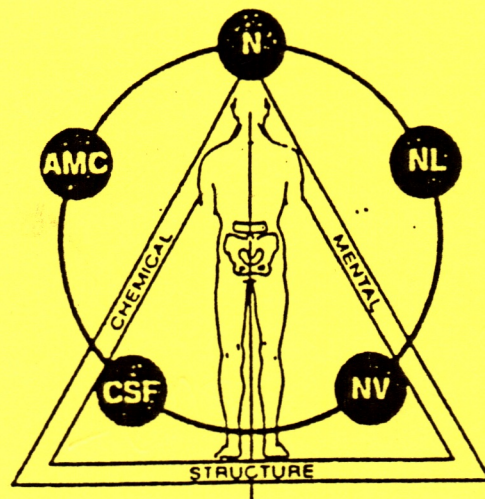


GEORGE J. GOODHEART, JR., D.C.

APPLIED KINESIOLOGY

RESEARCH TAPES
NUMBERS 120-137



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DR. GOODHEART'S RESEARCH TAPES
TAPE 121

-1-

-Dejarnette's Category 2 is an osseous sacroiliac lesion. The indicators in posture are a lateral pelvic sway and a high or low hip. The posterior ilium side has pain upon pressure over the origin and insertion of the sartorius/gracilis on the short leg side, and the upper groin. The posterior ischium side will have pain over the origin and insertion of the hamstrings, lateral portion of quadriceps (vastus lateralis), lower groin. UOMS: U = upper, O = obturator, M = medial, S = short for the posterior ilium. LLL: L = lateral thigh, long leg, lower groin for the posterior ischium. Category 2 is therapy localized with one hand over the sacroiliac joint.

-Modification of Category 2: patient is supine and placed in a Patrick-Fabere position (knee is flexed and laterally rotated with the foot on the opposite knee). This tests for the internal and external PSIS rotation.

-Sacrotuberous Syndrome: described by Danish researchers, translated by Mark Newton for GJG. They state that the Patrick-Fabere test will often be positive on the affected side. Fabere: F = flexion, AB = abduction, ER = external rotation, E = extension. While patient is in this position, place a pressure on the flexed knee while stabilizing the opposite hip; may be pain along the sacroiliac joint on the same side. Bilateral pressure at the coccygeal-sacral area in a cephalad and lateral direction may give sacrotuberous pain and may also give symphyseal pain as a result of the pelvic torsion. Often will have a problem between C1 and C2 which is due to the compensatory pattern. Axis of rotation on the affected side, instead of rotating at the sacroiliac joint, will rotate at the symphysis pubis; the culprit is the sacrotuberous ligament. GJG has found:

1. Symphysis pubis on the affected side will therapy localize, whereas the sacroiliac joint will not; this is done in the supine position.

2. Leg length is equal with patient supine, no evidence of a UOMS or LLL palpatory tenderness.

3. When patient therapy localizes the symphysis pubis and has a positive response, there is immediately evidence of the presence of a posterior ilium or ischium in that the leg shortens or lengthens, and the UOMS or LLL palpatory pain appears. Rather than adjusting in the classic osseous way, use a non-high-velocity technique.

-For a posterior ilium, the patient is supine, place a block under the posterior ilium side and the opposite ischium. Flex the knee of the long leg, bring across midline from lateral to medial; flex the short knee and bring it away from the midline from medial to lateral. Both knees are moving in the same direction.

-For a posterior ischium you do a stretch of the sacrotuberous ligament. Prone or side-lying patient, challenge the coccyx-sacral junction in a cephalad and lateral direction. Note palpatory pain in the C1-C2 area on the same side as the positive symphysis TL. Hold the sacrotuberous contact (like a basic contact) in the direction of positive challenge for 10-15 seconds and note removal of pain from C1-C2. Use 5-8 pounds of pressure. In difficult cases, you have to go

rectally to stretch the sacrotuberous ligament.

-Dvorak and Dvorak, Manual Medicine Diagnostics, second revised edition, has a section on the sacrotuberous ligament. "It is a fan shaped ligament whose fibers pass in a propeller-like fashion from origin to insertion, thus the fiber tracts undergo a change over the fibers arising at the most superior portion cutting across anteromedially going practically vertical, and inserting in the ramus of the ischium most anteriorly. Fibers arising at the most inferior portion in contrast ascend posterolaterally to the ischial tuberosity reaching a line of insertion of the most posterior portion. The sacrotuberous ligament lies posterior to the sacrospinous ligament which is weaker and shorter. Portions of the sacrotuberous ligament are close to the origin and serve as part of the origin of the gluteus maximus muscle. Palpating the origin at the coccyx and the sacrum, the examiner must be aware of the anatomical relationship of the sacrotuberous ligament to the sacrospinous ligament and the gluteus maximus. The sacral zones of irritation lie more medially and should not be the cause of confusion. The sacrotuberous ligament is spondylogenically related to the upper thoracic spine and is similar to the sacrospinous ligament which has also a cervical spondylogenic reflex."

-This is a common occurrence, i.e. trauma where there is a fall on one leg, or an impact on one side of the pelvis, stretching of the sacrotuberous ligament in pregnancy and childbirth. Injury to the sacrotuberous ligament will cause local pain and tenderness, and also makes the nervous system refractory in an effort to alter the muscle balance, the pain remains and there is no mechanical stabilization of the area, there is a locking of the sacroiliac joint. Normal proprioceptive impulses from the ligament and articularis sacroili, there will be pain at the insertion of the ligament, and secondary pains in the abdominal viscera. In the standing position, the iliac crest will move up on the side of the tension while the trochanteric line is unaltered, there will be an apparent lengthening of the affected side's extremity. The sacrum will be rotated so the apex will point downward towards the disordered side and there will be a compensatory lateral scoliosis in the spinal column with the convexity to the opposite side. This causes neck pain when the head tries to maintain itself in a level position despite the scoliosis. The basic method of treatment was to distend the ligament so as to alter its tension as was described in the Danish article. GJG has found the additional requirement of movement of the pelvis as described earlier.

-This explains why Logan's basic contact has gotten good results.

-GJG describes an 18 year old female patient with hematuria, abdominal pain, pain with voiding, but no sign of infection. Upon treatment of the sacrotuberous ligament, the abdominal pain stopped.

-Torticollis associated with upper respiratory problem may respond to the sacrotuberous ligament treatment.

-Patient's with lumbar pain, iliac crest pain with some radiation into the inguinal region, difficulty with sitting, headaches (forehead), neck pain, menstrual difficulty (like something is dropping), continual urge to defecate without defecation with the urge, dyspareunia may reveal this problem. Check the x-rays, may

reveal level trochanters, but a scoliosis in the lumbar spine with the convexity away from the affected side.

-Key to applying the described sacrotuberous ligament contact is not to contact the sacrum as in the pure Logan basic contact, but to take a sacrotuberous contact which is sacrococcygeal with a pressure cephalad and lateral. Change the direction of pressure to negate pain in the cervical spine. Make the adjustment using the blocks, this helps to remove the pain from the symphysis.

-There will be positive therapy localization to the sacrotuberous ligament area. Be sure to place the patient's hand correctly between the coccyx and ischial tuberosity. Correction of the sacrotuberous ligament will negate the therapy localization.

-Check muscles for aerobic weakening; weakening of the muscle with repeated testing. This indicates the need for anti-inflammatory supplements, i.e. Linum B6, vitamin F perles, evening primrose oil, etc. If there is a great deal of pain associated with the sacrotuberous ligament, use up to 6 per day.

-Another key diagnosis to the sacrotuberous ligament is to look at the gluteal crease. Normally it will point the upper end toward the inferior sacrum. In the sacrotuberous ligament dysfunction, the lower end of the gluteal crease will point itself towards the involved side.

-In difficult cases, if the contact on the middle of the ligament does not do the job, sometimes it requires directional pressure over the ligament in order to increase the tension (as you would a muscle) by spreading the ligament apart. Less often it may require origin-insertion directional pressure by pressing them together.

-Manual Medicine Diagnostics, Dvorak and Dvorak, an earlier edition. They state that the sacrotuberous ligament is spondylogenically related to the upper thoracics C7-T5. The propeller-like arrangement of the fibers find the expression in the SRS correlation and its manifestations. The most lateral portion of the lower section relates to C7 and the most medial portion relates to T5, whereas the most medial portion of the upper portion next to the coccyx relates to C7 and the most lateral portion on the sacrum relates to as high as T8. This may explain why there may be strange symptoms associated with the sacrotuberous ligament. The sacrotuberous ligament overlies the sacrospinous ligament. The spondylogenic reflex area for the sacrospinous ligament starting at its portion just on the ischium above the obturator is the occiput, and as it goes upwards towards its inserion on the coccyx and sacrum is as high as C6.

-Walter Schmitt, D.C. speaks of the clorox sniff test as a way to discover if there are superoxide radicals in the body. Clorox is an oxidizing agent so if there is an excess of oxidizing agents in the body, sniffing clorox will weaken muscles.

-The body makes its own superoxide radicals and there are superoxide radical quenchers, for instance DMSO on a low order, and vitamin E on a high order. Bilirubin is a normally acting free radical quencher.

-SOT describes the right thumb web as being associated with gall bladder reflexes and the left thumb web being associated with stomach reflexes.

-There is an area just ahead of the malleolus on the sole of the foot on the right hand side that is associated with gall bladder reflex. These reflex points are described in CMRT technique.

-GJG feels that this point is related to the large intestine.

-Mary Austin, Acupuncture Therapy, 1972, Doctor's Supply Center, 24028 Union, Dearborn, MI 48124, 313-278-2840. "One of the greatest points in acupuncture is the fourth point of the large intestine meridian, LI4, it has been called the Great Eliminator. LI4 is included in a wide variety of couplings or special combinations of points for specific purposes. If I were asked, "If one wished to memorize one point only, is there any one point of such importance that you would choose it?" - there is little doubt in my mind I would go for LI4. As a single point it can be used to regularize and tone up the entire large intestine function: also, as an eliminator, it is used to control the elimination of mental as well as physical toxins from the organism. It is useful in fevers when there is intense thirst, or fever with shivering. All kinds of skin conditions respond to this point, such as acne and boils; all kinds of headache arising out of faulty elimination. The effect on headaches is often quite remarkable. You will also realize there is a wide range of pains in the upper part of the body, in the neck, chest and limbs, eyes, sinuses, teeth, etc. amenable to treatment at LI4; also inflammation of eyelids and conjunctiva, mouth, lips, tonsils, nose, etc. LI4 is also diagnostically quite useful. If you place your thumb well into the point LI4 and your middle finger opposite to it in the palm, near the thenar eminence, so that your thumb and finger serve as pinchers, you will, by working the finger and thumb about, be able to feel the condition of the tissues. If, for example, it feels as if there were a rubbery lump inside, or a small sausage-shaped lump inside, deep in the tissues, you would know that the congested, bound-up unfree condition here mirrors the state of the actual colon. If the flesh between your finger and thumb feels limp or toneless, it will be but a reflection of the large intestine lack of tonicity. If we can alter the condition of the deep tissues at LI4 by massage, and bring them back to a living, pliable, supple condition, free of congestions and adhesions, then whatever is achieved here will have comparable beneficial repercussions on the colon and the entire large intestine function. Regular use of this point is generally extremely beneficial. Now for some special combinations of points or couplings. When children have such symptoms as cough, fever, breathing difficulty, or throat troubles of any kind, the combination at LI4, LI1, and Lung 11 is especially useful. In adults too, this can be useful to relieve bronchitis. LI4 and LI11 is a combination that may be used for all afflictions of the head, face, eyes, and nose. LI2 is a special point for constipation. I have known a few moments' massage treatment at this point to bring about a good bowel movement within ten minutes; the patient was constipated, congested, and without urge immediately before the treatment. Actually I did this particular treatment in order to lower a temperature that, in my opinion, had been too high for too long and must be reduced. But think of LI2 primarily as a special point for constipation rather than fever. For all disorders involving trachea and throat the combination of LI11 and LI15 may

safely be used with good effects expected. The combination of LI4, LU11, and LU9 has particular influence over the mouth. In the common cold think of LI19 and LI20."

-GJG had a patient with gall bladder symptoms; he tested her with the clorox sniff which was positive. He massaged LI4 for 30-40 seconds and found that this negates the clorox sniff test. He has repeated this 50-100 times since then.

-In SOT, check for occipital fiber 3, line 2, right or left, with nodulation on T4. There is consistently an irritability at LI4 in a large number of patients. Right/gall bladder, left/stomach. Because of the high prevalence, there may be a lot of unresolved stomach and/or liver/gall bladder problems.

-GJG feels this may be a reaction of the large intestine perhaps due to the failure of the stomach or gall bladder. Journal of Science states that bilirubin is one of the best free radical quenchers that the body produces.

-From Harry Eidenier's Newsletter, #48, Dec. 87 - Jan. 88, cited Bilirubin As An Antioxidant, Stocker, Science 1987, "Bilirubin is an antioxidant of possible physiological importance. To prevent the formation of oxidants and repair oxidative damage to tissues, all aerobic living organisms process antioxidant defenses that include the enzyme superoxide dismutase, catalase, glutathione, vitamin C, E, and A. Bilirubin, the end-product of heme catabolism is generally regarded as a potential cytotoxic, liposoluble waste product which needs to be excreted. In this part of the country, the indians used to kill the hedgehog at a certain phase of the moon and take the gall bladder and dip their arrows in it to make poison arrows. However, in a micromolar concentration in vitro, bilirubin efficiently scavenges peroxide radicals. Its antioxidant sensitivity increases as the oxygen is decreased from 20% (normal air) to 2%. In addition, under 2% oxygen in liposomes, bilirubin suppresses oxidation more than alpha tocopherol which is thought to be the best antioxidant for lipid peroxidation. This study supports the beneficial role of bilirubin at low levels."

-The lab values for bilirubin are wide, i.e. 0.1 - 1.2.

-GJG describes performing K27 and SP21 technique on a student at a Chicago seminar. There happened to be a laboratory seminar going on in the same hotel. They obtained a bilirubin prior to the treatment, the value was high; following the treatment the bilirubin decreased to a normal level. This occurred off and on, not consistent.

-Walter Schmitt, D.C. found that when K27 and SP21 no longer therapy localized, if you place a mild alkali in the body, such as organic minerals on the tongue, or a mild acid, such as betaine hydrochloride on the tongue, if K27/SP21 had not reached its zenith of stimulation, the therapy localization would then become positive again and treatment to K27/SP21 would be done longer.

-David Cheetham, D.C. treated a severe allergy patient with 8 minutes of tapping K27/SP21 with no return of the allergy problem.

-John Schmitt's class at Logan did a study on K27/SP21 trying to reproduce the same effects on pH, etc. It varied with the length of time that K27/SP21 was stimulated.

-GJG can change pH of mouth or LAAT about 6 out of 10 times after tapping K27/SP21 for 3-4 minutes. Reinstitute positive TL to K27/SP21

after putting an alkali or acid in the mouth.

-Stimulating LI4 for about one minute has good effects on upper thoracic pain, recurring upper thoracic subluxations, fixations, "gall bladder" headache, persistent fat indigestion, lack of hydrochloric acid/gas, undigested food in stool.

-LI4 will negate the clorox sniff test. In difficult patients, or patients in a lot of pain, recommend a source of SOD three per day, or whole dessicated spleen. The patients who took the nutritional support did better than those that did not.

-Anyone with a resting potential away from the midpoint of Isaacs' concept, either parasympathetic or sympathetic dominance, will have positive therapy localization to SP21/K27.

-Increased sympathetic drive patient will have positive K27/SP21 therapy localization that is negated by Organic Minerals (alkaline ash minerals) on the tongue. Needs support for the parasympathetic system. Tap SP21/K27. This helps to bring the resting potential back to the mid-potential.

-Increased parasympathetic drive patient will have positive K27/SP21 therapy localization that is negated by Betaine Hydrochloride (acid ash minerals) on the tongue. Tapping SP21/K27 brings the resting potential back to the mid-potential.

DR. GOODHEART'S RESEARCH TAPES

TAPE 122

-1-

-Pain at the right thumb web associated with gall bladder and pain at the left thumb web is associated with stomach.

-There are no specific references to these points in SOT except for some simplified hand reflexes.

-Manipulation of these areas seems to enhance the recovery of difficult gall bladder patients or gastric patients along with other important reflexes, i.e. foot reflexes, NL, etc.

-Particular patient with a lot of digestive disturbances, pain at the T2,3,4 area right and left, and reflex pain at the sternocostal junction of the second, third, and fourth ribs. Some foods would aggravate the condition, but would not reproduce the aggravation each time the food was taken. Patient was on supplements to thin the bile (vitamins A, F, and betaine) and bile salts. GJG manipulated both the right and left thumb webs of this patient while she was in an acute episode of pain in the right sternocostal joint and costovertebral areas, and the pain stopped immediately. This was after there had been some other treatment by GJG and analgesics taken by the patient. An outside lab measured the patient's bilirubin prior to treatment and after treatment and there was a change in the level. (Recall GJG treatment of Dale Sandvall who had an increased bilirubin level that was reduced with tapping of SP21 and KI27 from 2.2 to 1.7 in 10 minutes.)

-Common name for the thumb web point is Large Intestine 4 or heaku.

-One of the main functions of the liver is to detoxify the bowel.

-After World War II, there was a large outbreak of hepatitis in Texas due to the hepatotoxic effects of DDT. The Texas treatment was a non-absorbable intestinal antibiotic, seven-up, and hard candy for about a week. This sterilized the lower bowel, the candy provided glucose for liver function to maintain itself, and the seven-up provided sodium citrate.

-The patient won't be aware of a pain over LI4, but if you palpate LI4 with 7 pounds of pressure, the patient will note a very painful point, and the point may feel like a little sausage. Manipulate the point for 2-3 minutes. The sausage sensation disappears and the pain diminishes. This helps with digestive disturbances.

-GJG describes holding a contact over the gall bladder and manipulating right LI4, and he would note a gurgle or sound of intestinal function. Manipulating left LI4 and holding a contact over the stomach, he would note a gurgle over the stomach. The contact on the abdomen is not necessary, just the manipulation of LI4.

-Mary Austin, Acupuncture Therapy, 1972. See quote in previous tape number 121, pages 3-4. In addition, there is a lung point (LU4) that is very close to LI4, located slightly palmward from the web of the thumb. This point is treated along with LI4.

-Schmitt's clorox sniff test detects problems with producing too many superoxide radicals. If the patient has increased oxide radicals, sniffing clorox causes general muscle weakness. This shows need for

superoxide radical quenchers, i.e. superoxide dismutase, glutathione, vitamins C and E.

-Refer to Bilirubin As An Antioxidant quote in previous tape number 121, page 5. Article in Science, 1987, 235:1043, Stocker et al.

-Bilirubin seems to act like a free radical quencher and it seems to act better than SOD, vitamins A, E, C, glutathione.

-LI4 and LU4 have almost a confluence at the web of the thumb. You will manipulate both at the same time. There is a combined effect.

-Superoxide radicals (produced by white blood cells) attacks friend or foe. The body makes SOD in the liver from manganese, copper, and zinc. SOD, A, C, E, and bilirubin act as antioxidants.

-GJG describes the IFF system used during WWII in England. While flying, you needed to have the IFF system in use (identification friend or foe) while crossing a channel. If the IFF was not in use, the British anti-aircraft would shoot you down. Germans would fly suicide missions in order to bomb the aircraft factories in southern England, so it was necessary to use the IFF.

-Sometimes people don't have their IFF working for them (SOD, A, E, C, etc.) and their own superoxide radicals produced from the white blood cells can produce devastation in the body.

-Unused bile is relatively cytotoxic, but it is reabsorbed from the blood by the liver. There may be failure of the liver to reabsorb bilirubin because the liver is too busy dealing with the large intestine and cannot tend to normal duties. Stimulation of LI4 produces good effects in patient symptoms and it changes bilirubin levels.

-LI4 is tender to palpation and will therapy localize.

-Check patient for chlorox sniff test. If positive, check the various antioxidants for neutralization of the chlorox sniff test. Then manipulate LI4 until pain has reduced. Rechallenge with the chlorox sniff and many times it will be negative. Also check for therapy localization of L5 which is the associated point for the large intestine. If TL is negative, have the patient stop breathing and recheck to see if TL is now positive. Challenge and correct as usual.

-From Bilirubin As An Antioxidant, "Under 2% oxygen in liposomes, bilirubin suppresses oxidation more than alpha tocopherol which is thought to be the best antioxidant for lipid peroxidation."

-Patients with pain problems or spinal cord injury patients are related to lipid peroxidation.

-A normal amount of bilirubin is influenced by large intestine. Bilirubin levels taken pre and post-treatment show a change in their levels. The levels can go up or down in the change, most often by going up but remaining in the normal range.

-These changes may occur in urobilinogen, but in GJG's opinion, the bilirubin levels must have to be chronically high before this occurs.

-Guyton's Physiology: "Two basic conditions are necessary for the gall bladder to empty. Number one, the sphincter of Oddi must relax in order to allow bile to flow from the common bile duct into the duodenum, and second, the gall bladder must contract to provide the force needed to move the bile along the common duct. After a meal, especially a high fat concentration, both of these effects take place.

First the fat and the partially digested protein in the food entering the small intestine causes a release of cholecystokinin (CCK) from the intestinal mucosa, especially from the upper regions of the small intestine. Then the CCK is absorbed into the blood which passes to the gall bladder which causes specific contractions of the gall bladder muscles which provides the pressure to force the bile toward the duodenum. Second, vagal stimulation associated with the cephalic phase of gastric secretion (anticipation of food) or other intestinal reflexes causes an additional weak contraction of the gall bladder when the gall bladder contracts, the sphincter of Odi relaxes and this may be neurogenic, myogenic, or the effect of CCK in the presence of food produces a peristalsis in the duodenum. Each time a peristaltic wave travels towards the sphincter of Odi this sphincter along with adjacent intestinal wall momentarily relaxes due to the phenomenon of receptive relaxation which travels ahead of the peristaltic contraction wave. If the bile in the common bile duct is under sufficient pressure, a small quantity of bile squirts into the duodenum. Therefore, the gall bladder empties its store of concentrated bile into the duodenum mainly in response to CCK and when there is no fat, the gall bladder empties poorly, but with adequate quantities of fat, the gall bladder empties completely in about an hour. There is an enterohepatic circulation of bile salts. (Precursor of bile is cholesterol. The liver cells must have cholesterol in order to make bile (cholic acid and chemodesoxycholic acid in about equal quantities). These acids combine with lysine and to a lesser extent taurine to form glyco- and tauro- conjugated bile acids. The salts of these acids are then secreted into the bile.) Approximately 94% of bile salts are reabsorbed by an active transport process in the distal ileum intestinal mucosa. They enter the portal blood and upon reaching the liver, the bile salts are absorbed almost totally on the first passage through the liver into the venous sinusoids and into the hepatic cells, and then resecreted into the bile. Bile salts are reused approximately 16 times before being excreted in the feces. The small amount of bile salts lost in the feces are replaced by new bile that is continuously formed by the liver cells. Recirculation of these bile salts is called the enterohepatic circulation. In addition to the strong stimulating effects of bile acids themselves on bile acid secretion, the intestinal hormone secretin also increases bile secretion, sometimes more than doubling the secretion rate for several hours after a meal, however, this increase in secretion represents mainly a secretion of a bicarbonate rich watery solution by the epithelial cells and increased secretion of bile acid by the liver parenchymal cells. The bicarbonate in turn passes into the small intestine and joins the bicarbonate from the pancreas in neutralizing the acid from the stomach, thus the secretin feedback mechanism for neutralizing duodenal acid operates not only through the effects in promoting pancreatic secretion, but also through the effects of the secretion of the liver ducts as well."

-TL LI4; if positive, check the clorox sniff test; if clorox test is positive, see what antioxidant negates (A,C,E, SOD, etc.), manipulate LI4; then recheck for negation of the clorox sniff test.

-GJG had a patient who therapy localized LI4 with only the index

finger. He thought he had stumbled on a new way to identify acupuncture points since the index finger has the large intestine meridian in it, but he found that the patient was simply switched.

-GJG would find a switching pattern in patients who TLed to LI4 with only the index finger. The pattern was both activation of left brain with counting and right brain with humming. He noted that ribonucleic acid neutralized this switching pattern. He would also find indication of switching via TL of the umbilicus and right or left KI27, or both KI27 together. Manipulation of these points neutralized the indication of switching via right or left brain activity as long as the RNA was on the tongue. Once the RNA was removed, the right or left brain switching pattern returned. Manipulation of LI4 right and left would not neutralize the switching pattern. Give the patient 180 milligrams of RNA three times a day for a week in order to "prime the pump". This produced good results.

-Research of Kim Bo Han utilized radioactive phosphorous to identify the meridians. He stated that the meridians were one cell wall thick and contained RNA. The French are now using technetium 90 to identify meridians.

-Sometimes when you treat the meridian system, you move the energy around and move the "empty place" into another area. In 24 hours, the same empty place would return. Using RNA helps to provide the raw materials (similar to the Schmitt theory of "what if there is no water in the hose").

-Standard need for RNA is the inability to stand on one foot with the eyes closed. Another indicator for the need of RNA is now switching.

-Melzack Wall Pain Control technique: tapping the first tonification point of the meridian involved shows good results with control of pain. If you don't get results, it is possible that there is not enough RNA/memory chemicals.

-Jugular foramen contains the jugular vein, vagus, spinal accessory, and glossopharyngeal nerves. Compression of the occiput and the temporal bone or a stretch of the dural sleeve can initiate vagal disturbances. Need to perform Jugular Decompression. Good technique to use in digestive problems.

-Usual routine for digestive disturbances is to be followed. Add to this the LI4 treatment.

-You may find that the tissue between the little finger and ring finger is tender to palpation in these patients. TL and treat if positive.

-Check KI1 on the bottom of the foot for palpatory tenderness. If painful, this patient may have repressed fears or anxieties that are being held in check by a force of will. The patient does not complain of pain at KI1, and will find it hard to believe that it hurts that much on palpation. Manipulation of KI1 may cause an emotional catharsis, not from the pain of the treatment. Mary Austin speaks of this in her book, Acupuncture Therapy, 1972, Doctor's Supply Center, 24028 Union, Dearborn, MI 48124.

-SP21 is a back up for the spinal gate system. If SP21 and KI27 have positive therapy localization when TLed together, treat them by tapping for 3 minutes; this will lower blood sugar and blood pressure.

Prior to treatment, see if organic minerals or hydrochloric acid negates the positive TL (based on pH of patient). If you prescribe organic minerals, dosage is one-third of a tablet three times a day.

-Fecal pH should be 7.0. Use bromthymol to check stool pH. If turns yellow, the stool is acid. If bromthymol turns blue, the stool is alkaline. Normal is a greenish-yellow.

-Can obtain bromthymol from Seltzer's Pharmacy in Detroit.

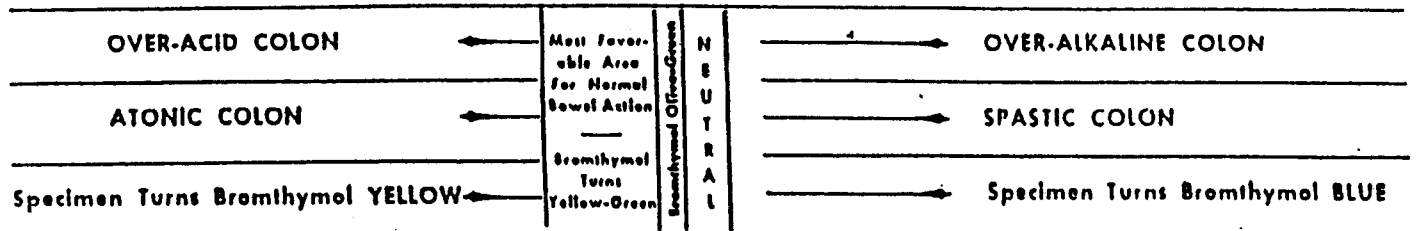
-Have the patient bring a sample of toilet paper with stool on it in an appropriate container. Put bromthymol on the tissue to determine if the toilet paper is acid or alkaline itself. Then drop bromthymol on the stool and check for color change.

-Refer to chart of Management of the Colon pH by Food Intake.

-Treatment of LI4 will show a change in the pH of the stool.

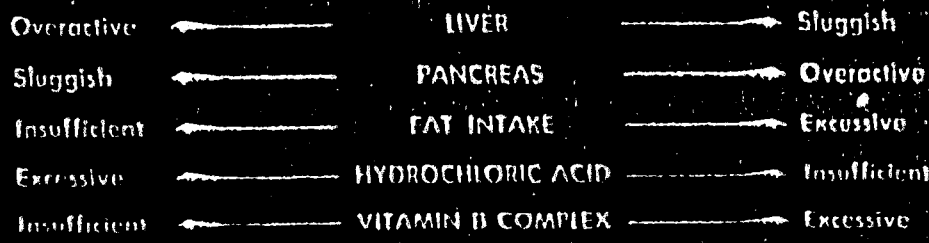
-Be sure to supplement the antioxidant nutrient that negated the clorox sniff test after manipulating LI4. Check L5 for sublaxation.

MANAGEMENT OF THE COLON pH BY THE FOOD INTAKE



pH Scale 6/0 6/1 6/2 6/3 6/4 6/5 6/6 6/7 6/8 6/9 7/0 7/1 7/2 7/3 7/4 7/5 7/6 7/7 7/8 7/9 8/0 pH Scale

<p>RESULT: FERMENTATION</p> <p>SYMPTOM: Excessive Intestinal Gas (Methane or Marsh Gas) Almost Odorless</p> <p>PATHOLOGY: DIARRHEA Hemorrhoids Intestinal Plosis Colitis (if excessively acid)</p> <p>ETIOLOGY**</p> <ol style="list-style-type: none"> <u>Excessive Intake of Foods Which Cause Acidity:</u> (Aids Lactobacillus Acidophilus Activity Creating Lactic Acid) Fruits, Vegetables, Starches, Sugars, Buttermilk. <u>Factors Which Tend to SPEED Intestinal Rate:</u> 	<p>RESULT: PUTREFACTION</p> <p>SYMPTOM: Moderate Amount of Intestinal Gas with Putrefactive Odor</p> <p>PATHOLOGY: CONSTIPATION (alternating diarrhea may be present) PRURITUS ANI INTESTINAL TOXEMIA (with symptoms of Hay Fever, Ulcers, Mucous) Colitis (if excessively alkaline)</p> <p>ETIOLOGY**</p> <ol style="list-style-type: none"> <u>Excessive Intake of Foods Which Cause Alkalinity:</u> (Due to alkaline guanidine created by bacterial activity on proteins) Animal Proteins: Meats, Poultry, Cheese, Sweet Milk, Eggs, Sea Foods. <u>Factors Which Tend to RETARD Intestinal Rate:</u>
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<p>THERAPY</p> <ol style="list-style-type: none"> DIETARY REGULATION: Select More Foods From List Which Causes ALKALINTY. Correct Item 2 by proper supplementation. 	<p>THERAPY</p> <ol style="list-style-type: none"> DIETARY REGULATION: Select More Foods From List Which Causes ACIDITY. Correct Item 2 by proper supplementation.
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**Note: It should be recalled that the Colon is a food tube and is affected differently than the blood serum pH by food.

DR. GOODHEART'S RESEARCH TAPES
TAPE 123

-1-

-Changes in weather/barometric pressure affect certain people. There are obvious effects of perspiring with heat and shivering with cold. Changes in weather/barometric pressure are unaccompanied by any science as obvious as the effect of heat or cold on the body. With a change in weather, there is an increase in the circulating level of serotonin. To balance the body with the increase in serotonin, the body then makes 5-hydroxyindolacetic acid and then this person is not affected by the weather. Some patients are able to tell that the weather is changing due to return of pain in an old injury.

-This is especially evident in patients with sinus problems. Common neurolymphatic reflex for the sinuses is located half way between the proximal and distal clavicle, just underneath. This neurolymphatic is associated with differences in head level. Attention to the anterior and posterior neurolymphatic reflexes is accompanied by marked changes in the progression and activity of the sinus, but there is a certain hardcore of patients that continue to have difficulty. They have blocked nasal turbinates, head pain, etc., and alteration of the sternocleidomastoid and upper trapezius.

-GJG has had a series of patients who are affected very strongly by the weather.

-Previous tape discusses the use of LI4 therapeutically when there is a positive clorox sniff test.

-Triple warmer meridian associated with the teres minor/thyroid.

-DeJarnette has stated that disturbances in thyroid function may manifest themselves as sinus trouble.

-We often recommend the use of iodine, especially patients with thick mucous that is difficult to get rid of. Use iodine, tablet or liquid (Ioaquosol).

-Also balance the head on the neck, i.e. Pitch, Roll, Yaw, Tilt, Auricular Technique.

-There is still a hardcore series of patients that do not respond to the usual treatment.

-Patient's say: their hands and feet are cold, that they put they shoulders up in October and don't put them down until April.

-Patients who have difficulty with cold or changes in weather, you would check their axillary temperature. Some patients would reveal low thyroid function with a low axillary temperature. However, there are some patients who have symptoms of low thyroid but have normal temperatures.

-Mary Austin, Acupuncture Therapy, 1972: "The temperature organ regulation function amounts to an automatic self regulating or coordination of three master or chi switches, one triggered by heat, another triggered by chemical reaction, and the third triggered by pressure/rythmn. The temperature organ effect or function will be concerned with the transfer of heat or heat energy from one part of the body to another. Either to retard or accelerate this conservation or dissipation of heat already there and the production of heat within the body either to retard or accelerate this process of manufacture.

Therefore, there are three duties to be performed. Where is this point located? It will need to be where the blood temperature is representative of the total body temperature of the inner organs. If there is such an organ, if such an organ exists, it would almost be perfectly protected from all risk of trauma or disturbances from external circumstances. The diagram to illustrate this is the traditional placing of the triple heater based on the illustrations of Ni Ching."

-The diagram and the ancient Ni Ching closely approximate that part of the hypothalamus that rests upon the circle of Willis. It is of the same tissue matrix as the optic nerves and retina. Located just posterior to the pituitary. The circle of Willis is named after the english anatomist in 1675, it was called then the arterial circle. It is formed by the internal carotids and the basilar arteries.

-There is a thermostat in the hypothalamus where the circle of Willis is located. This discovery resulted from experiments by Dr. Bensinger and his team at the head of the Calometric Branch and Biomedical Energetic Division of the Naval Medical Research Institute at Bethesda, Maryland.

-Try this the next time you see a difficult patient with head/neck range of motion problems, chronic sinus irritability, symptoms associated with weather or temperature changes, symptoms associated with under or over active thyroid. This is most acutely noted in patients who react with a change in weather. The chinese used to say "you have January rheumatism", and there is a certain amount of truth in this.

-DeJarnette discusses palpating the upper trapezius. The upper trap has a dual innervation.

-GJG determines on patients before they leave that with the left leg forward the left upper trap and right sternocleidomastoid turns off. This is normal. Beginning point for the PLUS technique.

-Patient who presents with a torticollis often says, "I must have slept wrong". The average case responds well to conservative manipulative treatments. However, some of the more difficult cases proceed to include an arm or a shoulder and a great deal of distress.

-Next time you have a patient with a difficult sinus or neck condition, check triple warmer 15 (TW15) which is located on the trapezius muscle, on the posterosuperior shoulder about half way between the point of the shoulder and the base of the neck.

-GJG notes that TW15 requires dual treatment.

-(Auricular Pull Technique of Dr. Watkins: obtain palpatory pain over the neck or back, look for the low occiput side, pull down on the ear on the low occiput side and see if this relieves the palpatory pain.)

-If you have a patient with the head/shoulder unlevel, check the upper trapezius and sternocleidomastoid as usual. Under most circumstances, you would find these involved and correct as usual. In a certain number of patients, they will have postural evidence of upper trap/SCM imbalance, but it is not weak. In this case, have the patient therapy localize TW15 and check for weakening of the upper trap/SCM. This does not respond to the 5 IVF factors, but rather to strain/counterstrain with the trigger point at TW15.

-GJG has had patients who were always cold, hands and feet cold, or patients who had difficulty in maintaining a normal temperature, or temperature normality between one part of the body and another, i.e. between the hands and the feet, or hands and the head, etc. Patients may sweat only at the head and not anywhere else (this may be a vitamin D deficiency or an indication to check TW15), or a patient that is cold in your treatment room and standing next to the space heater when everyone else is comfortable.

-Take the pain out of TW15 by strain/counterstrain of the upper trapezius. After the pain is out of TW15, put a thermistor on the hand or foot, or whatever the patient complains is too hot or too cold. Then tap TW15 and note change in temperature.

-GJG uses the liquid crystal thermography unit to show temperature change.

-Occasionally the strain/counterstrain will change the temperature, but you usually need to tap TW15 to make the change.

-Sometimes this works for patients whose hands and feet perspire. This is usually a problem with a lack of perspiration all over the rest of the body. This is treated by rubbing lemon over the skin and then taking a hot bath with a couple of handfuls of epsom salts. In some patients the sweaty hands or feet is due to alteration in TW.

-Draw a horizontal line through the top of the spinous process of T1 and a vertical line touching the inner border of the scapula, the distance between the T1 spinous process line and the point where the horizontal and vertical lines cross is an area referred to by Austin as AB. Extend the horizontal line a half inch lateral of line AB which then locates the hydrometric point (TW15).

-Acupuncture points are able to be found on cadavers with a point finder.

-Have patient therapy localize the pulse points to find if triple warmer is indicated. Regular therapy localization may not be positive until you have the patient stop breathing (breath cessation).

-Loss of hearing and tinnitus: check TW1,2,3,15,16.

-To improve circulation to the brain in patients with cerebral palsy, epilepsy, poor development we do cranial technique. While performing the cranial technique, the patient respire their own air, carbon dioxide is a potent vasodilator. Place a plastic glove over the nose and mouth of the patient and have them respire while you perform cranial technique.

-Check for diaphragm dysfunction, if positive, one of the factors to check and correct is a subluxation at C3. Have the patient therapy localize C3 and check for weakening of a strong indicator muscle. Often times straight TL to C3 is negative, but check TL of C3 against inspiration or expiration and the TL now becomes positive.

-Prior to correction of the diaphragm, check the patient's ability to tolerate rebreathing their own air, i.e. how many times they can breathe in the plastic glove. After correction of the diaphragm and related factors (NL, C3, thoracolumbar fixation, psoas reactivity), the patient will be able to increase the number of breaths in the glove, and the vital capacity will increase.

-A weak muscle that strengthens or a strong muscle that weakens on rebreathing carbon dioxide indicates a vitamin B deficiency.

Placing a tablet of Standard Process Cataplex B on the tongue will neutralize the breathing reaction in the muscle.

-Recurrent switching: needs K27/umbilicus, lack of magnesium (chronic tension in subclavius), stimulation of memory circuit (give them RNA), difficulty distinguishing right and left (needs folic acid), reading rapidly, backward, say multiplication tables, hum, etc. reveals switching.

-Relationship between levels of oxygen to the brain and switching.

-If a patient weakens when they rebreathe their own carbon dioxide five times, vitamin B or manganese may negate this weakness; but GJG has found that there is a subclinical subluxation at C3 that would only therapy localize with patient inspiration or expiration, most often expiration, and this correction negated the rebreathing weakness.

-The diaphragm drives the acupuncture system.

-New neurotransmitter concepts from the University of Michigan, Dr. Michael Marletta. The most common neurotransmitter is not what we think (acetylcholine, etc.), but is actually nitric oxide (key signalling for cells). Nitric oxide is one of the gases they check as an emitter from automobiles.

This neurotransmitter does not last more than 2-3 seconds, acts to facilitate transmission. Many vital functions of the body are mediated through nitric oxide. Blood vessels contain a smooth muscle relaxing factor (known for the last 4-5 years). The endothelial smooth muscle lining of blood vessels constantly are emitting little puffs of nitric oxide. In the immune system, the phagocytes (scavengers that kill bacteria), liver cells, and fibroblasts all use nitric oxide. Phagocytes produce nitric oxide.

-Nitric oxide has escaped physiologist's attention because it survives in the body for only seconds and because it bears no resemblance to any of the other biologic regulators (neurotransmitters).

-Nitric oxide is a messenger molecule that is involved in a wide range of activities: mediates blood pressure, helps immune system to kill especially invading parasites, stops cancer cells from dividing, can cause large scale death of brain cells that can debilitate people with stroke or Huntington's disease even though the cells of the brain that make it are immune to it.

-Dr. Salvatore Moncada, research director at the Burroughs Wellcome Research Laboratories in London wrote an article in 1989 suggesting that nitric oxide is the universal signal transducer (an intermediary that converts messages from one form to another). He feels that they have stumbled on something very big.

-Investigators have known for a long time that there was a substance made by the endothelial cells that line the blood vessels and that substance would diffuse into the muscle cells that grip the blood vessels and make the muscles relax. Yet this substance, which was then known as the endothelial-derived relaxing factor, appeared only fleetingly and no one had been able to characterize it before it was gone.

-The existence of this agent was then further documented by Dr. Robert Furchgott at the Down State Medical Center in Brooklyn at the

State University of New York. He and a Dr. Louis Ignaro at the University of California speculated that it may be nitric oxide since the biochemical properties of nitric oxide were very similar. There was some evidence that people would use nitroglycerin for heart disturbances, nitroglycerin breaks down to nitric oxide. Moncatta used the same machine that measures nitric oxide from car exhaust and aligned it to look for the chemical from the exhalation of cells. Putting nitric oxide on smooth muscle had exactly the same effect as the endothelial-derived relaxing factor.

-In addition to the nitric acid controlling blood pressure, they found that blood pressure soared when the endothelial cells were prevented from making this substance. The usual thought that the major signals that controlled blood pressure were signals that caused blood vessel constriction was something that was accepted, but Dr. John Hibbs of the University of Utah School of Medicine said that now it is the major signal that dilates blood vessels, nitric oxide. This is exactly the opposite view of the prevailing theories.

-A second threat of the nitric oxide study started with a question about substances that are thought to cause cancer. Researchers at MIT wondered whether mammals could synthesize nitrates or nitrites, and if so, were they being converted by cells into cancer causing nitrosamines. Cured meats and some vegetables are sources of this. Dr. Steven Tanenbaum of MIT gave student volunteers a diet low in nitrates and nitrites and analyzed the urine to see how much they were excreting. During the experiment, one of the students developed a viral disease with diarrhea and suddenly she began to excrete nine times the normal amount of nitrites and nitrates. This suggested to Dr. Marletta of MIT that the white blood cells of the immune system that are recruited to fight the viral infection, might be making nitrates and nitrites. They found this in the macrophages.

-Dr. Hibbs had been studying macrophages since 1970 trying to figure out how they killed infected cells. He knew that the macrophages needed one crucial amino acid to do the job. It turns out to be arginine.

-In the urea cycle, arginine is converted by arginase into citrulline. How is the conversion of citrulline associated with the killing of cells? When arginine is converted to citrulline, it loses a nitrogen atom and this nitrogen atom is turned into nitric oxide which is what kills the infected cells and allows the macrophage to do this. Not only did they find that second link, but the compound that relaxed the blood vessels could be made on demand by the macrophages to kill invading organisms and parasitic invaders like the mycobacterium that causes tuberculosis and leprosy, or the cryptococcus in toxoplasmic organisms that plague people with AIDS. These bacteria can slip inside cells, then those cells can burn up the person with puffs of nitric oxide.

-Dr. Hibbs said that cancer cells use nitric oxide in making it to control their own growth. When cancer cells start producing the compound they stop growing. The cancer cells are prodded to produce the nitric oxide by immune system hormones, especially gamma interferon and the tumor necrosis factor. This allowed Dr. Hibbs to explain how the immune system helps defend the body defend against

cancer.

-Snyder (who worked with Candace Pert and did the radioimmune histology stuff where they tagged the morphine and other opiates with radioactivity and found where they went in the brain), a neurobiologist at Johns Hopkins, said that nitric oxide is too nice not to be in the brain. He soon found that nitric oxide had a major role in neuron function. The enzyme that makes the nitric oxide arginase is greater in quantity in the brain than any where else. He states that the brain enzyme arginase is in the cytoplasm, the substance that makes up the body of the cell, but it can move to the membrane that encases itself when the cell needs to make nitric oxide and thus the chemical can be released inside of the cell without hurting the cell that makes it. The nitric oxide acts as a neurotransmitter passing messages between brain cells, but it is unlike any neurotransmitter ever found before. All the other neurotransmitters are stored in little bags inside the cells, like acetylcholine, and then released when they are needed. Nitric oxide in contrast is created only when needed. Sometimes the nerve cells can produce too much. Snider found that when the nerve cells would die, certain nerve cells that were actually making nitric oxide, not only were those neurons uniquely resistant to the neurotoxicity that was around them, but they caused it. The real damage from strokes occurs after the initial event of blockage. Initial blockage starves a group of brain cells that quickly die, then nerve cells in a larger area 10 times the original size of cell death begin to react and they release glutamic acid (part of the glutathione molecule) that stimulates the other cells to release a cloud of nitric oxide. The nitric oxide then kills all the cells in the area except those cells that are releasing it. If the cells have enough arginine, this stops the nitric oxide from killing them.

-Types of patients to check this in: stroke patients, failure to respond patients, patients that weaken on rebreathing carbon dioxide.

-GJG had a stroke patient who was unable to flex his knee while lying prone even after one and a half years of treatment. Placing two Arginex (Standard Process Labs) (contains arginase) on the patient's tongue caused him to immediately bend the knee.

-Another patient with a spinal cord injury. GJG placed a plethysmograph on the dorsalis pedis. The patient weakened with arginine on the tongue (zinc arginate, potassium arginate, charged amino acids) and also weakened with glutamic acid on the tongue. With Arginex on the tongue with either the arginine or glutamic acid, the weakness was negated. Patient kept a few Arginex in his mouth and checked for a reaction on the plethysmograph (made sure first that a chewing motion of the TMJ did not affect the plethysmograph), upon chewing the Arginex, there was a doubling of the width of the tracing (indicates an increased circulation to the area). Also did B&E treatment (common to do this in spinal cord injuries).

-Arginex as a source of arginase is useful in kidney, bladder, and liver problems; low specific gravity, elevated BUN (above 25), or elevated creatinine.

-Arginase is a factor in urea metabolism for excretion (manganese dependent). The Arginex works best, GJG does not find a need for manganese.

-Restrict the patient to one glass of fluid at night. Urinate and

discard the last evening urine. Upon arising, save the first, second, and third urine specimens (note times of voiding), after the third specimen, the patient can resume eating and drinking. This is the concentration phase. On the second night, no food or drink after the evening meal and kept inactive. Upon awakening, the patient discards the first urine specimen, then after this urination the patient is given 5 glasses of fluid to drink within 15 minutes. Urine is collected at 1, 2, 3, and 4 hours after the patient has started drinking. These samples are saved and recorded. After the 4 hour specimen, the patient may food/drink. This is the dilution phase.

-The specific gravity is measured for each specimen. The range should be 1.026 or over for the concentration phase, and 1.003 and gradually increasing for the dilution phase.

-In general, GJG just measures the specific gravity of one sample, and if it is very low or very high, test the patient against liver and/or kidney for need of Arginex.

-Test for available nitric oxide by the arginase splitting off the nitrogen from the arginine, if arginine weakens the patient, they need Arginex (source of arginase).

-Some patients are taking protein supplements and are overdosing themselves with arginine. This is a popular concept with people who are trying to stimulate human growth factor to increase muscle size.

-Most patients who weaken on rebreathing carbon dioxide will also weaken on arginine. GJG still working on where the structure, chemistry, and psychology is in relation to this.

-Test protocol: if arginine in the mouth weakens the patient, put Arginex (source of arginase) in the mouth to check for negation of weakening. Recommended dosage is to chew 3-6 per day.

-There are biochemical abnormalities that cause hyperammonemia. Can measure plasma arginine levels. The literature also describes if there is a deficiency of arginosuccinic acid. GJG has not done this. This is not a discussion of arginine and its relationship to the urea cycle, but rather that the arginase splits off a nitrogen molecule from the arginine to provide the base for the nitric oxide.

-Arginine is a normal part of the urea cycle for elimination of ammonia. GJG has checked patients for sniffing ammonia and this had no effect on the patient. This is not an ammonia problem, but that it relates to the level of nitric oxide.

-If there is no reaction, there may be a need for manganese or a failure of small intestine absorption.

-When the arginine can't be broken down, the body will find an alternate pathway. This involves the arginine combining with available glycine and eliminating ammonia via the creatinine which spills into the urine (Schmitt). This is different from the discussion of nitric oxide.

-GJG has been testing patients (under the supervision of a dentist) for sniffing nitrous oxide.

-There is no effect of glycine on these patients, either strengthening or weakening.

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-Arginine cycle ultimately gives off nitric oxide which is important in blood pressure regulation, immunity, platelet adherence, and levels of cholesterol.

-Place arginine (from any supplier, GJG uses Biotics) in the mouth of a patient and if this weakens a previously strong muscle, i.e. pectoralis major sternal, place Arginex (Standard Process) in the mouth with the arginine to check for neutralization of weakness. Arginex is a source of arginase. Provide arginex.

-Nitric oxide synthase controls metabolism of arginine to ornithine to citrulline. Nitric oxide synthase is both calcium and magnesium dependent. If patient weakens with arginine and is not helped with arginex, then leave the arginex on the tongue and add a source of calcium and magnesium (Calsol from Standard Process). If this negates the weakness, need to provide both arginex and calcium-magnesium product.

-If the calsol and arginex does not neutralize the muscle weakness to arginine, then place folic acid-B12 (Standard Process) on the tongue with the others and check for neutralization of the weakness. Tetrahydropteridine delivers folic acid for the nitric oxide pathway.

-If the arginex, calsol, and folic acid-B12 does not neutralize the weakness to arginine, then add SOD (superoxide dismutase) to the rest of the supplements in the patient's mouth. So far, GJG has not had one patient who did not respond at this point (these were all patients who had an indication for this approach, i.e. hypertension, immunity problems, impotency).

-The last two issues of the New England Journal of Medicine have dealt with the effect of nitric oxide on impotent and potent males and affecting circulation in the corpus cavernosum.

-Nitric oxide maintains the endothelial relaxing factor (ERF). ERF is responsible for maintaining a normal blood pressure.

-As people age, there is often an increase in the systolic pressure, and a lesser degree of rise in the diastolic. There are some people who are still normal at 120/80, this is due to the ERF.

-Nitric oxide is a new neurotransmitter. It is a simple gas that is produced by the intima of blood vessels. University of Michigan has done the work to show that the intima produces nitric oxide. When the intima is stripped from the blood vessel, there is no longer production of the relaxing nitric oxide.

-May 1992, Scientific American, The Biological Roles of Nitric Oxide. "This previously elusive and obscure chemical is proving to be of vital physiological significance. Nitric oxide may be the first of a novel class of neurotransmitters." By Solomon Snyder, Director of the Department of Neuroscience, professor of neuroscience, psychiatry, and pharmacology at Johns Hopkins. Received an award for basic biomedical research. He has pioneered the identification of receptors for neurotransmitters and responsible along with Candace Pert for identifying the location of the receptors for both morphine and other

narcotic agents, endorphins and enkephalins.

-Phagocytes produce nitric oxide and aid in immunity against parasites, viruses, and bacteria, and along with interferon and interleukin 1 and 2, will interfere with the production of new malignant cells.

-Patients who weaken with clorox sniff (Schmitt), manipulation of LI4 would negate this weakness to clorox, and the free radical quenchers would not be needed. Apparently, manipulation of LI4 helps the enterohepatic circulation of bilirubin. Bilirubin is the best free radical quencher, even exceeding vitamin E, glutathione, etc.

-Superoxide dismutase is also useful in continuing the function of nitric oxide.

-A large intestine visceral pattern could be influenced by treating LI4.

-The thrust philosophically in chiropractic is to reduce the art of chiropractic practice to that of a very narrow musculoskeletal vision, when in reality the more appropriate should be neuromusculoskeletovisceral.

-Visceral Manipulation, by Barral and Mercier, 1988, Eastland Press, P.O. Box 12689, Seattle, Washington 98111. Discusses basic concepts of visceral movement and the thoracic cavity, abdominal/pelvic cavity, liver/biliary system, esophagus, stomach, small intestine, colon, kidneys, perineum, bladder, female and male reproductive systems, and coccyx.

-Original concept of muscle/organ-gland relationship came from some observations: patients with kidney stones evident on an x-ray would have a lumbar scoliosis rotating away from the kidney stone side, or looking in urological texts, would see the same thing. Supraspinatus associated with drainage of the head and neck, even though textbooks say there is no lymphatics in the brain, there is evidence that the glial cells contain lymphatics. Observation that around April 15 (tax time) there was an increase in shoulder problems, i.e. bursitis, associated with using adding machines; the handedness of the patient did not always correlate with the side of the shoulder problem. This is a mental strain which would be associated with the supraspinatus. Bilateral weakness of the supraspinatus in the child is associated with having difficulty with one subject in school and doing well in the rest of the subjects, and doing the neurolymphatic associated with the supraspinatus improves this.

-Victor Portelli, D.C. has found that when an organ is out of position, if you push it further out of position and test the muscle associated with the organ, the muscle that was originally strong will weaken.

-Have noted this in the past, i.e. in females, if they void urine when they cough, this is associated with a weak levator ani and uterine drop. A bearing down that weakens the piriformis or gluteus medius is the diagnosis for the need to correct a uterine lift. Correction is a contact above the pube with the thumb and index fingers spread out, as the patient exhales, she raises her arms and legs and the doctor applies a pressure to lift the uterus (cephalad).

-Can perform this in the male, have them bear down and if there is weakening of the piriformis, go rectally and lift the prostate.

-Portelli and Marcellino have done a lot of research into visceral manipulation, including finding older textbooks on the subject. They have developed a system of visceral technique.

-Moving the pancreas by a squeezing/pinching motion will weaken only one or the other latissimus (if the pancreas is out of position), and it will not weaken any other muscle.

-Exception is if there are numerous adhesions and movement of one organ may influence another organ and possibly result in muscle weakness not related to the original organ tested, i.e small intestine.

-The treatment method is to lift the organ in the abdomen while the patient coughs, this breaks tension in the mesentery and peritoneal folds that hold the viscera in position.

-Recommend study of Portelli and Marcellino's work. Portelli wrote a paper for the Proceedings of the Members of ICAK called Ptosis of the Transverse Colon, in the Winter 1987 edition, contains a description of adjusting the colon as well as some home exercises.

-Pressure on the transverse colon posteriorly and caudally will weaken only the tensor fascia lata.

-Visceral technique is a difficult thing to teach because you depend upon feel. Portelli has simplified it with the ability to make a definite diagnosis to perform the visceral manipulation.

-When you have a cold with a runny nose, the mucous eventually will turn into strings of mucous. Normally there are enzymes that will digest the mucous strings. The same exudation occurs on the outside of the bowel, and you get spider web adhesions that literally fix the viscera into position.

-Evidence on magnetic resonance imaging of organ motion like the early osteopaths and others noted in the early years of bloodless surgery.

-Portelli's paper, Ptosis of the Transverse Colon: "This paper is presented to help in the evaluation and management of a condition that has not been addressed before in AK literature, that is ptosis of the transverse colon. Recurrent ICV, premenstrual tension, weakness of the abdominals could all be due to ptosis of the transverse colon. Effects of gravity on the colon producing weakness of the abdominals. It doesn't allow a return to normal function. Constant nagging pain in the lower abdominals, high blood pressure, occasional radiculitis due to traction of the lumbar and sacral plexi, ..., ptosis of the gall bladder into the lower abdominal quadrant. No consistent information on how to therapy localize this condition is available. Using a strong indicator muscle, use a holding challenge in a caudad direction on the most cephalic point of the bloated bowel (this point represents the upper edge of the transverse colon). If a strong indicator muscle weakens then it is indicative of ptosed transverse colon. Correction is achieved by applying a cephalad scooping posteriorward pressure on the lower portion of the transverse colon and gradually lifting the bowel towards it normal position. Asking the patient to cough several times during this procedure helps for a more speedier correction. The patient needs to learn how to correct this condition at home before

retiring...The home instruction is that the patient performs this procedure every night for approximately 3 months."

-GJG finds a consistent need to perform jugular decompression with visceral adjustment corrections. One of the signs of interference with the glossopharyngeal nerve is deviation of the uvula (with the patient in a seated position). Disturbance with the vagus is indicated when you ask the patient to say "ah", and one side of the levator palatini will rise higher than the other side. Occulocardiac reflex: pressure on the eyeball slows the heart in vagal disturbance, i.e from 72 beats per minute to 57, a drop of 15 or more.

-These are indications to perform jugular decompression, hold the fingers in a cantelever position between the occiput and atlas, prior to doing any visceral techniques.

-GJG's father used to say: "A patient complains of their lungs, digestion, voice, constipation, diarrhea, etc. I don't know what you call this, but it's all the same nerve."

-Pilot's on transcontinental flights get weak voices at the end of the flight due to this.

-There is a difference in facial temperature as measured on liquid crystal thermography, differences in pupil contraction, and a difference in toe turn in (relative hypertonicity and hypotonicity of the psoas muscles) are also indicators to perform jugular decompression. Perform the jugular decompression long enough to eliminate these signs, takes about 3-4 minutes. Then perform the visceral adjustment, and balance the pyramidalis muscle. Then the home exercises are not so necessary.

-Psuedo-Category 2, positive therapy localization of the symphysis pubis right, left, or both against the sartorius/gracilis. Maintain therapy localization to the symphysis pubis and now the evidence of a UOMS short leg posterior ilium or LLL long leg posterior ischium will be present, but when they take their hand away, the signs are gone.

-Dvorak and Dvorak spondylogenic reflex for the sacrotuberous and sacrospinous ligaments are at fault. Get a palpatory pain from C1-T8, then contact into the belly of the ligaments with your thumb and then repalpate the painful areas and note a diminished palpatory pain. This is commonly found in people that have arm or shoulder complaints.

-GJG finds (like Sheldon Deal described before) that you can't turn off muscles of the circulation sex meridian. Sometimes the sartorius/gracilis will test weak in the clear and you can't turn off the piriformis in the same patient (with sedation points). In classical acupuncture, if the CX meridian is over, the TW should be under. When you test the TW via teres minor, you don't find the teres minor to be weak (under). If you stimulate CX9 on the middle finger with 3 or 4 vigorous taps, the TW will now show weak (teres minor). Tapping the sedation point at the wrist should turn off the piriformis, but it does not; so go to the connecting point for either the CX or TW and tap this first, then tap the sedation point at the wrist, and then the piriformis should turn off. Try the connecting point of CX first, if that doesn't work, then try TW. In a rare

instance, you have to use SP21/KI27.

-The gonads are always on and the thyroid is off, and the patient complains of fatigue, trouble with weather. It's like leaving your car running, eventually you will run out of gas even though the engine is still running.

-Don't forget to check the associated point on the spine for CX and TW for a subluxation, T5 and L2.

-This often results in an increase in axillary temperature, improvement in constipation.

-Dr. Richard Murray discussed myelin health at the ICAK-Europe meeting in Belgium. Myelin is composed of 70-80% fat, and myelin sheath is composed of galactosphingolipoids, galactose, specialized lipids, cerebrosides, sulfatides, galactosides. Long chain fatty acid metabolism and catabolism requires many bioavailable nutrients. The only source of bioavailable lactose which the body can synthesize into delta galactose which is in turn incorporated into the galactosides is raw milk. Raw milk is practically impossible to find. There is a substitute product called BioLac by NutriWest, 500 milligrams per tablet, 190 milligrams of lactose.

-Muscle weakness in patients with neuromuscular disorders like multiple sclerosis show strengthening with BioLac on the tongue. Using Arginex, Calsol, folic acid-B12, SOD, for the nitric oxide production is also helpful. Also check them for repeated muscle testing, if weakness occurs, check them against fats like Linum-B6, vitamin F perles, Black Currant Seed Oil, primrose oil, etc.

-All of these factors are important in the rebuilding of damaged myelin.

-Wulzen factor is found in raw cream and is useful in arthritic pains. The BioLac is useful in place of the raw cream.

-Murray, "Cholesterol represents the major lipid, the fat of the myelin sheath. Interference with cholesterol synthesis production affects myelin synthesis as a whole. This is from Gray's Anatomy 36th Edition. One of the basic phospholipids in myelin is sphingomyelins which resembles lecithin, not the purified fractional type sold as a supplement, but a fatty acid complex that is present in some of the fatty acids. Cerebrosides are another essential lipid group in myelin from the glycolipid category, and its chemical composition includes a linkage with galactose, which is a sugar available in unheated milk and made unavailable in heated milk. Galangosides, a type of glycolipid, specifically helps to form the myelin sheath and the white matter of nerves. The sulfatides, also a glycolipid, are found in myelinated nerve fibers, and are composed in part of sulfates, a form of sulfur which is extremely important in the repair and maintenance. Many of these are from raw milk. Multiple sclerosis lesions are plaques, scar-like fibrous patches along the nerve fibers. These patches allow a "leak". An effective plaque will stop the leak, thus the patient enjoys freedom of symptoms as long as the patch of the myelin sheath is able to stop the leak. Swank has treated MS for over 30 years. He feels that MS is tiny heart attacks in the spinal cord and not the heart. Diet should consist of the best raw fruits and vegetables, natural fats and oils, raw cream or milk. Alpha lactose

predominates in milk. When it is heated, alpha lactose is converted to beta lactose. This conversion interferes with the normal biochemical conversion of lactose to delta galactose. Delta galactose is essential to the building of galactocerebrosides, the chemical constituents of nerve tissue. So the development of the entire myelin sheath is dependent upon the availability of galactocerebroside, from raw milk. This was virtually unavailable until the advent of this product."

-The combination of the nitric oxide precursors, fats, and BioLac has helped many patients with neurological degenerative diseases.

DR. GOODHEART'S RESEARCH TAPES

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-Medial meniscus syndrome: on the injured knee there is a spot on the medial knee about the circumference of a dime at the level of the medial meniscus. Method of correction (after balancing the muscles) is: patient supine, point toe towards center of midline, a sudden sharp traction is exerted in order to relieve the trapped meniscus. Weak sartorius/gracilis often involved which produces a wedge pattern with the wide side of the wedge on the underside of the knee which allows the meniscus to become entrapped. Discussed in previous manuals.

-GJG patient with knee pain. Previously treated one year prior successfully, with return of the knee pain, especially upon climbing stairs. When GJG supported the knee with his hands and walked up and down stairs with the patient, the patient could then perform climbing the stairs. There was a disturbance in the vastus lateralis as it relates to the vastus medialis obliquus (like the reins of a horse). When atrophy occurs, it is very specific. If the lateral muscle is stronger than the medial, the patella will be thrown medially. The patella moves laterally when the knee goes from extension to 20 degrees flexion.

-Patellofemoral pain syndrome: pain is a diffuse ache in the anterior compartment of the knee. Exacerbation of pain upon climbing stairs or following changes of position, especially of flexion. There is a palpable crepitus. Patient describes that the knee feels as though it is going to give out. There is a mild, diffuse swelling, lateral and/or medial. The knee giving way is a reflex inhibition of the quadriceps as a group, especially with ascending or descending stairs.

-The patellofemoral joint absorbs 3-4 times the individual's weight in stair climbing, deep knee bends, squatting, etc. When GJG's patient returned one year later, this is what he complained of. Treatment to the quadriceps did not produce the same results as the initial time. GJG felt atrophy on the medial side of the knee than on the lateral side. The lateral side muscle was throwing the patella in a medial direction. Holding the patella in a lateral direction with his hands allowed the patient to climb stairs with less pain. Knee supports or taping at that time did not reproduce this effect, and balancing the muscles did not give the pain relief as it had done the first time. This particular patient had knee arthroscopy and a laminectomy performed eventually.

-Australian physiotherapist discovered a taping procedure that allowed the patella to be held in the lateral direction during the first 20-35 degrees of flexion. She developed the McConnell taping treatment.

-The normal patellofemoral joint under normal conditions, the patella sits lateral to the trochlea when the joint is fully extended. This is due to a vector force that pulls the patella laterally. At 20 degrees of flexion, the patella sinks itself into the trochlea, but at 80-90 degrees flexion, the patella moves laterally again.

-McConnell says that you fall behind on the lateral side largely because there is a strong lateral connection of the vastus lateralis in the iliotibial band, but on the medial side, there is a very thin medial retinaculum that is only one layer thick, and there is only one muscle that would pull the patella into the right position, the vastus medialis obliquus.

-Place a red mark on the center of the patella with the knee in normal extension, measure with the Metrecom probe. Then measure right of center and left of center. In GJG's observation, there should not be more than 5 millimeters of difference (given error of placement on the medial and lateral marks). Disturbance in VMO (vastus medialis obliquus), there is not enough lateral pull and there will be a difference in the position of the patella. Pressure should be exerted from medial to lateral to hold it in position. That positioning is such that there is more than 5 millimeters difference on the lateral side (from the center to the lateral side than to the medial). May be able to see it with just placing the marks on the patella.

-Balancing the muscles or using tape failed at holding the patella in position until this new tape was discovered that was made in Germany.

-Travell and Simons, Myofascial Pain and Dysfunction, Trigger Point Manual, The Lower Extremities, Volume 2, Williams and Wilkins. In the discussion of the vastus medialis muscle, she states that the vastus medialis attaches distally not only to the medial border of the patella and through the patellar ligament to the tibial tuberosity, but also by a strip of muscle to the medial patellar retinaculum. The distal fibers of the vastus medialis are markedly angulated as they attach in the region of the patella. They can clearly be separated from the rest of the vastus medialis by fiber direction and by fascial plane. These distally angulated fibers often attach proximal to the femur, but chiefly to the adductor magnus, partially to the adductor longus, and to the medial intermuscular septum. The lateral obliquely oriented fibers have been designated the vastus medialis obliquus or VMO.

-The quadriceps themselves may show signs of any of the 5 IVF factors, if found, correct.

-The VMO (lower division) test: patient supine, flex knee and hip to place the heel at the level of the contralateral ankle. 20 degrees of thigh flexion, internally rotate the tibia. The doctor braces on the lateral side of the knee involved, cup the calcaneus, and pulls laterally to internally rotate the femur along the plane of the table. Rib pump area is the 7th costal cartilage and

costovertebral junction. The VMO may have a positive TL to any of the 5 factors, origin-insertion, or the rib areas (strain/counterstrain).

-The vastus medialis (middle division) test: patient supine, flex knee and hip to place heel on opposite tibia (about half way up), 35 degrees of thigh flexion, then internally rotate the femur. Rib pump area is the 8th costal cartilage and costovertebral junction.

-In this type of knee problem, the atrophy that occurs in the vastus medialis, oblique portion is different than that which occurs in the lateral aspect. The taping procedure is such that there is a pressure from medial to lateral on the patella. Measurements will reveal that the patella is too medial.

-Genu articularis test: patient supine, flex knee and hip to 60 degrees with no rotation of tibia, have the patient push up on their ankle while the doctor resists. Rib pump is the 2nd costovertebral and costosternal.

-The vastus medialis is innervated by a separate branch of the femoral nerve. This was made note of by Travell: Part of the femoral nerve branches to the vastus intermedius, penetrates that muscle to supply the articularis genu and the vastus medialis oblique.

-Tape: Medco Supply Co. 705 South Nichols Ave, Munsee, Indiana 47303.

-Exercise the vastus medialis (8-10 pounds and extend the knee) and tape for 2 weeks (patient must tape on their own).

-Why does the stomach and duodenal mucosa resist ulceration? This is due to the combination effects of the urea-urease enzyme system and carbon dioxide-carbonic acid anhydrase system (which is zinc dependent). They are biochemically associated in the gastric and duodenal mucosa. Their products neutralize acid and alkali respectively, and the two systems interact to maintain the acid-alkaline balance in the mucosa. Carbonic acid anhydrase, in addition, supports normal gastric and duodenal secretion.

-If there is a crack in the gastric mucosa, the urease enzyme system secretes urea (which is ammonia and carbon dioxide) and any erosion of the mucosa by hydrochloric acid is stopped.

-American Journal of Gastroenterology, Jan. 1960, Goodfriend and Goodfriend (a dentist and gastroenterologist), Vol. 33, No. 1, pages 80-89.

-Patients with gastritis, ulcers, or hiatal hernia can be given carbamide, which is basically urea, a half to one teaspoon 2-3 times per day is good prevention. Standard Process produces AC Carbamide which is urea and vitamins A and C.

- Conway: Urea's action neutralizes gastric acidity at the surface of the mucosa. They found increased urease action at the margins of excised human ulcers and decreased urease action in the mucosa most susceptible to ulceration. The level of urease is increased in animals by adding low concentration of urea to the

drinking water, by the hormone enterogastrone and by a high protein diet, and reduced urease action after diets low in protein, in other words, if you lower the protein intake, it is ulcerogenic.

-Conway: "The high acidity of the parietal secretions is associated with an equivalent alkalization within the secreting cells. The restoration of the hydrogen ions in the cell becomes essential. Likewise, the non-parietal cells, chiefly, as would be seen secreting mucous, go to secreting mucous to protect from the acidity of the gastric juice. Two intracellular enzymes have been shown to catalyze neutralizing reactions, they are carbonic anhydrase and urease. Carbonic anhydrase catalyzes the hydrogen ions of the oxyntic cell, and urease the formation of ammonia which protects the non-parietal cells."

-Clinical studies with two placebo tests in the six years prior to the publication of the article in 1960 showed that carbamide relieved symptoms in 90% of 115 cases of gastric or duodenal ulcer and 93% of 41 cases of upper gastrointestinal disorders, i.e. hiatal hernia, esophagitis. Therapeutic dose was a rounded teaspoon of carbamide in one third glass of water between meals and before retiring. A single dose before retiring lengthened intervals between and diminished the severity of reoccurrence. The safety and effectiveness gave it wide use in gastrointestinal disorders.

-Helps in burping, heartburn.

-Also check for small intestine.

-These patients may require zinc. Test for through the Zinc Tally test. Use small amounts of chelated zinc three times a day. Carbonic acid anhydrase is zinc dependent.

-Irritable Bowel Syndrome, reoccurring cystitis; these patients often have very alkaline urine.

-1983, Cohen, article concerning pathogenesis of recurrent urinary tract infections, the bowel, bladder, and hypokalemia connection. "A conceptual approach to the understanding of the pathogenesis of recurrent, non-obstructive urinary tract infections is presented. Abnormal colonic function is associated with potassium wastage which alters smooth muscle function of both the bowel and bladder. Hypokalemia additionally results in the aberration of an alkaline urine and bladder dysfunction which leads to bladder stasis, vaginal-perineal contamination from the bowel flora are etiologically important in such infections, thus a linkage exists between bowel dysfunction, potassium wastage and recurrent urinary tract infections."

-If sniffing clorox weakens, treatment of LI4 will negate the weakness. This is also present upon sniffing ammonia. Clorox and ammonia are found separate or occurring together. If the patient has a relative hyperammonemia, they will weaken to sniffing ammonia.

-GJG tests saliva potassium (obtained from Ann Arbor Scientific Organization). This parallels the blood potassium. In general, the patients will have low or low normal potassium and alkaline urine and require potassium supplementation, i.e. Organic Minerals from Standard Process.

-This is also been useful in migraine headaches.

-Cohen: "It is clear that abnormal colonic function plays a central role in the genesis of recurrent urinary tract infections. Colonic dysfunction is often associated with potassium wastage either on an intermittent or continuous basis. The biological consequences of such potassium loss are four fold: first, potassium loss might result in further alteration of colonic smooth muscle function with further potassium loss occurring, second, the alterations of colonic dysfunction are often accompanied by abdominal distension and fluid retention, third, the same problem that affects the smooth muscle of the colon also results in altered urinary bladder tone which is associated with varying degrees of urine retention and stasis, the final consequence of potassium depletion is the effect on urinary pH, the relative and resultant alkaline urine along with various amounts of standing bladder urine provide the setting for bacterial growth."

-Cohen has also published an article in Medical Hypothesis, The Hypokalemic Bowel, Bladder, Headache Relationship and New Syndrome, The Role of the Potassium-Ammonia Axis. "A conceptual approach that relates vascular headaches, bowel, and bladder dysfunction to abnormalities of the ammonia potassium axis is presented. Hypokalemia alters smooth muscle function of both bladder and bowel and results in the elaboration of an alkaline urine. The occurrence of an alkaline urine along with bladder dysfunction and urinary stasis predisposes to recurrent urinary tract infections. Hypokalemia and/or alkalosis increases the renal return of ammonia exposing the brain to chronically higher concentrations of ammonia, and it facilitates its passage into the central nervous system. Increased blood levels of ammonia predispose to hyperventilation which results in superimposed respiratory alkalosis on a pre-existing hypokalemia and/or alkalosis, therefore causing intense cerebral vasoconstriction, varying degrees of cerebral ischemia and hypoxia occur giving rise to higher brain concentration of ammonia, vasodilation occurs during the headache phase and maybe a consequence of sudden increases in brain ammonia and/or due to the release of other vasoactive mediators as a consequence of increased blood ammonia. A reduction of protein intake may result in alterations in amino acid precursors for brain uptake, therefore, further interference with the modulation of cerebral blood flow and brain function."

-Ammonia is detoxified to glutamine in the brain and results in a depletion of brain glutamic acid. The neurotoxic effects are magnified in the presence of hypokalemia and/or alkalosis. Glutamic acid is a precursor of GABA (a mediator of central inhibition). In an exaggerated condition it can lead to convulsion or seizure activity.

The precise biomechanical considerations for the genesis of seizures remains unknown, it is likely that chronic elevations of blood ammonia play a role. The depletion of glutamic acid may only be one facet of the effects of the myoclonic effects of ammonia. The long term elevations of ammonia may result in other nutritional consequences.

-If patient weakens to ammonia, consider that they may have a hypokalemic pattern. Place a potassium supplement on the tongue and retest the ammonia sniff, if it negates the sniff, give 4-8 Organic Minerals, or other potassium supplements. They may have symptoms of irritable bowel syndrome, recurrent urinary infections, migraine, or convulsions/seizures. Vigorous manipulation of LI4 also negates the ammonia sniff test (both thumb webs).

-Refer to Schmnett's material on ammonia for patient's who do not clear the ammonia sniff with the above treatments.

-Journal of the American Medical Association, July 19, 1985, Vol. 254, No.3. Refers to the above listed Medical Hypothesis article on bowel, bladder, and vascular headache relationship. Since this initial study, we have performed echocardiograms on 23 consecutive patients with the bowel-bladder-headache syndrome. In each instance varying degrees of mitral valve prolapse was observed. Furthermore, this constellation of findings is often associated with esophageal dysfunction. Hypomagnesia is also frequent concomitant. Many of the symptoms including anxiety, panic attacks, fatigue, and fibrocystic-like symptoms respond to the correction of the hypokalemia and alkalosis."

-Can use Organic Minerals for the potassium or can use a quarter teaspoon of potassium bicarbonate in a small amount of water for testing in the patient's mouth against the ammonia sniff test. Can use the potassium bicarb, a quarter teaspoon three times a day, or the organic minerals up to 6 a day.

-Therapy localization is positive whether the patient TL's with the fingers spread apart or with the fingers touching, in other words, the patient is not TLing himself, for those of you that are concerned with the relationship of other hand applications.

-A spread finger double hand TL is much different than the original work of Perlman and the later work of Beardall. None of these observations apply here. The interdigitated TL does not, of itself, offer any muscle test change, until the interdigitated fingers are placed palm down on the area that is being TLed. Earlier palm and finger opposition was used to TL sacral subluxations, with just the ulnar surface of the hands placed on the sacrum. The traditional TL with palm opposition to the back of the hand when applied with both hands does not give the same effect as the dual interdigitation form. Traditional TL utilizing both hands can be altered with both right and left brain activity. The interdigitation adds a possible "mass action" effect because of the right hand-left

brain, left hand-right brain sequential pathways are now effectively multiplied. This doubling effect is then applied to the area that is to be Tled, whether midline, left, right, anterior, or posterior. This temporarily neutralizes switching (which is basically a right and left brain mix-up). No meridian relationships have been noted, although it was an earlier conjecture for the basis of the mass action. The mass effect is probably hologrammic. Random approximations of the digits in flexed, extended, or crossed over patterns yielded no observable results.

-GJG is familiar with hand mode applications and this has nothing to do with interdigitation TL.

-1988-1989 Dorland's Illustrated Medical Dictionary, published by WB Saunders, definition of chiropractic: "Chiropractic is the science of applied neurophysiological diagnosis based on the theory that health and disease are life processes related to the function of the nervous system. Irritation of the nervous system by mechanical, chemical, or psychic factors is the cause of disease. Restoration and maintenance of health depends upon normal function of the nervous system. Diagnosis is the verification of these noxious irritants and treatment is the removal by the most conservative method."

-The ICA has just changed their definition: "The philosophy of chiropractic holds that the body is a self healing organism and a major determining factor is development of states of disease or dysfunction is the body's inability to comprehend its environment either internally or externally. Directly or indirectly all body functions are controlled by the nervous system, consequently, the central theme of chiropractic theories on health is the premise that abnormal body function may be caused by interference with nerve transmission and expression due to pressure, strain, or tension upon the spinal cord, spinal nerves, or peripheral nerves as a result of displacement of the spinal segments or other skeletal structures (subluxation)."

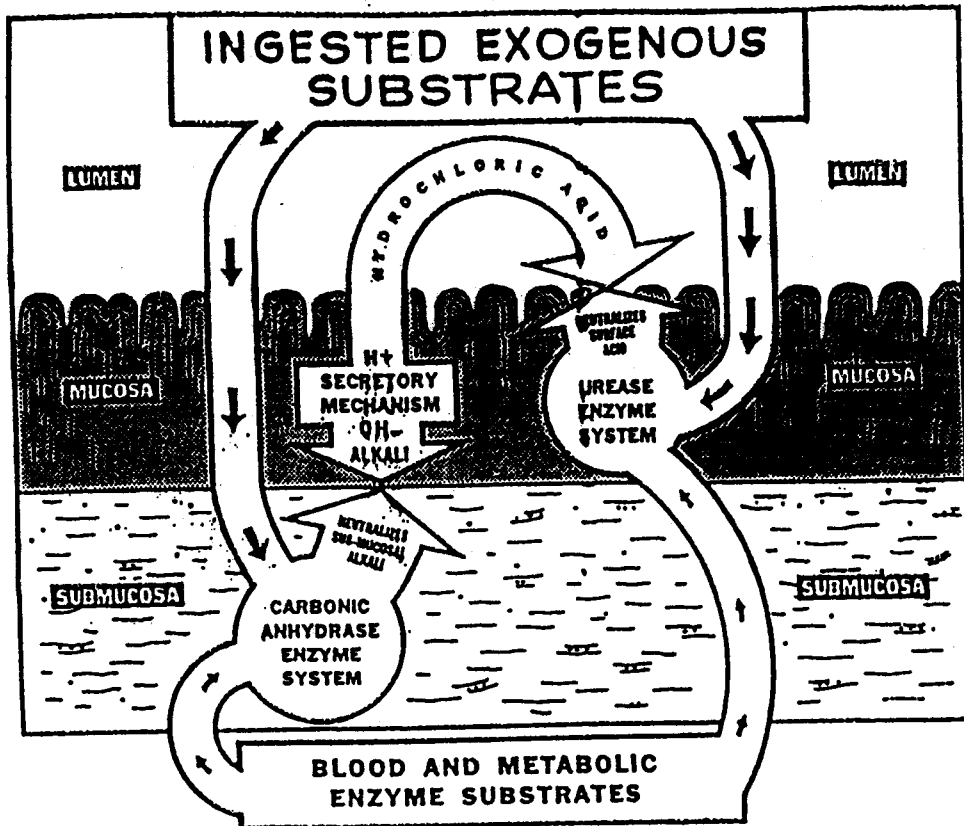
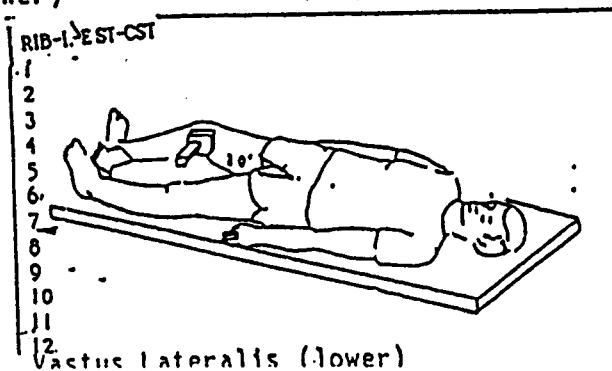
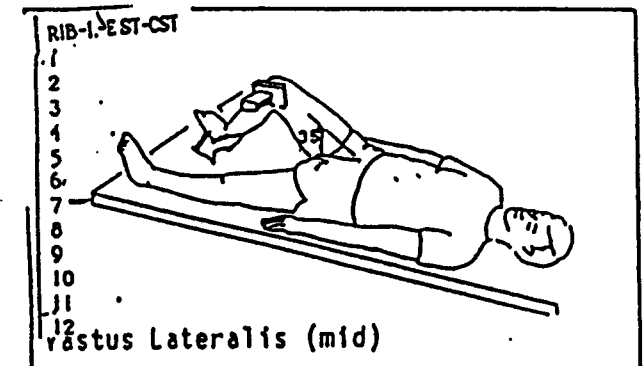
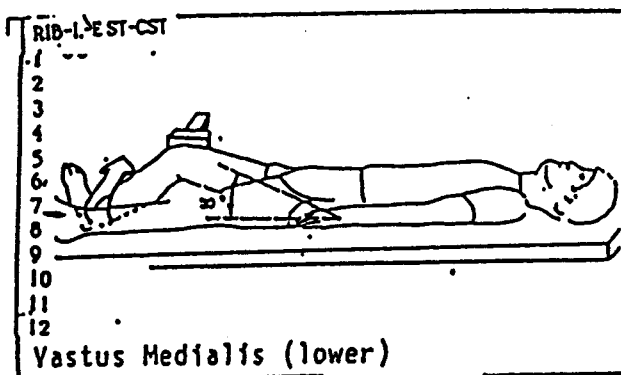
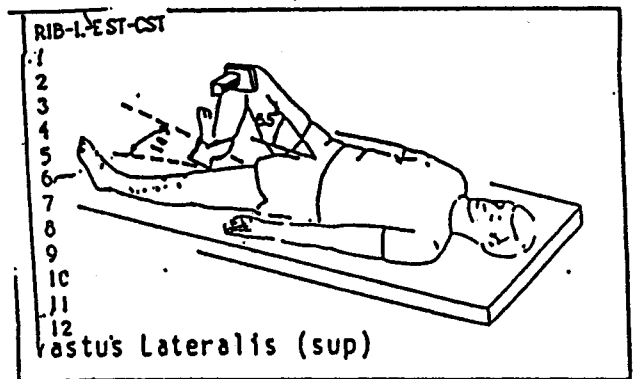
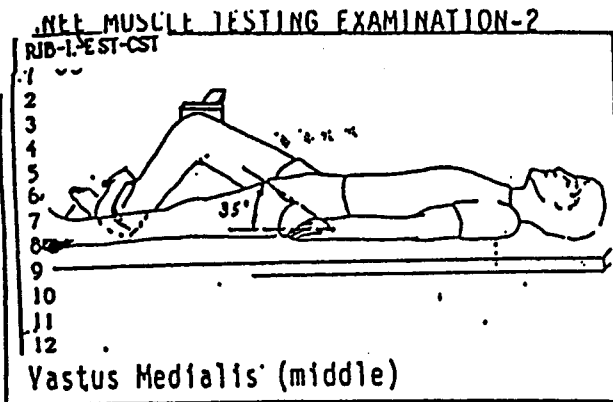


Fig. 5—Action of orally administered enzyme substrates in maintaining acid-base equilibrium and enhancing resistance of mucosa.



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-Discussion at the 1991 Summer meeting of the ICAK was clinical nutrition. GJG discussed the science of neuroendocrinology (brain to pituitary link) that was discovered by Hinsey and others. This brain-pituitary link is dependent upon hormones flowing within nerve axons (axonal flow). Ernst suggested that hormone messengers were being sent from the brain to peripheral organs through nerve fibers. It was assumed for many decades that axonal flow was always down, away from the brain. Within the last 10 years, it has become clear that hormones also move up nerve fibers from the body to the brain. This was noted utilizing different experimental techniques, i.e. hormones injected into the eye are carried back to the brain, tracers injected into the tongue are carried back to the brainstem, and substances injected into the thigh muscle can be carried into the spinal cord. The best studied molecule for this is called the nerve growth factor. This was in Science, #204, 4-20-88, pages 18-24. The central nervous system operates in the synaptic relationship that we are already aware of, but also in a parasynaptic relationship. Neurotransmitters that affect synaptic relationships are acetylcholine, serotonin, GABA, etc. There are other substances that act in parasynaptic fashion.

-Limbic system is closely connected to the sensations of pain. Pain pathways follow rostral ascending pathways which synapse in the limbic system. The response, repair, or alleviation of pain (what the body does automatically) consists of caudal descending fibers that shut off the same circuits that were turned on by the original pain.

-Mind Body Therapy, Rossi and Cheek, Norton and Co. Professional Book. Quotes will be taken from this book.

-There are localized neuronal networks of the brain that are activated by informational substances (substances that flow within axons). State-dependent memory, learning, and behavior are then encoded by these informational substances (IS) in these neuronal networks. The molecular genetic basis of memory, behavior, and learning is modulated by these IS. The informational receptor communication systems are the psychological or psychobiological basis of state dependent mind-body healing i.e. hypnosis. The neuronal network can be defined in terms of the activation of specifically localized area of neurons that are stimulated by the IS that reach them by the diffusion of the extracellular fluid (ECF). ECF makes approximately 20% of brain volume.

-Frances Schmitt of MIT, in a recent paper on molecular regulations of brain function. "The discovery that more than 50 years ago that contiguous neurons react with each other at a synapse, not by bioelectric modalities, but by the action of chemical mediators called neurotransmitters, which was for many years received with

considerable skepticism by the neurophysiological community. However, this now classical chemical concept with virtually no deviation remains a basic tenant of neurobiology. The working hypothesis here is suggested that neuronal communication may be mediated not only by the dozen-odd classical neurotransmitters, but by many, perhaps hundreds of other neuroactive substances called IS. In some instances they may be delivered in a non-conventional parasynaptic mode (non-synaptic). High specificity of action is achieved from specific structures (synaptic linkages and neuronal networks) but by equally selective bindings of various IS to the receptors not only at the synaptic regions, but over the entire neuronal surface. The IS are contained in the ambient ECF. Neurons may chemically intercommunicate by the mediation not only from the dozen-odd classical neurotransmitters, but also by peptides, hormonal factors, other specific proteins and many other types of IS, a term that is more generally applicable than neuroactive substances that was previously used."

-If you teach a human a memory task, you can demonstrate learning, but if you teach a human a memory task while under the influence of a psychoactive drug (i.e. thiorazine, elavil), the person can learn the task. When the drug has been excreted, there is a temporary amnesia. In other words, it is as if the drug was a part of encoding the memory, and excretion of the drug produced a temporary amnesia.

-1. Neuronal networks are defined as activation of specifically localized areas of neurons by IS that reach them via diffusion through ECF. ECF makes up approximately 20% of brain volume. A 15 square millimeter neuronal network could be turned on or off by the presence of a specific IS. That is, the activity of the neuronal network would be state dependent on the presence or absence of the IS.

2. IS are contained in and transmitted through the ambient ECF to surrounding brain cells where they can encode state dependent memory, learning, and behavior. 3. The molecular genetic basis of memory, learning, behavior (which is now called activity dependent neuromodulation) is then regulated by the IS.

-The traditional concepts of chemical transmission in the nervous system developed largely from detailed studies of the action of acetylcholine, etc. is the fast chemical signal used at the neuromuscular junction. Fast chemical signalling in which the neurotransmitter released at specialized synaptic junctions stimulates the opening of receptor control, ion channels in the post-synaptic cell within a millisecond time frame, and it does occur in the mammalian central nervous system. The amino acids glutamate and GABA (gamma amino butyric acid) may represent the principles of the fast signals used by most of the mainline fast conducting circuits. However, many chemical transmitters in the CNS do not operate in this classical manner. The action of monoamines and neuropeptides are slow acting, acting over a period of seconds or minutes, and rather than

direct, excitatory initiators of inhibition, they are more rapid in character. The slow modulators may not always be released at the morphologically specialized synapses, but sometimes continue to act further away from the site of release. This gave the concept of addressed chemical transmission where information is transmitted by the use of a wide variety of chemical signals acting diffusely, but selectively on the uneven distribution of receptors on the target cells to recognize these signals. Slow mediators act largely by triggering persistent metabolic responses in target areas rather than controlling ion channels. Chemically addressing the differences between IS and their receptors is a relatively slow pattern compared with the classical neurotransmission. There is now good evidence that the chemical addressing of the parasynaptic system is evolutionarily much older than the anatomical addressing of the central and peripheral nervous system in terms of synapses. What is lost in speed is compensated by the much wider bond of information that is mediated in this manner.

-Memory, learning, and behavior patterns are encoded by the IS in the neuronal networks. Example, can't remember something, but later in the day the thought appears. This is dependent upon the relative balance of neuromodulators that are present in the ECF.

-GJG states that thoughts are things. The brain contains steroid hormones that are the IS and perform a duplex action. They initiate a relatively fast (minutes) direct action on synaptic properties that regulate impulse traffic in particular neuronal circuits, and then a slow pattern (hours), like serotonin affecting sleep, a slow, indirect pattern, involving specific gene activation leading to the synthesis of essential proteins, specific receptors. Steroidal hormones regulate behavioral patterns involving reproduction, mood, territory defense, and other affective states. The steroid hormones illustrate the integrative control of both fast bioelectrical events involving the passage of impulses through the neuronal networks, through the classical appreciation of the nervous system, and the neurophysiological processes that underlie specific behavior patterns, and then the slow gene activated processes that lead to the synthesis of protein material which like specific receptors form the molecular substratum of behavioral pattern. The molecular genetic basis of memory, learning, and behavior are now called activity dependent neuromodulators which are regulated by IS.

-Rossi: "There is pretty good evidence over the last forty years that psychopharmacologists have used the classical state dependent memory and learning experimental paradigms to ask us the psychological and behavioral effect of psychoactive drugs which we now know are mediated apparently by the informational substance receptor systems. The central significance of our working hypothesis is the fact that animal or human subjects are given memory learning tasks while under the influence of psychoactive drugs that either mimic or modulate IS receptor systems. There is a varying degree of amnesia (loss of learning) when the drug has been metabolized out of the system. That is, when memory learning is encoded under drug

conditions, it tends to become state dependent or state bound to that psychophysiological condition such as memory or learning behaviors become disassociated after the drug is metabolized. Readministering the drug reestablishes the original encoding condition and typically results in some gain in memory learning."

-This reversible amnesia is also typical of post-trauma stress syndromes and psychosomatic syndromes. These patterns are encoded in a state dependent manner by the stress released IS (ACTH, beta-endorphin, epinephrine) that is typical in what Selye describes as the General Adaptation Syndrome (GAS). Selye believed that just as a shock evokes such psychosomatic problems and another shock or heightened arousal level could sometimes heal them. The more recent approaches to the mind-body healing and self-hypnosis, such as the relaxation response that are in use, are reported to work by the reduction of the same stress related IS that encode psychosomatic problems.

-Validation of this approach in healing involves understanding the molecular, genetic, and IS receptor system dynamics for the mind-body illness. Survey of the information reveals extensive documentation of how illness can become manifest through the molecular, genetic, and IS receptor pathways. Reliable biochemical assay methods are available for rapidly assessing the molecular pathway that is disturbed in the illness. There are charts that relate the IS and psychoactive drugs that trigger ACTH, beta-endorphin, vasoactive intestinal peptides, etc., which are capable of encoding memory patterns. Presence or absence of illness is readily seen with patient symptoms, testing, etc., but how do we make the mind-body connection/healing?

-GJG relates a personal experience from the 60's where he slipped and almost fell. He experienced pain that made it difficult for him to walk. He was treated by his father, but still had the pain. While he was walking down the hall, he remembered how he almost fell, the pain and distress went away immediately.

-GJG relates the case of a patient of Dan Duffy's that had difficulty with gait where he would take a step with the right leg and fall backwards, then take a normal left step. With each step on the right leg, his body would go backwards. This is when GJG discovered reactive muscles. The right quadriceps and rectus abdominis were strong in the clear, but when the quadriceps were tested and then the rectus tested immediately after, there was weakening of the rectus. Treatment was to turn down the muscle spindle cell of the quadricep and this corrected the gait problem. Triano and Davis documented the concept of muscle reactivity.

-Common to see an old humeral fracture producing problems years after healing due to a reactive muscle pattern. Why did the body heal the fracture, but not take care of the reactive muscle problem? The body cannot heal what it is not aware of. Mental recall of the physical or emotional trauma has been used in the past (asking the patient to recall trauma weakens a muscle, requires treatment to the emotional NV).

-If the emotional or physical trauma is out of the awareness of the body, the body cannot repair it.

-Correct all structural faults, especially make sure that they pass the Walking Gait Configuration and PLUS pattern, and make proper nutritional recommendations. See if walking makes any patterns return, if so, then check the spinal length lying, sitting, and standing. There are instances where the patient continues to have their symptom even after all corrections have been made.

-Concept that there is an encoding and retention of memory. Drug or nutritional measures to encourage memory, then wait for substance to be eliminated from the body, results in a temporary amnesia. The memory can be reinstated by giving the substance again. The amnesia is reversible depending upon how you treat the encoding. In GJG's instance, suppose he took a step just at the time he remembered the injury and the encoding principles were at hand. (He had been earlier treated, getting the structure straightened out). The step taken was a corrective step as opposed to the opposite leg that may have kept the lesion active.

-Patient with seizures since 1.5 years of age, onset one month following a fall onto his head. AK treatment reduced seizures from 10 a day to 2 a day, occurring mainly in the morning (associated with blood sugar values and Then and Now Technique). In this patient, Then and Now was lung against small intestine, combined TL of the lung and small intestine alarm points was positive, but individually was negative. Associated points were checked for subluxation and was negative. An upper cervical fixation was found. GJG then asked the patient if he could remember the first seizure, but the patient was too young at the time of the first seizure, so GJG asked him if he could remember the last seizure. The patient spoke very slowly and moved about very slowly due to medication. The patient then remembered an earlier seizure and was describing it aloud (in the slow manner) while turning from supine to prone. GJG then corrected the upper cervical fixation, and he now assumes that the patient was still thinking of the seizure event. The patient was asked to then turn supine again following the correction and he turned very quickly and proceeded to speak describing the seizure event in very clear and normal rate diction. The patient had a restless night that night and only one convulsion. Afterwards there were no convulsions.

-Mental recall of the physical or emotional trauma during the appropriate structural correction literally helps the body to remember the event in past tense and therefore link the correction to the incident and the body clears the circuit effectively so that there is no further revival.

-Correct all spinal and dural problems. After correction, retest your indicator, should now be negative. I.e. upper cervical fixation, bilateral gluteus maximus. After correction of upper cervical fixation, the bilateral gluteus maximus will be strong. Now, have the patient think of the emotional or physical trauma that started all their troubles and the indicator will return, i.e. gluteus maximus

will now weaken again. Treatment is to correct the subluxation while the patient recalls the emotional or physical trauma.

-Diagnose and adjust the dural subluxations and fixations while the patient accurately remembers the primary emotional or physical trauma. Actively adjust the dural areas especially while the patient actively recalls the original or first remembered emotional or physical trauma.

-Holographically the adjustment of dural areas is a time date, object beam-reference beam technique, to effectively file emotional and physical trauma in the past tense. Past tense meaning tight, and where there is a tight one there is a weak one, past weak muscle patterns.

-What if the patient cannot remember the emotional or physical trauma from the past? Have the patient hold the emotional NV on the frontal bone during the adjustment (similar to Dr. Scott Walker's NeuroEmotional Technique, the use of the emotional NV for emotional recall).

-Remember that structure determines function. Don't place the triad of health on its point, structure is the base. Combine the emotional recall with the structural correction.

-Check the patient for emotional NV technique by having them think of a trauma and see if it weakens the bilateral pectoralis major clavicular. If positive, correct with emotional NV. Testing again should now be negative. The emotional recall may not be positive at all. Then check for structural problems. Occipital side-slip can be diagnosed with the lateral thrust of the tongue. Sometimes you need to add chin up or chin down to the tongue thrust in order to make it show due to the anteriority of the lateral side-slip. Challenge and correct, but use a low velocity technique for correction (cervical compaction technique) because you will have to make the correction several times, you don't want to traumatize the patient. Check active vs. passive range of motion with the head in flexion and extension. Laterally flex the patient's head with the head in extension or flexion (opposite that which was found positive) and press on the occiput from right to left or left to right, whatever way challenged, and then slight anterior or posterior directions. Retest for the tongue thrust with chin up and down, should be negative with correction. Have the patient recall the trauma mentally and then retest the tongue thrust, will now weaken when the emotional/physical trauma is remembered that is causing trouble in the patient. Correction must be made again while the patient mentally recalls the trauma. Then retest the indicator while the patient recalls the trauma, and it will now be negative.

-This has probably happened by accident in many patients, but is very random. Now you can diagnose the need for it.

-You still have to diagnose the need, supply the need, and observe the results, give the proper nutrition, provide all the proper structural corrections, but adding this emotional recall has very good results.

DR. GOODHEART'S RESEARCH TAPES

TAPE 127

-1-

-WHEN we eat WHAT we eat has a lot to do with how much good we get from it.

-The proper combination of foods is a big subject and an important one. Much has been said on it and there has been some controversy. A close study of the known facts and informed opinions leads inexorably, in GJG's opinion, to one conclusion. GJG will set them forth here and let them speak for themselves.

-GJG knows that in doing so he will encounter resistance from two quarters. First from those to whom the idea is a new one, those to whom eating bread and potatoes with meats seems so eminently natural that they are loath to accept the thought that such a combination is a bad one. Many of our oldest habits are unsound and should be changed, not lightly or for a whim, but when solid convincing reason is brought forth for doing so.

-As a foundation for my observations, my theory of dietetics is based upon the hypothesis that inadequate absorption of food causes degeneration of tissue, and that for perfect metabolism we must not combine high starches and high proteins and fats in the same meal. It is, of course, absolutely impossible not to combine proteins and carbohydrates in the same meal. Practically all foods have some protein, some carbohydrate or some fat. However, a meal can be predominantly protein or predominantly carbohydrate. No one will ever dispute that statement.

-Briefly stated, his contention is that a combination of high protein and high starches effectively inhibits the complete absorption of all the nutritive factors of foods and places an unnecessary burden upon the entire digestive apparatus.

-His own first special interest in food combinations several years ago followed a simple observation of my own digestion. He noticed that on some picnics I would suffer considerable discomfort two or three hours after eating the sandwiches which were always our lunch. The discomfort was of the unpleasant type most layman call sour stomach. On other picnics he would feel fine all day. Checking soon showed that on the one hand the sandwiches which gave him trouble were those made with meat, eggs, or cheese. When the sandwiches were made of tomato, lettuce, jam, or preserves, he got no unpleasant sour stomach after effect. He felt fine.

-Yet he was aware that meat, eggs, and cheese agreed with him. He ate them frequently with no bad effects whatever. The answer was obvious, they only gave him trouble when eaten in sandwiches.

-Then a man who conducts many picnics came to me for advice on how he could plan picnic lunches and avoid the indigestion so many of his people complained of. GJG told him to not give them meat, cheese, or eggs in their sandwiches.

-He followed GJG's suggestion and was delighted with the result. He reported that his people came home in a happier frame of mind,

that remarks about indigestion had ceased, and that people were going on more picnics.

-Bread is a high carbohydrate. Eating high carbohydrates with proteins interferes with proper digestion. But that isn't all.

-As GJG has stated earlier, many of our illnesses and infirmities are due to deficiencies of certain essential food factors, vitamins and minerals. These deficiencies produce degeneration of certain tissues, and this degeneration results in loss of resistance. Then infections invade us and produce disease.

-These deficiencies are dangerous and must be avoided. It is not enough to have the essential elements in the foods we eat, they must actually be utilized by our bodies, they must be available to our tissues.

-It is a fact that we may eat large quantities of these food elements and get no benefit at all from them. If at the same time we eat other foods which interfere with the proper chemical digestion of the vitamin and mineral bearing foods, then we fail to absorb the essential elements into our circulation.

-If we eat some cheese, rich in calcium, and at the time it reaches our small intestine, an alkaline digestive process is going on there, then very little, if any, of that calcium will be available to us. The calcium will make a chemical combination with the alkali and become non-absorbable, it will pass through and out of our body unused. No matter how much cheese we eat, we may still suffer from calcium deficiency, if the calcium is not absorbed. But if this food reaches our small intestine when an acid condition is present, then much of the calcium will be utilized.

-Obviously then, we must be certain that when we eat cheese, our small intestine will be acid and not alkaline. But how? The answer is clear and incontrovertible, by not eating any high carbohydrates at the same time.

-When we eat carbohydrates, starches and sugars, our small intestine becomes alkaline and a condition is created by which essential factors in other foods cannot be used.

-But that isn't all. These same carbohydrates may interfere with the digestion of certain proteins in the stomach itself, and partially digested protein food actually becomes toxic material. Research has found that proteins may be split up by imperfect digestion into large protein molecules that may be absorbed into the circulation and prove toxic (poisonous) to the body. Instead of being split up into smaller molecules (the amino acids that are end products of normal digestion), proteins eaten with carbohydrates may actually become agents of evil to our tissues, such as the allergy producing and poisonous amines.

-The physiology of digestion: There are two distinctly different types of digestion, an acid digestion for proteins (meat, fish, eggs, and cheese) and an alkaline digestion for carbohydrates (sugars and starches).

-All physiologists agree that proteins are digested largely in the stomach, by the gastric juice, which is acid in reaction. One of the most important constituents of the gastric juice is free hydrochloric acid. Another important ingredient of gastric juice is

pepsin, the ferment that splits the protein; and pepsin acts only in an acid medium. In other words, the stomach contents are always acid, and the stomach must be acid in order to do its job of digesting protein foods.

-Carbohydrate foods, on the other hand, are not digested in the stomach, but are digested largely in the small intestine, principally by the pancreas secretions, which are alkaline. One of the most important constituents of this process is amylopsin, which splits the starch and the amylopsin acts only in an alkaline medium. On their way through the stomach to the small intestine, the carbohydrates inhibit the secretion of the hydrochloric acid in the stomach, but at the same time combine with some of the free hydrochloric acid which is already there. They pick it up and take it with them.

-Fats follow a still different course. Pure fats leave the stomach as fats, and entering the small intestine, cause the gall bladder to empty a quantity of bile into the intestine. This bile saponifies the fat (the first step in digesting fat), but in doing so it liberates fatty acids. These fatty acids, of course, work to neutralize whatever alkaline secretions are present in the small intestine.

-Obviously, therefore, if these fatty acids are produced in the intestine while some carbohydrates are being digested there, its just too bad. The alkaline secretions that are part of that digestive process will be neutralized, and the action of the amylopsin will be stopped. The digestion of the carbohydrates will be interfered with, and they will be left free to ferment and produce gas.

-Hence the following rule, which is not only logical and physiologically sound, but has been proved highly valuable by clinical observation. Rule 1: Do not combine pure fats (butter, cream, bacon fat) with high starches (potatoes, bread, cereal, sweets) at any one meal.

-If you're having high carbohydrates at a meal, don't eat any fats, and if you're having fats, don't eat any carbohydrates. Simple, isn't it? If you're having bacon for breakfast, don't eat cereal or bread. If you're having potatoes for lunch and a sweet dessert, don't put butter on your potatoes or cream in your coffee.

-In the past many physicians have practiced this rule unconsciously, by advising patients to cut out all fats and high starches, or greatly restrict them. Obviously this produced good results, because patients who ate neither could not combine pure fats and high starches. But, with a restriction of fats there was always the serious danger of running into a deficiency of the fat soluble vitamins and certain fatty acids (such as vitamin F) which are necessary to preserve life. Now that the light of science has illuminated the field, neither fats nor starches will have to be eliminated or restricted in most cases. The patient will simply be told to eat them at a different times.

-Interesting evidence that the high starches and pure fats are incompatible came as a sidelight from the observations of Dr. Joslin in his famous diabetic clinic in Boston. He established the fact that if you cut down in high fats in diabetic diets, you can add more carbohydrates without getting any increase of sugar in the urine,

without increasing insulin, if it is an insullin case.

-What does this indicate? Remember that diabetes is a disease in which the carbohydrate food is not split up into its end products, the sugars get into the blood stream and accumulate there, and that is why intake of carbohydrates has always been cut down to the minimum. But when fats are decreased, then the carbohydrates digest better, or split up more readily. Perhaps the presence of pure fats in the intestine while starches were being digested there was a considerable factor in the production of diabetes in the first place. Possible, in that way, as fatty acids were liberated, the pancreas depleted itself in a continued effort to produce secretions to neutralize these acids and became unable to manufacture its own insulin.

-Primitive man did not eat fats with carbohydrates. Eating his food as he found it, he ate lots of fat with his meat when he killed an animal; but in millions of years he never found lumps of pure fat attached to any vegetable (carbohydrate) foods. As he developed he never had need for a digestive mechanism that would digest fats and starches at the same meal, he never developed such mechanism, and today we still haven't any.

-Eat fats with meats, or with any other proteins, fish, eggs, or cheese. In fact you must be sure to eat fats with meat, they not only can be combined but they must be combined.

-One of the most important studies ever made on an exclusive high protein and fat diet, was conducted through the cooperation of the explorers Vilhjalmur Stefansson and Karsten Andersen. The purpose of the test was to demonstrate that man could live on a purely animal diet in our climate for an indefinite time, and in this case it was extended over a period of one full year.

-The complete report of this experiment has been published and the general findings are reported here. It is mentioned only to emphasize the importance of proteins and fats in the diet.

-The conclusions reached by this test were: a. That it is possible for man to live for long periods on meat alone. b. That no ill effects whatever were recorded. c. That the diet, in order to be adequate had to contain large quantities of fat, some liver, and that lean meat alone was not tolerated. d. That the tissues of one animal contain everything which is essential for another animal, in this case, man.

-Important clinical observations in this test support GJG's thesis that there is greater absorption of foodstuffs when eaten in the proper combinations. There was much greater absorption, no gas and a distinct simplification of putrefactive organisms in the intestine. There was no constipation. A further important observation was that both men showed no increase in blood pressure throughout the year, and one of them actually showed a decrease of 20 mm in his systolic pressure.

-This experience and its conclusion, that fats and proteins are an excellent combination, checks with our knowlege of the physiology of digestion. Since protein is digested largely in the stomach by acids, and since the pepsin which helps digest it works only in an acid medium, then when it gets into the small intestine, if fats are

being digested there at the same time and they have liberated enough fatty acid to make the intestine acid, then the action of the pepsin would be prolonged and the digestion, of the protein would be carried further. It all works out beautifully, fats, proteins, acids, they all go together and help each other. Remember that, associate them in your mind: fats, proteins, acids.

-But remember that it's a different story with carbohydrates. Carbohydrates (starches and sugars) are digested by alkalies. Naturally, if any acid is combined with carbohydrates it will tend to neutralize the alkaline digestive juices they need. The more acid present, the more alkaline secretion will be required to neutralize the acid before it can begin to digest carbohydrates. That is simple, too, isn't it, and obvious?

-From this we get Rule 2: Don't combine acids and carbohydrates. Don't take buttermilk, orange juice, lemon juice, grapefruit juice, or vinegar at any meal which also includes high starches and sugar.

-Here again is an interesting corollary that will be good news to many people. Often patients have told GJG "they cannot take orange juice, which they love, because it causes acid stomach". On questioning them, it was invariable that they had taken it at breakfast with cereals, toast, or other carbohydrates. Invariably, when I told them to take it alone or with protein foods only, they did so with great satisfaction and no bad effects. If you have had trouble with orange juice, just try it with bacon and eggs.

-It should be remembered, of course, that most healthy people can combine orange juice and starches without feeling any distress or evidence of impaired digestion. But the impairment goes on just the same. Every time a healthy person combines acids and starches he is making trouble for his digestion, he is getting less value from his foods, and he is hurting himself. The body has remarkable ability to adjust itself to the most terrible treatment. You have heard many people exclaim, "I have the digestion of a horse", or, "I could eat nails and it wouldn't hurt me". Fifteen years later some of these people are wrecks.

-The third rule is, perhaps, the most important of all. Rule 3: Do not combine high proteins (meat, fish, eggs, or cheese) with high starches (potatoes, cereals, breads, sweets) at the same meal.

-This prohibition is based not only on extensive clinical findings but on sound physiology. It has been vigorously disputed in the past but there has not yet been any logical reason or proof against this rule. GJG is certain it will not be disputed in the future.

-Review the evidence. It may seem a little tedious but you should understand this subject for your future full health.

-We know that proteins require acid for their digestion in the stomach. We know that carbohydrates require alkalies for their digestion in the small intestine.

-Some years ago, in a study on sugars which came out of Mayo Clinic, two things were made clear: 1. Sugars inhibit the secretion of the hydrochloric acid in the stomach. 2. Sugars combine with the free hydrochloric acid in the stomach. Both of these actions, by lessening the amount of hydrochloric acid in the stomach, interfere

with the digestion of proteins, which must have that acid.

-Conversely, if proteins are being digested in the stomach and there is more acid there for the sugar to combine with (pick up and take along to the small intestine), then it will require just so much more alkaline secretion from the pancreas to neutralize the extra acid before it goes to work on the sugar. And the same is true of starches which are potential sugars. Not only do the sugars interfere with the digestion of the proteins, but the proteins make more difficult the digestion of the sugars.

-What happens in the stomach when protein is eaten, when starch is eaten, and when proteins and starches are eaten together; and in what condition the food passes from the stomach to the intestine.

-A study by three Philadelphia investigators appeared in the June 1936 issue of the American Journal of Digestive Diseases and Nutrition in which a graph showed the degree of acidity of samples of stomach contents withdrawn at varying times from five subjects; first after protein meals, then after starch, then after combined protein and starch. One and three quarter hours after the ingestion of the meals the record showed that the stomach contents of the protein meal were most acid, the starch least acid, and the mixed meal half way between.

-100 c.c. of the protein meal stomach contents required 60 c.c. of the deci-normal alkaline solution to neutralize the free acid, and the graph was going up sharply. 100 c.c. of the starch meal contents required only 20 c.c. of the alkaline solution to neutralize the free acid and the graph was falling rapidly. 100 c.c. of the mixed meal stomach contents required 40 c.c. of the alkaline solution to neutralize its acid, and the graph was coming down very slowly.

-This means that when the starch meal entered the small intestine comparatively little alkali would be required to neutralize the acid it had picked up in the stomach, but when the mixed meal reached the small intestine just twice as much alkaline pancreatic secretion would be needed to neutralize its acid before starch digestion could begin.

-It is also clear that when the mixed meal was eaten, the proteins in it were being digested under difficult conditions. Instead of the normal acidity required, as shown by the all-protein meal, the acidity was far lower. The presence of the starches had cut the acidity to one-third less. Just such conditions are most likely to produce imperfectly split up proteins, the large toxic protein molecule.

-When high proteins and high carbohydrates are mixed, this investigation proves, there is not enough acid to digest the protein part readily, and too much acid to digest the starch part readily.

-Now the bad effects of this abuse are not always immediately apparent. The digestion of youth especially has abundant juices to spare; but if by habits of food combination we impose this extra burden, we deplete that abundance, dip into our reserve power of accommodation, and by the time the age of thirty is reached there is more or less impaired digestion. This may not make itself known by distressing symptoms, but the digestion is nevertheless chemically impaired. This contributes to an increasing deficiency of essential

food elements, and that, in turn, leads to more tissue degenerations. Minor disturbances are directly created, serious diseases are made more probable, and one more obstacle is raised to our being able to live a full, long life of glowing health. Those with perfect health at present, please take note of this.

-High proteins and high starch foods should not be mixed. Now it is true that nearly all foods contain some starch elements and some protein elements. This fact was misleading when GJG first studied mixtures fifteen years ago, and it has misled many other investigators since. Superficially it would seem to indicate that the mixture is natural and therefore presumably healthful, but let us look at the details.

-Meat, leading protein food, does contain carbohydrate, but what kind? It contains a small amount of glycogen, or glucose (muscle sugar). This is a carbohydrate that has been originally eaten by the animal from which the meat came, converted by the digestion of that animal and stored in its muscles as muscle sugar. Little digestion, if any, on our part is required to make this sugar ready to be absorbed, it is ready to be absorbed as soon as it is liberated from the protein part of the meat.

-Similarly, the amount of protein that is in starchy vegetables is small indeed in proportion, and because of its negligible quantity presents none of the difficulties in digestion that result from combining large quantities of high protein with high starches. With this point disposed of, GJG believes that his colleagues will agree that the physiological case against eating carbohydrates with proteins is complete and incontrovertible.

-While man, as he evolved, developed two types of digestion for the types of food he ate, other animals confined themselves to one type of food and correspondingly one type of digestion. What do they show us?

-Herbivorous animals, such as the cow or sheep, eating only vegetable food, have specialized on alkaline digestion. They are equipped to eat large quantities of food in proportion to their size, compared to humans. They all first alkalize their food by much chewing (their saliva being alkali), and they all rechew their food for a long time (chewing the cud). They all have a large sack or pouch where man has his tiny appendix.

-Carnivorous animals, such as lions or wild dogs, have specialized in acid digestion. They bolt their food in large pieces and chew it as little as possible, if at all. Actually the less they chew it, the better it is for them. An experimental study was carried out at the Mayo Clinic in which dogs were fed different articles of diet, and the contents of the small intestine examined for the results of digestion. One comparison was made between meat fed in large chunks and meat ground up. The big pieces were digested far better than the ground meat.

-It is highly significant that meat-eating animals have no appendix or a very small one. Man, with his small appendix, seems plainly in the class of the meat-eating animals, rather than herbivorous animals with their large pouches. Our inability to handle starches and sugars advantageously seems to stem from fundamental

physical sources.

-With the atrophy of our appendix, we lost our ability to get enough protein from vegetable sources to produce the best possible physical man. We cannot chew our cud.

-Sound physiology dictates that when we, like carnivorous animals, eat meat, we should, like them, chew it as little as possible; but when we, like herbivorous animals, eat vegetable foods, we should, like them, chew well and thoroughly. Careful clinical observation corroborates this. Tests show overwhelmingly that the fact proves the theory.

-Americans are notoriously calcium-deficient. Not because we don't eat foods rich in calcium, but largely because we don't eat them in combination or form in which the calcium can be assimilated. Animals never eat high proteins and high carbohydrates at the same meal. They have excellent teeth.

-Proteins made toxic histamine and histaminase. The danger of improperly digested proteins is instead of splitting up into their proper end-products, they split up into intermediate or large protein molecules that are actually toxic.

-Some of these molecules are the substance called histamine; a toxic protein known to pathologists and pharmacologists. (Histamine is used by physicians as an irritant or capillary-dilating element in functions and in external treatments for sprain, arthritis, etc.) The histamine we manufacture within ourselves is a direct cause of many common troubles, especially allergic reactions such as hay fever, asthma, eczema, coryza, migraine headaches, and general malaise.

-A careful and extended series of observations which GJG recently gave unmistakable indications that mixed diets (combinations of fats with starches or high proteins with high carbohydrates), produce more histamine in the system than the combinations he has recommended.

-Histaminase is a substance developed from the intestines of certain food animals, it has the property of splitting up histamine and thus destroying its toxic effect. This put into our hands an excellent means of testing for the presence of histamine, and for finding with a considerable degree of accuracy to what extent bad food combinations produce toxic results.

-GJG has made careful observations on many allergic patients with this substance. When these patients eat a mixed meal, they require more units of histaminase to control their symptoms than when they eat proteins only or carbohydrates only. The mixed diet produced more histamine. Many allergic patients, in fact, lost their symptoms entirely by simply avoiding bad food combinations; they actually lost their hay fever or headaches by eating the kind of meals GJG recommends. But as soon as they slipped and ate an unwise meal, back came the symptoms.

-Clinical observations, careful studies of what happens to people like you and me, sick people, well people, and people almost well, superbly happy people, and people who are just on the verge of physical collapse, have given GJG a complete and confident certainty of the great benefits to be derived and retained by avoiding the bad food combinations described in the foregoing. Theoretical physiology,

laboratory tests and other research confirm it, but to GJG, his clinical experience over a period of fifteen years is the most important evidence of all. GJG believes that your own experience will be equally convincing to you.

-Experiences in curing diseases, experiences in building up weak people, experiences in restoring full vitality to sub-par men and women, experiences in bringing immediate benefits and long-range benefits to all types of cases, have made sure that no other conclusion is possible.

-We have long known that extracts from adrenal gland will control allergic reactions. Undoubtedly the adrenal gland takes care of the normal amount of histamine produced in the body; but when years of improper food habits have given us certain deficiencies and degenerations, the combination of excess histamine and food deficiencies depletes our adrenal glands, the control is lost, allergic reactions appear more readily and we are well on our way to serious bodily degeneration.

-The evidence on the matter of histamine production alone is sufficient to justify all of GJG's recommendations on the food combinations.

-The amino acids: Not all proteins are of equal value in nutrition. The different proteins vary widely in chemical composition and in their ability to satisfy the body's requirement of nitrogen; they vary in the degree to which they supply the amino acids essential for tissue building and tissue repair. There are some ten amino acids which have been isolated from proteins and have been shown to be essential to human nutrition.

-The value of any protein is measured by its ability to supply some or all of these amino acids. A complete protein would be one which would supply all of them, but unfortunately few proteins ever approach this ideal. However, a properly varied diet containing proteins from not only the muscle tissue of animals but also the connective tissues and tissues from their organs, plus eggs, will usually supply all the essential amino acids in sufficient quantity.

-Dietary Rules for Health: The general rule is, be sure you eat enough of the vital food elements, and be sure you eat them in the right combinations.

1. Eat all kinds of meat, fish, eggs, leafy vegetables, citrus fruits (and carbohydrates only if you must) as the safest way to avoid deficiencies.

2. Do not combine pure fats (butter, cream, bacon) with high starches (potatoes, cereals, breads, cakes, sweets) in any one meal.

3. Do not combine acids (citrus juice, vinegar, buttermilk) with high starches at any one meal.

4. Do not combine high proteins (meats, fish, eggs, cheese) with high starches at any one meal.

5. Eat fats freely with proteins and acid solutions.

6. Be sure you get enough of each essential nutritional element as follows:

a. Meat and eggs: One serving of each, or two servings of one per day, with butter or other fat. Fish or fowl may be substituted for meat or eggs.

b. Milk, buttermilk, or cheese: Two glasses of milk or buttermilk, or two and one-half ounces of cheese a day (or one glass of milk or buttermilk plus an ounce or more of cheese).

c. Raw, low starch fruits and raw green and yellow vegetables: Two servings a day or one large salad bowl a day.

d. Supplement the above daily, with one or two tablespoons of a plain cod liver oil, or its equivalent in other fish liver oils, or their concentrates in capsules. But if you use capsules, then be sure to take plenty butter fats and cream; your liver must have fats, if it is going to make bile for you. If you are a carbohydrate eater, then you should supplement the diet with yeast or other equivalent form of the vitamin B complex.

-These are radical changes in your present eating habits. This will not be easy and there's always a hardship in shaking off old habits and forming new ones. You are certainly entitled to ask the question, "If I undertake this change of habit for one month, what effect can I expect?" A straight question deserves an honest answer. How quickly you feel noticeable improvement depends largely on how good your health is to begin with, and how bad your eating habits have been in the past.

1. If you are now in fine health, have been eating plenty of protein, have no digestive troubles, no marked deficiencies, you may experience no detectable effects of this diet in one month's time. But you will later. If you come around in ten years' time, GJG can tell if you have been following perfect eating habits by just looking at you.

2. If you now suffer from occasional flatulence, indigestion, "acidity", and gas, a month on this regimen with no cheating will work wonders. Your ailments will probably disappear.

3. If you feel "all right" but sluggish and under par, if you have been eating unwisely, too much carbohydrates and not enough of the other food factors, you will experience a new feeling of well being and full health which perhaps you did not believe possible.

-We must be certain to eat high proteins, we need have no fear of eating too much, except those who have no control over their appetites. While man may continue to exist on a relatively low protein intake, there is ample evidence that a more liberal favors the development of a better physique and improvement of general health. Any excess of proteins, above the body's requirement for growth and repair of tissue waste, is efficiently utilized as a source of bodily heat and energy.

-The types of recommended diet is given here generally. They follow the rules that he has been so earnestly urging, but do make some concessions to present habits and permit some low starch fruits and vegetables with high protein meals. While such minor infractions are not serious, it is recommended that even these be avoided after you have acquired the habit of eating proper combinations. For good medical reasons, as well as psychological ones, it is important to make meals planned within these rules as varied, as appetizing and as much in conformance to preferences and previous habits as possible.

DR. GOODHEART'S RESEARCH TAPES
TAPE 128

-1-

-Resume of the PAT (Primary Atlas Technique) and the work of Raymond Dart, anatomy professor, Witwaterstrand University, Johansburg, South Africa. Dr. Mungo Douglas of Bolton (Lancashire) wrote "Reorientation of the Viewpoint upon the Study of Anatomy", initially published in the British Journal of Physical Medicine in December 1950, and also in the Universal Constant in Living. There he claimed (1) that the primary function of muscle is the "relationing" of the various parts of the body to one another; (2) that their function as movers of body-parts upon body-parts is secondary; (3) that, of all such "relationing" in the body, the head-neck relation, brought about by the suboccipital group of muscles (atlas-occipital, axis-occipital, atlas-axis), is of paramount importance, and that it is worthy of the distinction of being recognized as the "primary relation upon which all more ultimate relations depend".

-What Mungo Douglas calls the "relationing of parts" is a neat way of describing the customary postural positions which adjacent body-parts assume as the result of the groups of muscles moving them. His purpose was to demonstrate the muscular anatomical background of "primary control", that is to say the head-neck relation. A further significant anatomical fact is that this important suboccipital group of muscles controlling the head-neck relationship is supplied by a single (sub-occipital) nerve from a single (first cervical) segment of the spinal cord.

-Dart: "This single somite, or body segment, doubtless for a special reason, is the only segment of the entire series of postcranial segments the nerve supply of which is purely motor in character. In other words, this segment of the body musculature is the only one that has been deprived of a segmental skin area proper to itself, and to the stimulation of which it would, therefore, have been too susceptible of reflex response. If its corresponding neural segment has any indigenous sensory receptors, they can only be those lying in the muscles and joints of that segment, and thus are therefore purely proprioceptive. In other words, reflex responses of these muscles and joints as end organs are immune from skin receptor interference by the segmental area of skin. Responses of a reflex sort, evoked by touch and leading to postural contraction of the suboccipital musculature, can only be elicited in this muscle group by stimuli coming in from receptors of skin segments other than its own. The nearest tactual receptor segments are the trigeminal skin area anteriorly and the second cervical skin area posteriorly. Doubtless it was primarily to determine in as direct a segmental reflex manner as possible such tactually evoked postural head-neck relationships that the trigeminal nerve, which receives all the tactual stimuli entering the body from the entire anterior end of the vertebrate body, invaded centrally the posterior column of grey matter, or substantia gelatinosa Rolandi, by a downward or spinal

extension of its descending root: this root proceeds in man as far posteriorly as the fourth cervical segment."

-There are receptors other than tactual, however, which profoundly affect this head-neck relationship. There is a brain tract of such high importance in every creature with a head articulated to the trunk (that is to say, every vertebrate), that it forms one of the largest bundles in the brain stem of fishes, amphibians and reptiles. This tract becomes medullated between sixth and seventh months of intrauterine life in man, simultaneously with the anterior intersegmental tract of the spinal cord, of which it is the proximal extension. This tract, the medial longitudinal bundle (fasciculus), binds together anteriorly the three motor nuclei (oculomotor, trochlear, and abducens) supplying the eyeball muscles, and posteriorly it connects the anterior horn cells supplying musculature that links the head to the trunk.

-The most important sensory element, however, in determining the postural adjustments evoked by this bundle, is formed by the intersegmental fibres running from the vestibular nucleus to the eye muscle nuclei anteriorly, and to the anterior cervical segments and posteriorly co-extensive spinal nucleus of the accessory nerve. The intersegmental fibers coming from the brain segment supplied by the eighth (or vestibular) nerve cause those simultaneous modifications in tension in the musculature that controls the position of the eye relative to the head, and of the head relative to the trunk and forelimbs, which are occasioned reflexly by the everchanging positions of a mobile head (supplied by a single pair of tactual nerves).

-We all have experience in palpation and adjustment of the upper cervical spine, whether it be a subluxation or a fixation. One of the ways to diagnose is to use therapy localization. There was an accidental observation on a particular patient that had difficulty therapy localizing by placing the hands behind the neck and placing the fifth finger at the junction of the occiput and atlas, and the other fingers reaching down to the third or fourth cervical. If the patient's hands were held in that position by an assistant, then he could TL. If the patient TLed the atlas with just the index fingers, there was no positive TL. However, by using the patient's thumbs for TL (which made it easier for the patient to TL), then the atlas TL was positive. This was found by accident.

-Parallel: a deaf person must be yelled at in order to hear a sound. This is similar to the atlas. C1 has no sensory root, therefore it is difficult to get TL in the usual fashion. The square millimeter measurement of the thumb is larger than the index finger.

-The sensory root for C1 is the temporomandibular joint.

-Dorsal column stimulator placed into the spinal cord is not effective above C2 because the dorsal column stimulator depends upon the substantia gelatinosa (spinal gate). Sheely used a TENS unit to identify the level and then placed the dorsal column stimulator in order to help intractible pain.

-"Low Back and Leg Pain From Herniated Cervical Disc", Kabat, published by Warren Green Co. St. Louis, MO. He uses a specific method for identifying failed lumbar disc surgery syndromes. He looks

at the patient's history. If the patient fell so that the force was cephalad, from the side, from the front, or caudal, there were different methods of evaluating. He found by trial and error that there was a high percentage of a hidden cervical disc at C6-7 (the layman's term is slipped disc), in the presence of low back pain and sciatic radiation. Often this was found in patient's who had already had lumbar disc surgery. He found the wrist extensors as a useful diagnostic tool. He utilizes manual muscle testing to identify potential spinal problems. If the blow was from above, he taps briskly on the top of the skull (it has nothing to do with governor vessel acupuncture points); if the blow was from the side (as in a car accident), he taps on the side of the shoulder; if the blow was from above on the shoulder, he taps on the top of the shoulder in a caudal direction; if the blow was from below, he has the patient stand on one foot and test the wrist extensors on the same side; if the blow was from the front, he taps vigorously on the forehead from front to back; or if the blow was from the back, he taps the back of the head from back to front. He then tests the wrist extensors after the blow, observing for muscle weakness. Usually one sided muscle weakness, the same side as the sciatic radiation, but necessarily so. If you find the wrist extensor weakness on the side of the sciatic pain, you can reapply the blow that weakened the wrist extensor and then test the anterior tibial, and the anterior tibial would test weak. The proof that it is a cervical involvement and not a reflex from the lumbar spine, he administers a cervical traction with his hands (or from an assistant), repeat the blow to the head/shoulder, and now the wrist extensor or anterior tibial will not test weak. You will probably find a positive indication for challenge and adjustment of the hidden cervical disc (commonly C5 or C6), and adjustment is down the facet line (from anterior to posterior).

-GJG found that the patient had a negative TL to the cervical spine in the usual manner with the fingertips. When the patient TLed C1 with the thumbs, it now showed a positive TL. The tap/blow to the head/shoulder that previously weakened the wrist extensors, would then negate the positive TL of C1 with the thumbs. When the thumbs were removed, the tap/blow test was again positive. C1 is similar to the neck traction in Kabat's test in negating the wrist extensor weakness.

-The dura of the skull is firmly attached to the foramen magnum, and then is firmly attached to the upper anterior portion of the atlas, and then the dura of the skull becomes the endosteum of the spinal canal. The dura of the brain enters the foramen magnum where it is attached, some authorities say it is attached to C1 and some say it is not, but it is then definitely attached to the posterior portion of C2 and C3, the loosely held all the way down to the anterior portion of S2 where then the non-neural filum terminale is attached to the first posterior coccygeal segment. The atlas acts as an adapter in that it can change the tension that exists in the dura.

-"Low Back and Leg Pain From 'Slipped Disc' in the Neck", Kabat. An instruction book for patients.

-Quote from "Low Back and Leg Pain From Herniated Cervical Disc": "This book is the first report of a major scientific and

practical breakthrough in the common, difficult problem of pain in the low back and leg. Low back and leg pain is attributed to a variety of disorders of the lumbosacral region, frequently to herniated lumbar disc, but medical and surgical treatment have often been unsatisfactory. Original clinical research on the pathological physiology of herniated cervical disc left to develop a new method of diagnosis and conservative treatment which is effective at eliminating herniation of the nucleus pulposus and preventing its recurrence with disappearance of the complaint such as cervical radicular syndrome. In the course of this investigation, it was conclusively shown that compression of the cervical spinal cord by the herniated nucleus pulposus of the cervical disc is the most common cause of pain in the lower back and leg. Conservative treatment exclusively of the herniated cervical disc has achieved complete and lasting relief of low back and leg pain in a large series of cases. In many cases the only complaint caused by the herniated cervical disc is pain in the low back and leg which is indistinguishable from the characteristic symptoms of a herniated lumbar disc without pain in the neck or arms that would call attention to a disorder of the cervical spine. In patients who an immediate lumbar laminectomy was recommended elsewhere for a herniated lumbar disc confirmed by a recent positive lumbar myelogram, the low back and leg pain proved to be solely to herniation of the cervical disc. Pain in the low back and leg has been reported from compression of the cervical spinal cord by tumors, cervical spondylosis, cervical soft disc protrusion, yet this has been ignored in the management of patient's with this complaint. Herniated cervical disc is caused by trauma and is much more common than previously recognized, occurring at almost any age, including childhood. The frequent intermittent symptoms have been explained and a diverse manifestations can simulate a variety of other disorders".

-Kabat's observations are correct. Dart speaks of the C1 nerve as having no sensory root. The head, TMJ, eyes should all be level. We have previously discussed EID (Eyes Into Distortion), EOD (Eyes Out of Distortion), and BID (Body Into Distortion). These have been tied together; the vestibular segment (eighth nerve vestibular branch), trigeminal-TMJ branch, C1 lack of sensory root, the medial longitudinal fasciculus (bundle) tying together the three eye muscles, and the spinal accessory nerve.

-GJG used Sam Yanuk as a demonstration subject of this principle in San Francisco. He was questioned as to any cervical problems which was negative, but he did have back complaints. A tap on the top of his head weakened the wrist extensors bilaterally, and also standing with the weight on the left leg produced weakness in the left wrist extensor. Traction of the cervical spine as well as TL of C1 would negate this muscle weakness.

-Dart said that the abdominal muscles act as if its a pressure holding device and the viscera causes a strain on the abdominal muscles when the abdominals are weak. That in turn causes the normal tension and allows diaphragmatic activity.

-A muscle should get strong when you stretch it. A stretch weakness occurs when the muscle is strong in the clear, but weakens

after it is stretched. This requires fascial flushing correction.

-In Sam Yanuk's case, his posture revealed poor abdominal tone, even though he is relatively thin. The abdominal muscles (rectus, internal and external oblique) were strong, but they weakened after a stretch of the abdominal muscles. Method to stretch the abdominals: GJG placed his chest on the table and had Sam arch his back over GJG's back to stretch the abdominals. Dart states that we are hung by the musculature by the back of the neck and the top of the head. If the sagittal suture is compromised, it will cause a weakness in the abdominal muscles when it is pressed together. This is a fail safe mechanism that allows as the anterior pressure in the abdominal muscles continues to be exerted, the sagittal suture opens up and allows the abdominals to stay strong. Example: pulling downward on the front of a shirt would cause a pressure of the patient forward, and the collar would exert a pressure at the C6-7 area.

-Need to diagnose the abdominal stretch weakness, and see if folic acid-B12 negates the weakness. Correct it via fascial flush technique, NL treatment, and give folic acid-B12 if necessary. Retest after correction for improvement in the abdominal stretch. About 70% of the time, testing for the hidden cervical disc will now be negative (tap on the head weakening the wrist extensor, etc.) because the pressure on the C6-7 area has been removed by correcting the abdominal muscle. You may still have to do the hidden cervical disc technique. But C1 will definitely still be in lesion, C1 will not correct itself following the abdominal muscle correction. You have to clear out the relationship of the medial longitudinal fasciculus; EID relationship (i.e. head level off); must be a negative TMJ (including ligament interlink between the TMJ: palpate the TMJ right and left and determine which is the sorest, shove the index finger to the hyoid towards the least sorest side and stimulate the least sorest side of the TMJ), (find the sore pterygoid side and tap T2, T3, and T4 to take the pterygoid pain out); check active and passive cervical range of motion and do cervical compaction technique if there is restriction of movement (if it is restricted in lateral flexion, you take it out with rotation to the same side, if it is restricted in rotation, you take it out with lateral flexion to the same side, if it is restricted in extension, place the head in gradual flexion, if it is restricted in flexion, place the head in gradual extension; if you found a problem with EID, have the patient hold their eyes into distortion during correction of the cervical compaction; if you found a problem in the TMJ, have the patient open and close the jaw during correction of the cervical compaction; this realigns the cervical column); then recheck thumb TL of C1, will be there still 90% of the time, so challenge C1 for anterior en masse, posterior en masse, lateral left or lateral right, and adjust per challenge.

-"Blocked Atlantal Nerve Syndrome in Infants and Small Children", G. Gutmann, Manual Medicine, Springer-Verlag, 1987. Citation for upper cervical problems in children.

-C1 is capable by way the spinal accessory relationship with the nucleus ambiguus, along with the cranial root of the spinal accessory (which is really more medullary), and the cervical root (comes off, C2,3,4, and sometimes 5 and ascends through the foramen

magnum and goes laterally and forward to the jugular foramen and then comes down again; this area is sometimes referred to by anatomists as part of the vagus). That is why the atlas along with the spinal accessory seems to have profound effect upon digestion and other vagal neurological patterns.

-Gonstead technique for the occipitoatlantal and atlantoaxial levels state that the atlas is adaptive and not primary.

-Muscle Meridian technique sometimes responds to direct manipulation of the muscle meridian and/or the use of B and E Technique, but sometimes patients would require a repetition of it and there would be some recidivism.

-Dale Anderson, D.C. presented Muscle Meridians at a past ICAK meeting. Anderson described Ho points as taught in a course by Dr. Amaro. Ho points are basically on the elbows and knees, and they affect the muscle meridians. BL54, Ho point for the bladder meridian, if therapy localized and is involved, all of the muscles will test weak on the same side.

-There are 12 meridians and 12 months of the year. Each month the body audits itself and a patient may fail the audit/s which compounds problems.

-GJG had a patient who played tennis and had a complaint of a cold hand. GJG was unable to warm the patient's hand until he instituted use of the Ho points. GJG found the Ho point for the month of March, which is the stomach meridian, and tapping the convergent point was the treatment.

-There are four convergent points for all 12 meridians with one convergent point for 3 meridians. TLing the Ho point weakens all the muscles on the same side of the body. There is a spinal relationship for each of the 12 meridians (associated points), but there is no spinal associated point for the muscle meridians, except for C1. If all the muscles are weak on one side of the body with TL of a Ho point, TL of C1 with the thumb will negate the muscle weaknesses. You still have to stimulate the convergent point and then adjust C1.

-C1 is adaptive, most patients have a hidden C1 subluxation which ordinarily does not palpate or does not show up on x-ray (minimal deviation). The postural pattern is strong abdominal muscles that weaken upon a stretch of the muscle. The corollary pattern is ordinarily a hidden cervical disc that requires adjusting anterior to posterior down the facet line at C6 to C7, usually bilateral; and then TL of C1 with the thumbs; using Cervical Compaction. Due to the cerebellar relationship to C1 by way of the vestibular nucleus and by way of the medial longitudinal bundle, it is a good idea to interrupt the TL to C1 to be sure that there is no cerebellar adaptation. The cerebellum is an error comparer and an error compensator. Parallel: catcher instructs pitcher to throw a strike, pitcher throws a strike, but it turns out to be a ball, and the catcher catches the ball and moves the glove to the center of the plate and calls it a strike.

-Dart: "Such splitting as occurs has been principally confined to the production of the three-sheeted layering (1) inner or transverse, (2) intermediate or internal oblique and (3) outer or external oblique characteristic of the trunk flexors, (thoracic and abdominal). In like fashion, the longitudinally-split arrangement

characteristic of the double-sheeted limb flexors and extensors was produced, as were the various subdivisions of the sacrospinalis mass. This splitting into sheaths, however, has given origin to a simple double-spiral mechanism of great importance to bodily economy, but the essential simplicity of which is frequently forgotten amidst anatomical detail. For example, let us follow the oblique direction of the fibers of the external oblique muscle, from the midline of the body, pubic symphysis and iliac crest upwards through the single morphological sheet formed by the external intercostalis, ribs and scalene musculature to the transverse processes of the cervical vertebrae, and thence through the deeper lying sheet, formed by the semispinalis musculature, to the cervical spine and occiput. Thus we get a picture, or a bird's eye view, of the manner in which the single superficial sheet, formed by these two opposed diagonally running flexor muscles in front, is continued, through a deeper lying extensor sheet on each side of the spine behind, to suspend the pelvis from the occiput and neck vertebrae. This diagonal suspensional arrangement becomes the more impressive when we recognize that the diagonal direction of pull exercised by each external oblique sheet (intercostal muscles and levatores costarum) is continued across the midline through the deeper lying internal oblique sheet to the perimeter of the pelvis on the opposite side of the body. Thus, any postural twist of the body (and the customary twist in a right handed person is a twisting of the trunk to the left) results in a postural rotation of the thorax, shoulder (right) and head, together with the vertebral column towards the opposite (left) iliac crest; there is also a relative inability to rotate the opposite or heterolateral (left) shoulder towards the homolateral (right) iliac crest. These diagonally disposed sheets, when followed in their continuity around the body, constitute two interwoven spiral layers. The pull exercised on the circumference of the pelvic basin, through the deeper lying (internal oblique) sheet from the ribs and the transverse processes of the spinal vertebrae of the contralateral side, by the superficial layer of muscles (external oblique, quadratus lumborum, external intercostal, levatores costarum and scalene), is a plane of traction that is being simultaneously exerted along the deeper lying plane of pull by the deep (multifidus-semispinalis) sheet of the sacrospinalis from the spines of the vertebrae and the occiput. Thus in a very real sense, the occiput and spines of the vertebrae suspend the body by means of two spiral sheets of muscle encircling the trunk. This arrangement of the trunk musculature, in the form of interwoven double spiral sheets, is continued across the dorsal midline just as it is carried over the ventral midline. The superficial layer of the sacrospinalis sheet (iliocostalis, longissimus, and splenius) continues on to the posterior aspect of the ribs, cervical transverse processes and mastoid process the same oblique line of traction as is being exercised on the spines by the deep (or multifidus) sheet of the opposite side of the back. The whole trunk repeats, in its own fashion, the muscular story of the intestinal tract and of the heart, by becoming enwrapped by spiral coils of muscle, which are only prevented by the bony framework of the thorax and pelvis from

completely emptying its contents when they are contracted forcibly".

-What this means is when those muscles are weak after a stretch, and when the muscles pull, instead of pulling the pelvis up so that the patient stands up straight, they pull the body forward. That is why patients are ahead of the plumbline. That is why when patients get older, they move forward. We are trying to take the pull off of the cervical segment.

-Nutritional support may be necessary for the abdominal weakness in the form of ionic manganese and superoxide dismutase.

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-Right and left brain have different elements that each side is related to. Water-soluble are related to the left brain and fat-soluble are related to the right brain. Vitamin C, manganese, thyroid, and the acid ash minerals all relate to the left brain activity. Vitamin E, zinc, steroids, estrogen, alkaline ash minerals all relate to right brain activity. Based on the electron poisoning concepts of James P. Isaacs, M.D., vitamin A, iron, and copper were all mid-line, which means that they would not bother the right or left brain, or correct it, but sometimes were necessary to maintain function. Practical way to use the electrom poisoning concepts.

-In 1982 Wally Schmitt observed that tryptophane should be tested when left brain activity weakened right sided muscles, and right brain activity weakened left sided muscles; and tyrosine should be tested when left brain activity weakened left sided muscles, and right brain activity weakened right sided muscles. This is related to a pineal-pituitary alteration due to melatonin. Pyridoxine is needed to transform tyrosine into nor-epinephrine.

-In 1988 Frank Bahr and the Melanin Hypothesis was discussed in the Research Manual. If testing tryptophane weakens a patient, give them tyrosine, and if testing tyrosine weakens a patient, give them tryptophane. This is based on the concept that if the patient has too much tryptophane or tyrosine and you give it to them, it will weaken them. This is helpful in patient's with cyclic problems, i.e. pineal. We found this in individuals who had trouble with rhythmic responses, seasonal, diurnal, circadian. Test these patients against tyrosine or tryptophane by placing a small amount of the tip of the tongue and have the patient insalivate it, and then test an appropriate muscle. If tyrosine weakened them, you give them tryptophane, and vice versa, about 500 milligrams. GJG would also measure variations in ranges of motion. If you give the opposite substance, it will reduce the range of motion, i.e. leg abduction.

-Leg turn-in in patients who are already taking sufficient sources of natural B and G would continue to show an imbalanced leg turn-in. Addition of the transformed form of vitamin B would equalize the leg turn-in. Some patients have trouble transforming vitamin B into the active form (i.e. pyridoxine to pyridoxal-5-phosphate).

-This is a preamble to the next discussion on ion resins. This was discussed at the 6th Annual Trace Mineral Conference at the University of Missouri where Isaacs talked about the use of ions on resins. Myers, a founding member of the International Academy of Applied Nutrition, also talked about ions, preparation of metal ions of trace minerals.

-"Trace Minerals, Vitamins, and Hormones In Long Term Treatment of Coronary Atherosclerotic Heart Disease", Isaacs, Lamb, et al., Johns Hopkins School of Medicine, Baltimore, Maryland, Piedmont School of Medicine, Atlanta, Georgia. Abstract: "25 patients with severe coronary atherosclerosis or documented myocardial infarction

had been followed for six years on a special regimen of oral zinc, copper, manganese on ion exchange resins...After five years of therapy, blood and urine levels for trace minerals were within normal ranges. No adverse effects of the trace minerals were detected clinically except zinc had significantly altered insulin requirements of diabetic patients, manganese had a sedative and muscle relaxing effect, copper and zinc improved assorted skin, arthritic, and ophthalmic disorders. Skin appearance and texture improved. Finger and toe nail pliability and growth rate and cuticle development were augmented. Hair density and growth rate, and scalp health seemed improved. Gum color, texture, healing of retractions, resistant to trauma, strength attachment to teeth were improved. Comments concerning improvement in epithelia were frequently volunteered by patients. The effects were not difficult to grade. Most of the effects seemed to be related to the trace minerals. Copper improved acuity of visual perception for red and green colors. Manganese had a sedative effect on some patients on the psyche. Along with copper, manganese also had a relaxing effect on skeletal muscle contracture, and fasciculation associated with the arthritis. Zinc and copper were particularly helpful for a variety of skin disorders, including staphylococcal pyoderma. Zinc on exchange resin had such a remarkable effect on altering insulin requirements in diabetes mellitus that it should be marked for prime investigation in the future. The amount of minerals to produce these various effects is indeed small, and the minerals are much more active when given in the resin form than in the salt form".

-Another article from the 6th Annual Trace Mineral Conference: "Effects of Essential Trace Minerals to Thyroureicil and Lugol Solution on Human Tumors Transplanted Into Hamster Cheek Pouches", Isaacs, Lamb, Department of Pediatric Surgery and Anaesthesiology, Johns Hopkins University School of Medicine, Baltimore, MD. "We have found that trace metal ion, particularly copper and manganese, prevent the epithelial enlargement of the thyroid gland caused by thyroureal compounds..." Thyroureicil or propylthyroureicil has an effect that makes the thyroid enlarge and this was prevented by small amounts of ionic trace minerals.

-The frequent involvement of the piriformis and psoas muscles in dural torque and spinal biomechanical problems led to the accidental but practical use of bilateral "leg turn-in" technique. This early observation allowed the utilization of the transformed form of the B complex with much success utilizing simple leg turn in as indicator of general distortion. The correct nutrient on the tongue immediately balanced unequal leg turn in and in the case of equal leg turn in, the wrong nutrient on the tongue immediately produced unequal leg turn in, or in rare cases, leg turn out. This same method is useful along with regular diagnostic techniques to analyze for the presence of trace mineral deficiencies. For example, copper imbalances can produce zinc deficiencies. In the presence of equal leg turn in, or turn out, copper ions on the tongue will immediately cause unequal leg turn in, or in rare cases, leg turn out. The use of zinc ions on the tongue will immediately correct the evidence of leg turn in produced by the copper, for example, in the presence of a copper

elevation which frequently causes spinal problems. See Spine 5, 1977 "Elevated Copper In Idiopathic Scoliosis", Pratt and Phippen, and also by Schmitt and Tolen, "The Cranial-Spinal Torque Pattern", ICAK Collected Papers, Summer 1983.

-Excess copper needs, as you can see per the chart from the Mulder's Interaction Chart, neutralization by zinc, manganese, molybdenum, and/or iron. Updated high tech hair analysis has now been found to be useful in diagnosing copper abnormalities, as well as blood cell analysis and 24 hour urinalysis. Folic acid and pantothenic acid are also needed when there is excess copper, as you learned from Schmitt's paper. The ionic form of the trace mineral resin based allows quick, immediate alteration in leg turn in and verification of the need for the appropriate nutrient trace mineral, or its antagonist, as the case may be. The immediate correlation and correction of a Vitamin A Deficiency Syndrome, which has not responded to appropriate and natural sources of vitamin A from the animal, vegetable, and fish origin, by the use of the silver ion is a frequently encountered pattern. The muscle testing response on ingestion of food nutrients, such as grains, dairy, and protein sources can be analyzed by the muscle weakness response and with the offending substance still in the mouth the correction of the muscle weakness by the appropriate therapy localization of the neurolymphatic for the thymus, B and E meridian points (usually for stomach as ST3), or the neurolymphatic for the liver. In the event of failure of correction of weakness induced by the offending food, the use of appropriate trace mineral ion therapy is indicated. Zinc and copper are frequently involved, but each case requires separate and thorough identification of the need for the appropriate ion or ions.

-Standard reference texts such as "The Biology of the Trace Elements", Shutte, Lippincott and Co., Philadelphia, and "Metabolic Aspects of Health", Myers and Schutte, Discovery Press, 1978, are good sources of information on trace minerals. The published material by Myers from the International Academy of Nutrition, 1976, and later, are also good sources. Sources from reputable nutrition companies servicing the healing arts professions are also valuable reference material. The unique capacity of the ion source resin based allows a quick response and with the appropriate muscle test indications offer a valuable guide for trace mineral therapy. Many times the use of an appropriate nutrient as a trace mineral does not produce the desired result because of a failure of absorption or utilization. Many times the source of the trace mineral of the non-ionic form can be likened to "putting a bowling ball through a keyhole". The ionic form seems to help in a failure of regular and indicated nutritional sources of the indicated trace minerals, this also includes the chelated form.

-In the article by Myers, "Biological Transmutation of Cobalt and Magnesium in the Support of Good Teeth and Good Health", he says in his conclusion that "Cobalt along with potassium, magnesium, copper, zinc, molybdenum, vanadium, silver, manganese, and iodine aid in the development of the brain, pituitary, thyroid, and other controlled devices of the endocrine and sympathetic nervous systems. These systems control the size, shape, and growth of the bony skeleton, and the size and shape of the dental arches. It is my

suggestion that cobalt is lost by transmutation in the food by cooking even when an adequate diet is consumed. Processing, cooking, sterilizing, and staleness cause a loss of valuable nutrients. This leads to degeneration of the skeleton and produces a face that is narrow and a dental arch too small for the teeth. Supplementation of the diet of the mother, and especially the baby with vitamins and minerals, especially minerals, will serve to correct many of these deficiency patterns which we see so rampant in our population".

-The original ions used by Dr. Isaacs in the Electron Poisoning Concepts were resin preparations for ionic trace minerals. Dr. Myers worked with Dr. Isaacs and used the resins obtained from the well known laboratory of Rohm and Haas for the source of the ionic resins. Incredibly small amounts of the resin based trace mineral ions seem to produce quick and observable results along with the appropriate structural correction.

-The use of the D.S.O. motif is appropriate here, Diagnose the need, Supply the need, Observe the result, act accordingly.

-Preparation of the metal ion resins: some of the resins are negatively charged which are used for the cations of zinc, cobalt, copper, iron, manganese, magnesium, and silver; and some of the resins are positively charged and are used for anions molybdenum and vanadium. GJG has not yet used any vanadium.

-It would be tempting to make the overly simplistic statement that anions would go on one side of the body and cations on the other side, but this is not the case. GJG does find that zinc works best on the right side and manganese works better on the left.

-Patient with difficulty seeing at night, requires more illumination when reading in the dark, left sided back pain that extends to the shoulder/neck, left upper extremity pain and paresthesias, pain may follow the facial nerve and give pain in the left upper molar teeth, sometimes into the lower molars as well. This can be made temporarily worse by the use of cysteine or methionine. When you test for leg turn in, you will very often find that one leg will turn in better than the other. This symptom pattern listed is often a need for ionic silver. Myers disclosed that silver is a component of natural vitamin A and represents the intrinsic factor that is needed in pernicious anemia. The silver was identified spectroscopically for Myers in two different instances and the remarkable specificity that the ionic silver has in operating on the stomach, facial nerve, and vagus nerve. It may be the factor that we have been looking for now to turn the intrinsic factor of pernicious anemia, the extrinsic factor being cobalt. Silver also has the remarkable effect on the stability of color vision, it makes colors much more vivid and aided in light sensitivity control in the retina, so that one can go into very dim light and have the retina remain sensitive, in other words, to see the menu in a restaurant, and then go into the bright sunlight and have the retina sensitivity greatly reduced again. An adequate amount of tyrosine and tryptophane must also be supplied as well as vitamin A. 6-8 granules of the ionic silver on the tongue will make an immediate change in the leg turn in, and in a week's time you will see a change in the vision.

-The action of cobalt is excellent, it has a tendency to

normalize the pulse and stops irregular ectopic beats. There is a pressure discomfort in the precordium just above the nipple, patients keep saying that they have pain in that area, and it is not related to the lack of iodine that you sometimes see in costochondritis, but the cobalt ions will relieve that chest pain and the chest feels much more open and easier to breathe, "can take a deep breath".

-Cobalt and copper are constantly complementary. If one gives too much cobalt, a tightness occurs in between the shoulder blades and a dryness of the mouth that is relieved by copper and molybdenum. If there is too much cobalt, they may need a natural source of thiamine to neutralize.

-Myers: When there is trouble with the skin, hair, and nails, the skin becomes stronger and tougher, and the fragility and thinness of the aged skin disappears, you see those black and blue spots on the back of the hand that you often see in older patients, the skin appears a lot more youthful, it does not get the blemishes of old age. In some remarkable cases, large black moles were simply washed away leaving normal skin on the face and arms. In many of his cases, warts cleared up in several weeks, and in one case, a hard, needle pointed, wood-like wart behind the right thumb began to soften within 15 minutes of giving cobalt and disappeared completely in two weeks. Another coral-brain type wart disappeared in another month with treatment with no return in 13 years. The basal cell of the growing nail needs both copper and cobalt. Cobalt need can produce a black disintegration of the nails and their base, especially if there has been some injury to it. The fungus that grows underneath them is the usual diagnosis, but not the cause, it is usually the after-result. When the nail is normal, the fungus just doesn't grow. Hair has a tendency to grow more rapidly. The strands are thicker and smoother, the ends do not split and fray. The hair is more easily dressed and lays in place. Several patients remarked that the natural curl returned to their hair which may be due to the copper. Copper effects on wool is to change it from a steely undesirable hay-like pattern into a normal quality crimped organized pattern in 24 hours after supplying the sheep with the the right type of mineral. Before he knew the beneficial effects of copper on precordial distress he had treated a woman with vitamin A which did fine, but when he gave her vitamin E, the contact lenses she had been wearing for years suddenly caused the corneas to become very sensitive. She also had very wrinkled edges of the lips that looked like the edge of a pie crust decorated with the prongs of a fork. The lips were tender and sore as was the vaginal lips. The addition of cobalt ions in very small amounts relieved the distress in all these areas as well as the precordial distress. Cobalt makes the eyes feel at ease and makes the eyeball nucleus much more lubricating. Copper plays a role here and makes the tears flow more freely and to relieve dryness. I have found that iodine, cobalt, and copper improve light sensitivity in the retina and reduces irritation from light glare and also makes vision sharper and colors much more vivid. In general, women do not get color blindness because of the difference in the x and y chromosomes. You will still see color blindness or color vision faults in women. Many times the ability to see red color returns in a remarkable way.

An artist/designer from the Maryland Institute was told by her artist husband that she could never see colors properly. At 44 years of age, following hysterectomy she suddenly realized that her ability to see color completely changed. After she had been on some cobalt and copper she could now see all the colors much more vividly, especially the color red. She could see red tints that evidently had been absent. The light intensity of her office increased 10 foot candles to her. Several artist patients had to repaint their pictures because they looked so dark and shadowy that they were dark and dismal. Styes disappear with the aid of zinc, iodine, and cobalt. Red, irritated corneas and lid margins clear up. The cholesterol accumulations on the lid will disappear with the use of cobalt showing us the direct effect of cobalt on cholesterol metabolism. Here you might need a little chromium. A lot of people have herpes simplex. Later sometimes, these patients might get herpes simplex with the menstrual period, and they would also sometimes get it in the vaginal lips. Cobalt is good for that. Molybdenum will precipitate a fever blister. Copper and molybdenum are in close balance. The excess in one produces a deficiency in the other. Shingles and herpes simplex are greatly aided in and completely relieved by magnesium (GJG finds magnesium by mouth to be very helpful, whereas Myers gives it intravenously in the form of magnesium chloride). Athlete's foot is a similar breakdown of the sympathetic nerves between the toes. Zinc and cobalt ions are mostly involved, zinc being the greatest requirement. Once the lesion appears, as in a fever blister, the fungus grows in the damaged tissue. The fungus is the usual diagnosis, but it doesn't start until there is a primary lesion. Spontaneous and profuse bleeding of the nose is difficult to stop. Cobalt stops the bleeding and improves the turgency of the turbinates removing the puffiness and bogginess of the nose, (GJG: along with C5 adjustment). Patient may need magnesium, A, E, and tryptophane and sometimes manganese. Some of these patients have pain in the upper left quadrant of the abdomen, extends up the left back, into the shoulder and arm, something similar to the silver as previously discussed. Often the entire abdomen was so tender to the touch that in several cases the gall bladder had been removed to find the cause of the generalized abdominal discomfort, they had a lot of GI series, etc. With magnesium, zinc, copper, and cobalt by mouth, pain and discomfort was eliminated from the abdominal area. (GJG: Sometimes they need liquid iodine, 5 drops in 5 ounces of water, placed on a tampon and placed in every night for a couple of weeks). The cobalt had the greatest effect in the area of the pancreas and completely relieved the pain in the left back and side.

-Stambol, cardiologist with the southern division of the Albert Einstein Medical Center. Atherosclerosis was the result of cholesterol being deposited on the lining of the arteries, particularly in the coronary arteries. This is much more prevalent in men, a ratio of 6 to 1 to women. It is an established fact that the average age of women is greater than men. Note the number of women and men in retirement homes. This difference has been ascribed to estrogen and sporadic attempts have been made to give estrogen to men to correct that difference. Stambol has shown that it is more likely

due to the presence of another hormone-like substance produced in the ovary. This is called protein-bound iodine or diiodotyrosine.

-Breast tissue is produced from about 15 sweat glands in the skin which form the nipple and then grow backwards towards the chest wall. What were embryologically tortuous sweat glands develop into the globules of the breast like a bunch of grapes and each grape-like structure is called an alveolus. The alveoli secrete the cholesterol-type materials that contribute to the formation of milk and it appears that diiodotyrosine is a special hormone secreted by the ovary for the purpose of keeping the cholesterol substance in a liquid form. In the female, this is nature's method of keeping the wax-like cholesterol in solution. It is well known that the breasts are prone to develop cysts and abscesses which are due to improper functioning of this mechanism. Long before Myers knew of Stambol, he was using diiodotyrosine to soften breasts for nursing. In one patient, the left breast was involved in severe pain and induration, and required 200 grams of diiodotyrosine to bring the breast to normal. In another case the mother was nursing the baby with only fair results. The breasts were hard and very painful and having difficulty producing enough milk to satisfy the infant's hunger. The mother was given 10 grams of diiodotyrosine (GJG gives a single drop of iodine in water three times a day and 100-500 milligrams of tyrosine). The milk came out of the breasts within minutes under pressure and could be seen to spurt from the nipple for a distance of about 2 centimeters. This subsided when the pressure in the breast was relieved. The mother had no difficulty nursing the baby after this initial help. Breast soreness and heaviness has been repeated many times. There is a condition called Shimulbushes disease which is described as a bag of worms. The ducts more often feel like strand of spaghetti with nodules along them rather than worms as Shimulbush first described it. They are hard and sometimes form masses which are then described as cystic fibrosis and are quite easily visualized by xerography. The use of diiodotyrosine along with trace elements of magnesium, copper, cobalt, manganese, and silver has a remarkable effect on this syndrome with relieving the condition where the breast almost feels like liquid.

-GJG experience with hypothyroidism treatment with thyroid protomorphogen and iodine, especially iodine intravaginally, produced a remarkable improvement in these women. Not only did they have an improvement in the systemic condition, but in the vaginal mucous. In the beginning, the mucous was thick, white, and paste-like; sometimes the patient would describe it as looking like cottage cheese. Just as iodine helps the flow of tears, so also does it help the mucous switch to a clear liquid fluid flowing from the cervix. Sometimes you spray the iodine on with an atomizer or place it in the vagina and the strand of mucous would be up to 4 centimeters in 15 minutes. This strand of mucous is present normally in women with sufficient iodine in their body. This secretion is used to lubricate the vaginal lining. Premarin ointment is used to lubricate the vagina. It may cause trouble with the mucous membranes and may make it difficult to have intercourse. Iodine also gets rid of infective organisms in the vagina. The carrier of the iodine is the unsaturated fatty acid

linoleic acid. In the case of severe vaginitis it is a good idea to use safflower oil or black currant seed oil as much as 10 capsules a day to get the iodine to get the mucous membrane back to normal. The same is true with Bartholian's cysts. The iodine makes thesecretions of the gland fluid so that the material will flow out without the liquification where the orifice is blocked, enlarged and a painful cyst appears. These are always present in hypothyroid patients. Need to check the circulation sex and triple warmer meridians. May find the circulation sex will be over and the triple warmer will be under. Balance these. Two other remarkable things occur with the application of iodine to the vaginal lining. First, a remarkable softening of the breasts, light and soft. Patients were aware of this change within several minutes of application the iodine. The second change is in the abdomen. Many of the patients complained of abdominal discomfort and after application of iodine, they comment on how comfortable they felt with their abdomen. If you cannot touch the abdomen of the patient, GJG uses 5 drops of iodine in 5 ounces of water. Insert into the vagina with a cotton (have the woman perform this herself). GJG notes that many times the abdominal discomfort is eased. There are cases of women where they had their gall bladder removed but this did not remove the source of the abdominal pain.

-Perkin and Brown, Boston, Mass, 1938: Remarkable insight into the functional differences between the male and the female, and the probable reason why the female lives so much longer without coronary artery disease from arteriosclerosis. Experiments on male dogs show that when the thyroid is removed, its protein-bound iodine drops to one-tenth of the normal value by the next day. When the thyroid is removed from the female, nothing happens until the ovary is removed also, at which time the protein-bound iodine level drops to the same level as the male after thyroidectomy. It is interesting to note that at the estrus period in the female dog which occurs twice a year (March and October), the protein-bound iodine doubles for a few days of her heat period. When she became pregnant, the protein-bound iodine levels dropped to very low levels, a little higher than after removal of the thyroid and ovary. It is important to remember that all these changes occurred in both the male and female dogs were being given an adequate amount of iodine every day (72 milligrams iodine daily in the form of a lugal solution into a stomach tube to assure that it was completely ingested. From these data and the proof by Stambol that the ovary manufactures diiodotyrosine, it can be inferred that the female is endowed with this ovarian function to make it possible for her to feed her offspring. In softening the cholesterol material in the glands of her breasts, she also keeps cholesterol in other parts of her body in solution, thus preventing it from precipitating in the ateries, heart, brain, etc. When one views the remarkable improvement in the woman from the higher intake of iodine protecting her against vaginal infections, cystic fibrosis, and breast pain, one has to rely on that she needs much more iodine that she is getting from the dietary intake, even with iodized salt.

-There are two other symptoms that appear both in the male and female from an additional supply of iodine. One is a loss of stiffness of the neck. Many complain that they cannot turn their head

freely and there is a constant soreness in the muscles of the neck. Frequently, even in younger women, the muscles feel more like steel wires than flexible muscles. They should be very pliable and soft to the touch. For some reason the left side of the neck is more involved than the right both in the male and the female. Why that is, GJG does not know. Although iodine plays a great role in relieving the stiffness, it is not in itself totally effective. Sometimes you have to add other trace minerals to get complete relief, which is also true of the abdomen and breast. Sometimes, you use the ionic form of magnesium, cobalt, copper, zinc, silver, and molybdenum; copper is the ion that has the most to do with the thyroid and catalyzes the formation of diiodotyrosine. A lot of people think that most people have too much copper. GJG finds just the opposite, many people require it. As in nature, copper is almost always associated with silver. It requires silver ions to completely relieve the pain in the left side of the neck and the back. Much of the shoulder/arm syndrome that was discussed earlier, both on the left and right, is relieved by silver, copper, and iodine. It is difficult to say how much one must give to see the changes, but you have to feel your way with these exchange resins (cation and anion resins). Relief comes within minutes, and you can palpate the neck muscles and feel the tension and knots in the muscles practically disappear. Silver seems to have the most effect on the stomach and esophagus which produces pain in the left back about the level of the fifth interspace. GJG has had patients where he was desperate to relieve that and nothing was working. Sometimes the pain there is so severe that the patient cannot press his back against a chair. Pain in this area is such a common occurrence that it is difficult to find a patient that is completely free of it. When you place these ions on the tongue of patient, within a few minutes changes occur both in the breast, neck/back, and also the vision. Many times patients will remark that the lights have become brighter in the room. Tyrosine plays a role in the sympathetic nervous system, the visual apparatus. Apparently the activation of the tyrosine by copper produces higher sensitivity of the retina to light. It also improves color sensitivity, especially red is much more vivid and brilliant. There is hardly a patient that Dr. Meyers has seen that had normal red sensitivity, who is always improved by the addition of tyrosine, iodine, and trace elements.

-Much of this information has been abstracted by Meyers' work. When you give the right substance, you maintain the easy leg turn-in, if you give the wrong substance, you immediately change the leg turn-in or turn-out. You have a standard by which you can apply single or combinations of the elements.

-The new packaging has a tip that allows easy dispensing of single granules, similar to that used in homeopathic doses. If you check the label, the dosage is 5-6 granules, once a day or as needed. In the past, GJG had the patient wet the pad of the little finger, turn the bottle up-side-down, take the proper dosage, and then scrape off the remainder. GJG recommends that you stay within the dosage limits on the package.

-Ion resins are available from DSD International, 640 East Purdue, Suite 106, Phoenix, AZ 85020, 1-800-232-3183 (west of the

Mississippi). Viotron 1-800-437-1298 (east of the Mississippi).

-An ion is an electrically charged atom or group of atoms that may be positively or negatively charged, attracted to the anion or cation (the cathode or anode source), but it must become disassociated from its parent mass. In the human body, it's the water content that enables ionization to occur. To get good results with ion therapy, you want to be sure that the patient is hydrated. When the patient places their finger on the tongue, you should be able to see a small sheen of saliva on the pad of the finger. Water is the universal solvent that provides that ideal atmosphere for ionization. You can demonstrate that very well. Distilled water, which is free of minerals, is a very poor conductor of electricity. When you add ordinary salt to it, the conductivity is improved because when the sodium chloride is placed into solution, certain sodium and chloride ions disassociate from the combined chemicals and become ionized or free atoms. These ions act like electrical hands to pass the current along. Ionized minerals help to facilitate varied reactions of chemoelectric effects. An ion in the body can consist of any electrically charged mineral. In the main, those minerals were thought to be calcium, potassium, phosphorous, and sodium, and then various trace minerals were also concerned, especially iodine and iron. These mineral ions enable reactions to occur in special ways. Ionization is an important feature in explaining nerve conductivity. Enzyme systems, hormonal influences, even digestion and assimilation may depend upon the integrity of ionic equilibrium. For example, 90% of the zinc in the body is hooked up with carbonic acid anhydrase. That is very essential for the production of hydrochloric acid. There are all sorts of instances. The ions also act as ionic pumps, or bioelectric generators. The best known is the sodium and potassium pump. Pump pertains to an attraction and repulsion of the positively charged ions which then push or pull themselves across a cell membrane which theoretically acts like a grid to control the flow of current. That is the way it may simulate the action of a radio tube, which is in effect an electronic ionizer. It is probable that all the tissues rely upon ionic pumps or biochemical-electrical generators for their excitability. The nutrition of the cell is dependent upon those influences. It is well known that too much or too little of electrolytes can cause cells to shrink or swell, which may cause problems with the cell. There is a very delicate balance of ionic equilibrium that influences our nutritional well being. Each tissue compartment, such as that within the cell, the fluid surrounding it, has its own mineral environment. This is what Dr. Isaac speaks of. One may be highly concentrated in potassium, as is the cell, whereas another is in sodium, as in the blood. Yet there is constant interchange of the small amounts between two compartments so that the elements are never static. Thus ions act as a pressure valve to avoid overloads. Potassium has the ability to make a lot of changes in cell metabolism, it is the principle alkaline mineral in the cell. Potassium something like an iceberg with only the tip showing to the diagnostician. It is a mystery mineral that requires a high degree of suspicion before an early diagnosis of its deficiency is likely to occur. Everyone can measure potassium on a SMAC, and you would think

that the lab test would reveal a potassium deficiency, but such is not the case. You cannot tell how much water is left in a sealed can by looking at the size of the leak. The water may drip out right up to the last drop. Then and only then do you know that it is empty. It is the same way with potassium in the body, except, that the can that holds the potassium is in the cells. We can only see the drips of potassium that show up in the bloodstream, therefore there is not any real good method for accurately measuring the amount of reserve potassium in the cellular storehouse areas. That is why you have to have a high index of suspicion of deficiency. Because potassium is necessary for electrical phenomenon to occur in the body, it is necessary for growth, detoxification (that is why vegetable juices have an enviable reputation). Potassium deficiencies show up in diabetes, kidney disorders, heart disease, and many other conditions. The need for potassium is increased where any rapid cell building/proliferation goes on, especially in the case of healing or rapid growth. Potassium deficiency may be the aggravating factor in acne, no matter what else is being done. Any excess in sugar other than the natural source in fruits is utilized by the uptake of potassium. This causes an increase potassium need in the diet to make up for the extra demands. Nature combines natural sugar with large amounts of potassium. Man extracts this form of potassium in molasses, this upsets the balance, and a price must be paid. Discarding normal body potassium tissue sources is a bitter price to pay for sugar refining.

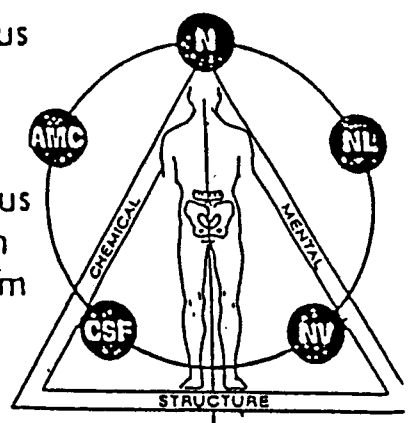
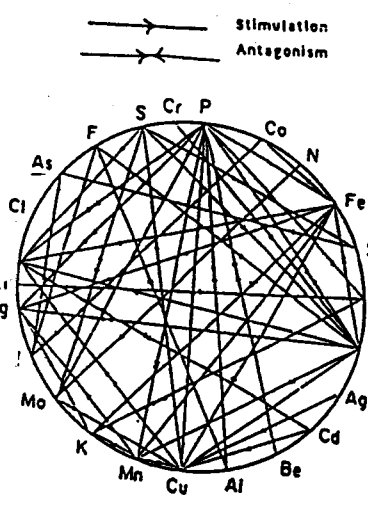
-When the adrenals are depleted, they cannot get rid of excess potassium.

-Good signs of potassium deficiency are: sensitivity to light, lump in throat aggravated by emotion, heart pounds with fright but then does not calm down, acne/blemishes/boils, weight loss/failure to gain, slow healing, gas pains especially those connected to intestinal movement. Dietary sources of potassium are: vegetable juices, molasses, beet extracts, olives, broccoli, potatoes, tomato juice. Sometimes you need to prime the pump with the ions.

-Ionic calcium is useful in excess secretions like "runny nose", watery eyes, drooling, sinus drainage, muscle soreness and cramps, menstrual cramps. May also need magnesium. Use the leg turn-in to diagnose whether the patient needs it or not.

MINERALS — HOW THEY RELATE TO EACH OTHER

CALCIUM	Depresses Manganese Depresses Magnesium Depresses Phosphorus Depresses Zinc
SODIUM	Depresses Potassium
ZINC	Depresses Iron Depresses Copper Depresses Phosphorus Depresses Cadmium
COBALT	Depresses Iron
CADMIUM	Depresses Copper
PHOSPHORUS	Depresses Zinc Depresses Iron Depresses Calcium Depresses Magnesium
POTASSIUM	Depresses Sodium Depresses Iron Depresses Manganese
MAGNESIUM	Depresses Phosphorus Depresses Calcium
MANGANESE	Depresses Iron Depresses Phosphorus Depresses Potassium Depresses Magnesium
COPPER	Depresses Iron Depresses Zinc Depresses Phosphorus
IRON	Depresses Potassium Depresses Phosphorus Depresses Copper



Ions available from:

DSD International
 1-800-232-3183
 West of the Mississippi

Viotron
 1-800-437-1298
 East of the Mississippi

DR. GOODHEART'S RESEARCH TAPES

TAPE 130

-1-

-Human skeletal muscles are composed of thousands of individual muscle fibers. One single muscle fiber is about the thickness of one hair and can reach a length of 10-15 centimeters, depending upon the length of the muscle. There are two types of muscle fibers, the slow twitch fibers (Type I) and the fast twitch (Type II). In addition to these, there are intermediate types, IIA and IIB. Histochemical examination with ATPase stains makes it possible to discriminate slow and fast twitch fibers of an individual muscle. The postural muscles are mainly composed of slow twitch fibers in contrast to phasic muscles that are composed primarily of fast twitch. The slow twitch fibers contract more slowly, approximately 100 milliseconds, in contrast to the fast twitch fibers which contract in about 7 milliseconds. Slow twitch fibers obtain their energy primarily from glycogen and fat with high oxygen consumption and minimal lactic acid production. The fast twitch fibers obtain their energy from glucose (aerobic cycle) with a rapid production of lactic acid. The capillary supply is higher to the slow twitch as compared to the fast twitch, 4.8-5.0 capillaries for slow fibers and 2.9-3.0 capillaries per fast fibers. The slow twitch fibers fatigue after several hundred contractions in comparison to the fast twitch fibers which fatigue after just a few contractions. The slow twitch fibers are primarily innervated by the alpha 2 motoneurons with a great supply of muscle spindles. The fast twitch fibers are innervated by the alpha 1 motoneurons and have only a few muscle spindles. The fact that the muscle spindles are not randomly distributed seems to have significance in the development of functional pathologies of muscles. There are important differences between slow and fast twitch fibers.

-Examination of athletes show that the ratio between slow and fast twitch fibers is not fixed in any one muscle and can be changed by exercise. The quadricep muscle of a marathon runner consists of up to 93% slow twitch fibers while the musculature of an untrained person who does very little running consists of about 48% slow twitch. The biochemical studies done as far back as 1975 indicates that hypomobility of the lumbar spine and compression of the nerve roots can lead to changes of the fast twitch multifidus muscle by decreasing the fast fibers. The same study shows that patients with idiopathic scoliosis have more slow twitch fibers on the side of the convexity than on the concavity.

-Receptors found in voluntary muscles: muscle spindles, golgi tendon organs, paccinian corpuscles, free nerve endings (Type 4 nociceptors), synovial joint capsule receptors (Type 3 mechanoreceptors). The Type 4 and 3 are according to Barry Wycke. Distribution is quite variable of muscle spindles in voluntary muscle. Muscles which are responsible for very delicate and precise movement show a high number of muscle spindles than those that deal

with gross movements. For example, 50 muscle spindles are found in one gram of the rectus femoris muscle, in contrast to the small suboccipital muscles which have 150 muscle spindles per gram of muscle tissue. The paraspinal muscles such as the intertransverse muscles in the cervical region have as many as 200-300 muscle spindles per gram of muscle tissue. The muscle spindles are usually found in proximity to the slow twitch fibers.

-The muscle spindles contain 3-8 muscle fibers which are also known as intrafusal muscle fibers. These intrafusal muscle fibers are parallel to the normal skeletal musculature (extrafusal muscle fibers). When the extrafusal muscle fibers contract, tension in that part of the muscle spindle that does not contract decreases. When the muscle is stretched, tension in both intrafusal and extrafusal muscle fibers is increased. The center of the muscle spindle is sensory, not contractile, and harbors many nuclei.

-Golgi tendon organs consist of a large myelinated nerve fiber (12-18 micrometers in diameter) which terminate with a spray of fine endings between bundles of the collagenous fibers of tendons usually near the musculotendinous junction. To understand their function, it is essential to recognize the fact that they are arranged in series with the extrafusal muscle fibers. Whether the muscle contracts or is stretched, the tendon organ will be stimulated, since in both cases the tension of the tendon organ will increase. In other words the tendon organs are tension recorders, while the muscle spindles give information about the length of the muscle. The muscle spindles also give information about the speed of stretch. For example, if you hold a melon in your hand at the market, and they cost \$0.39, but one looks bigger, you test the weight by the tension on the spindle cells in the biceps. If you pick up something that looks like a melon, but it is actually a steel ball painted to look like a melon and you misjudge the weight, you will stretch the biceps so fast that you cannot accommodate to it. When that happens the biceps muscle will contract and it will look like you want to stretch it because the elbow is flexed. If that is a problem and you cannot straighten the arm, if you bring the muscle back to its original position (shorten the muscle by flexing the elbow), then spread your fingers on the biceps belly on the spindles, with inspiration, 30-40 seconds (strain-counterstrain). After that, you should be able to stretch your elbow out in normal fashion.

-The myotonic reflex arc of the phasic reflex depends upon a muscle spindle with intrafusal fibers which contract due to stimulation by the gamma-1-neurons. In this fashion, the central portion of the muscle spindle (the non-contractile, central "sensory" portion) is stretched which in turn stimulates the spiral endings of the Ia-fibers which surround this central "sensory" portion. This stimulation is responsible for the elicitation of a specific automatic myotonic reflex, in which the phasic motoneurons of the alpha I fibers are stimulated via afferent II-fibers along with their direct reflex collaterals thus causing contraction of the

muscles involved. The gamma-1 firing then eventually causes a decrease in the length of the highly sensitive receptors in the central portion of the muscle spindle. The length of the muscle spindle and therefore the entire muscle tends to be kept constant automatically via the phasic myotonic reflex. The strength of this reflex depends on the strength of the external force as well as the firing rate of the gamma-1 fibers. The intrafusal muscle fibers of the slender muscle spindle contract as a result of the influence of the tonic gamma-2 fibers. When the secondary sensory endings located on the intrafusal muscle fibers change their length due to external stretch these secondary endings send impulses to the ventral horn cells of type alpha-2 via afferent type II fibers and associated multisynaptic pathways. These alpha-2 motorneurons cause the slow postural musculature to contract; the length of these postural muscles is maintained as long as the spindle is kept in a certain contraction state via the gamma-2 neurons. In addition to this tonic stretch reflex, the stretch receptors of the golgi tendon organs take part in the regulation of muscular tension. These golgi organs are located at the junction between muscles and tendons. Rapidly conducting I-b fibers lead from these golgi tendon tension receptors to the spinal cord causing inhibition via several interneurons. They act on both the alpha-2 neurons thereby inhibiting of postural musculature which results from the tonic stretch reflex and also the motorneurons of the alpha-1 fibers and their respective fibers for the phasic extensor motions. This crossed inhibition reflex together with the extensor reflex (which originates from secondary endings) regulates the muscular tension even when it is under the influence of external stretching forces. In addition to impulses from the tendon organs, there is another mechanism that tends to limit the activity of the excited motorneurons, the so-called recurrent or Renshaw inhibition. When a motorneuron fires impulses, these will pass via its recurrent collaterals to Renshaw cells; these are neurons, short axons situated in the ventral horn, having an inhibitory effect on the motorneurons. The Renshaw cells, as with many other interneurons in the cord, are subjected to supraspinal control, for example from the the cerebellum and the mesencephalic reticular formation.

-Schmitt developed gamma 1 and gamma 2 muscle testing. Most of the time you are doing doctor initiated muscle testing, but sometimes there is patient initiated muscle testing response. Doctor initiated produces effects that are influenced by dural involvement. Patient initiated muscle testing produces effects that are supraspinal in character, indicating some type of cranial fault or possibly response from the cerebrum and cerebellum.

-"Empirical Approaches to the Validation of Spinal Manipulation", from the Michigan State College of Human Medicine in Lansing, Michigan. Gamma 2 neurons reflect the normal regulation of the muscle tension. Gamma 1 reflects the influence on muscle length.

-The golgi tendon organs are located near the musculotendinous junction. To understand their function it is important to recognize that they are arranged in a series with the extrafusal muscle fibers so that whether the muscle is stretched or contracts, the tendon organ will be stimulated. In contraction, the extrafusal muscle fibers have tension put on them, but the intrafusal muscle fibers have reduced tension, whereas when the muscle is stretched, both the extrafusal and intrafusal muscle fibers will be conscious of the increased tension.

-Muscle testing can be doctor initiated or patient initiated. Work from the Los Angeles College of Chiropractic: used doctor and patient initiated muscle testing. They used a mechanical device and there was increased statistical evidence that there was more uniformity with patient initiated muscle testing than with doctor initiated muscle testing, but both yielded fairly good results.

-The discussion to follow will focus on patient initiated muscle testing. RMA = repeated muscle activation. This is performed by the patient only.

-Testing of the abdominal muscles in the standard fashion, either seated or standing, will often test strong. A stretch of the muscle may weaken the abdominal, a contraction may weaken the abdominal (Travell vs. Jones). RMA is neither of these conditions.

-RMA is where the patient does his own muscle contraction. For example, in the case of the abdominal, have the patient bend forward 10 times, then the abdominal muscle may weaken. GJG notes a high percentage of this finding, along with left and right rotation weakening that was previously intact (strong).

-This came about from one particular patient. The patient injured himself moving and experienced double vision. He did not respond to other conservative treatment, so he saw GJG. After cranial technique, his double vision had improved. 2-3 months after that problem cleared up, he began having trouble with his right knee with an increasing genu valgum on the right which again did not respond to other conservative treatment, so he again saw GJG. GJG expected to find increased tension on the lateral side of the knee and decreased tension on the medial side of the knee due to the positioning, but this did not show. The patient did not respond and was getting worse to the point of needing a cane. It was getting difficult to muscle test due to the pain. X-rays were negative. There was no pain when he stood or sat, only when he moved. GJG had the patient move his own muscles and then tested to see what would happen with continued movement of the muscles. To the surprise of GJG, the only muscle that weakened was the tensor fascia lata, which was exactly opposite of the scenario that he had created in his mind (the genu valgum), one would have expected the opposite to be true (normal or hypertonic tensor fascia lata). He theorized that the body knows its weak, but when he had the minor fall (initial injury while moving), maybe he injured the tensor fascia lata. Flexion and extension weakened only the tensor fascia lata, not the quadricep,

piriformis, popliteus, sartorius, gracilis. GJG performed origin-insertion on the tensor fascia lata with immediate improvement in normal gait and lack of pain. This required a couple of repetitions, on another treatment, he showed the pattern on the sartorius.

-The origin-insertion treatment on the tensor fascia lata was effective, but had a tendency to recur. GJG tried various nutrients, a non-heat processed veal bone, choline. The patient responded, but then would deteriorate. GJG felt there was a nutritional need that he couldn't identify. The only thing that seemed to help was the veal bone, but it did not last.

-The golgi tendon organ and muscle spindle cells block nociceptor input into the spinal cord, directly and indirectly. Pain (nociceptor input) is blocked by mechanoreceptor input. Therefore, if there is abnormal joint motion, normal joint proprioception is lost and this results in a decrease in the background mechanoreceptor activity which is necessary to maintain a minimal threshold of pain. When the pain threshold is decreased the patient may perceive a sensation that is normally not painful as painful. This perpetuates the problem.

-90% of the patients who showed the RMA pattern had a cerebellar involvement (simple thumb TL to C1 or the occiput) and many showed evidence for an occipital or spinal fixation. Many showed weakness of the extensor muscles which are basically cerebellar involved. Most of them showed a change with activation of the TMJ.

-Muscle testing of the gluteus medius can be accomplished side-lying (after Kendall and Kendall), in the supine position with straight leg abduction and a neutral toe (after Beardall), or in the standing position with leg abduction. If strong, have the patient activate the gluteus medius (RMA, repeated muscle activation) 10 times by abducting the leg in the standing position, then retest the gluteus medius in the standing position, it will weaken in the RMA pattern. This responds to origin-insertion technique of the gluteus medius. This is true for any muscles.

-Possible explanation for this is the relationship between the intrafusal and extrafusal muscle fibers. There is a definite difference between a regular muscle test and the RMA. Duke University has done some work that leads to the conclusion that a lot of athletic injuries are due to microavulsion. Microavulsion represents the random effect of trauma (often unremembered) and the need for origin-insertion. The usual treatment was pressure on the spindle cell towards the belly of the muscle and on the golgi tendon organ towards its insertion, and the addition of non-heat processed veal bone did not suffice. The addition of choline was "spotty" until GJG figured out that it was the golgi tendon avulsion changed the logistics of the availability of acetylcholine.

-The Journal of Nutrition, 1954, Holve and Copeland, Alabama PolyTechnical Institute: "One function of vitamin E is to bring about the synthesis of acetylcholine from choline and acetate.

Pantothenic acid is also involved. A deficiency of choline as well as a deficiency of vitamin E leads to muscular dystrophy. Rabbits given choline deficient diets developed muscular dystrophy between the 7th and 100th day. Symptoms were identical to dystrophy produced by vitamin E deficient diet. When choline was fed in the diet, all signs of muscle weakness subsided in 4 days. The kind of disorder produced by choline deficiency is more like that seen in humans with muscular dystrophy. In human muscular dystrophy there is usually no evidence of severe liver damage."

-The Archives of Pediatrics, Vol. 49, 1949: "25 muscular dystrophy children treated with fresh wheat germ oil, B complex, and C complex all improved, one completely.

-The Internal Record of Medicine and General Practice Clinics, February 1954, Martin: "Complete cure of muscular dystrophy with all natural food substances. Whole grain cereals, raw certified milk, fresh raw fruits, vegetables, eggs, fish, meat, and cheese. Cheese preferably from raw milk and raw cream as well as the use of vitamin E."

-The oil form and the dry form of vitamin E are equally effective GJG's experience. The presence or absence of selenium doesn't seem to be a factor, but GJG thinks that since selenium is a co-factor for vitamin E, he uses that form.

-Scientific American, April 1982: "Uptake and conversion of choline is important. Choline in the extracellular fluid of the brain is taken up by the terminal of the cholinergic neuron and is converted into acetylcholine by the action of vitamin E. As acetylcholine is released into the synaptic cleft when the neuron fires, the acetylcholine may interact with a receptor and thereby transmit a signal to the postsynaptic cells. Alternately, the neurotransmitter may be converted back into choline which may be then again taken up by the presynaptic terminal and may enter the extracellular fluid and the bloodstream."

-1984 Applied Kinesiology Research Manual: "If you pick up a newspaper you'll see many advertisements for Dr. so and so's quick weight loss clinic or other rapid weight loss establishments. You seldom see Dr. so and so's quick weight gain clinic. In general there are more lazy people than there are energetic people, although all of us know people who are the exception to this rule. So it would seem reasonable that people in our culture and population have nervous systems that are prejudiced towards the eat and get fat parasympathetic system as opposed to the fight or flee, slim and trim sympathetic nervous system. This is a general observation. We all know people who have trouble gaining weight despite adequate caloric intake, but this is the exception. The preponderance of the population are in the other area where weight loss is a desirable goal and certainly there are more books on how to lose weight than there are texts that describe how to gain weight. Certainly, the evidence is apparent that there are more people who are lazy than are energetic. Since these facts are self evident, there must be a

reason for this evidence. The chemical nature of the transmitter at the neural junction outside the central nervous system is well known. At the neuromuscular junction, release of acetylcholine by motor neurons stimulate the endplate of the membrane of the muscle fiber. Acetylcholine is release to all and at all autonomic ganglia by the preganglionic neurons and is the transmitter of all parasympathetic cholinergic and some sympathetic adrenergic neural effector junctions. For the rest of the sympathetic junctions, the neurotransmitter is noradrenalin. Therefore, all preganglionic neurons of both adrenergic and cholinergic systems require acetylcholine and all postganglionic neurons of the cholinergic system requires acetylcholine, and even some postganglionic adrenergic neurons use acetylcholine. Therefore the body is prejudiced towards the eat and get fat side of the nervous system and three times as much choline is needed as is adrenalin. If the adrenergic nervous system is deficient in neurotransmitters at the preganglionic site, sources of adrenal material will produce profound weakness of these muscles if they are found strong in the clear, instead of producing strength in the muscles, or if stenghtened by TL of any of the 5 factors, adrenal material placed on the lingual receptors produced weakness of the sartorius/gracilis/posterior tibial. The sartorius and gracilis muscles in these patients were therefore weakened by sources of Drenamin, Drenatrophin, Stereotrophic Adrenal Extracts, and other adrenal support supplements available, by greatly aided by choline."

-The key to this discussion is not the choline that is necessarily needed, what is needed is acetylcholine and many times it is the lack of availability of vitamin E (one of the best antioxidants) to synthesize the acetylcholine combination. Recall the Journal of Nutrition reference above, that "the function of vitamin E is to bring about the synthesis of acetylcholine from acetate and choline, pantothenic acid is sometimes involved." Sometimes the patient needs a source of vitamin B. The dry form of E or wheat germ oil works well.

-The next time you see a patient whose head is not level and you've tested the anterior neck flexors, and against the 5 IVF factors, and you've done everything you know of to examine occipital lesions, cervical fixations, EID, BID, aerobic, anaerobic, etc., simply test the anterior neck flexors which are strong, have the patient turn their head to the left to activate the right SCM 10 times may weaken the right SCM. May find this right SCM weak with RMA with the head LOW on the right, even though this seems paradoxical. When the body thinks that the muscle is weak, the body tightens the muscle and that's why the head goes down on the weak side, a kind of stupid body wisdom.

-RMA indicates that there is not enough available acetylcholine im the presence of a microavulsion.

-It is the acetylcholine that is in short supply and this can be shown the following way. Have the patient turn their head to the

left and then you bring it back to neutral. This will not weaken the right SCM. Then have the patient flex and extend the wrist 10 times, then have the patient turn their head to the left and you bring it back to neutral, and now that right SCM will test weak. This shows that it is the use of acetylcholine by the wrist motion and then the acetylcholine is in short supply for the SCM test. This is induced by the microavulsion and requires the strong heavy pressure at the origin-insertion, just as GJG did back in 1964. GJG thinks this is a function of the cerebellum.

-Quote from the paper that GJG presented at the Winter 1994 ICAK meeting: "The neuronal circuitry that is found in the cerebellar cortex is consistent with the notion that it may function as a recognition machine. Preliminary recognition processes are also carried out at the points of convergence of and onto the neurons containing the fibers input to the cerebellum. The descending fibers contributing to the cortico-ponto-cerebellar pathways are intermingled with the descending fibers of the corticospinal system. Presumably, therefore, the cells of origin of these two pathways in the cerebellar cortex also lie close together. Accordingly, while we don't know the precise nature of the signals passing in the cortico-ponto-cerebellar pathways, it seems reasonable to suppose that this pathway responds and reports to the cerebellum something of the "intentions" that are formulated in the cerebral cortex and are thus conveyed to the motor system in the corticospinal tract. The cerebellum is thus in a position to invite a comparison between the state of affairs as reported by the peripheral receptors and a desired state as formulated in the cerebral cortex. It receives information from golgi tendon organs telling it what forces are being made by various muscles and the information from other receptors that may tell it about the consequences in terms of interaction between the body and its environment that follow any particular pattern of motor command. In other words, GJG feels that there is a failure of feedback that comes from the microavulsion and that has to be mechanically corrected in the presence of adequate amounts of natural sources of vitamin E."

-GJG explored a relationship between the calcium sodium potassium pump and the nernst potentials that Guyton talks about in his physiology sections on neuromuscular transmission and acetylcholine. There does not seem to be a relationship between the RMA and the calcium sodium potassium pump. It is more related to vitamin E and the synthesis of acetylcholine.

-Walking and Limping, Ducroquet, Lippincot Book: Section where the beginning of walking is discussed. "It is the gluteus medius that maintains the relative horizontality of the pelvis. The lateral abdominal muscles on the opposite side act with the gluteus medius in close synergy. It's this action performed by these two muscular groups that permits the harmonious transfer at the thoracic center of gravity in the frontal view. There are instances of weakness of the gluteus medius where the opposite abdominal will preserve in

part the pelvic horizontality in the body action of suspension. In normal walking, the lateral inclination has two purposes, transfer of the thoracic center of gravity laterally, and reinforcement of the action of the opposite lateral abdominal muscle by the separation of the pelvic and thoracic insertions."

-Sometimes the most common thing you'll see will be in people who have differences in blood pressure sitting, standing, and lying, in addition to the adrenal effect. Sometimes you'll see a patient after they have had the "flu" where they say they are so tired that they don't want to get up, but you don't find the normal adrenal situation with the blood pressure dropping, pupils dilating, etc., yet one of the reasons they feel so badly is that the normal action of the gluteus medius and opposite lateral abdominal is not working and the patient feels as though they are not getting around well and they have to work too hard just to stand up and walk. They need the RMA pattern checked, origin-insertion technique, and a source of vitamin E (wheat germ oil or dry E). Temporary value comes from veal bone and choline, but E is for the long term. In our present society with all the sources of the wrong types of fats and the emphasis on reducing fats, the few sources of vitamin E now become even more meager and more wide spread in its deficiency.

-Try to show the RMA pattern in the abdominal muscle of a patient that does abdominal crunches for exercise. When the activate their abdominal muscles, they then test weak.

-European Chiropractic Union, Fred Lee, 1971: "Look at this walker, he is not lifting his body with extension of the foot, but now look at the same walker from behind. With each step his pelvis makes an excursion towards the side of the carrying leg. This sideways movement of the pelvis changes the trochanteric angle of incidence on the side on which the carrying step is made. The angle becomes more acute, therefore, the pelvis is lifted up on the respective side. The muscle, gluteus medius, stabilizes the entire ilium at this second at the level of the carrying leg, so now the inclined pelvis should come back to the horizontal and higher level. Thus the other leg, the swinging leg is automatically lifted over the ground. The effect of gravity is displaced with each step. The oscillation of the body upward and downward while walking is therefore the result of the alteration of the trochanteric angle of incidence and the work of the gluteus medius. (GJG adds to this the opposite lateral abdominals.) The normal stepping forward, the sacrum is pulled upward by the sacrospinalis on the forward stepping side, so that the scissor-like sacroiliac articulation closes at the top. If the torsion is blocked on this forward stepping side, the sacrospinalis nevertheless contracts rhythmically with each step. its contraction reduces its own length and the spine must give way on the other side, in this instance, the left side. This is the reason for the painful contracted psoas, it's partly antagonistic on the left side. The gluteus medius on the right side must provide help by contracting more than normally and also becomes painful.

When the gluteus medius fails, for example on the right side, the stabilization of the pelvis in the horizontal plane also fails when the left foot swings forward. The oscillations of the pelvis for the purpose of rhythmic change of the trochanteric angle of incidence continues to exist when movement of the inward rotators at the time of right step forward pulls the pelvis sideways at the same movement time towards that side. When the right gluteus medius is paralyzed, the pelvis is not lifted according to the trochanteric angle of incidence. The left leg has no freedom to swing forward. When the gluteus medius is paralyzed, the whole pelvis is subjected to incorrect rhythmical movements, the spine bends in the direction of the paralyzed gluteus medius, or the weakened one."

-It is interesting to note how many gluteus medius weaknesses you will find using the RMA pattern.

-Hiatal hernia diagnosis: TL with the fingers together the same way that you do for an adhesion complex, using the neck flexors as the indicator muscle. Challenge by pressing upward and testing the pectoralis major clavicular. Treatment is a pulling down coincident with expiration, balance the crura of the diaphragm by balancing the psoas muscles, and they generally need hydrochloric acid and okra pepsin. Check the psoas against the the RMA pattern.

-Illi: "We have muscles which rotate the leg inward (inward rotators) and we have muscles which rotate the leg outward (outward rotators). The relation of the strength of the outward and inward rotators is 155:50. When a person steps forward, the inward rotators normally rotate the leg medially as a muscle bundle acting in antagonism. Therefore the ilium rotates backwards on this side. At the same time the weight bearing leg is rotated outward on the left by the outward rotators, but now the foot is stabilized on the ground and therefore acts as an axis so the ilium rotates forward in its turn. Throughout this you are looking at x-ray motion pictures of the spine while walking. Now you see the consequences correctly. With each step forward the ilium makes a countertorsion backward and vice versa when the leg carrying the body is behind and the ilium turns forward on its side. This reduces to a minimum the torsion made rhythmically by the pelvis. Note how the trochanter leads with each step and the projection becomes smaller and smaller. That lead becomes smaller and smaller following the rhythmical movement forward and backward. The sacroiliac articulation naturally becomes involved. It lies between the immobile spine and the mobile femur heads. The point of the triangle of the sacrum is below and the base above. Certainly there remains only two more movements that have to be damped down. One is the rhythmic movements of the pelvis to and fro, the complication of which is the fifth lumbar vertebra which are not suitable. It's clear thanks to the perfect work of the inward rotators and gluteus medius, the pelvis remains horizontal for the major portion of time in its rhythm with spine will not be

involved in the false movement. This means that the compensation of walking is affected in full by the sacroiliac articulations."

-RMA (repeated muscle activation) involves testing the muscle after the patient has contracted it 10 times. The stupid body wisdom reveals itself in that the muscle is injured and actually weak, but the body tightens up the muscle. You will often find the sternocleidomastoid weak with RMA on the low occiput side. Treatment is origin-insertion and a form of vitamin E to stabilize the acetylcholine.

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REPEATED MUSCLE ACTIVATION

-While GJG was lecturing in Vail, he showed how repeated muscle activation (RMA) would weaken the abdominal muscle. Someone at that time asked the question whether the abdominal muscle weakness upon RMA showed on the TS Line. The abdominal muscle does not show on the TS Line until after the patient activates the abdominal muscle 10 times.

-New way to look at postural analysis. For example, a high occiput would be the weak muscle side; but when you look at it in the light of repeated muscle activation, the high side is the strong side and the low side (which would ordinarily be the contracted side) would be the weak side. This is why we call it "stupid body wisdom". The TS Line indicator of the muscle only shows up after the muscle test.

-Why are these muscles "out of the loop", why doesn't the organ activity show up (not necessarily obligatory). This raised a lot of conjecture. We have finally made some observation in this regard.

-In the case of a right low occiput, RMA by having the patient turn their head to the left and back to neutral would then reveal the weakness. However, having the patient turn their head to the left and then the doctor moves the head back to neutral (rather than the patient), there would be no appropriate weakness in that case. This indicates a lack of distribution of acetylcholine in the body, a lack of fluid in the body for the distribution of interstitial tissue fluid, acetylcholine levels, or a lack of the synthesizing capability of the wheat germ oil fraction, or fundamentally a lack of choline. The remaining perplexing question that persisted was how come those muscles were "out of the loop" and how come this is so common.

-Memory has been studied extensively. A spanish neuroanatomist outlined a general theory of memory. Ramon Cajal suggested that learning leaves its mark by making connections between neurons (1893). "The Organization of Behavior", Hebb (canadian psychologist) showed how this might occur. If during a learning experience the two neurons tend to be active simultaneously, he suggested, the synapse between them might be strengthened linking the cells into the same circuit. Dr. Hebb used this hypothetical mechanism, which has now come to be called the Hebb synapse, as a building block erecting an elaborate learning theory in which neurons are connected to form neural assemblies which are then integrated into stronger and larger structure called phase sequences. The nomenclature of Hebb's theory has largely fallen by the wayside, much like Melzack-Wall gate theory of pain. The nomenclature has changed, but the effect remains the same. He provided a guiding light about emerging patterns of neurons that can be used as symbols just as patterns of binary digits in a computer can stand for the menagerie of things and ideas that

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constitute our world. When you talk about, for example, the taste of an apple, suppose that when one experiences the taste of an apple, a brain cell or neuron fires sending a signal to the next neuron in line; when one sees that color red, another neuron fires creating a separate circuit (the apple is red); if the two circuits fire in rapid sequence, links between two of the synapses are reinforced in a larger circuit of the concept "apple".

-There is a neurotransmitter molecule that is called NMDA after the chemical n-methyldeaspartate. It's quite striking that brain cells that have been damaged are now known to be rich in an unusual molecule called the NMDA receptor.

-A retired postal worker from California underwent coronary bypass surgery and then suffered a sudden loss of blood to the brain. He survived with most of his faculties intact, but the patient, known in the Annals of Neurology as R.B., lost the ability to form memories. He could remember things that had past, but nothing since the neurovascular accident. When R.B. died in 1983, his last 5 years was an amnesiac blur, he couldn't remember anything. Scientists at the VA Medical Center and Salk Institute in California were allowed to study his brain. The amnesia was not caused by massive or even moderate brain damage, but rather a small, well defined lesion in the hippocampus, a part of the temporal lobe believed to be involved in storing memories. The brain cells that had been damaged were found to be rich in an unusual molecule called the NMDA receptor after the n-methyldeaspartate chemical that is used to detect it. Since 1986, scientists have been accumulating evidence that this special receptor is a key component in the brain's memory circuit turning on the biochemical reactions that lead to the encoding of memories. It appears to be the gatekeeper that allows calcium flow to the brain cells strengthening the network of neural connections that are believed to constitute memory.

-This is one of the hottest theories in the neural sciences. It is a beautiful little switch. In the last two years, the evidence that the NMDA receptor is critical to learning is so compelling a theory that scientists with competing theories of how the brain stores memory are finding something in common however divergent the details of the mechanism they propose, and they are revising them to include this type of receptor. In fact, the discovery of the receptor's unique properties has helped reawaken interest in the whole field of learning and memory holding out that higher brain functions may possibly be explained through biology.

-The apple example: when one tastes the apple, a neuron fires and sends the signal to the next neuron in line. When one sees the color red, another neuron fires creating a separate circuit. If the two circuits fire in rapid sequence, links between the two synapses are reinforced into a larger circuit called the memory circuit and is connected with the concept "apple". The NMDA receptors on the neurons might be the key to this mechanism. If a neuron has been stimulated by a signal, the receptor springs open and now the receptor is primed for the second signal that causes calcium ions to flow into the

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neuron setting up and off reactions that strengthen synapses and thus the memory.

-Hebb wrote his book in 1949 and there was no evidence then that memory actually worked the way he thought it did. A breakthrough came in 1973 when Bliss reported that high frequency electrical stimulation increased the sensitivity of neuronal circuits. It could be shown that the hypothetical memory mechanism called Long Term Potentiation (LTP) worked by strengthening the synapse between neurons, then scientists would have evidence that this memory worked in the manner suggested by Hebb.

-McNaughton at the University of Colorado took another step towards this goal when he showed that LTP is more likely to occur when two converging neural pathways are stimulated at the same time. (Are you getting the idea that this has something to do with hologrammic?) He was trying to draw parallels between neurobiology and psychology. This was very suggestive. Suppose that one signal represented the taste of apple and the other the color red. Using long term potentiation, the brain might link them forming a new node in the associated memory network.

-Throughout the early 1980's, studies that scientists made of LTP seemingly ability to snap together chains of neurons existed. A number of researchers including Gustafson and Weigstrom at the University of Guttentberg in Sweden and Brown at the City of Hope Research Institute in California began compiling a growing body of evidence that these connections are made when the sending and receiving neurons are active at the same time. LTP was looking more and more like a manifestation of the head synapse. The discovery of the NMDA receptor has taken neural science even closer to understanding the chemical mechanisms of memory, testifying to the early science of Hebb.

-What has this to do with a muscle that is not in the loop, not on the TS Line, and you had to do repeated muscle activation to find it, and then when you found it, the TS Line would become active?

-Like cells anywhere in the body, brain cells or neurons communicate by exchanging molecules. The axon or transmitting end of one neuron releases molecules of neurotransmitters into a microscopic gap called the synapse. The opposite side of the divide of that synapse receptor molecules in the receiving neuron respond to the neurotransmitter by opening channels that let potassium and sodium ions into the cell. If enough of these positively charged ions accumulate, other channels that are sensitive to voltage are tripped open. More ions flood into the neuron causing it to fire sending its own signal to the next axonal cell in line.

-Neuroscientists believe that the brain stores memory by linking neurons to form loose circuitry by long term potentiation. Either ascending neurons must admit more neurotransmitters, or the receiving neurons must become more sensitive to the substances produced. In the 1970's, scientists found that they could turn up the synaptic volume controls by stimulating neural pathways in the hippocampus (where that patient described above lost his memory for a decade). High

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frequency bursts of electricity from then on the circuits would respond to electrons much more vigorously, thus many scientists believe that is what happens when memory is recorded.

-By the early 1980's, scientists had discovered that whatever chemical reactions caused the effect, long term potentiation (LTP) was triggered by calcium. This is where the NMDA receptor comes in. While the neuron's other receptors let potassium and sodium into the cell, the NMDA also lets in calcium ions. At the University of Bristol, Coleridge showed that by chemically blocking receptors, he could prevent the induction of long term potentiation. Three years later a team of British and American scientists made the strongest link yet between the NMDA receptor and memory. Morris et al at the University of St. Andrews along with Lynch et al at the University of California at Irvine showed that blocking the receptors for NMDA actually interfered with spatial learning in rats. Scientists are also finding that NMDA receptors may be active during gestation and early infancy when the brain's rough circuitry is being laid. Singer of the Max Planck Institute for Brain Research in Frankfurt has shown that blocking receptors interfere with formation of visual pathways in kittens. He said that it is an attractive idea to think you have one mechanism for both learning and development. Seavers of Yale agreed with this.

-Scientists are working on a more microscopic level in discovering physiological details that might explain how the receptor switches on the reactions that cause long term potentiation and memory formation.

-Normally a magnesium ion blocks the receptor's calcium channel where an incoming signal stimulates the neuron and the change in voltage causes the ion to pop out. Now the receptor's primed to respond to a second signal. When the neurotransmitter crosses the synapse and hits the receptor, the channel is already open, calcium flows into the cell and long term potentiation takes place. The first pulse cocks the trigger and the second pulse fires the gun.

-In 1993 at the Annual Convention for the Society for Neuroscience, Larson, a post-doctoral researcher in Lynch's lab at the University of California at Irvine, received an award for his work showing that long term potentiation is especially effective when the second pulse follows the first pulse by 200 milliseconds. He also found that the effect is even stronger if 10 pairs of these 200 millisecond impulses are applied every 5 seconds. The result is a frequency that corresponds to the theta rhythm, a brain wave that some scientists believe is involved in learning. Larson found that chemically blocking the NMDA receptor suppresses the long term potentiation. It was even more exciting that Larson had linked long term potentiation to the natural brain rhythm. It is even more suggestive that the theta rhythm has been shown to emanate from rat's hippocampus when it was exploring and gathering information about its surroundings. We have found the natural rhythm that makes long term potentiation, the theta rhythm, the natural, indigenous rhythm of the hippocampus. While the NMDA receptor and memory continues to grow

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stronger, it is still not known where the calcium stimulates the neural connections by causing more glutamate release or by making the receiving neuron more responsive to the molecule. Many researchers believe that calcium leads not only to the strengthening of pre-existing synapses, but to the formation of new ones as well. Calcium is also believed to trigger the brain's damage that occurs during seizures when glutamate floods the synapses and overstimulates the NMDA receptors. Sometimes, some believe, this mechanism may be involved in some degenerative disorders like Alzheimer's or possibly Huntington's.

-There are a lot of questions to be answered, but the main point to be shown is that there are two signals, one associated with the pattern which is apparently out of the loop, and another way to make the body remember it. This is what we will be talking about.

-As the scientists continue to study the NMDA receptors, they are finding it is capable of even subtler interactions. Recent evidence indicates that its sensitivity changes depending upon how much of the amino acid glycine it's exposed to. Cottman states that now you potentially got a way to turn the receptor up and down. It seems that the NMDA receptor molecule acts as a two way switch, but is equipped with a volume control as well.

-All of this has come because GJG couldn't understand why the RMA muscles were "not in the loop", and trying to investigate why they are not in the loop.

-This background information came from: Carl Pribram, "Brain and Perception, Holonomy and Structure and Figural Processing", Stanford University, Rarford University, in collaboration with others, published by the Lawrence Erb and Associates Publishers, Hillsdale, NJ and London.

-The Hebb concept is controversial. The old concept of the Hebbian model of learning is supposed to ignore the extracellular context of communication. The newer people discussing Hebb state that it is the most oversold concept in neuroscience. A non-Hebbian theory is related to nitric oxide and its relationship to long term potentiation. GJG is aware of all this, but the nitty gritty and fine points of Hebbian or non-Hebbian is not necessarily significant except to know that there may be differences of opinion. There is a great deal of evidence that the Hebb bandwagon people are trying to incorporate some of Hebb's ideas in with their own.

-GJG is also aware of the work of Richard Bartlett, D.C. of Montana. This is not necessarily any of his work, some of the ideas may coincide with the method and the description is really based upon the ideas of long term potentiation and the concepts of Pribram, and some of the observations made of encoded memory.

-Recommend that you reread the suture cranial faults and glabella fault section in Applied Kinesiology, Volume 2, Head, Neck, and Pain Dysfunction, The Stomatognathic System, by David Walther, co-author Robert Ricketts, page 190-192, and page 171-173.

-Synaptic Function, edited by Eldman, Gall, and Collins, published by the Neuroscience Institute Publishing Co., a John Wiley

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and Sons Publication. This book was given to GJG by Dan Duffy, and on the front page, he said "George, there ought to be at least a half a page of useful information inside". It acutally amounted to a full page of information that was useful. This represents the newest information.

-Long term potentiation as a means of forming memory has been discussed. The cerebellum acts to "tone down" things. When you are learning to drive a stick shift car, you are all over the place, Jerking about. The cerebellum smooths out all of those erratic motions. It is a toner-downer.

-1984 Applied Kinesiology Research manual, page 2, "The patterns of activity that Purkinje cells have, those that are firing, are fundamentally inhibitory in action and they are monosynaptically inhibiting the cells in either Deiters' nucleus or the intercerebellar nuclei. Eccles, another cerebellar researcher, states that the whole output of the cerebellum is transferred and transmitted to the central nervous system solely by turning down the background discharges to those nuclei, or negative signaling information. Therefore, as we stated before, the cerebellum is an error comparer, so to speak. It is a comparator; it compares the error, in other words, the standard error, from the fibers coming in 2.5 to 4 milliseconds in the case of the VSCT, 2.5 to 6 in the case of the DSCT and 18 to 25 milliseconds in the case of the ascending spinal olivary tract. The cerebellum is basically an inhibitor."

-Chapter 17 of Synaptic Function, a Japanese researcher's abstract states "The long term depression induced in synaptic transmission from parallel fibers to Purkinje cells in the cerebellar cortex appears to be the physiological counterpart of memory in the cerebellum. Long term depression is induced after conjunctive activation of parallel fibers and climbing fibers by a variety of experimental arrangements."

-What the cerebellum does is exactly the opposite of what the cerebrum does. One causes long term potentiation and the same stimulus causes long term depression. That is how the cerebellum remembers as opposed to how the cerebrum remembers.

-The end of Chapter 17 states "It now seems evident that long term depression represents a memory device when used in the cerebellar neural circuit and plays a key role in the adaptive control functions of the cerebellum. In general, I've discussed a recent monograph by Ito in 1984 that the experimental examination of these possibilities will fruitfully offer a better understanding of the mechanisms and implications of synaptic plasticity of the central nervous system's function."

-Concept of hologrammic or holonomic. Pribram says what's important for the holonomic brain theory is the finding that the activation of interacting polarizations occurs in parallel, is distributed and discontinuous. In the holonomic brain theory, such parallel distributed and discontinuous processing is described as non-local and cooperative and is represented by a "hilvert's space".

-Fundamentally, we have two things. There is a stimulus that

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causes long term depression of the cerebellum and long term potentiation of the cerebrum. These are the two phases of the hologram.

-At the San Francisco meeting, GJG used Sam Yanuck in the demonstration of Kabat's concept of a cervical disc producing sciatic pain. You can provoke a weakness of a posterior tibial (for example) by reproducing the type of injury that Kabat said was associated with the cases he had operated on for lumbar disc and who had a return of the sciatic pain and disability. Kabat's idea was that he would reproduce the original injury. So if the injury was at the front of the head, he would strike a sharp blow to the frontal bone. If it came from the back or the side, he'd have a short sharp strike to the cranium in that area, enough to put a stimulus in, but not create a bruise. Kabat's idea is using wrist extensors in an indication of cervical disc involvement. Test the wrist extensor, then use the sharp blow to the skull, and retest the wrist extensors. In Sam Yanuck's case, there was a weakening of the wrist extensors after a blow to the vertex. GJG then identified that C5 was anterior via challenge and the adjustment was made down the facet line of C5 with the patient in the prone position. Retest of the Kabat technique with a blow to the vertex no longer produced the weakness. The tap on the vertex produced weakness of the wrist extensors and posterior tibial in Sam Yanuck's case. Slight extension of the head performed by Sam would remove the weakness. Cervical compression would re-establish the weakness. GJG tried to show that you can make the presence of a hidden cervical disc reveal itself in that manner. Sometimes you need to use nutrition for the hidden cervical disc adjustment in the form of superoxide dismutase (SOD) to potentiate the response. It is like recreating the scene of the crime, you try to reproduce the original injury that the patient experienced.

-GJG patient who had experienced a severe whiplash who hadn't responded to one and half years of varied treatment. The blow on the top of the head weakened the wrist extensors, posterior tibial, and anterior tibial on one side. The necessary corrections were made and then the blow to the head no longer produced weakness. The patient then remarked that he was not able to completely straighten one of his knees for a number of years and after the treatment, he stated that he could now straighten his knee, but he said that he was able to straighten his knee after the tap to the head (diagnostic test) and not the cervical adjustment. The patient said that the tap may have been diagnostic, but it was therapeutic for him. Due to this serendipitous observation, GJG tried to find out what that was.

-There are six fontanels at birth, at the corners of the parietal bones. The lower ones coalesce and firm up within about 2 or 3 months. The posterior fontanel closes at one year. The anterior fontanel stays open until the second year. If you observe children when they are lying down as opposed to when you hold them up, the anterior fontanel while it is still patent can be very revealing with regards to intracranial pressure. Normally the pressure increase, with respect to atmospheric pressure, when the infant is horizontal,

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and the anterior fontanel will be kind of convex. However, in the vertical position, the intracranial pressure is normally subatmospheric, and the fontanel will be concave. If there is some type of intracranial pressure that is raised and is pathological, when the infant is in the vertical position, the fontanel will be convex. There are a few exceptional circumstances where this does not apply, where the fontanel remains flat, but this is a good maneuver to determine intracranial pressure is normal when used as a part of the normal diagnostic procedure. GJG has observed his new grandson. When he began to walk, GJG noted that the anterior fontanel was convex in the vertical position. When he started to walk, the fontanel started to get flat. Perhaps this area is a key or gateway into that part of the brain which is related to the assumption of standing and walking positions.

-With this idea in mind, GJG started to investigate the area of the anterior fontanel. GJG found that it was not GV21 because it would not therapy localize in the average patient. Tapping the area had no effect. Closing the eyes with TL had no effect. When the patient performed cerebellar therapy localization (tapping the area repeatedly with the eyes closed), it was positive.

-When testing for encoded memory, you have the patient recall of the incident associated with an injury or accident, no muscles weaken. (If the muscles weaken with recall, this is the emotional neurovascular circuit.) Go ahead and fix whatever you find on the patient, do it as precisely as you can, and make sure that walking does not cause it to return. Have the patient recall the incident (accident or whatever the trauma was, emotional or physical), and now the body acts as if you didn't correct anything because when you touch the anterior fontanel area, it acts as if you haven't corrected what you just corrected. GJG thought that this was a therapeutic inroad to the cerebellum.

-Repeated muscle activation, muscles that weaken after 10 contractions, are not "in the loop", they do not show up on the TS Line until the patient performs the 10 contractions, then it shows up, "in the loop". Perhaps the anterior fontanel area (bregma) was a way of putting it into the loop. Have the patient TL bregma, and test the indicator for what you have just corrected. For example, if you just corrected an upper cervical fixation and have strong bilateral gluteus maximus muscles, have the patient TL bregma and then retest the bilateral gluteus maximus to see if they now reweaken. Tapping bregma helped some patients, but not all patients.

-GJG noted patients with glabella faults, breathing in through the nose had no effect, but breathing in through the mouth weakened them. In a glabella fault, the head is too long from front to back, and you want to increase its dimension from side to side, so to speak. GJG felt this had an effect on the sagittal suture. GJG noted on those patients in whom he would tap bregma and it would abolish the perception that something was not corrected. If GJG then compressed the sagittal suture, it acted as if it had been fixed again. GJG decided to spread the sagittal suture and then tap it

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vigorously 2-3 times. It does not seem to make a difference if you tap it 1, 2, or 3 times. On some difficult patients where it doesn't seem to disappear, he taps it 2-3 times, but one tap is usually enough. You must decompress the sagittal suture first for the tap to have an effect. The sagittal suture spread and tap acts as if you've put it into the memory bank and a lot of adjustments that were failing to hold seemed to hold better.

-There seems to be a relationship of this to magnesium, both magnesium ions and magnesium lactate seem to abolish this effect.

-This seems to be a cerebellar problem in that if you touch bregma, it does not therapy localize, but when the patient taps it with the eyes closed, there is a positive TL. This is an entrance into the memory pattern. We do temporal tap when people have biologically or culturally unacceptable habits (abuse of drugs, people, children, self, smoking, drinking, etc.). Temporal tap is used by tapping the TS Line saying "There is no need to (behavior)" on one side and "I get along fine without (behavior)" on the other side. This bypasses the mental filter. If you TL bregma, it abolishes any effect that the temporal tap has on causing muscle weakness (much the same as protruding the jaw forward negates the temporal tap).

-Everytime you make a structural correction, to make certain that it holds, it requires momentary spreading of the sagittal suture and tapping of bregma. The reason for this is related to Hebbian long term potentiation of the cerebral cortex and long term inhibition of the cerebellum. This is how the body remembers things.

-In a patient, not all corrections will be brought back by TL to the bregma. You may need to perform the sagittal suture spread and bregma tap after correction of an upper cervical fixation, but not for a Category I in the same patient.

-The same is true for nutritional corrections. For example, if you use wheat germ oil for RMA, place the wheat germ oil on the tongue and it negates the RMA, but TLing the bregma brings the RMA weakness back, even with the wheat germ oil on the tongue.

-GJG has only seen one patient where the sagittal suture had to be compressed, but this particular patient had a sagittal suture that was like a furrow.

-Whatever you correct, make sure that the muscle weakness is no longer present. Have the patient TL bregma and see if the previously corrected problem now returns. Spread the sagittal suture and tap bregma 1-3 times and now the indication that the correction was not made with TL of bregma is now gone.

-Formation of memory and long term potentiation involve the fact that most receptors involved in neural firing responding to neurotransmitters or to a change in voltage. NMDA receptor is unique in that it must first be stimulated by a voltage change and then by a neurotransmitter, in this case, glutamate. Normally a magnesium ion blocks the receptor's calcium channel. Though an incoming signal stimulates the neuron, the change of voltage causes the ion to pop out, and then the receptor is primed to respond to the second signal when the neurotransmitter crosses the synapse and hits the receptor,

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DETECTION OF THE "SLEEP" PATTERN IN THE "AWAKE" PATIENT AND THE
SEROTONERGIC NEURONAL RELATIONSHIP TO THE RETICULAR ACTIVATING
SYSTEM (RAS)

-Early in 1994, at a NutriWest sponsored meeting in Vail, Colorado, while attempting to demonstrate the apparent normal response of the abdominal muscles to ordinary methods of testing, GJG had the patient activate (contract) the muscles by their own effort. RMAPI (Repeated Muscle Activation Patient Induced) is where instead of the doctor testing the muscle, the patient contracts his own muscle ten times. RMAPI acronym that was coined was effective in demonstrating the profound weakness of the involvement of the abdominal muscles on this patient following ten abdominal crunches where the patient was asked to bend forward ten times. The question was asked from the alert audience, "did the TS Line show evidence of the abdominal weakness that was just demonstrated". Present observations indicate that the TS Line does not show this reaction until immediately after the ten efforts at contraction that the patient attempted. In other words, the TS Line indicator was not there before, and it would last for about 60 seconds afterward, and then it would go away. GJG tried to figure out why it was out of the loop. Repeated efforts to find the TS Line aberration resulted in the same response, no TS Line activity prior to activation of repeated muscle contractions induced by the patient but its presence to be found immediately following these contractions induced by the patient by at least ten repetitions. Attempts to TL any latent TS Line activity on these types of patients was also consistently negative until a chance observation regarding cross hand TL was made. In temporomandibular joint activity we frequently utilize cross hand TL of the bilateral TMJ's and it is part of the Primary Atlas Technique GJG has demonstrated at lecture in 1992 and 1993 years of instruction. The apparent lack of the TS Line knowledge of an aberrant RMAPI fault is interesting, it only shows when actively diagnosed by the RMAPI method. The lack of being in the loop has intrigued GJG as well as his partners and associates.

-The phenomenon of encoded memory and its related pattern has also remained an interesting development. At this point it appears as if as in the structural-chemical-psychological triangle, there is a memory pattern for each side of the triangle. The newly discovered Sagittal Spread Tap Technique seems to facilitate memory of the correction of the structural components once accomplished just as putting a disc into a computer slot, this allows the memory of the correction to take hold so to speak. They used to say and still do, "it helps the adjustment to hold". The simultaneous recollection of the encoded memory incident while performing the appropriate structural adjustment seems to hold true for the mental/psychological side of the triangle. Here again, two things are done (the hologram frequency analogy). The apparent correction of lesioned areas that have responded to appropriate correction frequently are disturbed by having the patient walk on a treadmill if available or simply walking

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-This tape will cover the functional hallucis limitus and AK gait problems, and postural complex general considerations.

-What I said previously at the Atlanta regional AK meeting was that people with chronic musculoskeletal pain often present with a complex clinical picture and it's a difficult thing to manage. A seldom thought of etiology has recently come to light involving the biomechanical functions of the foot and the remainder of the body. Minor and subtle and easy to overlook functional abnormalities, when repeated thousands of time a day in the course of normal ambulation need to be considered in order to effect successful management. The difficulty in clinical management has been to quantitatively evaluate these abnormalities so you can rule out an apparent abnormality from a true malfunction. Some new concepts concerning the effects of lower extremity malfunction on the rest of the body and especially these words, vice versa, will be described. It's for this reason that the material on the sacrum, including Illi's observations are included as well as the nuchal ligament interaction. Additional information on the femoral head with special attention to the iliacus is also included because of this interaction of the foot to the pelvis and vice versa. Some of that material on the femoral head you have on the last double tape.

-In the early fifties, Lawrence Jones, an orthopedist, tried to make an observation about the postural complex. The diagrammatic presentation he made consisted of two large concentric circles. You'll note that each circle both the inner and outer one constitutes a distinct but a related unit and together they form a series of serial shifts with a change in position at the bottom of each part of the circle which is communicated to the parts of the intermediate and distant superstructure. I.e., as above, below and as from the bottom up. The figures to the left are accompanied by ten matching captions on the right and in the center are these two skeletal figures that summarize the series of changes that are depicted in the circle and that's nerve tension for the inner series as you can see on the material that accompanies this tape, and nerve release for the outer one. The bottom figures of the serial distortion demonstrate the extremely important synchronized rotation of the foot and leg. This mechanism of angulated pressure will be analyzed later. The inner circle represents the unitary shift of the vertical segment of the lower extremity, the leg and the thigh, as exemplified by the patella and the knee joint movement as well, as you can see, the inward rotation. Now the point of all this is that it can occur from above to below as well as vice versa.

-RMAPI of the iliacus major and minor is a frequent structural cause and as you know from the last tape, requires origin and insertion technique and increased hydration/water intake and a source of wheat germ oil 185 mgs. three times a day. The pictures are self explanatory but one of the things that I say is that evidence is going to be presented that will correlate the fact that the synchronized rotary movements of the foot and leg cause corresponding changes in the pelvis and vice versa. The spinal column and its contents are effected and the spinal cord effecting the structural component is effected neurologically. It should be noted that the pelvis is mounted centrally on the hip joints when the mode of suspension is considered. Movement of the pelvis must be of a type corresponding to a wheel mounted on an axle. Now we're talking about a single wheel because there can be a forward movement in one position or a backward

for 20-30 strides. This also tends to disturb spinal length measurement even more than initial finding. Encoded memory patterns in this situation have been ruled out or do not apply, yet simple walking resets the subluxation-fixation postural fault, including cervical ROM and other standards. Yet the appropriate nutrient, usually an electron poisoning formula resets this structural correction and greatly changes the spinal length aberration. Rewalking does not induce return of faults. The patient is then advised to taste part of the capsule content and then continue full ingestion with the frequency determined by the doctor's experience and knowledge. In other words, give the patient some electron poisoning and then the walking does not screw them up. Why is that out of the loop and why does it require the use of encoded memory at the time of making a structural correction, or why does it require a nutrient that helps the body remember? GJG had his mind on the concept that the body was trying to remember if it had forgotten.

-In talking about the Sagittal Suture Spread Tap Technique, in 1949 Hebb wrote about this hypothesis concerning memory. In 1973, Bliss reported high frequency electrical bursts increased neural sensitivity, enhancing long term potentiation (LTP). Five years later McNaughton of Colorado University found that when converging neurons are stimulated at the same time long term potentiation takes place, which aids memory. Stimulation every five seconds by 200 millivolts pulse enhance LTP. The on-off action depends on calcium ions which in turn are stimulated by the amount of magnesium and glycine near the cell, thus a "turn-on" "turn off" and a "volume control". Cerebellar Potentiation of Long Term Memory is available from the Central Office of ICAK.

-The general consensus of opinion in regard to the postural (anti-gravity) muscles is that they are the slow twitch variety. These postural muscles are tonic as opposed to phasic. They are oxidative, slow fatigability with high capillary density and therefore are classified as "red" and most important when fatigued tend to shorten. They have a low myosin ATPase activity as opposed to the white phasic fast twitch glycolytic high activity in their short duration phasic activity. They have low capillary density and tend to weaken during functional disturbances. From Dvorak and Dvorak Manual Medicine 1991.

-To be able to read this material and the previous material it is obvious in the words of Richard Restak, The Modular Brain, 1994, that a "state of optimal cortical tone is necessary for the carrying out of all mental activities. This wakefulness depends on the reticular formation in the brain stem. This nerve network is about the size of your little finger deep in the brain stem, it is responsible for alert wakefulness". Wakefulness depends upon a vertically arranged two system network conducting information from outside in as well as from the cortex downward to the nerves and muscles of the body.

-The reticular activating system in the brain stem has its upper end in the posterior hypothalamus. The hypothalamus plays an important role in maintaining wakefulness at levels of visceral and

somatic stimulation which would not usually activate the cortex. The waking person with eyes closed will show an alpha rhythm of regular 10-14 per second brain waves. The American Scientist, Sept/Oct 1994, "Serotonin Motor Activity and Depression Related Disorder", Barry Jacobs of Princeton, describes much newer information on serotonin motor activity. In animal experiments it is evident that during REM sleep that serotonergic neuronal action potentials range from 5 per second in the active waking state down to zero per second during REM sleep. In other words, all of the serotonergic neurons turn off during REM sleep which accounts for 20-25% of the total sleep time. An ordinary night of sleep cycles is divided into a wake cycle, stage 1, 2, 3, 4 relatively deeper sleep.

-One of the fundamental patterns of REM sleep is paralysis of the major anti-gravity muscles of the body. This is achieved by inhibiting the neurons that control the tone of the body's slow twitch tonic red anti-gravity muscles. Every one has experienced a dream where they feel that a gorilla or shark is chasing them and they cannot move. That is not a dream, that is a fact that the serotonergic neurons are causing a paralysis of the major anti-gravity muscles.

-The activity of serotonin neurons is under negative feedback control in which the released serotonin molecules bind to the receptor on the releasing cell and inhibits the cell's activity. This is why serotonin precursors like L-tryptophane do not elevate the synaptic brain levels. Those neurons compensate by decreasing their activity by negative feedback. However if L-tryptophane is combined with low levels of a receptor blocking agent the concentration of serotonin can be increased. This is like the use of prozac, a mind altering drug that is so much in use today and so little understood. It is also possible that repeated muscle activity increases serotonin neuronal activity. Disturbances in muscle GTO-spindle cell activity may alter this beneficial activity of exercise.

-The discovery in 1993-1994 of the repeated muscle activation patient induced production of a profound muscle weakness on standard muscle testing was of great value in difficult cases. Technique applied to GTO and spindle cell activity based on a possible forgotten microavulsion was quick and therapeutically appropriate. The weakness patterns, many times of relatively strong abdominal muscles, appeared when the muscle was strongly contracted a minimum of ten repetitions. This diagnostic measure was valuable as mentioned earlier in difficult and problem cases. An interesting feature of these situations was the apparent absence of any TS Line activity, it only appeared following the ten repeated self induced muscle contractions. This TS Line activity quickly diminished in less than 60 seconds, and has remained, until recently, an enigmatic finding. The thought occurred in this regard, could the neuronal activity of the muscle in question be some way asleep, out of the loop, for full arousal by way of the reticular activating system (similar to the NEHT pattern we have found with the small intestine in the malabsorption syndrome). A key factor in the discovery of a "sleeping small intestine" was based on the chance observation of a difficult

migraine patient who showed no weakness of the quadriceps muscles or of the abdominals until she closed her eyes (to limit the migraine symptoms she was experiencing at the time), while using TL of the NL for the small intestine. Certainly the alpha waves observed in an EEG during sleep, REM sleep, and early arousal from sleep alter their frequency when the eyes are opened under these experimental situations. See the Sleep Waking Cycle Mechanism in Ciba Neurology Collection. An observation made early in GJG's practice with his father has stayed with him: he would tell a constipated patient that their bowel awakens at the same time they did and if everything was alright it would have a tendency to go back to sleep again. He suggested a large glass of cold spring water first upon arising with consistently good results with this advise some fifty years later. The thought occurred, could this analogy literally be true in fact rather than as an analogy.

-An accidental observation while testing an anti-gravity muscle on RMAPI coupled with the two hand finger interlace TL looking for viscerotonic abdominal faults led to a reappraisal of the reticular activating system's ability to properly arouse the musculovisceral functional relationship. GJG was looking for visceral adhesions by having the patient TL with the fingers interlocked using an anti-gravity muscle as the indicator muscle, this TL produced weakness. He was challenging for the direction of correction on the viscera utilizing the right pectoralis sternal as the indicator muscle. He was unable to find a direction of challenge that weakened the indicator muscle, and was surprised when he returned to the interlaced finger TL over the viscera that it no longer TLed with weakness of the anti-gravity muscle. Then having the patient close their eyes with interlaced TL produced weakness.

-The early work of Seiffer at the University of Pennsylvania School of Medicine, involving cutaneous nerve reflex findings and cutaneous nerve supply activity, was published by W.B. Saunders Co. as early as 1900. Subsequent work by a Canadian physician who performed major surgery under a local anesthetic added to the early observations of Seiffer. Seiffer would operate under local anesthetic and then touch or stimulate different organs and ask the patient where they felt it. M.L. Reese of Sedan, Kansas used this early work in his research activity with DeJarnette in SOT. The accidental correction of a repeated muscle activation patient induced following assessment of a small intestine reflex area, led to the concept that many organ systems as well as muscles may fail the arousal effort of the RAS and are responsive to TS Line diagnosis and appropriate cranial technique used on the action of the yellow and elastic component of the dural cranial tentoriae. The abdominal reflex areas do not TL but do respond to interlaced finger TL. The organ-muscle relationship of AK allows the patient testing by RMAPI of the appropriate muscle associated with the particular viscera. For example, the pectoralis major sternal/liver, quadriceps/small intestine, tensor fascia lata/bowel, etc. The reflex abdominal areas of Seiffer are similar to, but are not acupuncture meridian points. They are similar to reflex areas described earlier by Head and others

but they had their beginnings with the cutaneous nerve reflex areas.

-The failure of the TS Line to show the RMAPI muscle prior to testing and the temporary lighting up of the TS Line led to the refinement of the TS Line search for dysfunction by very light but sensitive palpatory diagnosis which proved to be valid by appropriate testing.

-On a different matter, but eventually related, the spondylogenic reflex activity of Dvorak and Dvorak was the key diagnostic and therapeutic finding and the use of the Lovett reactor greatly aided in clearing out recurrent reflex problems of both large and small intestine as well as the liver, gall bladder, stomach, spleen, and pancreas. Positive diagnostic signs were developed based on the RAS concept and coupled with Lovett, Dvorak and Dvorak receptor activity, led to much success with difficult and problem cases.

-If you think of the TS Line as a type of switch frequency selector, for example, all TS Line points should be on the same frequency, such as the switch on a radio for FM or AM frequency or wave lengths. A highly palpable TS Line point usually means a disturbance of some or all of the five factors. A more subtle palpable point usually means that segment or segments are involved with a loss of the RAS arousal system and indicates that the associated areas are literally asleep. Those areas are on a different holographic frequency associated with the sleep mode rather than the awake mode. The treatment restores all points to the awake mode and does not interfere with the usual and necessary alternate sleep mode when it is time for the organism to shut down and rest.

-Frequently as in NEHT small intestine pattern a NL point would not TL with eyes open but would TL with eyes closed, hence the analogy of a possible or potential sleep mode of activity, a frequency shift. The NEHT approach has stood the test of time.

-Diagnose difficult and problem cases by usual 5 IVF factors and add eye closure for sleep mode disclosure. This situation occasionally has occurred in the past but had a low incidence. The present visceromusculoskeletal approach has a much higher incidence and has an equally rewarding therapeutic effect.

-The Lovett reaction vertebra relationship is a valid one and shares the TS Line point's ability to relieve the painful or "ouch" areas associated in a general way with the visceromusculoskeletal diagnostic symptom pattern. It remains a therapeutic option for palpatory pain relief, to hold "ouch" areas and simultaneously hold the TS Line point (20-30 seconds) for pain relief. If continued pain on palpation persists, tap (one hertz for 20-30 seconds) the Lovett reaction vertebra for pain control. Some pain areas may require tap of the TS Line area.

-Naturally you may already have directed the patient to taste an appropriate nutrient also necessary for proper segmental pain control and relief. All TS Line areas require natural sources of vitamin E, from wheat germ oil or in dry tablet form, along with selenium. This synthesizes the coupling of available acetate and choline to form the neurotransmitter acetylcholine. Steady and continued response is the

usual pattern of relief; usually on first treatment application. Some may require an additional jump start to facilitate the process of recovery. This RAS sleep vs. awake approach is a valuable therapeutic option and GJG commends it to you. It fits well in the principle and philosophy of AK especially with the concept of encoded memory patterns and is a rational accompaniment of all other AK approaches that we have all had a hand in developing.

-Experience has shown that the appropriate meridian patterns of the B and E areas that begin and end on the head may be a part of the sleep mode of the patient's RAS activity. Interlaced finger TL to appropriate B and E AMC points on the head can be regulated by tapping the appropriate tonification point. Tapping the B and E point is usually ineffective in this situation. Correction of the AMC organ muscle imbalance does not correct the RAS sleep activity but parallels the reflex area previously described.

RETICULAR ACTIVATING SYSTEM TECHNIQUE

1. Assess patient history, form an opinion as to visceral involvement. TL pulse points on left and right wrist, use an anti-gravity muscle such as the quadriceps or piriformis. Usually may be positive in the clear, but usually shows positive with eyes closed. In rare instances may require gait involvement. Acupuncture meridians are not always involved in RAS technique.
- 1A. TL interlaced fingers on the B&E points on the head. Not all cases show this pattern.
2. Lightly palpate the TS Line for subliminal nodular involvement. Subliminal TS Line will TL with bilateral cross hand TL.
3. TL appropriate viscera or visceral abdominal reflex areas using interlaced finger activity. Most importantly, use any antigravity muscle as test muscle, see chart of slow twitch postural tonic muscles. Test for appropriate nutrient at this time. Test only, do not have patient ingest nutrient.
- 3A. If interlaced fingers TL of B&E was positive, tap tonification point.
4. Double check the viscerally related antigravity muscle response with repeated muscle activation patient initiated (ten activations). This finding should agree with result of #3 interlaced finger TL of viscera.
5. Lift appropriate viscera headward by firm pressure while actively testing an anti-gravity muscle. No weakness should occur. This is a 10-15 second effort. Some cases may require patient to cough during visceral lift to loosen any adhesions.
6. Retest visceral related abdominal reflex area, retest appropriate viscera related muscle. No weakness should occur in either antigravity muscle or the appropriate viscera related muscle.
7. Request patient to close eyes, alpha rhythm reproduces all weaknesses previously noted.
8. Relieve #7 by continued eye closure on part of the patient and firm pressure at sphenoid area with your index finger, have patient turn head to apply self regulated pressure. Apply 20-30 seconds total. Hold TS Line point and lift viscera, 20-30 seconds.

9. All muscle activity should now be normalized. Hold indicated reflex areas and appropriate TS Line level for a brief 10-15 seconds. This should relieve palpatory pain. Reflex areas should now be clear of palpatory pain. Tapping of TS Line may be necessary to clear pain in some cases.

10. TL accessible spinal levels. This may be negative but will show positive when patient closes eyes, changing to alpha rhythm. In inaccessible to TL spinal areas, such as T5 and T6, challenge for subluxation in the clear, especially with eyes closed. Challenge and adjust.

11. Find spondylogenic reflex vertebral area (example, L5 primary C1 reflex areas). Muscles shaded gray will palpate painful on side of primary subluxation. Tap of spondylogenic segment 1 tap per second (60 seconds). Reassess all potential reflex areas for pain, release by continued tap or by TS Line and pain area hold or tap for 10-15 seconds. See appropriate diagram for TS Line, reflex areas, antigravity muscles, and spondylogenic Lovett reaction.

-Since REM of sleep cycles results in shut down of serotonergic neuronal activity of anti-gravity muscles, we have found that both EID and EOD can be a recurrent element in the sleep wake cycle that produces the sleep mode of visceral skeletal activity found in the RAS technique.

-The very existence of head and hand stress receptors in AK as well as the NV receptor areas would lead to an understanding of reflex pain complaints. The Dvorak-Dvorak interactive spondylogenic observations has stood the test of time. This allows a better understanding of the original Seiffert areas as well as those described by Reese and DeJarnette of SOT. Also the areas of Head and those of Kellgren and many others have lead to a better understanding of these areas.

-The RAS technique diagrams based on our observations of the Lovett reactor pattern and the Dvorak-Dvorak originals were redrawn by David Leaf, D.C. Our own observation of the Lovett reactor's ability to control palpatory pain following the primary adjustment and the subsequent tapping of the Lovett reactor's vertebra has remained as mentioned, useful technique and has stood the test of time.

-As you can well imagine there is a blurring in many cases in actual practice of the singularity of an individual vertebrae and their reactive partners. Many times more than one vertebra can be subluxated or fixated. Yet the apparent confusion potential does not obtain as one might predict. Find and adjust primary vertebra, test for palpatory pain as described by Dvorak-Dvorak, tap Lovett for 60 seconds, and then retest for abolition of the primary pain pattern.

-Just as in the phrase "the very existence of head and hand receptors" previously would hold true, so also can it be said of the abdominal cutaneous receptors in the RAS technique pattern. Be sure to test abdominals for RMAPI weakness, correct by O-I activity and appropriate nutrition and then recommend the diaphragmatic exercise to stretch the same muscles you have just strengthened. The

stretching technique changes visceral related RMAPI, for example a PMS liver reflex resets temporarily but this does not alter the abdominal cutaneous receptor, which then resets the sleep pattern again.

-In the RAS technique development early efforts to use EID or EOD revealed an interesting observation. Efforts of the patient to voluntarily direct eyes to all 8 quadrants up to the left, directly left, down to the left, and up to the right, directly right, and down to the right, as well as directly up for both and directly down for both yielded weakness of tested muscle in two ways. 1. An immediate weakness occurred when eyes were placed in direct EID, in our series of over 100, 20% showed the traditional EID pattern (those responded to the usual cross crawl, i.e. perform cross crawl with eyes in EID position). 2. The remaining 80% showed weakness only after repeated testing regardless of eye position in any sequence. This weakness, observed from RMAPI, was neutralized by insalivation of 385 mg of wheat germ oil.

-The repeated eye movement which resulted in muscle weakness was not specific to any one tested muscle. However, it immediately reversed the corrections previously induced by step 5 and step 6 of the RAS technique. It also reversed the corrections induced by step 8 and 9 of the RAS technique. Priming the patient with wheat germ oil immediately on discovery of weakness from repeated eye movement abolished this reset pattern which was at first quite disconcerting.

-As the REM sleep chart shows the timing and duration of the REM period during an average night's sleep, it is obvious that any lack of acetylcholine or its synthesizing agent (found in wheat germ oil) would deplete the body's available store of these materials and thus perpetuate the aberrant sleep-arousal fault discussed elsewhere. In light of the above information, it is obvious that all TS Line areas require a priming increment via the wheat germ oil factor. This allows synthesis of normally occurring acetate and choline. Naturally, use appropriate nutrient for the muscle organ relationship found at the appropriate TS Line area.

-Naturally, as with any other AK structural correction, or reflex response technique such as the RAS technique, double check for permanence of response by testing for the need for the Saggital Suture Spread Technique. This can be done initially as a screening prior to any other methods of correction by simple two handed TL of the saggital suture, or by muscle testing during cerebellar screening (patient taps own suture with eyes closed). During the testing of the RMAPI involvement the procedure can be accomplished by single handed TL activity if the involved muscle happens to be an upper arm on either side. TL of any of the diagnostic "ouch" areas following correction of the sleep segment of the RAS technique may reset the sleep pattern once more. Reduction of pain on palpation is a satisfactory method, but TL of any of the "ouch" areas, even though relatively pain free, indicates that they may still be capable of resetting the sleep pattern. Therefore, in difficult and complicated problems, TL "ouch" areas while simultaneously Tling the saggital suture area with the patient's other hand. If weakness occurs in an

anti-gravity muscle, such as the quadriceps, neutralize for permanent effect by Saggital Suture Tap Technique. Good general rule: Momentarily TL saggital suture following any segmental procedure, if positive, use saggital suture spread technique. Note to reader: this may take you longer to read than the time it takes to do it, this is an effective technique to make any adjustment hold.

DIAPHRAGM

-The work of Raymond Dart, South African Nobel prize winner in anatomy, states that the body is literally hung from the occiput and the cervical column. The downward pull of the relatively unsupported viscera in the weak abdominal muscle pattern one observes by either the stretch pattern, or the contraction pattern, or by repeated muscle activation previously described and corrected. Have the patient perform the stretch exercise described later. In those patients with limited ROM of the cervical column in lateral flexion or rotation (both active or passive), the abdominal stretching exercises are essential. Especially in patients who do not respond fully to the cervical compaction technique. Demonstrate to the patient that in a limited ROM either in rotation or lateral flexion that simple elevation of the arm above the head on the side of the limited ROM immediately but temporarily normalizes ROM. Therefore, the treatment is obvious, correct the particular type of abdominal weakness you have diagnosed by either fascial flushing (FF) or strain counterstrain technique, or by the use of O-I technique in the RMAPI patient. Use appropriate nutrition, such as B12/Folic Acid for the FF, wheat germ oil for the RMAPI, and sources of glycine or fatty acids for the strain counterstrain. Instruct the patient to continue the abdominal stretching exercises indefinitely, it is the price we pay for standing up and being human in this era.

-Stretch the muscles that oppose inhalation and pull in the ribs and stomach. Even though breathing is pretty complicated, stretching is fairly simple. We use a stretch called the pull-over. You may have tried something similar to this for strength training, but this is different. Here we are using a light weight, 3-10 pounds to stretch, not strengthen. To stretch the rib cage and stomach muscles, lie on your back on a bench or bed with your head lying off the end. Slowly lower the weight over your head, keeping your elbows bent and your upper arms roughly parallel. Letting your arms flop out to the side, bending the elbows will lessen the stretch. Now with the weight hanging down, stretch your ribs and stomach by inhaling as much as you can, don't hold your breath. While you inhale, raise your buttocks up. Then exhale and return to the buttocks to the bed. Do this 10 times. Rest for 30 seconds with head level. Repeat this routine 3 times.

-Test for diaphragm activity: lateral compression of the rib cage just enough to restrict the rib cage motion of the patient during inspiration. There may be a side in which you can restrict the lateral motion and this most often corresponds to the poor internal rotation of the lower extremity. This is the psoas-diaphragm relationship that is too tight on that side and it restricts the

motion of the diaphragm. Another way to test: test an indicator muscle like the tensor fascia lata, have the patient raise their head and rotate the upper body to one side, then retest the TFL. Hold inspiration or expiration and retest the TFL, it may weaken in that position with a phase of respiration. Also test the opposite side of head raised with the upper body rotated. The reflex for this type of problem is KI 27 and BL 12. Both of these are imbalanced, it is like a switching pattern for the diaphragm. You can TL KI 27 or BL 12 bilaterally (BL 12 is approximately at the C7-T1 area), and this will negate the head raised up with the upper body rotated weakening with a phase of respiration. Treatment is a deep manipulation of KI 27 and BL 12 bilaterally. Retest and now the lateral chest expansion is normalized. You will also see an increase in vital capacity. This often has an effect on cardiac arrhythmias. The normal respiratory sinus arrhythmia that Guyton refers to is an increase in cardiac rate by 30% with inspiration and a decrease by 30% with expiration. In many people it is backwards or it fails to do that. That is a fault that is compensated by the body, added to it a subluxation, poor lymphatic drainage, etc., and you end up with a set of symptoms. This is a switching pattern for the diaphragm, different than the diaphragm dysfunction that we already are aware of. Early work of Beardall talked of this. The diaphragm has two leaves. GJG often finds failure of contraction on the right of the diaphragm that responds to a variety of things. Patient may have adrenal related signs and symptoms, but cannot find an adrenal related muscle weakness. Try this diaphragm diagnosis of raising the head with the upper body rotated against the sartorius/gracilis and you may find weakening at that point, and it does not respond to the adrenal five factors or nutrition, but responds to diaphragmatic activity.

RETICULAR ACTIVATING SYSTEM TECHNIC

1. Assess patient history, form an opinion as to visceral involvement. T.L. pulse points on left and right wrist - use antigravity muscle such as quadriceps or piriformis. Usually may be positive "in the clear", but usually shows positive with eyes closed. In rare instances may require gait involvement. Acupuncture meridians are not always involved in the R.A.S. technic

1A. T.L. interlaced fingers B & E points on head. Not all cases show this pattern.

2. Lightly palpate TS. line for subliminal nodular involvement. Subliminal TS Line will TL with bilateral cross therapy localization.

3. T.L. appropriate viscera or visceral abdominal reflex areas using interlaced finger activity. Most important, use any antigravity muscle as test muscle - see chart of slow twitch postural tonic muscles. Test for appropriate nutrient at this time. TEST ONLY - Do not have patient ingest nutrient.

3A. If interlaced fingers T.L. of B & E was positive - tap tonification point.

4. Double check the viscerally related antigravity muscle response with repeated patient initiated muscle activation (ten activations). This finding should agree with result of #3 interlaced finger T.L. of viscera.

5. Lift appropriate viscera headward by firm pressure while actively testing an antigravity muscle* No weakness should occur. This is a 10 - 15 second effort. Some cases may require patient to cough during the visceral lift to loosen any adhesions.

* postural (←) 3 Pectoralis major muscle

6. Retest visceral related abdominal reflex area, retest appropriate viscera related muscle. No weakness should occur either in antigravity muscle or the appropriate viscera related muscle.

7. Request patient to close eyes - alpha rhythm reproduces all weakness previously noted.

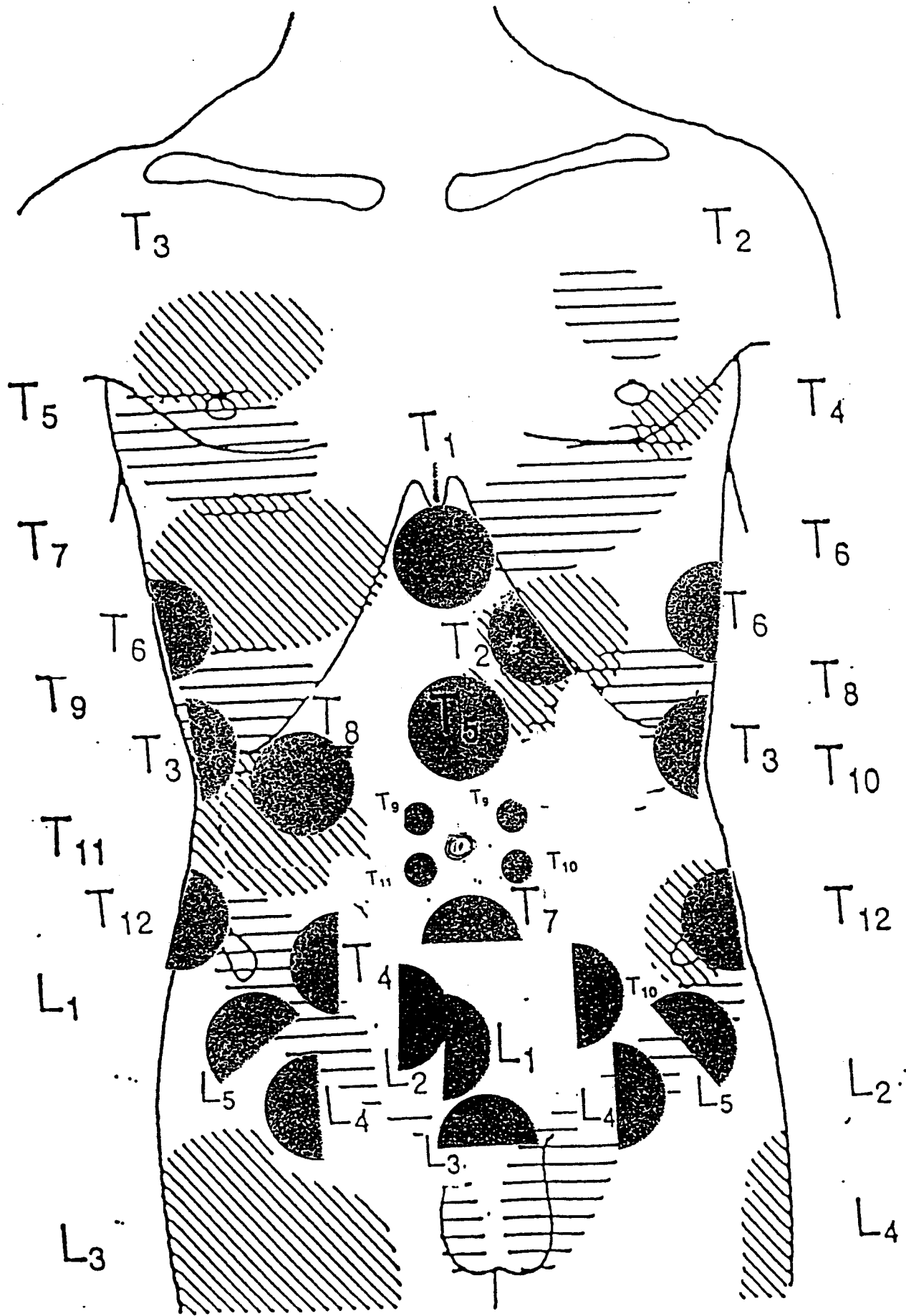
8. Relieve #7 by continued eye closure on part of patient and firm pressure at sphenoid area with your index finger - have patient turn head to apply self regulated pressure. Apply 20 - 30 seconds total. Hold TS Line point and lift viscera, 20 to 30 seconds.

9. All muscle activity should now be normalized. Hold indicated reflex areas and appropriate TS Line level for a brief 10 - 15 seconds. This should relieve palpatory pain. Reflex areas should now be clear of palpatory pain. Tapping of TS Line may be necessary to clear pain in some cases.

10. T.L. accessible spinal levels. This may be negative but will show positive when patient closes eyes, changing to alpha rhythm. In inaccessible to T.L. spinal areas, such as T5 & T6, challenge for subluxation in clear especially with eyes closed. Challenge and adjust.

11. Find spondylogenic reflex vertebral area (example, L5 primary C1 reflex areas). Muscles shaded gray will palpate painful on side of primary subluxation. Tap of spondylogenic area will relieve spinal pain on palpation. Tap reflex spondylogenic segment 1 tap per second (60 seconds). Reassess all potential reflex areas for pain - release by continued tap or by TS line and pain area "hold or tap" for 10 - 15 seconds. See appropriate diagram for TS line, reflex areas, antigravity muscles and spondylogenic Lovett reaction.

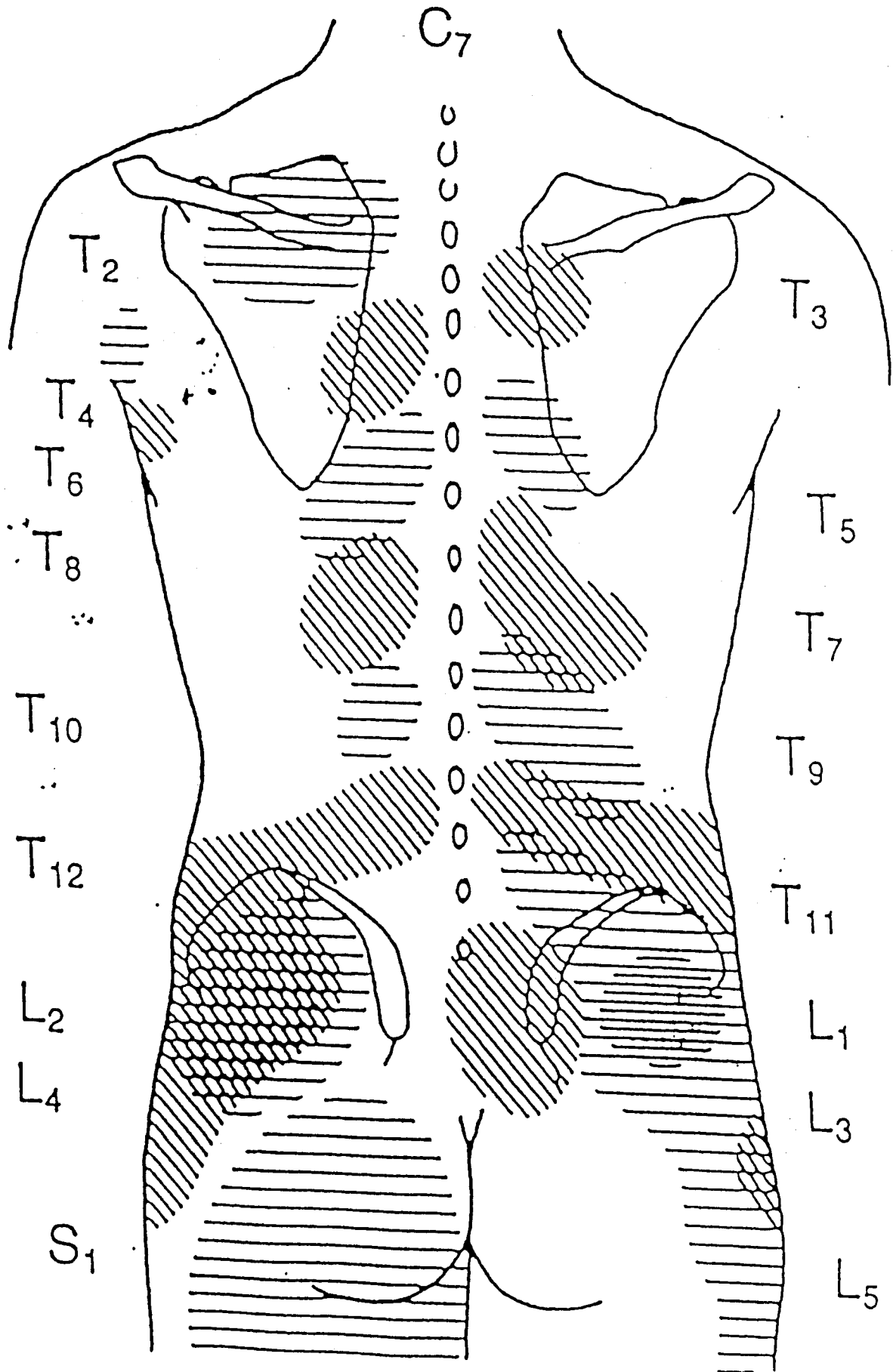
CUTANEOUS REFLEX ABDOMINAL AREAS
Adapted from Sieffert. University of Pennsylvania Medical School, 1900



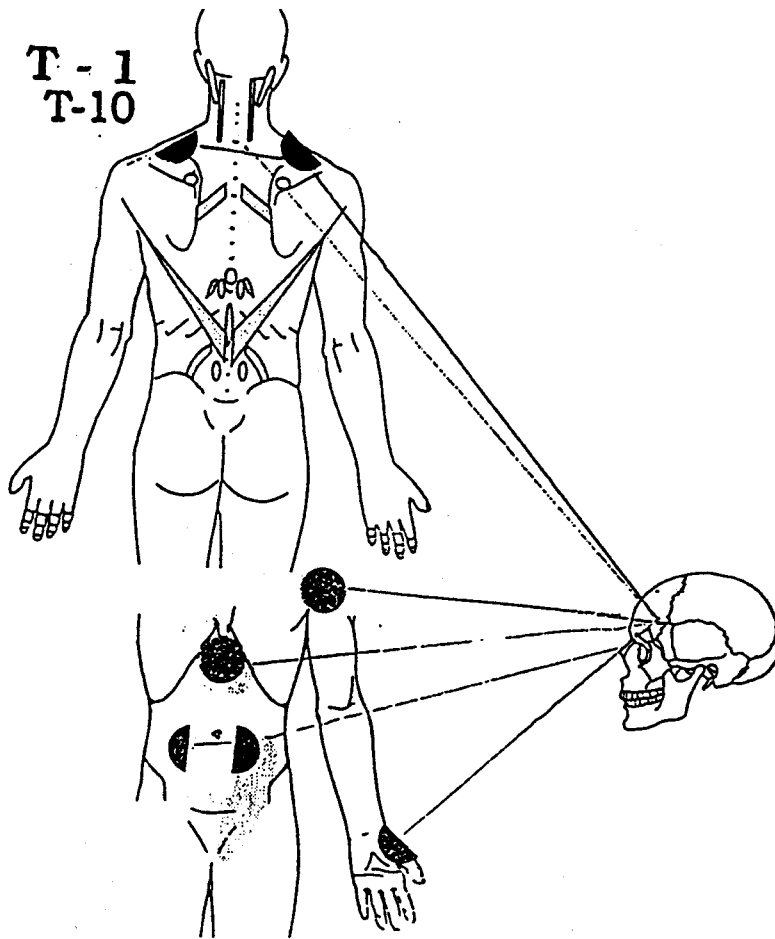
Kellgren, J. H.: Observation of referred pain arising from muscles.

Clin. Sci. 3 (1938) 175

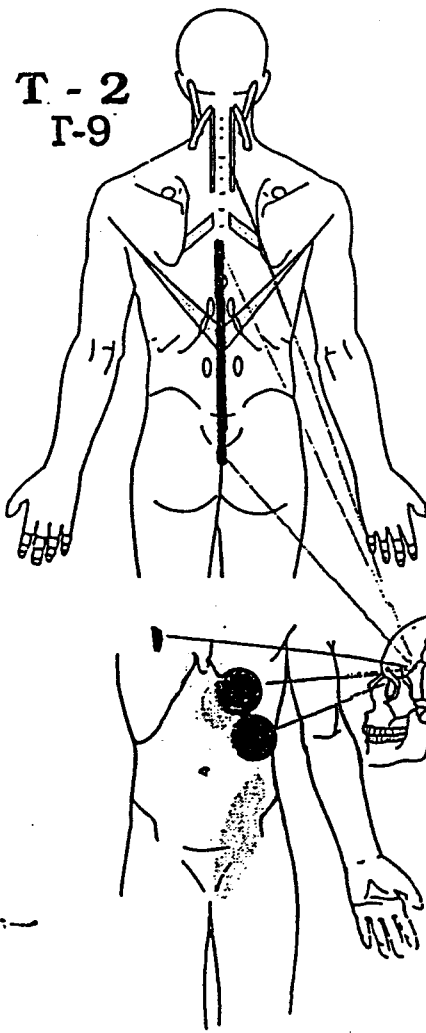
Kellgren, J. H.: On the distribution of pain arising from deep somatic structures with charts of segmental pain areas. Clin. Sci. 4 (1939) 35



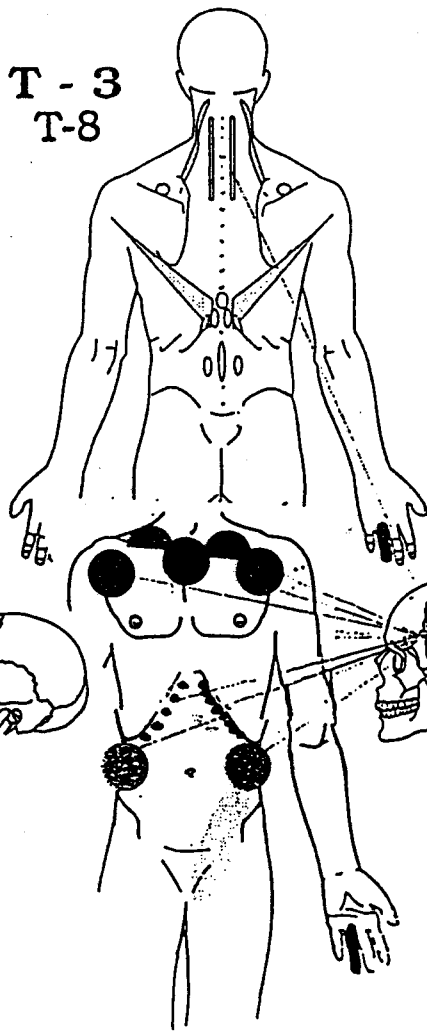
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T-10



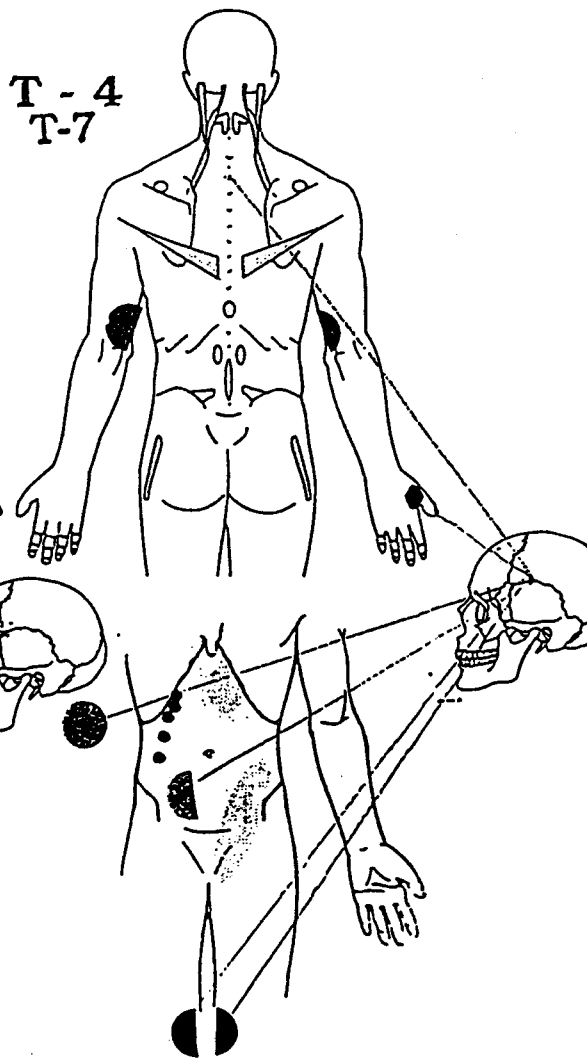
T-2
T-9



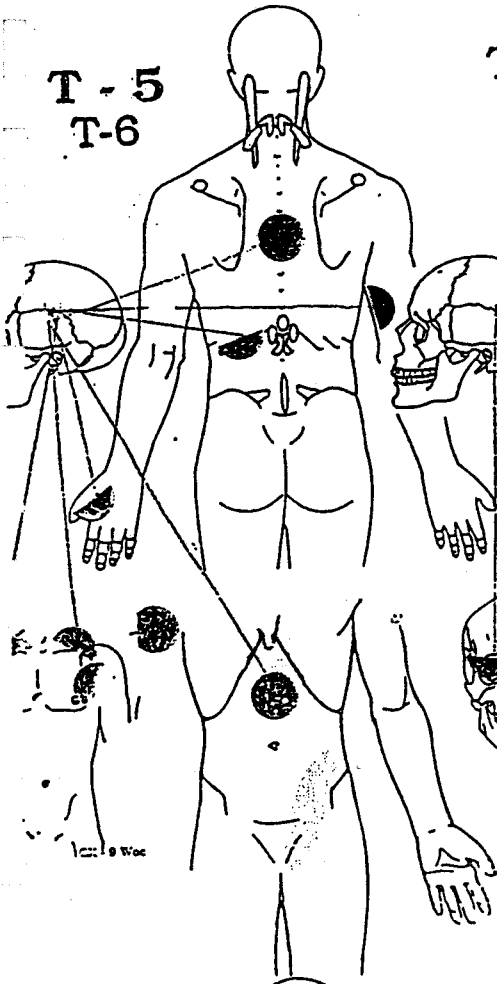
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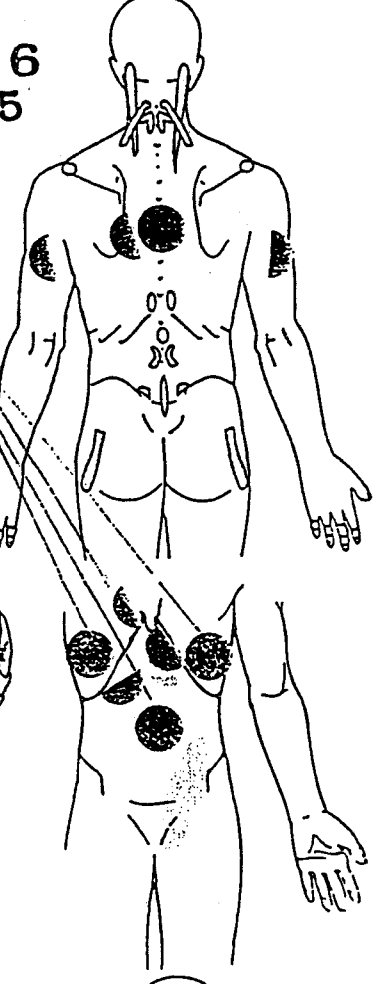
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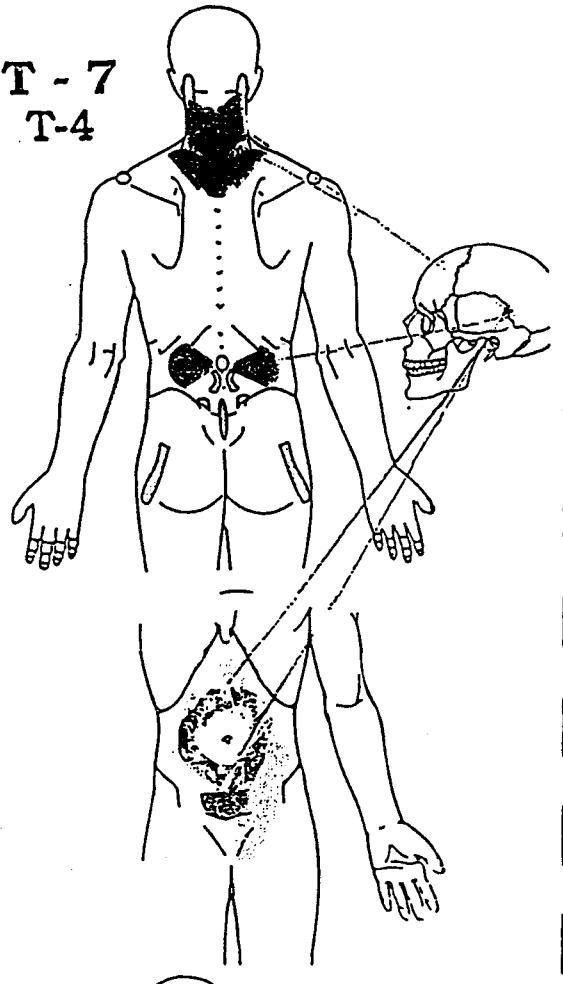
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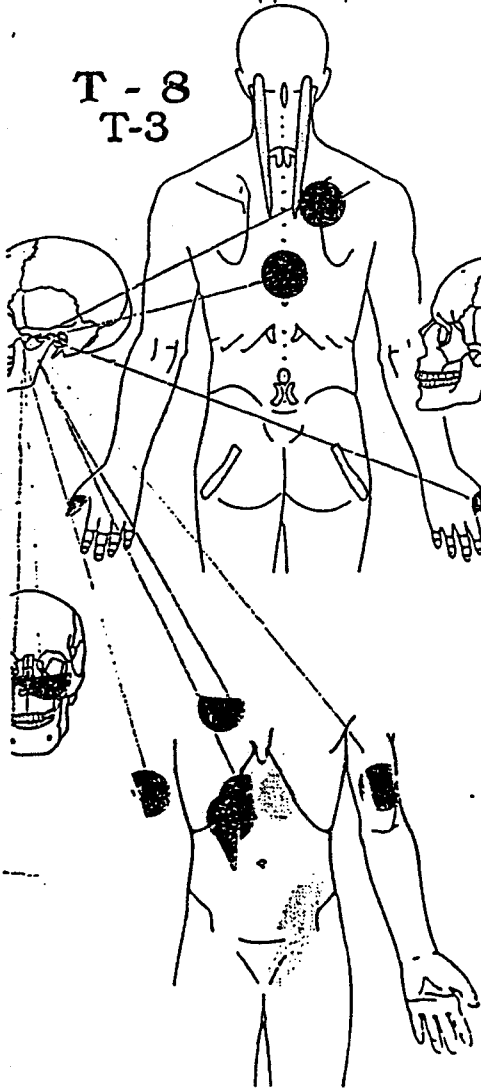
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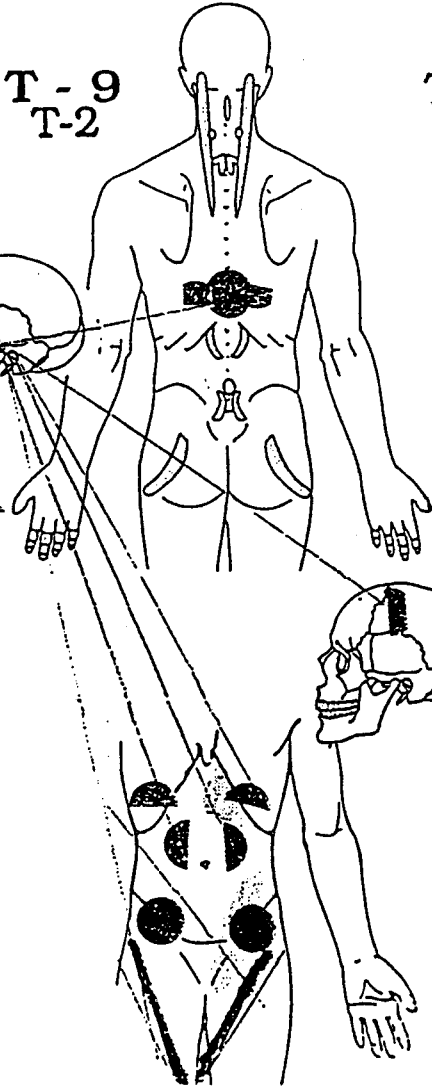
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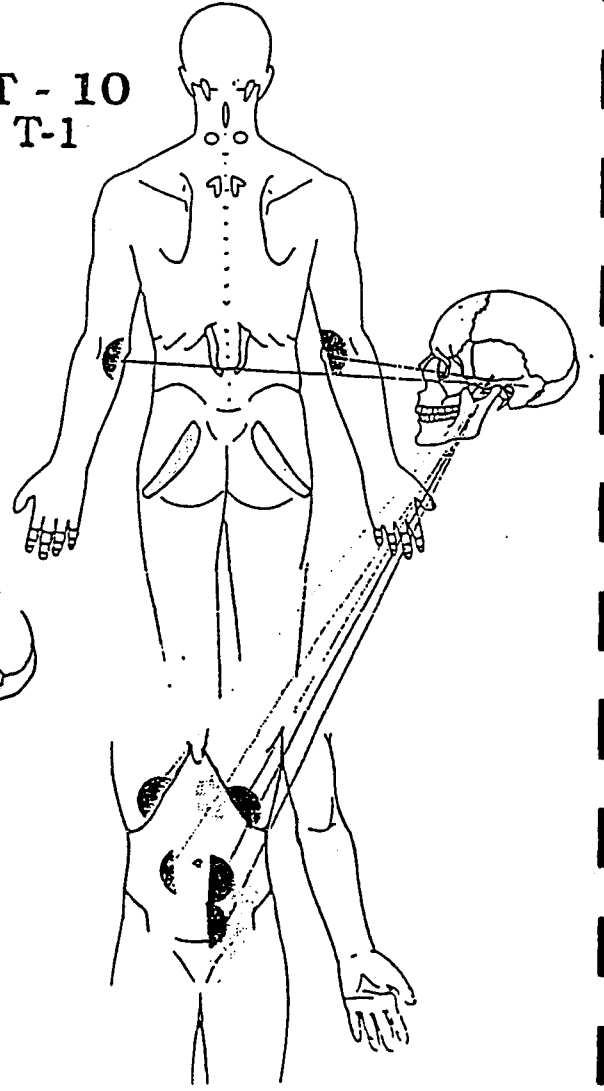
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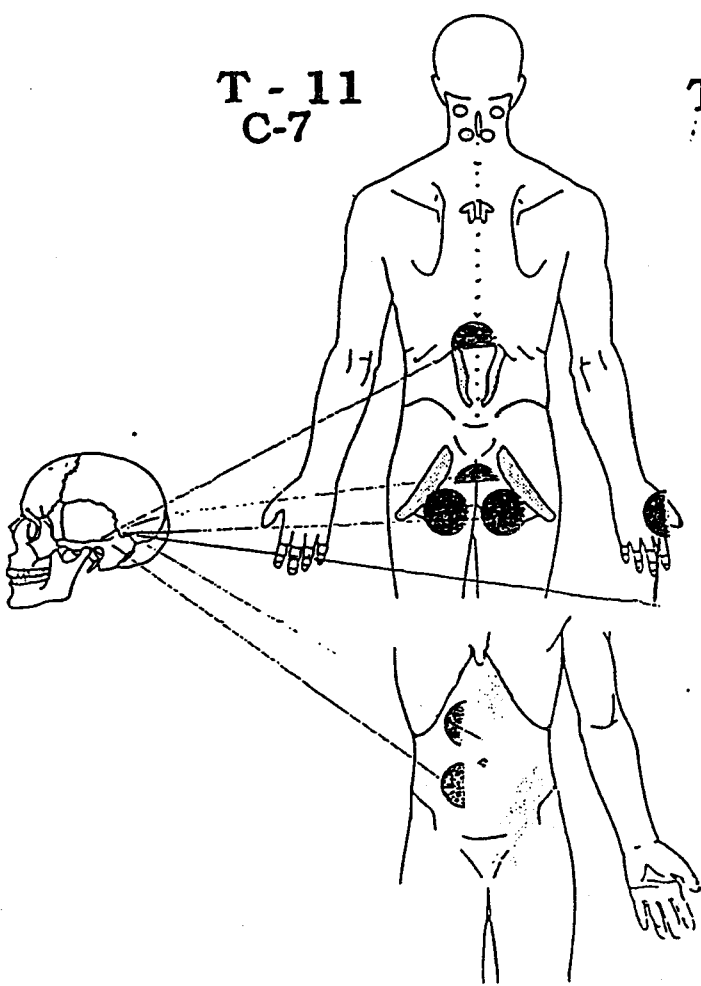
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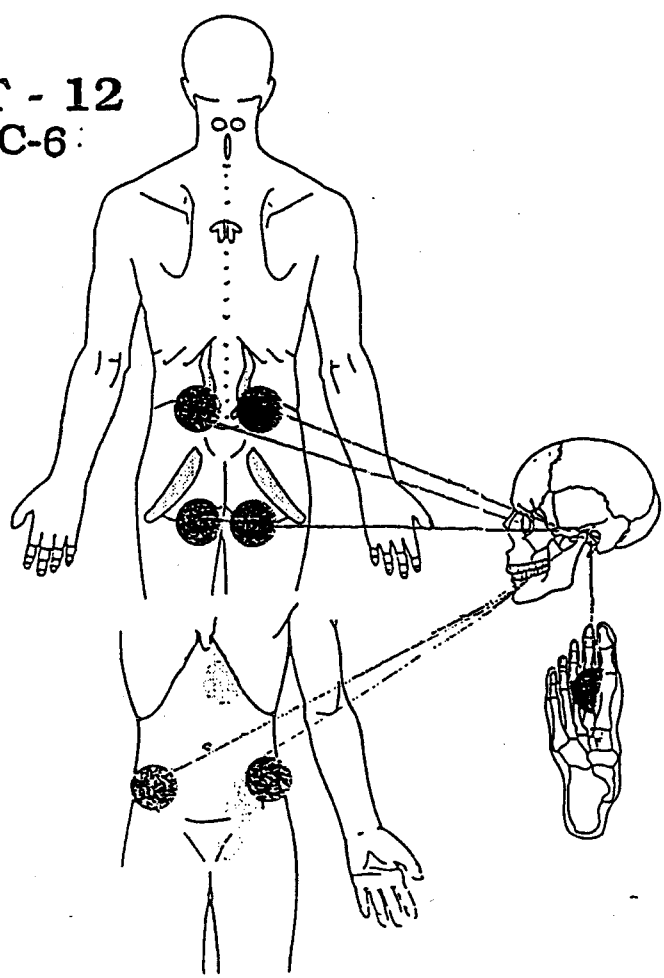
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T-1



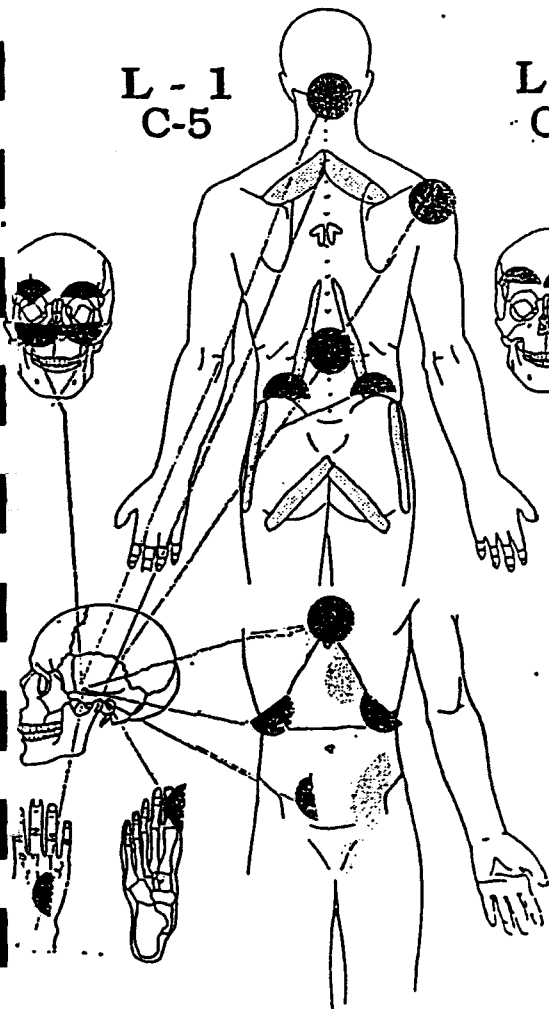
T-11
C-7



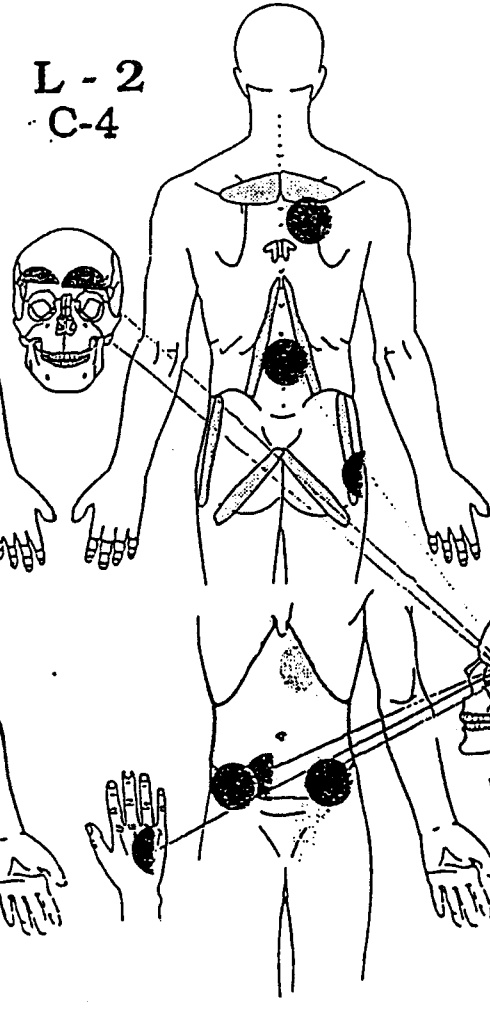
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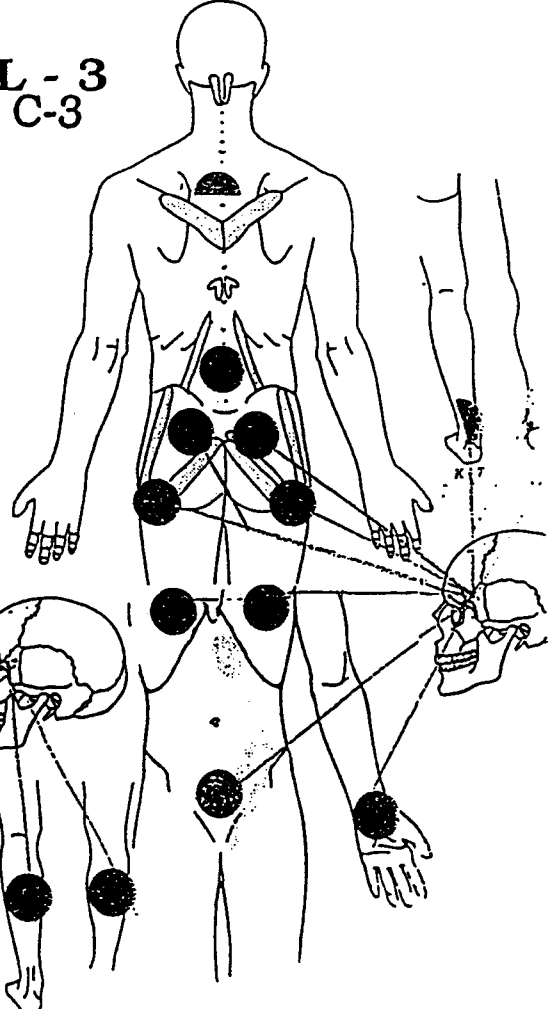
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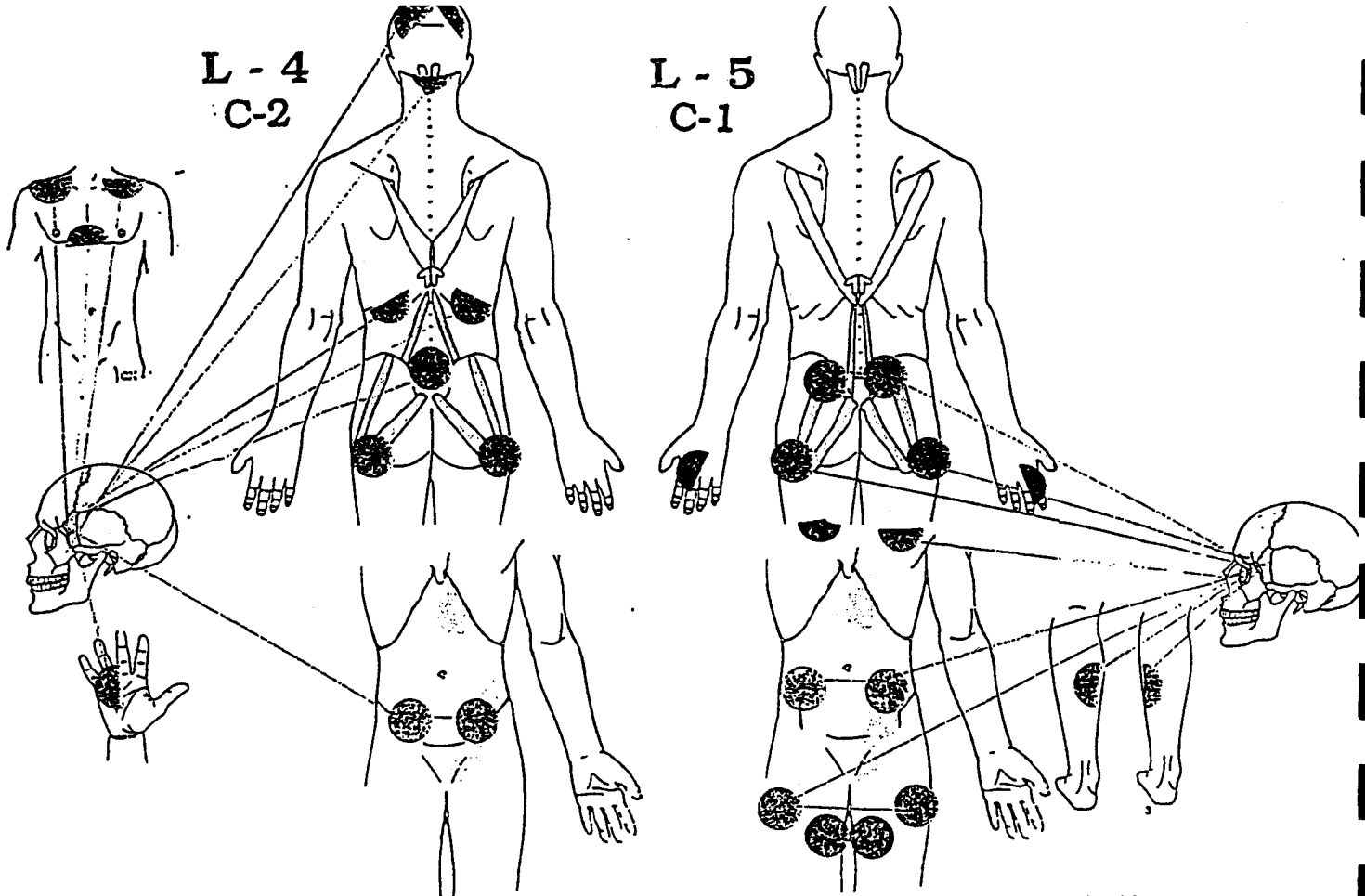


L-2
C-4



L-3
C-3





Many of these reflex areas are from the original Sieffert research work at the University of PA Medical school. Some are from the fine work of Dr. M. L. Reese, Sedan, KS. Some are visceral reflexes from the original work in S.O.T. by Dr. DeJarnette. Some represent the work of Kellgren in the mid 1930's. Some other areas are those I learned through my father's observation, and some are from my own observations. The TS Line muscle organ reflexes represent observations made early in AK. Subliminal TS Line areas discussed in the Reticular Activating System Technic (RAS) are nodules which shift in and out of easily palpable perception - they resemble (analogically) the frequency shift selector on a radio that selects AM or FM signals.

When treating the spondylogenic reflex area, (example L5 primary C1 reflex areas) tap reflex area as advised in the Reticular Activating System Technic, section 11. Since these muscles are all spinal muscles, have patient stand following prone position and check for range of forward flexion and backward extension. Record and mark R.O.M. - if reduced R.O.M. re-tap reflex area vigorously for 60 seconds while patient actively forward flexes and backward extends. R.O.M. will improve if limited.

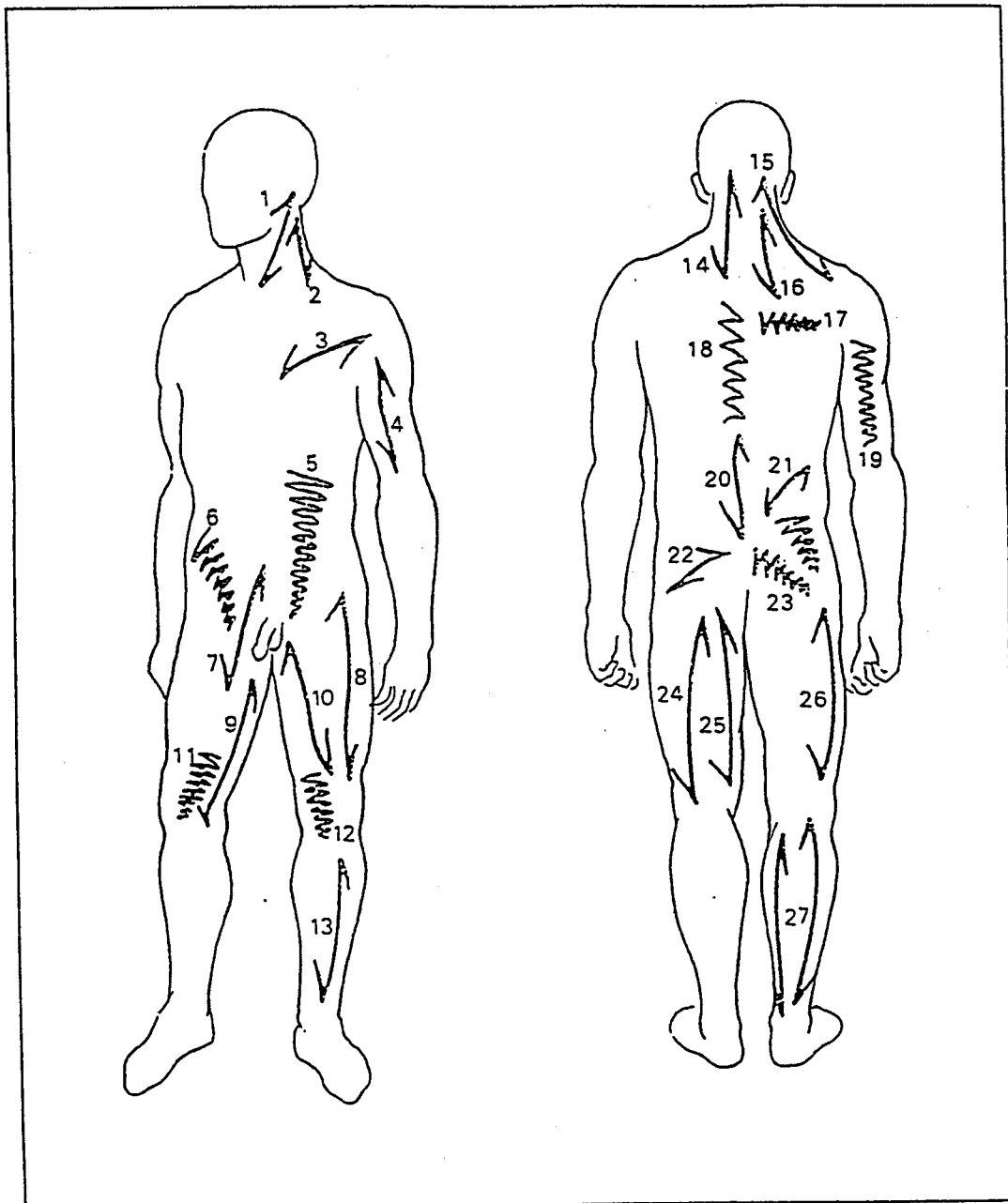


Fig. 3 Overview of the postural (←) and phasic (*Wavy line*) muscles

1 Sternocleidomastoid muscle	15 Trapezius muscle (descending portion)
2 Scalene muscles	16 Levator scapulae muscle
3 Pectoralis major muscle	17 Rhomboid muscles
4 Biceps brachii muscle	18 Longissimus dorsi muscle
5 Rectus abdominis muscle	19 Triceps brachii muscle
6 Abdominal oblique muscle	20 Longissimus dorsi muscle
7 Iliopsoas muscle	21 Quadratus lumborum muscle
8 Rectus femoris muscle	22 Piriform muscle
9 Gracilis muscle	23 Gluteal muscles
10 Adductors	24 Biceps femoris muscle
11 Vastus medialis muscle	25 Semitendinosus muscle
12 Vastus lateralis muscle	26 Tensor fasciae latae muscle
13 Tibialis anterior muscle	27 Triceps surae muscle
14 Longissimus cervicis muscle	(soleus and gastrocnemius muscles)

Drawing - enlarged from Medical Checklists, Manual Medicine, Dvorak-Dvorak, Thieme Publishers 1991

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CEREBELLAR RELATIONSHIP TO COMMON STRUCTURAL FAULTS

-The importance of the abdominal muscles in relationship to cerebellar activity is fundamental. This fundamental relationship of the cerebellum lies in the mechanoreceptor population of the ribs, including both the costovertebral and the sternocostal articular mechanoreceptor population. In addition, as you know, Guyton cites the mechanoreceptor population of the cervical column as additional cerebellar input for balance/equilibrium. The cerebellum in terms of posture is in charge of extensor muscle tone in the spinal column and elsewhere. Weakness of the abdominal muscles on testing is of common occurrence. This weakness may be primary, or in response to stretching the abdominals. As you know, stretching a muscle should strengthen it, not weaken it, according to O'Connell and Gardner. By the same token, contraction of an abdominal muscle to a maximum extent should certainly not weaken it, yet the work of Lawrence Jones of strain/counterstrain has, as it's the AK diagnosis, exactly this pattern of weakness following maximum muscle contraction. The latest AK finding is RMAPI (repeated muscle activation patient induced) which adds further to the frequency of abdominal muscle involvement with the additional feature in the RMAPI variety of a "stupid body wisdom" element feature of muscle contraction despite the initial diagnostic value of weakness on repeated self initiated repetitive contractions. Treatment of RMAPI is origin and insertion hard heavy pressure directed from ends of muscle to center of muscle (Golgi tendon organ). Spindle cell in the belly of the muscle is spread apart. In addition to the mechanoreceptor population stimulation-deficit, (induced by aberrant rib activity associated with the abdominal musculature involved in rib position and movement) the loss of change of tone of the abdominals induces a cervical column component. As Raymond Dart, the great South African anatomist cites on his discussion of the part played by the abdominals, in erect posture: "thus we get a picture, or a bird's eye view, of the manner in which a single superficial sheet formed by these two opposed diagonal running flexion muscles in front (oblique fibers of the external oblique left and right) is continued through a deeper lying extensor sheet on each side of the spine behind to suspend the pelvis from the occiput and the neck vertebrae". As Dart continues to say "thus in a real sense, the occiput and spine of the vertebrae (cervical) suspend the body by means of two spinal sheets of muscle encircling the trunk". When the abdominals are weak, they may be by way of stupid body wisdom (SBW), literally paradoxically, pull the rib cage downwards. This pull downward (frontward) is then frequently acted upon by the body's effect to straighten itself, by pulling the cervical column backwards, setting up, in unilateral fashion, an anterior rotation of atlas and other segments; if the resultant opposite pull action is bilateral, the resultant anterior atlas and below becomes a constant recurrence. Naturally the suboccipital triangle is no exception to this postural pattern. The common eventual result of the abdominal muscle test failure, regardless of the type of test

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is 1. abdominal pull causing "forward" tilt of torso, 2. a compensating backward effort of the torso causing further forward pull centering mainly at the anterior of the cervical spine 3. additional adaptation by the posterior musculature of the cervical spine compounding the adaptive response. The reduced movement thereby induced in the cervical spine and the corresponding lack of appropriate muscular movement of the intercostal structures of the relatively fixed ribs, reduces mechanoreceptor stimulus of the cerebellum. The change in extensor musculature by extensor cerebellar aberration adds to the confusion.

- Observations of ROM both passive and active should be made in both sitting and standing posture patterns. Many times a correction made in the sitting posture maintains itself in the standing posture as well, but in some patients corrections must be repeated with the patient in the standing weight bearing position. Additional experience with this type of ROM cervical correction has shown that abdominal muscles are generally involved when the head is in the normal cervical lordotic pattern as well as the head in the cervical extended pattern. Correction of the abdominal weakness invariably increases the limited ROM in this type of patient. With the head in marked flexion, active and passive rotation also yields major limitations in ROM, both active and passive. The abdominal muscles may occasionally play a part in this type of cervical flexion sequence, but the usual cause of the limitation of ROM, with the head in flexion, is the ipsilateral quadratus lumborum. This may frequently require RMAPI investigation along with origin and insertion technique, but it may require fascial flushing or strain/counterstrain as well. Just as in the limited ROM of the cervical column discussed earlier, simple elevation of the arm above the head in both the sitting, and if necessary, standing position will reveal the side of the body that requires abdominal attention, so also there is a quick diagnostic feature for the limited ROM in the flexion position. If there is limited ROM in the flexion position, with the patient either sitting or standing, and raising the arm does not alter the limited ROM, simply incline the seated patient, or the standing patient 10-15 degrees, stabilize in that position and reassess for improvement in the limited ROM. Naturally, all of the above is based upon a less than adequate response to the normal cervical compaction technique that is standard practice for this type of difficulty. Recall the work of Raymond Dart, the noted South African Nobel prize winner in anatomy, he states that the body is literally hung from the occiput and the cervical column. The downward pull of the relatively unsupported viscera in the weak abdominal muscle pattern is the primary problem. Just as with the abdominals, so with the quadratus, both must be corrected in the appropriate fashion.

The quadratus has an attachment to the lumbar vertebrae and 12th rib. Those fibers from the 12th rib come down diagonally and insert on the lumbar transverse processes and bodies, whereas, there is also a cross-hatching of the fibers that come off of the superior crest of the ilium and then move medially to attach to the transverse processes and bodies of the lumbar vertebrae. There is a crossing of fibers from below upward and from above

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downward. You therefore have to pay attention to both the origin and insertion of those fibers. If flexing to the right 10-15 degrees, away from the side of limited rotation with the head in flexion, that you are contracting the right and stretching the left. GJG rarely sees a contracted left quadratus in the true sense when there is limitation of left rotation, but when you flex the patient to the right, there is an immediate alteration. Attempting to use inappropriate common sense, thinking that represents stretching a muscle that is already contracted, if you try to release the quadratus, it makes the cervical ROM all the more greater. Correction of the quadratus is also useful in cases of restriction of cervical lateral flexion with no rotation. Lateral flexion limited to one side, take the patient away from that side, laterally flexing 15-20 degrees, and retest cervical lateral flexion. As long as the patient is in the trunk lateral flexion, there will be an increase in cervical lateral flexion. This means that the side opposite that which you moved the patient is the RMAPI quadratus.

-Key feature to the RMAPI is that it doesn't show up on the TS Line until you do the repeated muscle activation, and then the TS Line will show up for about 60 seconds and then goes away again.

ISCHIOFEMORAL LIGAMENT

-We may not examine patients in the appropriate position. Patients often say that they have pain when they stand, but not so much pain when they walk, or they have pain when they stand that improves when they sit, or if they have sciatic pain, it may improve when they lie down, or not diminish with change of position. GJG wondered at the vagueries of these observations. He has had trouble correlating spinal length to the complaint of the patient. GJG measures spinal length of all patients, from the tip of the coccyx to the base of the skull (junction of C1 and EOP), sitting, standing, and lying. A general rule is: the longer the spinal column is in length past the normal 14 mm difference, the more frequently will the pain exist in that position. For instance, if they are longer standing, the odds are they will have more pain when they stand. If they are longer sitting, they will have pain sitting. But that is not an absolute rule and GJG has not fully understood it.

-GJG measures leg length, palpates the Achilles tendon, as we all do, looking for general information. Recently at the Chiropractic Centennial, there was a table specially constructed to allow unrestricted movement of limbs in such a way that the table sections could slide in such a way that any slight movement of the limb getting longer or shorter could take place. The paper presenter was able to show that turning the head had an effect on the length of the limb in some patients. How do we apply this information?

-GJG has observed that patients negative in the sitting position for PLUS pattern, may show a difference in leg length when they go from the supine to sitting position, one limb becoming longer than the other. Place your thumbs on the medial malleoli to measure. This difference can be up to half an inch. It is obvious that this can't be movement of the sacroiliac joint which moves in fractions of millimeters, it has to represent changing

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muscle tone producing evidence of a posterior ilium or posterior ischium, with the resulting efforts of the muscles to change it. Sometimes you can use the classic observations when one makes for total value of limb length, i.e. Hoppenfeld. We are not talking about a patient with an obvious osseous difference. The difference in leg length from supine to sitting has been measured via Metrecom to be sure that he was seeing was actually so. Some patients show up to a half inch difference. They will be negative for TL of the sacroiliac joint for a Category II and Category I. However, TL of one sacroiliac joint with the opposite leg raised about 10 inches in a gait-type pattern will be positive. Will only show on one side. This indicates a disturbance in the sacroiliac joint in the sitting position and it is "out of the loop". The body does not report it until you move the opposite leg. The sacroiliac joint will also TL positively if you have the patient close their eyes. It's as if going back to the alpha rhythm of the brain, similar to the Sleep vs. Awake pattern, makes it show up. Removing the hand from the sacroiliac joint negates any weakness with the eyes closed.

-If the limb appeared short upon sitting, there should be pain upon palpation of the medial thigh (adductors), upper half of Poupert's ligament, first rib head, all on the same side, and only in the sitting position, all of the classic signs of a posterior ilium. If the limb lengthens, there will be pain on the lateral lower one-third of the thigh, lower groin, and first rib head. Make a mechanical adjustment to the sacroiliac in a side lying position. Make any respiratory corrections as well. If the positive TL to the sacroiliac joint is negated by inspiration or expiration, make the appropriate correction to the ilium on the appropriate phase of respiration. Reassess the limb length when the patient goes from supine to sitting.

-GJG also measured the ability of the patient's leg abduction and adduction. Crossing the leg at the knee in a Patrick Fabere position will reveal that one knee is parallel to the floor and the other knee is at an angle to the floor, with the knee being higher. The higher knee correlated to the side that the patient would walk with the toe pointed out. Many people walk with the left foot straight ahead and the right foot toeing out. This is associated with a dropping of the pelvis on the same side, going inferior at the symphysis. GJG tried testing the gastrocnemius and posterior tibial for RMAPI weakness, etc. and found noting that would affect the toe out. GJG checked hip adduction by crossing the leg over the opposite knee. He found that the left leg adducted well, but the right leg did not adduct well, it was restricted. He could not find a muscular reason for this, except an occasional quadratus. The ischiofemoral ligament on the side of the restricted adduction and the side of the toe out was in a hypercontracted state and required origin-insertion technique. The ischiofemoral ligament comes off the posterior portion of the ischium and bridges itself across the neck of the femur and attaches itself to the anterior portion. When it is tight, it externally rotates the limb and gives the appearance of the toe turning out on that side. Sometimes GJG uses the treadmill on a slow speed and uses the television

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monitor so that the patient can observe the toe out. With the rare exception of the quadratus, GJG was powerless to correct the toe out until he started to release the ischiofemoral ligament. The treatment to the ligament requires quite heavy pressure acting as if the ligament were a muscle, taking the ends of the ligament and pushing away from the center. This would produce a remarkable increase in the leg adduction.

-The ischiofemoral ligament tightness does not always accompany the side of the sitting sacroiliac disturbance, but does accompany the side of the toes out. GJG sees a high frequency of tight ischiofemoral ligaments on the right side.

-The ischiofemoral ligament runs from a portion of the ischium adjacent to the femur and then runs to the neck of the femur. The ischiofemoral ligament has a considerable portion of it on the anterior portion of the femur. Think of the ischium in its position relative to the anterior portion of the femur, and when the patient goes to sit up, the most posterior part of the ischium keeps moving further away from the anterior portion of the femur. That process of movement will make one limb change its position. If the ligament is tight, that limb will start to appear short in the position that assumed by the patient sitting up. The ischium keeps moving posteriorly and superiorly, the origin is moving further away from the insertion. The femoral head will sometimes accommodate to that and move in a posterior superior direction, but many times will not and will result in a change in limb length, depending upon the relative hypertonicity of the ischiofemoral ligament. This sometimes produces a paradoxical situation where it looks like there is a sitting sacroiliac joint disturbance, but following TL with the opposite leg raised or with the eyes closed, will not indicate any disturbance in the sacroiliac joint. That will be the side of the tighter leg adduction, toe out with walking, tight ischiofemoral ligament.

-If the patient still reveals a toe out on the treadmill after correction of the ischiofemoral ligament, you can also stretch the ischiofemoral ligament by attempting to move the attachment of the femur further away from its attachment to the ischium. Maintain your contacts on the ischium and femur ends of the ligament and pull apart, and at the same time internally rotate the femur to stretch the ligament. You can have the patient supine with the knee flexed and use your elbow to internally rotate the femur. The combination of releasing the ligament and then stretching it is very useful

-If you think of the ligament stretch adrenal problem in the ischiofemoral ligament, you can see why the femoral head ligament of itself not causing much disturbance, frequently will cause reflex disturbance in the sacroiliac joint, sacral-lumbar joint, and as high up as the cervical spine, which is sometimes very enigmatic and hard to understand.

CARDIOPLUS

-Observations regarding patients with mild states of congestive heart failure, or disturbances in heart rate, or any other of the variety of reasons that focuses on the heart, especially if the phonocardiographic tracing shows a diminished rest period with the first

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sound and second sound spaced almost evenly, the second sound should ordinarily be tucked up close to the first sound, it should have a one-third, two-thirds relationship. When the second sound keeps moving away from the first sound, the rest period of heart is diminished. GJG has noted that cardiotrophin is a useful product to change this and gives the patient much more ease and less shortness of breath. Patient is usually also on medications from their internists. In some patients, cardiotrophin did not work as well, so the companion product that contained the heart muscle substance as well as the vasodilating effects, called cardioplus. Some patients that took cardioplus were pleased because it worked better than the cardiotrophin. The cardiac muscle may have broken down and may have needed the protomorphogen to cancel the antibody (protomorphogen hypothesis). When it did not work, the cardioplus, which contains G, E, and C, in addition to the heart muscle substance, many patients improved. The second heart sound would tuck up closer to the first heart sound, there was more rest time, and the heart got its blood supply.

-Many patients remarked about how the cardioplus helped to stabilize their blood sugar if they were a maturity onset diabetic or insulin dependent diabetic, and even a hypoglycemic patient. Cardioplus appears to help not just the heart, but all muscles, and has a tendency to balance out the blood sugar by increasing the muscle demand and improves tissue tone by the effect on the vascular muscle and arterial wall. Cardioplus is not new to GJG, he first learned of it in a nutritional manual published by Standard Process when Dr. Lee was still alive. There can be insulin resistance, which means the insulin receptors are plastered over. It's like ordering room service and then not opening the door when the food comes. The muscle can refuse the blood sugar or refuse the amount that is available or has been ordered. The same is true with fat. Aerobic (slow twitch) muscles burn fat and anaerobic (fast twitch) muscles burn glycogen. Sometimes the muscle will refuse the fat or glucose.

-Myoplus is the same product by another name if you don't want the fear reaction in the patient of "heart".

-By trial and error, GJG found that cardioplus will improve range of motion in difficult neck torsion problems, especially as described at the beginning of this tape. You may find the abdominal muscle as an RMAPI pattern when the patient has difficulty with cervical rotation with the head in flexion. Some patients responded well to the cervical compaction and the origin-insertion of the abdominal muscle, but a certain percentage of patients continue to have limitation of rotation. This is often found in elite athletes who are complaining of arm, shoulder, neck, and hand problems. One particular tennis player had a limitation of rotation to the left which resolutely resisted any effort on GJG's part to help it. An RMAPI pattern was negated with myotrophin, but there was no change in the cervical range of motion. The cardioplus made the immediate increase in range of motion. GJG theorizes that the skeletal muscle must undergo some sort of a change which

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yields this type of result. This may be hooked up with the tyrosine-specific kinase enzyme that is part of the utilization of glucose.

-Patients who are hyper- or hypo-glycemic, or patients with difficult range of motion problems, should be tested against RMAPI and cardioplus/myoplus.

BLUE GREEN ALGAE

-GJG is in the process of testing blue green algae in the liquid and capsule form. His initial impression is that it is good stuff. The network marketing of it is not to his liking, so any income derived from it goes to ICAK and he has a federal non-profit ID number. It comes from Oregon. Looks to help basic nutrition.

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START WITH THE STRUCTURE

The Sacral Distortion

-The sacral distortion is very difficult to analyze. The cardinal principle in the sacral distortion is the acute pelvic twist with small lateral pelvic movement. There is extreme tension of the buttocks and elongation of buttocks, and a feeling a extreme weakness of the back in the standing position. If you examine the patient in the standing position, you will see a crease in the ribcage at the level of the 11th and 12th ribs, which may be single or double, and it may be paralleled by an opposite pattern on the opposite side. The more dominant crease at the 11th and 12th rib is usually an indication of a sacral inferiority on the opposite side. A lower buttock, with the patient in the standing position, also indicates a sacral inferiority on the same side.

-The indication for a sacral fixation is bilateral weakness of the neck extensors when tested individually (i.e., the right and left neck extensors are both weak individually), an iliac fixation is unilateral weakness of the neck extensors, and a lumbar fixation is a weakness of the neck extensors bilaterally when tested together.

-One of the indications for a sacral subluxation is nuchal ligament tension on the side that needs correction. The only exception to that is the sacrum that is occasionally bilaterally inferior, and in that case, there is nuchal ligament tension on both sides. There will be palpatory pain on the either side of the external occipital protuberance, quite prominently down to the third cervical lamina, very close to the center, and some cases even further down.

-A sacral subluxation is never listed as a sacroiliac subluxation. An innominate subluxation is not a sacral subluxation. The sacrum is truly a mystery of the human body. It sets forward of its iliac articulation, yet supports the entire body weight. Whenever the nuchal ligament or ligaments from the external occipital protuberance to third cervical or any space in between those points on the nuchal structure are painful to palpation, a sacral subluxation must be corrected before results can be expected. The sacral subluxations come nearer to explaining the so called disc lesion that does any combination of lesions.

-The sacral articulation surface projects itself into the receptacle of the ilia much like a cork in a bottle. The iliac surface is the female part of the articulation and the sacral surface is the male portion of that union. The serrations of the sacrum must fit correctly into those of the ilia for correct and stable weight bearing function.

-Example of a sacral subluxation, the sacral base is superior on the left and inferior on the right. The sacral apex is to the left. The left sacroinnominate articulation is open and gives the appearance of a true saddle type lesion. It is impossible in this lesion to adjust the left innominate into position with the left sacral articulation, so this must be listed at all times as a true left superior sacral base and a right inferior-anterior base. The pelvis will rotate to the right or low side giving this patient the appearance of a true right sacroiliac muscular distortion. The diagnostic point is the extreme nuchal ligament pain on palpation. Left mastoid and first rib tubercles will be negative. The fifth lumbar will

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be inferior on the right, but right styloid will be negative, or both styloids will be extremely painful. The dorsal spine will scoliose to the left, and the right leg will be long in the prone position.

-Leg measurement in the prone position is an important indicator, perform on every patient. You measure at the medial malleoli. The long leg is the ischial side and the short leg is the posterior superior iliac spine.

-Example: the patient is prone with a long right leg and short left leg. The doctor stands to the short leg side of the patient. The right thumb contacts over the ischial spine with the thumb facing headward. Left thumb contacts over the posterior superior iliac spine, the thumb facing footward. Give light traction-type thrusts with the ischial point footward and posterior superior iliac spine contact headward 10 times. Then hold the right contact with a footward pull and left contact with a headward pull, and have the patient inhale and exhale two times. The third inhalation is prolonged, and the exhalation is forced. As exhalation nears termination, give a headward traction with the left thumb and footward traction with the right thumb. Remeasure the leg length and if now equal, the sacral respiratory balance has been established.

-Palpate the nuchal ligament from the external occipital protuberance inferior to the third cervical. This is a band of ligamentous tissues extending in the central occipital-spinal line. When painful on either the right or left sides, it indicates a sacral lesion.

-Nuchal-Sacral Reflex: Palpate the medial side of each posterior superior iliac spine (PSS). Painful side is the sacral reflex fixation side (99% correlation with sacral involvement either inferior or posterior). Example: palpatory pain in the nuchal area just inferior of the external occipital protuberance with patient prone. Make contact with the left thumb at the nuchal ligament and right thumb to the left PSS area. (99% of the time the pain will be greater in comparison at the nuchal area) This patient will have long right leg and short left leg and the doctor stands to the short leg side of the prone patient. Right thumb contacts the ischial spine with the thumb facing headward, left thumb is over the PSS with thumb point facing footward. Give ten light traction type thrusts to separate your thumb position (similar to Category I challenge) . Hold the right contact over the ischial spine footward with left contact over PSS while patient inhales 2-3 times, on the third exhalation give a heavier thrust with the opposing thumbs. Remeasure leg length.

-Nuchal ligament is a band of embryonic ligamentous tissue. Pain here indicates a sacral lesion. Sacrum will generally be inferior on the long leg side and posterior on the short leg side. For the inferiority hold your thumb on the sacral base at medial PSS and with other hand flex the patient's leg (bending knee) slowly until the patient complains of anterior thigh pain or lumbar pain. This moves the ilium like a wheel lifting the sacrum with it while the doctor maintains the contact on the sacrum/PSS. Hold to patient tolerance with a slight headward pressure of the thumb until you feel both ilia and sacrum rise on that side. When ilium rises, hold it down with your thumb and quickly flex and inch or two on the leg to let sacrum "slide by" the ilium. Thumb contact should be firm but not heavy.

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- With nuchal pain on short leg side, simply have patient side-lying away from doctor and flex the leg on posterior sacral side and tuck toes behind knee. Extend top shoulder back and hold doctor thumb against sacrum while patient maintains flexed thigh parallel to the floor. This is to keep an opening between sacrum and ilium; if you let the leg go up too high, it closes it in the back; if you let it fall too low, it closes it in the front. You need the ability of the sacrum to move in a forward direction. Use a stiff thumb contact to sacral ala on the high side. Pull patient elbow back and push the sacrum forward with your thumb until you feel a tension, then thrust forward on the sacrum. The nuchal ligament tension should now be released after correction of an inferiority or anteriority.

-This is based on some of the early DeJarnette technique.

-To challenge for an inferior sacrum, contact the ilium on the same side and then challenge the sacrum up, and test the hamstrings for weakening.

-To challenge for a posterior sacrum, hold the anterior ilium on the same side of the prone patient and then challenge the sacrum from posterior to anterior

-These challenges should correlate to the long and short leg sides.

-Coordinate these sacral techniques with the PLUS pattern, especially useful in the prone position. Simply have the patient elevate their head and chest by extending the head and chest with their hands on the face section of the table, pushing the head and thorax into extension. The right piriformis must weaken under these conditions. A Category I condition may or may not accompany this sacral distortion. Correct the Category I if present. Correct the sacral subluxation and use the nuchal ligament long leg flex technique. Hold the posterior superior iliac spine inferior while you flex the long leg to allow the sacrum to slide by that innominate. recheck the nuchal ligament for tension relief and head level improvement. Use a raw veal bone supplement at three times a day. Remember that origin and insertion technique to the sacrum is the basis for Logan basic technique success when the basic contact technique is AK understood.

Femur Head

-The piriformis arises from the anterior two-thirds of the sacrum and inserts into the lesser trochanter. This causes the femur to externally rotate, it also produces abduction in a non-weight bearing position, and an abduction force in a weight bearing position. This abduction and external rotation of the piriformis is balanced by the quadratus femoris, which arises from the anterior portion of the ilium and goes to the linea alba at the posterior portion of the femur. The femur head is the axis of a pulley, with the piriformis going up and over the pulley and the piriformis pulls in an upward direction when the pelvis is in a side-lying position, and the quadratus femoris is the other extension of the pulley, pulling it down. The femur is the point of the opposite pull between the two muscles and there should be a balance between them. The external obturator and superior and inferior gemelli are also in this balance. Getting the sacrum at zero defect is very important before you can treat the position of the femoral head.

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-Lawrence Jones, an orthopedist in the 50's and 60's, was a pioneer in his observations of radiographic measurement of the changes of the pelvic position and how it related to the entire postural complex. He felt that it had to do with changes in the foot. An accumulation of evidence confirms that postural defects in the lower extremities correspondingly transmit to the pelvis. So also can the reverse be true. Pelvic problems can transmit themselves to the lower extremities and upper extremities. There are two different types of problems. 1. Differences in leg lengths produced by disturbances in pelvic, femoral head, sacral, and iliac level cause lateral angulation. 2. Internal rotary imbalances causes an anterior and posterior displacement with the pelvis being regarded as a wheel, the top of the wheel moving forward and backward with the corresponding bottom of the wheel (ischium) moving backward or forward as the upper part of the wheel moves in the opposite direction.

-Measure the leg length in the supine position and then with the patient sitting up. If there is a difference in leg length, this indicates femoral head disturbances. This was on the last tape. We will be discussing the obturator externus, gemelli superior and inferior, iliacus, and quadratus femoris and their relationship to the femur. The iliacus has an attachment to the sacrum, whereas the psoas does not. Any time one calls the muscle the iliopsoas, it is designed to call attention to the insertion on the lesser trochanter of the iliacus, but fails to call attention to the iliacus attachment to the sacrum, which is a very major portion of the PLUS pattern. The sacrum has a movement with flexion and extension. Walking causes the sacrum to go back and the ilium and fifth lumbar to go forward on the side of the forward leg. There is a shuttle action with the sacrum moving in the opposite direction as the ilium and fifth lumbar. However, when the patient flexes forward, the sacrum goes backward on the right and not on the left. The same is true when the patient extends, the sacrum moves back on the right and not the left. The iliacus cooperates on this function that Illi first observed. Illi did not mention the iliacus, but there is no question as to sacral attachment.

-The acetabulum and femur head is covered with hyaline cartilage and has no nerve supply, there is total coverage except for the attachment at the top of the femur head where the teres ligament is, a retention ligament that aids in the maintenance of the femoral head in the acetabulum. The ball and socket joint of the hip is further dependent upon a thick marginal band of fibrous tissue, the cotyloid ligament, which spans the cotyloid notch and thus surrounds the head and aids in holding it in place by suction. That capsule arises from the margin of the acetabulum and the cotyloid ligament and extends downward around the neck like a sleeve to be attached to the region near the anterior intertrochanter line in the front, and near the middle of the neck medially. The synovial membrane is reflected onto the neck from the capsular attachment and envelopes it up to the margin the articular cartilage.

-An excellent book to consult is "Myofascial Pain and Dysfunction, The Trigger Point Manual, Volume II", Travell and Simons. Chapter 4 talks of lower leg length inequalities

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and compensatory C and S curves. Several drawings discuss structural alterations talked about here.

-Synchronous rotary movements of the foot and leg are linked to changes in the pelvis. Postural errors in this system are more commonly caused "from the top down" contrary to popular opinion of "from the bottom up". We consider changes in the spinal cord, column, and pelvis influencing the acetabulum and femoral head much more than the foot. The pelvis can move centrally on the hip joints, much like a wheel, with the "axle" of the femoral heads being eccentrically positioned. The acetabular cartilage is devoid of nerve supply according to Gray's anatomy. The ilium and ischium must counterrotate equally much like a wheel around this acetabular axle. The iliacus is the "sleeping" factor. The fan shaped attachment of the iliacus narrows to a thin tendon passing anterior to the pubes just lateral to the symphysis, angling sharply to insert into the medial trochanter. Strong internal rotation of the upper end of the femur will pull directly on the upper pelvis surface. The forward pull on the ASIS is from the rectus femoris and sartorius, and if they are weak, there is a backward direction to the ASIS. These obvious forward and backward movements of the ilia can be measured radiographically. The more common movement of the pelvis forward causes the sacral base to press forward on the terminal roots of the cauda equina which is a major cause of localized back pain. The iliacus involved changes the position of the ilium. As the ilia is pulled forward above, there is relative backward movement at the pelvic base with sciatic nerve pressure by altering the sacrospinous ligament, closing the lower aperture of the sciatic foramen.

-Postural leg length change can be seen left and right as well as front and back. Many supine patients with TMJ pain show temporalis pain. Illi said that many of these patients have their pelvis in a position of "rest" with their spine in a position of "walking" or vice-versa (1951). Temporalis pain may be relieved by raising right leg and left arm or vice versa while applying palpatory pressure. We have found a high percent of pain relief with raising the left leg and right arm, and eventually that only the right arm was what truly relieved the pain and the left leg independent of the right arm did not. Also the left leg off the table in extension also relieved the pain in a high percentage of patients. Many other types of palpatory pain were also relieved and patients could help themselves by getting into one of these positions. (right arm forward or left leg backward). Exercise of putting left leg back while pointing toes to the arch of the right foot will detorque the patient after correction and remove the persistent subluxation wherever it may be.

-Low back pain is much more prevalent than sciatic pain statistically. Pronation problems are a factor, however muscle balance of the femoral head and pelvis is very important, they contribute just as much to the patient's symptoms and ultimate rehabilitation. Pelvic angle increase and lumbosacral angle change can reflexively cause posterior tibial pain, which is most often associated with the pronated foot. A weak iliacus or iliacus weak on RMAPI (repeated muscle activation patient initiated) may be seen or a common reactive muscle pattern between the iliacus and posterior tibialis ipsilaterally. If the iliacus is the cause, this problem must be approached from top down rather than bottom up.

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-Every muscle has a rib pump involving intercostal nerve movement of spinal fluid. Right arm and left foot forward step, the axis of pelvic rotation is balanced by the counter rotation of thorax around T7. Interestingly the rib pump point for the iliacus and the piriformis is at T7! New understanding of why T7 subluxation is so frequently found and how this can affect these muscles.

-Iliacus is tested at 45 degrees hip flexion (supine) with femur in extreme external rotation. Stabilize the opposite ASIS and contact the medial malleolus. Line of test is directly down through sagittal plane toward table. Rib pump is at T7 within 2-3" laterally requiring treatment of manipulation or strain/counterstrain with respiration, spreading fingers on deep expiration.

-Iliacus minor origin arises at anterior inferior spine of ilium, inserting into the iliofemoral ligament at lesser trochanter. Rib pump is at 8th intercostal space from 3-4" lateral to the transverse process and is treated the same way. Muscle test is again flexion to 45 degrees with the line of drive at 15 degrees laterally. Treatment usually with origin/insertion or strain/counterstrain. Also test quadratus femoris, piriformis, and obturator externus.

-Obturator externus is almost same as quadratus femoris except the hip is flexed higher to 110 degrees. Rib pump is further lateral near the upper outer border of scapula at level of T3.

-Quadratus femoris origin arises at the anterior upper border of the ischium and inserts into the posterior upper femur at the linea quadratus. The rib pump area is unusual in that it is just below the clavicle at the upper, anterior portion of the axilla, near the upper end of the middle portion of the deltoid. Usually very painful and bilaterally located. The quadratus femoris is in direct opposition to the angle of the piriformis. The test position is with the patient supine and the femur is at 75 degrees, the bracing is on the ipsilateral knee which is flexed to 90 degrees, the ankle is taken directly lateral with the opposite hand. 90% of patients seen that have limited hip adduction have a weakness of the quadratus femoris that puts the piriformis into a hypertonic state. This is observed through restricted adduction and increased abduction of the hip on that side which leads to a compensation of the opposite side and produces changes of rotation from the top down, from the femoral head down, not from the pronated foot up.

-The superior and inferior gemelli are tested with the patient prone. The inferior gemellus is tested with the knee flexed 90 degrees with the hip 15 degrees in flexion by taking the leg off of the table, pressure is exerted on the ankle into abduction while the stabilizing hand contacts the opposite buttock. The rib pump area is between the 7th and 8th ribs, about 3-4" lateral to the costovertebral area. It is treated by manipulation or strain/counterstrain with expiration. It frequently accompanies the weakness of the quadratus femoris. The gemellus superior arises from the same outer surface of the ischial spine, but is higher than the gemellus inferior, and inserts into the medial superior surface of the greater trochanter. It has a neurolymphatic reflex at the 10th intercostal space, 3-4" lateral from the spine, but you may find it closer to the transverse process. It responds to

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manipulation or strain/counterstrain to remove the pain. The gemellus superior is tested with the patient prone, knee flexed to 90 degrees and the hip flexed off of the table to 35 degrees, the ankle is then pressed into abduction while the stabilizing hand contacts the opposite buttock. These two muscles complicate the limited adduction of the hip, changes PLUS patterns, Walking Gait Configuration, sacral patterns, femoral head patterns, and contributes to the perpetuation of sacral subluxations with corresponding changes in the ilium (Categories 1, 2, 3).

-The drawings for testing of these muscles were supplied by the work of Alan Beardall and Human Biodynamics Organization in Portland. GJG does not always agree with Alan in that the reflex points were rib pump areas and not neurolymphatic reflexes.

-Lawrence Jones, The Scientific Exhibit, The National Convention of the American Medical Association, and the Sciatic and Low Back Pain Division, in San Francisco, 1946; "Fatigue and Various Neuralgias", published 1948; "Nerve Tension and Inflammation", Atlantic City 1949 and Los Angeles 1951. Through the action of the iliacus, strong internal rotation of the upper end of the femur would pull directly on the upper surface of the pelvis, the force being most strongly exerted at the anterior superior iliac spine. He is stating that it is coming from the bottom up. The sartorius and rectus femoris (especially in sleep vs. awake patterns) may also aid in the crest of the pelvis forward, and consequently a corresponding backward movement of the pelvic base, producing a posterior ischium, the LLL. This movement can be measured radiographically, as was done by Jones. The patient is standing in a with the feet in a supinated position and the sacral angle will change from 60 degrees to 40 degrees. GJG states that this can just as easily occur from the top down, the ilium moving and causing a corresponding rotation. To document this relationship of the top down, test the posterior tibial (main muscle preventing pronation) and iliacus in a reactive pattern with the iliacus tested first and the anterior tibial tested second. The anterior tibial will weaken in a high percentage of cases of pronation. This says that there is hypertonus of the iliacus. Iliacus origin-insertion technique is appropriate in order to reduce the tonus. If the iliacus tests weak with RMAPI, there is stupid body wisdom, and the treatment is origin-insertion technique to tighten it, this is the paradoxical pattern.

-When you have a pelvic angulation, disregarding any differences in leg length, the general elongating nerve tensions that have the observed start at the ankle, are augmented by double shortening pressures that accompany the pelvic shift. The upper component, frequently a forward movement of the pelvic crest, causes the sacral base to press forward on the terminal roots of the cauda equina. This is a major cause of low back pain. This is what Jones stated in 1951. The lower component, or backward movement at the base of the pelvis exerts pressure in the sciatic nerve by elevation of the sacrospinous ligament and closes the lower aperture of the sciatic foramen. The same movement that produces low back pain can cause sciatica, thus the combined mechanism explains their frequent association.

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-Example: patient with arthritis of the left wrist, pain and disability. There was evidence of a sacral subluxation through tenderness of the nuchal ligament, an increased blood pressure (patient was instructed not to take medication that day), and diminished adduction of the right femur when crossing the left. This pattern was evident in the supine, sitting, and standing positions. You must ask the question, Why is that? The ischiofemoral ligament may have to be stretched as was talked about in the last tape. He showed a need for correction of mastoid point C to reduce blood pressure. Upon correcting the right femoral head, all of the pain, limitation of motion, and disability in the left wrist disappeared.

-Test the quadratus femoris. If it is strong, have the patient therapy localize the neurolymphatic point on the anterior and most upper portion of the axilla on the same side. Retest the quadratus femoris, if it weakens, this is a 51%er. This puts the piriformis into a hypertonus. The piriformis has to let go when the patient takes a step forward. When there is a hypertonus in the piriformis, it makes it hard for the piriformis to let go. The iliacus crosses the sacroiliac joint and is attached to the sacrum, as is the coccygeus. The iliacus may be strong or a 51%er. Test the external obturator against the rib pump point and correct if present.

-Patients infrequently pass the Freeman-Wycke One Leg Standing Test. This indicates something wrong in the cervical column, costovertebral and sternocostal joints, and in the femoral heads information which transmits the information to the cervical, costovertebral, and costosternal joints, where a good deal of equilibration takes place rather than in the vestibular branch. The costovertebral and costosternal joints also have input into the cerebellum which is far reaching in its effects in disturbances of the extensor muscles, which has to do with how we stand.

-The piriformis, iliacus, and superior gemellus all have a rib pump reflex at the 7th thoracic.

-The rib pump reflex for the gluteus maximus is at the 10th thoracic. The muscle may test strong, but weaken with therapy localization to the 10th thoracic. Especially common in patients who walk with a strong outward rotation of the lower limb, the weakness will be on that same side. This can occur unilaterally with one foot that flares out, or bilaterally with both feet flaring out and having the Charlie Chaplin gait. Treat the rib pump at the 10th thoracic by having the patient prone, raise the hip into extension to take the pain out of the rib pump reflex, and have the patient hold expiration while you spread the point apart with your fingers. If the gluteus maximus, a leg-puller-upper, is a 51%er, the tensor fascia lata acts as an unopposed leg-puller-downer, which then has a tendency to limit leg adduction in the supine, prone, and standing positions, and leads to pelvic problems.

-Limited adduction and increased abduction on one side often shows a weakness in the quadratus femoris, external obturator, iliacus. The opposite side will show limited abduction and increased adduction and may have a piriformis-rib pump. Make these corrections to normalize femoral head activity.

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-If you have a patient with pain, limitation of motion, disability, etc. in a joint, make your corrections to the femoral head. After you have corrected the femoral head, sharply stretch the hip into adduction several times and test a muscle that is related to the joint that is involved (i.e. wrist, neck, foot, etc.) and you will note that adduction of the hip will weaken the muscle related to the involved joint. Have the patient therapy localize the neurolymphatic reflexes for the adrenal glands and repeat the stretching of the hip into adduction, retesting the muscle related to the involved joint will now be strong. Correction is adrenal neurolymphatic reflex activity. This is usually enough to stop the stretch reaction, but sometimes adrenal tissue nutritonal support is necessary.

-Once you have made all of your corrections, be sure to check for SST (Sagittal Suture Tap technique). Have the patient therapy localize the sagittal suture and you will note return of the limited hip adduction. You do not have to recorrect the femoral head, but it indicates that the sagittal suture must be spread apart and the anterior fontanele tapped.

-In the summary that Lawrence Jones made in his text, "The Postural Complex", chapter 15, Charles C. Thomas Publishing Co., 1955: "It must again be emphasized in the great majority of cases, the foot, the primary cause of serial distortion, is a silent factor, in that in and of itself, may not be painful. Quite as important is the fact that symptoms may not arise from a definite fault in posture. Many patients who have excellent physiques by the most exacting standards have a complete set of symptoms, whereas others with multiple defects of considerable severity may be relatively symptom free. It must be emphasized that in the vast majority of the cases, the foot is the primary cause of serial distortion. In the course of clinical discussion, the statement has been made with tongue in cheek that his investigation was based on two major discoveries. 1. The foot is attached to the leg. 2. The spinal cord is a continuous structure. This is of course a persuasive argument reduced to absurdity. The first of these, the simple connection of the foot to the leg is a distinct oversimplification.. The following analogy has been found to be more pertinent to the understanding of the specific phase of the postural problem. It has been amply demonstrated that internal rotation of the foot causes an exact corresponding shift at the ankle, knee, and hip, with demonstrable changes at the lumbosacral level. Relative inequality of weight in joint surfaces may be compared to uneven wear on the automobile tire that can only be terminated by correction of the wheel alignment on the axle. Without this preliminary change, attempts at repair are a waste of effort. The second portion concerning the spinal cord as a unit emphasizes a general favor to recognize this simple fact but actually conceal a much greater error. The spinal cord is only a segment of the complete unitary structure that comprises the brain, spinal cord, and peripheral nerves and the sympathetic and parasympathetic nervous system. A mechanical lesion or even tension at any number of critical points can considerably affect the entire interdependent system to disturb the fine balance of stimulation or inhibition which is essential to normal function".

- "Applied Kinesiology, 1994-1995 Workshop Procedure Manual": "From time to time I have talked about the absolute classic book by DuCrouquet "Walking and Limping". 'In

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the section where they discuss the beginning of walking they say "It is the gluteus medius that maintains the relative horizontality of the pelvis. The lateral abdominal muscles (on the opposite side) act with the gluteus medius in close synergy. It's this action performed by these two muscular groups that permits the harmonious transfer at the thoracic center of gravity in the frontal view.' Sometimes the opposite abdominal muscle will preserve the pelvic horizontality by the action of suspension. In normal walking the lateral inclination has two purposes: to transfer the thoracic level of gravity laterally and to reinforce the action of the opposite lateral abdominal muscles by the separation of their pelvic and thoracic insertions." "Quoting from an article that Dr. Fred Lee spoke about in 1971 at the European Chiropractic Union "Look at this walker, he's not lifting his body by the extension of the foot but now look at the same walker from behind, with each step his pelvis makes an excursion towards the side of the carrying leg. This sideways movement of the pelvis changes the trochanteric angle of incidence on the side of the carrying leg. The angle becomes more acute, therefore the pelvis lifts up on the respective side. The gluteus medius muscle stabilizes the entire ilium at this moment, at the level of the carrying leg. So now the inclined leg should come back to the horizontal and higher level. Thus the other leg, (swinging leg) is automatically lifted over the ground. The effect of gravity is displaced with each step. The oscillation of the body upward and downward is therefore the result of the alteration of the trochanteric angle of incidence and the work of the gluteus medius." Also it's the effect of the opposite lateral abdominal. "In normal forward stepping, the sacrum is pulled upward by the sacrospinalis on the forward-stepping side, so that the scissor-like sacroiliac articulation closes at the top. If the torsion is blocked on this forward stepping side the sacrospinalis never-the-less contracts rhythmically with each step. Its contraction reduces its own length and the spinous 'gives-way' on the other side. This is also the reason for the painful contracted psoas (partly antagonistic) on the left side. The gluteus medius on the right side must provide help by contracting more than normally. It also becomes painful. When the gluteus medius fails on the right side, for example, the stabilization of the pelvis in the horizontal place also fails when the left foot swings forward. The oscillations of the pelvis for the purpose of rhythmic change of the trochanteric angle of incidence continues to exist. The movement of the limb's inward rotators at the time of the right step forward also pulls the pelvis sideways at the same movement time towards that side. When the right gluteus medius is paralyzed the pelvis is not lifted. Of course with the trochanteric angle of incidence the left leg has no freedom to swing forward. In other words, when the gluteus medius is paralyzed the whole pelvis is subjected to incorrect rhythmical movement, the spine moves in the direction of the paralyzed or weakened gluteus medius. Now that we know how to test this by RMAPI, it is very interesting to see how many people have a medius that isn't working correctly. We have muscles that rotate the leg inward, inward rotators, and muscles that rotate the leg outward, outward rotators. The relation of the strength between the outward and inward rotators is 155:50. When a

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person steps forward the inward rotators normally rotate the leg medially, as a muscle bundle acting antagonistically. Therefore, the ilium rotates posterior on this side. At the same time the weight bearing leg is rotated outward by the outward rotators but the foot is stabilized on the ground and acts as an axis so the ilium can rotate forward in its turn. Throughout this, you are looking at x-ray motion pictures of the spine while walking. Now you see the consequences correctly. With each step, the ilium makes a small counter torsion backward and vice versa. When the leg carrying the body is behind, the ilium turns forward on that side. This reduces to a minimum the torsion made rhythmically by the pelvis. Note how the trochanter leads with each step with the projection becoming smaller and smaller. Note also that the sacroiliac articulation naturally becomes involved. It lies between the immobile spine and the mobile femur head. The point of the triangle of the sacrum is below and the base is above. There are only two other movements that need to be defined. 1. The rhythmic movements to and fro of the pelvis. 2. The complication of the fifth lumbar, which is not suitable. Due to the perfect work of the inward rotators and gluteus medius the pelvis remains horizontal for a major portion of the time. The pelvis' rhythm ensures that the spine will not be involved in its false movement. This means that the compensation of walking is affected by the sacroiliac articulation. All of the above is for your review and understanding. The use of RMAPI and concept of SBW (Stupid Body Wisdom) will intrigue and please you in its application of difficult patients."

-The femoral head and acetabulum is covered with hyaline cartilage and has no nerve supply, but has a high level of proprioception due to the very size of the femoral head and the relationship to the acetabulum and the muscles surrounding it. When you check the adductive ability of the right and left hips, you find a high preponderance of limited adduction on the right hand side. You categorize and catalog the muscles that are associated with that and test them in the clear and as a 51%er (quadratus femoris, gemelli superior and inferior, obturator externus). When the right femoral head has trouble keeping in balance, the left femoral head side will have a piriformis problem with rib pump. When you unravel it and reduce the changes in the angle of incidence in the trochanter, you markedly reduce the reflex activity that the femoral head seems to have on structures all over the body. Correct the ischiofemoral ligament. Hyperadduct rapidly several times the femoral head (stretch it) that you just corrected and if it weakens a muscle in a target joint, contact the neurolymphatic reflex for the adrenals, an inch out and two inches up from the umbilicus, and this will neutralize the muscle weakness in the target joint. Treat with adrenal neurolymphatic activity. Many of these patients also will fail the PLUS pattern, most commonly there is failure of the left upper trapezius and right sternocleidomastoid to weaken when the patient is in trunk flexion or extension. Many times this is due to dural involvement and simply opening the mouth will stop this reaction, showing the attachment of the dura to the pterygoid processes of the sphenoid bone. A large percentage of patients who show restricted adduction of the right femoral head will also show therapy localization of the right and left femoral heads in turning off the left upper trapezius and right sternocleidomastoid with the patient in forward bending

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or backward extension in the PLUS pattern. If you have already corrected the muscles about the femoral head as described, this indicates that there is an outstanding nutritional fault, a need for pyridoxine (B6) 50 mgs. with niacinamide (B3) 10 mgs., at a dose of three per day. This helps to maintain the integrity of the femoral head correction as well as any other reflex fixations and sublaxations.

-Applied Kinesiology, 1992-1993 Workshop Procedure Manual: "Runners do not run in a straight line. Every runner moves laterally and vertically as he runs. At first glance, this sideways and up and down movement doesn't seem like much, but once you measure those extraneous movements in slow motion and multiply them by the number of strides in a race, it soon becomes evident that every runner runs much farther than required. A runner takes approximately 1,000 strides per mile. This means that every error, no matter how small is magnified 1,000 times every mile, and 26,200 times during a marathon. Once you realize this, you can begin to look at running as a high skill sport, much like tennis. And as with tennis, the runner who makes the smallest number of errors often wins the contest. In the accompanying photos, Hussein and Petersen have been captured at the moment when each has full weight on one leg. If you drop a line through the center of their hips (midline) and one through the center of the weight bearing leg in order to measure their cross-over (i.e. how much their leg crosses over toward the midline), you can see that Hussein crosses over only 3 degrees. This is actually quite a bit for him, his cross over is usually 1.5 degrees. Petersen, on the other hand, crosses over 10 degrees. He crosses over not only toward his midline, but well beyond it. His time in 1987 was 2:12.03 or approximately 132 minutes. But he was adding 6 inches of lateral travel to every stride he took. That adds up to a total of 2.5 miles over the course of the marathon. At approximately 5 minutes per mile, that's 12.5 minutes he could deduct from his time by eliminating cross-over. Without cross-over, he would have finished in under 2 hours, put his name in history and put millions in his bank account. Hussein crosses over only 1 inch per stride or .42 miles of lateral travel over the whole race. that means that Petersen ran 2.08 miles farther than Hussein. By running just as efficiently as Hussein, Petersen could have cut 10.4 minutes off his time for a 2:01.60, a world record. He would have beaten Hussein by more than 9 minutes instead of losing to him by only 60 seconds. Crossing over toward your midline is also extremely hard on the muscles and joints of the legs. Anything above 3 degrees crossover is almost invariably associated with shin splints, knee injuries, hamstring pulls, hip pain, and back problems. The reason that your legs get sore is simple to demonstrate. With your weight on your left leg, lift your right leg straight up and down. As your foot lands underneath your hip, it doesn't need to roll in to make contact with the ground. Now swing your leg over to your midline and plant your foot. You have to roll the foot in to make contact with the ground. To control this aberrant inward motion, the leg muscles have to contract but also stretch at the same time. As a result of this constant trauma, the muscles become sore and small microfibers forms in the connective tissue between them, binding them together so they can heal.

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movement in another but when we're talking about the pelvis as a unit - when the top moves forward, the base must move backward in exactly the same arc and degree and incorporated in that figure, that you'll see as the attachment of the iliacus muscle to the internal anterior surface of the iliac wing. That widespread fan-like muscular fiber activity at the origin, those fibers unite into a narrow tendon which passes the anterior surface of the pubis just lateral to the symphysis and then angulates sharply backwards to finally insert in the inner upper surface of the femur at the projecting inner trochanter. Through this medium, this effect, strong internal rotation of the upper end of the femur would pull directly on the upper surface of the pelvis and that force being largely exerted on the region of the anterior superior iliac spine. Many times it's the iliacus minor that we have to be concerned with. There are undoubtedly other factors acting in that same area: the sartorius, rectus femoris, and a few others which may aid in pulling the crest of the pelvis forward and consequently cause a backwards movement of the pelvic base. The iliacus is often involved and requires accurate diagnosis. Quite frequently it will be the iliacus minor. You'll notice on the second in that pelvic series, the inner circle illustrates that this movement can actually be measured radiographically. Such pictures are taken in the standing position and Jones talked about that. Now the last of that triad of the inner circle illustrates the important clinical effects of that pelvic angulation, namely the generalized elongating nerve tensions that start at the ankle or can start at the pelvis and are augmented by the double shortening pressures that accompany a pelvic shift. That upper component, with the forward movement of the pelvic crest causes the sacral base to press forward on the terminal roots of the cauda equina and this is one of the major factors in the causation of low back pain. The lower component or backward movement of the pelvis, the ischium going backwards, exerts pressure on the sciatic nerve by elevation of the sacrospinous ligament that closes the lower aperture of the sciatic foramen. These are more or less the words that Jones used to describe this whole pattern, in short the same movement that causes low back pain may produce sciatica, but this combined mechanism explains their frequent association. Recall now too that this can come from above to below as well. In the center you see those two skeletal figures, one labelled nerve tension and the other named nerve release. Nerve tension arises from the composite effect of the serial deviations of the inner circle. The companion picture nerve release correspondingly portrays the result when correction at the base, at the foot, relieves the serial distortion or when correction in the pelvis or higher up relieves the foot and therefore it reverses the serial distortion of the superstructure and vice versa. The numbers attached to the central figures, one for the ankle, two for the sciatic foramen and three for the lumbosacral junction represents the order of their appearance from below upwards but are not indicative of their respective importance. It just so happens, in light of our present knowledge, that the one, or the ankle component, is quite important, but the pressure at the lumbosacral area is considerably more important than that occurring at the sciatic area. And this conclusion is based on some of the observations Jones made both clinical and statistical observations of low back pain as a neuralgic symptom not only outnumbers sciatica statistically but almost invariably precedes it for a long term interval. Since the central nervous system is a continuous structure, tension in one area must be transmitted in various degrees to all others. Correspondingly and conversely for the same reason, relaxation of tension may cause

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corresponding release at distant points. Structure determines function. This material came from Lawrence Jones who is an MD and orthoped, scientific exhibits at the National Convention of the AMA Sciatic and Back Pain, San Francisco, 1946, and Fatigue and the Various Neuralgias, Chicago 1948, Nerve Tension and Inflammation, Atlantic City 1945-49 and Los Angeles 1951. So it's something we've talked of before and we've included copies of those diagrams in many of the lectures we've made.

-1990-1991 Workshop Procedure Manual: the unique relationship of the functional hallux limitus and the relative relationship to gait efficiency was discussed. The author, Howard Dannenberg, DPM and a patient is an editorial consultant to the journal of Podiatric Medicine Biomechanics. The following material represents quotations from that 90-91 AK Workshop Procedure Manual, pages 100 to 102. Dr. Danenberg, the author, describes a new method of viewing gait efficiency and presents a new entity not visible even to the most trained observer in gait. New theories regarding methods of understanding propulsion efficiency and the symptomatic conditions are discussed. Following the 1980 Olympics and for the four years I remained on the team we did many projects but there was a device which I talked about again in the 90-91 manual. I talked about the technical advance of the so called electrodynogram system put out by the Langor group which is a method of putting a number of very thin sensors on the bottom of the foot and one indifferent one on the calf and then using a computer to measure the length of time the foot is on different parts during a weight bearing activity during a normal step. And in the 90-91 manual I talked about a reference from the 1953 edition of British Journal of Anatomy. Hicks described the so-called windlass effect and the automatic, completely mechanical method of raising the arch with each step. It simply involves the extension of the great toe on the first metatarsal which functionally shortens that plantar aponeurosis. This creates a decrease in the distance between the plantar aspect of the calcaneus and the first metatarsal phalangeal joint. The mechanical arch raising and external rotation of the lower leg result. The windlass however was thought to be an ineffective method of stretch out, especially would stretch out in flat foot. Data from the electrodynogram made by the Langer group seems to indicate that it is the functional inability of the great toe to extend, i.e., the reason for the title, Functional Hallux Limitus, rather than the ineffective of this windlass that is responsible for the failure of the arch to be raised. It's the belief of the author, Howard Danenberg, that it's the functional inability of the hallux extension that accounts for so much of the mechanical pathology. That's what we're going to talk about.

-I have every patient walk on a tread mill and I notice variations in the heel lifting on one side and the other. I listen to what they say and they give me a careful history and many x-rays and a lot of blood chemistries, the usual things on the type of patient I see that have usually been sent in by another doctor usually a good AK guy who's having difficulty with this type of patient. I see a difference in the heel lift but it takes a little time to be able to see that. What we do is make the usual postural exam and make the usual observations and what we look for is a weakness of the extensor muscle, the extensor hallucis which literally dorsiflexes the big toe. We also look for the extensor digitorum which dorsiflexes the other toes. But that's what we look for. Naturally we look at the patient's posture both at rest and in motion. We have them stand on

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the plumb line and face us and then turn around and face the other way and quite often we have them walk on the plumb line and sometimes we have them walk on a treadmill especially if it's been a difficult pattern. We make the usual observations for the exam of the patient's blood pressure and all the rest of the physical exam has been done and an analysis of the films has been made and so forth so we get right to the heart of this and we test the extensor hallucis and the extensor digitorum muscles with the patient supine and in a certain percentage of patients you'll find a weakness right away. I'd say in perhaps maybe a third of the patients will show that.

-Frequently I have them sit up and press the fibula and tibia just below the knee together to compress the tibia and fibula because the most common cause of the weakness of the extensor hallucis of the big toe, which causes a corresponding spasm of the flexor hallucis interfering with the gait, is a pressure by the inferior retinaculum at the ankle just above the ankle, causing pressure on the deep peroneal nerve causing weakness of both the extensor hallucis and also the extensor digitorum. If pressing from side to side at the tibia and fibula at the knee eliminates this rather common weakness we simply have the patient lie on their side and then make a high velocity thrust on the malleoli compressing the malleoli together like you would when the patient has a carpal tunnel. We then retest both the left and right extensor hallucis if it was bilateral or on the one that we found if it was only unilateral and it should remain strong. Then we tape the ankle with 3M tape, which is a fabric tape elastoplast which dries real rapidly and doesn't cause any adhesive dermatitis, and we leave it in place for about a week. That's the first thing we do and sometimes that alone is enough to take the weakness of the hallucis out. That coupled with all the rest of the things we do causes the patient to do very well following that. But if the muscles are weak and the approximation of the tibia and fibula doesn't seem to help it then you just test the origin and insertion. Most often there will be a weakness of the extensor digitorum, more frequently the extensor hallucis and a simple origin and insertion pressure will quickly relieve it. That's not too uncommon. The 90-91 manual states that there is a rib pump activity at dorsals 4 and 5 and that has to be treated by using strain counterstrain. Sometimes there may be a nutritional fault and the nutritional fault seems to have a varied pattern. There hasn't been one that seems to be consistent, although there is a high frequency of a need for both potassium ions and cobalt ions. In some patients with a history of infection we very often find the thymus to be involved, but at this point the nutritional component seems to be very limited because the response to origin and insertion and the use of the approximation seems to be very effective. The obvious RMAPI would be a factor and therefore that would be again origin and insertion as well as increasing the hydration and in addition put the patient on a source of wheat germ oil. We use a perle that contains 385 mgs. of cold pressed wheat germ oil. That seems to be a minimum amount, but every patient is a little bit different.

-Now if the muscles test strong, the extensor hallucis and the extensor digitorum, and you feel this is a situation you want to investigate further, test them weight bearing. You simply have the patient stand up on the high/low table or just simply have them stand and observe for a limited range of motion. If there is any flexor spasm, the large toe which usually has quite a good amount of freedom, has a very limited movement and is literally limited to zero. If that range of motion is limited, test all the above responses that you find i.e., if you found the muscles weak

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and if you haven't taped the patient yet, or if you perhaps have made the approximation of the fibula and tibia but you haven't taped, test the patient literally for walking backwards. Sometimes when you test the patient and you find a weakness, usually the patient has walked into your office, and if they have it, sometimes having them walk backwards temporarily will neutralize any weakness that you find. Unfortunately, it only lasts for about sixty seconds. Then the minute the patient starts to walk forward again for about sixty seconds you get the muscle weakness again. I know sixty seconds is a long time in some guys high volume practice, but that's what we found that is a way of demonstrating a factor usually coming from gait. So you have the most common feature, a separation of the fibula and tibia. Another more common one is RMAPI. When the patient weight bears and they have limited motion it needs the same thing, it needs origin and insertion and usually the response to origin and insertion is very good. There's an extraordinary response in range of motion. Sometimes there can be a failure of the extensor muscle to work properly because its part of a disturbance in the liver meridian. If you find weakness, you can test it against the liver alarm point which is at liver 14. Even after you've done origin and insertion, you can still double check it against the alarm point liver 14 and if it weakens it then have the patient therapy localize to liver 3 on the dorsum of the foot just behind the large toe. If that is the case, stimulate liver three by tapping vigorously at one hertz to ten per second. You can use, if the law allows it, an acupuncture needle at that area, or you can use a laser for five or ten seconds on that point. The type of laser we use is the type we use to point to a screen when we're lecturing. Testing the muscles against compression manually at the tibia and fibula is the most common thing we do, tape those and leave the tape in situ for at least a week. We sometimes give the patient some extra tape if they need it. Then we use a triangular pad, a orthotic felt, the chiropodist felt, a quarter inch in thickness, two inches long and about an inch and a half high. We support metatarsals two, three, four and five temporarily, and if necessary, you can add that to the bottom of the orthotic surface that they're wearing. Then you correct both the nuchal and sacral fault that you find using nuchal tension as an indication of sacrum, pelvic and femoral heads as per the instructions that we give you. Then check the iliolumbar and sacrolumbar ligaments as by the instructions. Then as a final feature, therapy localize the sagittal suture and see if it's positive for an extensor hallucis weakness return and use SST, the sagittal suture spread and tap.

-The so called functional hallucis limitus can be defined as an inability of the proximal phalanx of the hallux, the closest one to the first metatarsal head to dorsiflex i.e., to come up during the stance phase of gait. Functional locking can vary in terms of the time and it can be less than one hundred milliseconds which is what is normal. We found that all the best athletes during their gait patterns all had less than one hundred milliseconds of time on that portion of the foot. It is extremely important to note that the full range of motion may be present in the first metatarsophalangeal (MTP) joint during non weight bearing exam and symptoms of pain may not be present in the joint and the patient's chief complaint may not be associated with it at all and not very many of the patients complain of pain associated with the first MTP joint. When the great toe reaches the ground it no longer moves and motion at that MTP joint is created by the foot flexing over it. During visual examination of the gait, any first MTP joint dorsiflexion can

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only be visualized as related to heel lift. Heel lift is accomplished by the first MTP joint dorsiflexion, and therefore, if functional hallucis limitus is present, heel lift in general can be delayed or be totally restricted. The net effect would be to hide the etiological functional hallucis limitus and can explain why this entity has gone virtually undetected in visual examination of gait. What really takes place when that extensor hallucis is weak is that the flexor hallucis gets tight and it actually limits toe flexion and sets up all types of aberrations in gait. It's just as if you have a wheelbarrow full of cement on a building site and you're trundling the wheelbarrow and the wheel of the wheelbarrow hits a two by four on the building side and stops but the cement keeps going.

-In the original article published by Howard Danenberg, DPM, Malcolm Laughton, PhD, MD and Richard Napoli, DPM there was a large cohort of patients with the primary complaints of: 22% of the patients complained of cephalgia, TMJ and neck pain; another 22% complained of low back pain; another 22% complained of hip pain; 34% complained of knee and leg pain; and none of them complained of foot pain. That's the point I'm trying to make. You can observe the posture both at rest and in motion as we were talking in the beginning on the flow chart but it takes a great deal of skill and sometimes having the patient walk at different speeds on the treadmill to see that alteration in the heel lift is one of the hardest things to see. I didn't see it for a long time until I finally had Howard as a patient, he unfortunately had the problem himself. He needed help in addition to the orthotic and the other material that he had prescribed for himself and which had worked very well for others. He needed rib pump activity as well as structural correction. But if you test the extensor hallucis and the extensor digitorum muscles you at least start to see the relatively high frequency that this muscle pattern is weak in the average patient population. Now when you find the muscles weak you can use appropriate five IVF factors and RMAPI factors, but the most usual thing is the extensor hallucis is weak and it responds to origin and insertion technique. The nutritional pattern for that is non-heat processed veal bone as we've learned in many tapes and many years ago. But if it only weakens on repeated use, that's RMAPI and requires wheat germ oil and origin and insertion. If it weakens on stretching that means fascial flush. If it weakens on maximum contraction that means put that particular muscle in a relaxed position and work on the spindle cells. That you already know. If the muscles test strong and you're having trouble with the patient understanding some problems, you can test during weight bearing and have the patient stand on one foot and then stand on the other foot. It's astonishing how many have a very limited range of motion when they're standing. This really means there is a great amount of contraction in the flexor hallucis which itself may occasionally require origin and insertion technique, that's relatively uncommon but many times in a persistent one you have to take that into consideration. If the range of motion is limited in one way or another, or muscles are weak, just have the patient walk backwards for about sixty seconds and everything that you find will disappear, but unfortunately only temporarily. That's another way of confirming that it's coming from gait. You can have the patient resume forward walking momentarily and the weakness and range of motion changes disappeared so nicely come roaring back. You then test for the response to the alarm point at liver fourteen and see if the muscle will respond to that. It will also respond to therapy localization of liver three on the dorsum of the

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foot just behind the big toe. That requires stimulation of liver three, tapping it, putting a needle in that point if that's within the limitations of the license where you're practicing, or you can use momentary laser technique which is very useful. This is a relatively common pattern. Test the muscles against a manual compression of the fibula and tibia as I mentioned earlier and use a high velocity compression adjustment for the proper approximation of the ankle joint. Then be sure to tape it after manipulation. Most patients need the effective taping and with some patients I leave it on for two weeks rather than the one week that I suggested. Then you can get a metatarsal pad that will allow you to support two, three, four, and five. You can put on the bottom of the patient's foot. You the metatarsal pad from your usual supply source or from podiatric supply. The pad can be placed under two, three, four, and five and you can put it under the orthotic lower surface if they're already wearing some. Be sure to correct the nuchal, sacral and femoral head faults as we will talk about and then clear the iliolumbar and sacrolumbar ligaments if you find them (that's following David Leaf's flow charts that he's produced and done such a good job on and highly recommend that you get). Then therapy localize the sagittal suture and if it's positive for the return of the weakness of the extensor hallucis, use sagittal suture spread and tap.

-We sometimes call one type of a cranial fault a universal cranial fault. Many times this is like a universal foot fault, but the interesting thing is hardly ever does the patient complain of foot pain, they generally complain of something else as I mentioned on that table of percentage of patients and the patients complaint. 22% complained of cephalgia headache, TMJ, and neck pain, 22% complained of low back pain, 22 % had hip pain, and knee and leg pain came out to 34% and none of them complained of their foot. So as a result, you're not given a clue as to the source of the patients pain problem if all you do is depend on where they complain. But if you do muscle testing especially in both weight bearing and non- weight bearing you see an awful lot of extensor hallucis, and in some instances the extensor digitorum, but mainly the extensor hallucis. It responds very well to your approximation technique, to taping and also to origin and insertion. The nutritional support I mentioned may be ionic cobalt or ionic potassium or sometimes thymus, but that doesn't seem to be often needed. Generally the origin and insertion technique plus the taping seems to do it as well as the stimulation of liver three. The nutritional requirement patients are relatively few and far between in the ones I've seen.

-1983 Workshop Procedure Manual, page 82: Nuchal tension and sacral problems were discussed. Preceding this was the discussion of the sacral base line called the true sacral base. In this discussion the sacral base x-rays were compared to standard 14x17 x-rays in the same case and it soon became apparent that the level of the sacral base was not consistent with a line drawn across the superior aspect of the sacrum when we use the Barge sacral x-ray technique. Barge did a study at the Logan College and found a very high percentage of sacral anomaly, much more common and, in fact, almost constant in the female, much more constant in the female.

-Sometimes pain may be the complaint that patients will have. They'll complain of neck disturbances (nuchal tension), but if you look at the occiput you'll find a tilting that doesn't seem to become evident if you test the muscles that are normally associated with head level or shoulder level. If you challenge the sacrum you'll generally get a negative challenge to the usual

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basic type of activity using your thumb on the sacrum, but if you hold the ilium down with one thumb with the patient prone, then challenge the sacrum upwards, you'll get a positive response. Now that usually shows sacral inferiority to exist on the side of the nuchal tension, which you establish first by palpation, and second by simple observation when the patient is standing. Generally the head is low on that side and sometimes the head is tilted up slightly. When you have unilateral nuchal tension with the patient prone it means a posterior sacrum on the short leg side. When you challenge the posterior sacral position on the short leg side, you may have to vary the challenge angle slightly, sometimes it doesn't challenge directly lateral if you have a posterior, slightly superior, slightly inferior angle, as well as posterior to anterior. Unilateral nuchal tension with the patient prone on the same side of the long leg means a sacral inferiority. Bilateral nuchal tension with the legs even in the prone position means a bilateral sacral inferiority. Correction is by a bilateral knee bend while you hold the thumbs on the ilium. Bilateral nuchal tension with the legs uneven is the most common pattern in the prone position and means an oblique sacrum with the inferiority on the long leg side and a superiority on the short leg side. Challenging confirms this. When you find an inferior sacrum you hold your thumb on the ilium, flex the knee and let the sacrum slide by. You do the same thing with the oblique sacrum on the long leg side. You then have a posterior sacrum on the opposite side and you treat that by just adjusting it. You make two adjustments based on nuchal ligament tension and also leg length differences, that's pretty straight forward. In the oblique sacrum you'll generally find an anterior dorsal in the mid thoracic area, correct it. In the oblique sacrum, the patient will show knee problems, especially in the posterior popliteal area. Inspect that and treat it properly. Check especially for a bilateral popliteal weakness which as you know indicates a lower cervical fixation, correct it. The anterior dorsal subluxation is generally corrected prior to the oblique sacral correction, all things being equal.

-Bilateral nuchal tension with uneven legs in the prone position indicates an oblique sacrum. That bilateral nuchal tension should be there. Now sometimes because of how the nuchal ligament is organized, there's both a posterior and anterior segment. If you don't find it but you suspect it's present, have the patient flex and extend the head while they still therapy localize and this may now reveal it. Check for the potential inferior position on the one sacral side and the superior sacral position on the other side. Rule out the piriformis and the iliacus by using the PLUS pattern in case that's a perpetuating cause. On the inferior sacral side use the flex leg on the long leg side, hold the ilium down and adjust the inferior sacral pattern by holding your thumb down. That takes care of the inferior side of the oblique. You may have on the other side posterior superior or just straight superior. You can challenge for that by holding the thumb contact on the ischium and the other thumb contact making a superior sacral change. When you make the proper sacral adjustments, if the total nuchal pain doesn't diminish by 95% be sure to recheck for the anterior dorsal. A lot of these patients have iliac respiratory fixations and they accompany sacral subluxations. You can rule out the iliac fixations by therapy localization of either the left or right sacroiliac joint, test the ipsilateral neck extensors in the prone position, and you can correct by appropriate respiration. If inspiration abolishes the therapy localization of the ipsilateral neck extensor adjust the posterior superior iliac spine (PSS) from lateral to medial

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when you take a deep breath. That's how the PSS moves. If expiration abolishes it, adjust it from medial to lateral on expiration.

-In difficult problem patients always double check the nuchal patterns in both the sitting and standing positions. Correct in the position that produced the weakness when changing from prone to sitting or standing. Correct it if possible in the appropriate position. Be sure to finish it off with SST, the sagittal suture spread and tap. Give a strong tap at the bregma to allow any adjustment that you made to hold. Don't forget the potential for the sacral wobble and the need for appropriate correction. You can find that in section SP6 of the title sacral wobble in David Leaf's flow chart for 1995. Naturally always check for evidence of category one or two or three by observation and therapy localization of the pelvis by appropriate technique. You'll often find a category one will be present with a chronic oblique sacrum. Check for a possible lumbar involvement. In real difficult inferior sacral problems, you may have to use a heel lift when you see persistent signs of an inferior sacrum. Correction of the femoral head imbalance as we discussed in the last tape, #134 parts one and two, is highly recommended.

-DeJarnette, 1964, page 25: "Whenever the left or right innominate is in an anterior subluxation, the sacral border on that side moves forward and upward and this begins the oblique subluxation. When the opposing innominate is caused to compensate for the anterior subluxated innominate it will, like a fellow pushing an immovable object, brace itself and in so doing reverse its position in relation to the first subluxated innominate and now we have the true sacrum with the mid dorsal pain and the axis fixation complex..."

-Naturally you check for the block technique and a category one may be present. Many times you may find upper cervical fixation and lower cervical fixation which may accompany the oblique sacral and category one combination. An anterior thoracic, frequently incurred from trauma, needs correction by adjusting the segment by putting a pad below the anterior segment and then either have the patient on their back or standing use an extension move to let the anterior dorsal come back.

-When you see the sacral fault you'll find that the veal bone and the vitamin E derivatives are very useful as well as the appropriate E-Poise or Electron Plus material if it keeps coming back on treadmill walking.

-The nuchal tension that is prolonged is really an attempt at self correction of the oblique sacrum. That's what lays the groundwork for the patterns of both the upper and lower cervical fixations in the oblique sacral situation and the anterior thoracic component is always a factor to consider. There will always be pain in anterior thoracic just at the tip most inferior tip of the spinous in the mid thoracic area. The only random thing that takes place in the body is the effect of trauma on the body and hence the variability of the response. Here again the innominate position both left and right would allow the RMAPI of the iliacus, psoas and piriformis. Whenever the right or left innominate is in an anterior subluxation the sacral border on that side moves forward and upward. This begins the oblique subluxation. Then the opposing innominate is called upon to compensate for the anterior subluxated innominate and will, like a fellow pushing on an immovable object, brace itself, and in so doing will reverse its position in relationship to the first subluxated innominate and now we have the true oblique sacrum with the

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mid dorsal pain, the axis fixation, and sometimes the lower cervical fixation. That's a relatively common thing. Origin and insertion technique may be necessary to restore balance to the piriformis. It should be really difficult to do origin and insertion on the piriformis unless you're going to use intrarectal pressure, but attention to the insertion requires application only to the greater trochanter insertion. Naturally, regular testing as well as aerobic and anaerobic testing should be used in difficult problems. The use of a RMAPI gives an additional dimension to this biomechanically highly important muscle.

-The Logan basic sacrum contact therapy is an established method of treatment but it has never yielded consistent diagnostic criteria for its well regarded use in therapy. We found the best indication for its use is a contact based on anterior and posterior palpatory pain in the neck, and both subjective and objective pain in the cervical column and the pain extends from around C1 through T8. It can be both unilateral or bilateral. You don't contact on the sacrum but in the gluteal muscle with your thumb to reach the crossing of the sacrotuberous and sacrospinous ligament. This gives astonishing pain relief on palpation quickly and it seems to be really independent of the actual sacral bony position. Experience with the pseudo-category two has helped us to solidify this opinion. In many cases it responds very simply to sacrotuberous and sacrospinous ligament pressure to diminish cervical pain on palpation both in an objective and subjective fashion, in active and passive motion, and in cervical compaction. A therapeutic trial is both the best diagnostic effort as well as a simultaneous therapeutic response. Testing and correcting the piriformis muscle activity doesn't preclude a trial of the sacrotuberous sacrospinous technique approach. Many times you can slightly vary the sacrotuberous, sacrospinous contact if you're not getting all the pain out, sometimes taking the thumb slightly higher, slightly lower into the gluteal muscle/perineal area. This is remarkably effective for this type of anterior and posterior neck pain, both subjective and objective, greatly increases the range of motion. It has done very well on the lecture platform which is one of the hardest places to fix things because you have to either put up or shut up and that's the kind of thing I enjoy.

-You can get the information on the Barge method from Tortipelvis, 1980, Third Edition. He's responsible for Logan College's study on 125 patients. Of 125 sacral base x-rays, the sacrum was low on the right in 32%, low on the left in 39.2%, sacrum was level in only 28.8%, the sacrum low on the left or right 71.2%. Out of the 125 sacral base x-rays that showed other guidelines, transverse surfaces, and notches that correspond reasonably well with the level of the sacral surface, adequate correlation was 46 out of 125, 36.8%. Inadequate correlation 63.2%. Of the 125 sacral base x-rays, 82 or 65.6% were found to have plateaued sacra. Of the 32 that were plateaued sacra, (plateaus develop of unequal height one side or the other), unequal plateaus were 36 which is 43.9%. Of the 125 sacral x-rays, 76 were males. Of the 76 male x-rays, there was no sacral plateau in 51.3%, 39 of them. Low sacral plateau was 32, 42.1%. High sacral plateau was 5. Two of the five were young men with scoliosis. All males with a plateau high or low was 37 which is 48.7%. But listen to the female: of the 125 x-rays, 49 were female, no sacral plateau- 4, 8.2%. Low sacral plateau- 23, 46.9%. High sacral plateau- 22, 44.9%. All females with a plateau, sacrum high or low- 91.8%. That speaks for itself and many times is a reason why you're having trouble with some of your patients.

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-**Octacosanols**, found in wheat germ oil, are useful substances for recurring fixations. We refer to them as **antigravity substances**. This gave us a clue later on when we found that **Repeated Muscle Activation Patient Induced (RMAPI)** would cause weakness. We thought that wheat germ oil would be helpful there and it proved to be. Use it three times a day. The concentration has been changed from 185 mg to 385 mg/capsule.

-People use lemon juice to inhibit the color change in potato salad. This represents the activity of a very useful enzyme, **phosphatase**, to keep calcium in solution. One of the reasons that raw veal bone, rather than heat treated products, are so useful in correcting both Golgi Tendon and spindle cell activity is that the muscle action produced by the microavulsion or by the spindle cell being taken unawares by a sudden stretch all do very well with the elements of phosphatase from non-heat processed veal bone. Phosphatase is also useful for teething children. A piece of raw potato seems to satisfy them real quickly and that's an old fashioned idea that has a new fashioned background.

-People with thick secretions, thick eye secretions, granulated eyelids, chronic sinusitis or if that particular patient seems to cry readily, regardless of gender, those people need **organic iodine** either the tablet or liquid form. These patients have chronic trouble literally because their secretions are so thick. This can prove to be a disastrous occasion when there is biliary secretion. They're susceptible to selective dehydration in certain parts of their body and iodine has a tendency to thin the secretions. Very often those people are usually colder when other people are warmer; they state that they don't like to be observed when they learn to do a new thing; and they often say that their get up and go has got up and went. Iodine itself seems to keep all the glands working. A lot of people are not aware of the fact that not only the thyroid is related to iodine, but every gland is. The Layhee clinic was the site of a very interesting observation by Perkins and his associates. They gave both male and female dogs lugol solution, potassium iodide by stomach tubes to insure correct amounts and normal protein bound iodine. They removed the thyroids from the male dogs and the PBI dropped by 90%. The same procedure on the female dogs caused a drop of only 10%. Later, when they removed the females' ovaries, and repeated the procedure, the PBI dropped the same amount as it did in the male dogs. What this means is that the female has a different pattern for the use of iodine. Sometimes when the secretions of the vagina are thick and when there are recurring vaginal infections of one kind or another, a pledgette of cotton tampon soaked in an iodine solution and inserted into the vagina. A single drop of the Ioaquasol from John Thie's father's company in an ounce of water or fifteen drops of the dilute solution of the potassium iodide from Biotics. Do that for three weeks on and one week off, not during the menstrual period. That improves glandular function and thyroid function especially the one that cries so easily or who has thickened secretions.

-When you stretch a muscle the muscle should strengthen. Rocky Calavito used to play for the Indians and he was famous for hitting home runs out of Tiger stadium. He used to put a bat behind his back with his elbows bent and stretch his chest muscles and

then get up to the plate and hit a home run. Stretching a muscle certainly shouldn't weaken it. When you stretch a muscle and it weakens, that's a need to fascially flush the muscle, going along the fascia. This is a very important factor that a lot of people fail to recognize and include in their diagnosis. It also indicates the need for more B12 which should immediately neutralize the stretch weakness. A stretched muscle should actually get stronger rather than weaker, this is agreed to by many authorities. Sometimes you're not absorbing the B12 so you have to think about the small intestine malabsorption which we'll talk about later on.

-There has been a lot of conversation about this particular element that we talk about and very often its seen in anemia. A bilateral tensor fascia lata (TFL) weakness in the clear is often associated with a lack of iron. Many times it will respond to a form of iron and quite often that can be the element. However, the reason can also be the malabsorption of iron or its improper utilization. There seems to be a miniature representation of the TFL along the lateral portion of the tibia and fibula. If you find the TFL sensitive up near the femoral head, there may be a corresponding place up near the fibula head. If the sensitivity is in the middle of the TFL, then it will be in the middle of the area of the tibia/fibula. Sometimes that's a useful thing to do in addition to the manipulation we do.

-Sometimes you'll see plantar warts under a disturbed metatarsal. That requires investigation of the foot structure. This is seen especially in younger people whose nutrition may not be appropriate. Sometimes you see plantar warts in people who can't walk such as in cerebral palsy, etc., where you can't logically say that it comes from the weight on the foot. A source of organic trace minerals is a useful thing. The tissue of the body is basically nitrogenous. Warts have been blamed on a rather ubiquitous virus, but it probably is ubiquitous because more people have trace mineral deficiencies rather than some virus you get from some athletic shower room floor. Have the patient apply a drop or two of nitric acid on a small Q-tip after shaving down the wart with a razor blade and sanding it down. The sharp blade can be dangerous. Caution the patient that the area will change color, it gets much more yellow and gets dark. Usually that seems to stop the wart when you use the local treatment along with ingestion of trace mineral. I often see this especially in young women who, for one reason or another, mostly emotional, want to become a vegetarian and they diminish their protein intake. Protein gets a bad name for a variety of reasons. The apologists for the non-meat position say that if we feed the corn to people and not feed it to animals we'd have more people, etc. etc. That may or may not be true. Nothing makes flesh like flesh as they say. Some people don't have to borrow the energy of the animal to make protein. There's nothing wrong with that. I see a lot of good protein levels and good albumin/globulin levels in people who are vegetarians, but I also see the opposite. Sometimes the ingestion of animal protein, rare especially, seems to help people, especially children and young women who have recurring bouts of this wart pattern. Sometimes you may have to use something around the wart to relieve pressure on it if there's any irritation. The level of globulin should not

be higher than 2.8 and any time you see a 3.0 or 3.2 with a normal total protein level you generally have a situation where you're digesting yourself. Sometimes you make swiss cheese out of a joint or you'll denature different areas of tissue. Very often increasing the protein and the enzymes necessary to digest protein, fat and carbohydrate along with investigation of the possible Neuroenteric Hologrammic small intestine absorption pattern is a good thing to remember in these cases. There are a large percentage of people who have this. Sometimes the reason why protein get a bad name is because people fail to follow a compatibility diet. They're consuming high starch with high protein and many times that causes a lot of digestive distress. As a result some non-protein regimes get a reputation for helping. If you watch the food combinations, a lot of that is eliminated.

-When you have patients who don't therapy localize (TL) because of medication or drugs etc., the body has lost the memory of it. In a case where you expect to find a specific muscle pattern based on your experience, i.e. you're attempting to find the tensor fascia lata TL or the TL of the liver in a case of psoriasis, but it is not revealing itself, put some RNA in the patient's mouth while testing. RNA unlocks the cell door so that thyroxine can get in and cause normal metabolism. Many people who need thyroid or iodine help are greatly helped by RNA.

-People with nightmares, the night terrors that sometimes children get, often show a higher blood pressure lying down, as much as ten or fifteen millimeters higher than when they're standing, yet there are no other signs of adrenal dysfunction other than the fact that the blood pressure is higher laying down than standing up. This is especially seen in the systole, diastole doesn't seem to change so much. Naturally you have to rule out and differentially diagnose an adrenal disturbance. Signs of adrenal dysfunction are the Ragland effect (blood pressure dropping on standing), dilated pupil, and an exaggerated second heart sound, which doesn't require any form of cardiographic equipment, all you have to do is listen. You hear lub DUP lub DUP, especially in the pulmonary area, you hear that second sound very exaggerated. These people have weak sartorius/gracilis muscles, etc. But when you have someone who has nightmares and crazy dreams, quite often this means that the kidneys are not clearing all the waste out and that usually means they'll have a double psoas weakness that will be present when they're laying down but not standing up. Another way is to test for a double psoas when they are strong in the clear, have the patient touch the occiput and that will weaken the bilateral psoas muscles. This usually means there's a lateral occiput sideslip, left or right. You test for a lateral occiput against a convenient muscle like the pectoralis clavicular or sternal. Test them bilaterally for weakening against a tongue thrust left and right. The tongue thrust lets you diagnose an occipital subluxation because the posterior pharyngeal wall is attached to the median raphe of the occiput and when the occiput goes left or right by subluxation you get that unusual tongue pattern. When its in a child, sometimes its very disturbing because they've been sleeping well, and then when they're three or four years old they suddenly start having nightmares and they want mommy to sleep with them. You get the kid to sleep and the minute you leave the room the kid starts to holler again. That's a need for homeopathic costicum, which is old fashioned lye, but in the

homeopathic remedy. 6x costicum puts those kids to sleep like they've been hit with a sledgehammer and they couldn't care if there's anyone left in the world. That's something that all the Goodheart grandchildren seem to have and I've also seen it in my sister's children. It's very useful.

-People who yawn a lot very often have a very acid salivary pH and they need alkalizing agents. It usually means a lack of **alkaline minerals**. There are not absorbing it so quite often it is small intestine malabsorption. They do well with organic mineral sources, potassium especially is useful and it doesn't require very much. They do well on high sodium foods such as zucchini, string beans, celery and squash. The yawning can sometimes represent a change in the digestive gradient and you should investigate that.

-Sometimes older people with capillary fragility bruise easily, especially on the back of the hand, should be tested for the need for sources of **buckwheat and calcium normalizing factors**. Many times that's a sign of malabsorption. Some women will get it only with onset of menstruation; their levels of vitamin C and petechiometer are normal, but that's a sign of malabsorption.

-People who have allergies, asthma, or hay fever should be tested for **adrenal insufficiency and acid/alkaline imbalance**. Many of those people need **acids and calcium**, but the body goes into an obligatory acidosis to keep the salivary secretions and the other secretions a little more acid so that they can absorb calcium. So you have to use some retrospective observation and very often you find they have **malabsorption**. Many times you'll see the small intestine/quadriceps muscles or the abdominal muscles weakening against the neurolymphatic reflex starting at the xiphoid down to the mid-axillary line on the anterior, and between eight and twelve interspinous transverse processes posteriorly; sometimes it'll be the medial thigh, the neurolymphatic reflex for the rectus abdominis that is off. Both the rectus and the other abdominals are related to the small intestine, as well as the quadriceps. They will have a very acid pH and they'll need beginning and end (B&E) technique, tapping of the little finger on the jaw for the B&E of the small intestine. That is sometimes very quickly neutralized by parotid three times a day. Standard Process is the only company that makes parotid. After you've given the parotid and it has neutralized the weakness of the small intestine meridian and also the neurolymphatic reflex of the small intestine, have them wash their mouth out with neutral pH water and then recheck salivary pH. You will be surprised, it'll be quite alkaline. The patient is quite pleased with that. It doesn't last forever, you have to keep the parotid going for about a month. Much of that information is in the 95-96 Research Manual, which if you don't have, I suggest you get it because there's a lot of good information in it.

-Patients with failing memory sometimes need RNA. I have them stand on one leg with their eyes open first, and then with their eyes closed. If they wobble a lot, I keep adding RNA until they stabilize. If they stand with their eyes closed and they wobble a little bit and the RNA makes them worse, that means they need just homeopathic amounts of RNA throughout the day, just a pinch.

-Some eye trouble is related to the liver or the kidney. Both **vitamin A and vitamin F** help those patients as well as the eye protomorphogen. Hawkins, in a book that was printed 30 years ago and reprinted, said that 70% of all the patients they tested at the University of California Dental School had vitamin A deficiencies because of the number of dental problems they had. Take a multiple source of vitamin A, animal, kidney fat, fish liver source, vegetable source, lemon grass oil, or other sources. It should be a multiple source because some people don't respond to the single liver source.

-**Manganese** is an element that is sometimes associated with psychological changes. Manganese is the mineral of choice when dealing with a disc lesion, granted that all other things are equal in terms of your structural management of this. The original idea came from the fact that an early Canadian researcher observed perosis in chickens and other fowl that had their feet steamed. He noted that there had been a loss of manganese and a loosening of the ligaments and they couldn't walk because their knees would bend backwards. This was observed in the early fifties and led to my observation in disc lesions that manganese seemed to be a factor because the ligaments seemed to be relaxed. It's still a good thing to add to your treatment of disc lesions. There is a great deal of information that would validate the fact that manganese would add tone to ligaments and therefore it's useful any time you see evidence of a relaxed ligament. Dr. Ballantine, a fine MD, has published a very excellent text on diet and nutrition subtitled *Holistic Approach* published by Himalayan International Institute in Hunsdale, Pa and he spoke to us at an ICAK meeting in Philadelphia. He cites the evidence that manganese is one of the least toxic minerals. Occasionally you see manganese poisoning in miners who work with manganese ore. It's characterized by a very unusual psychiatric disorder and its followed by a crippling neurological disease similar to Parkinson's. The interesting thing is that the Parkinson's syndrome that results from taking powerful tranquilizers has been reversed by manganese supplements. To round out the paradox he says that schizophrenic patients have been often treated with manganese supplements and quite often they show definite improvement. So very high or low levels of manganese seems to produce very similar pictures in the body that psychiatrically resemble schizophrenia and neurologically resembles Parkinson's disease. This has been recognized by homeopaths who produced Parkinson-like syndromes more than a century ago by giving small doses of manganese acetate. Therefore they use homeopathic doses of that same manganese acetate to ameliorate the symptoms in patients that have Parkinson's syndrome. A lot of physicians, including myself, feel that patients who have allergies respond well to manganese supplements. That's what Dr. Ballantine observed in patients who were manganese deficient. In schizophrenics, manganese seems to restore balance when the histamine that is released during allergic reaction is either too high or too low and furthermore, in those schizophrenic patients, when the serum copper is elevated it is reported that manganese along with zinc seemed to lower the copper and promote its excretion which is followed by a general improvement in the psychosis.

-There is plenty of information about the need for **B6**. The wedding band syndrome is the most common where the patient has one finger that seems to enlarge. I

know there are some people who are interested in polarity techniques that represent the need for one finger to be either positive or negative and that's not what I'm talking about. Here a single finger will sometimes get swollen at either the proximal or distal joint and that often responds to 50mg B6/10mg niacinamide, three times a day. It takes about a week for that to respond. An accompanying factor that is very often present is a snapping finger, or there's a stenosing tenosynovitis in either the thumb or one of the other fingers where the finger gets stuck in a flexed position and you literally have to manually put it back and it snaps. I see that in a lot of artists. I had a group of nuns that were all art teachers that had that. I started with one who was helped and soon I had dozens of nuns. They had taken the vows of poverty, chastity and obedience so we never charged them, but they used to pray for me. I'm sure that I needed it. Right after they did some good praying following the correction of their snapping thumbs, a patient that I had known for many years left me a sum of money that allowed me to put a down payment on a condominium up north that we used for many years teaching not only skiing, but AK. One way you can test for B6 which also helps to diagnose a folic acid or B12 deficiency is to use homocysteine. Nutriwest produced a quantity of homocysteine which is a byproduct of improper metabolism of methionine. When you break down methionine, instead of producing cysteine you produce homocysteine. Putting a small amount of homocysteine should not cause any weakness especially of the part of the body that the patient is complaining of. I carry a small bottle of homocysteine around in my pocket because I see that so often. That is a good indication for checking the patient for B6, folic acid and B12 deficiency. If Paul White is out of the homocysteine ask them to make some more because the production of this tape may stimulate more use of that. It's a good way to find out if that's a nutrient failing to be in the diet or failing to be absorbed or perhaps both. The wedding band syndrome means you can't get the ring off, which is from local inflammation, and B6 helps that quite a bit.

-People that have a recurring temporal bulge (what we used to call a banana head) many times have a **hydrochloric acid (HCL)** deficiency. These people are allergic. Quite often carbonic acid anhydrase is the thing that puts hydrogen and chloride together to make HCL. **Vitamin B** is helpful as well as an accompanying factor. The temporal bulge should be corrected by cranial technique. You can prime the pump with some HCL. That's after the fact. If you give them some vitamin B, that allows the body to make the HCL they're deficient in. Incidentally, that is a factor along with lymphatic drainage that's many times involved in a hiatal hernia where the patient is taking antacids because of all the heartburn, but really what is wrong is that they don't have enough HCL. If the HCL doesn't relieve the symptoms of the hiatal hernia, pressing in on the soft part of the abdomen just below the bifurcation of the ribs on the left hand side and pulling downwards is the way to get the stomach back out of the hiatus. If you have to keep doing that it indicates that they don't have enough HCL, or the stomach can't flush its own lymphatic toilet and many times needs neurolymphatic activity, but most of all indicates antegrade lymphatic technique to make sure the lymph is draining into the subclavian, especially on the left side. One of the ways we test that is to test a pectoralis

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clavicular or a subscapularis. Have the patient lie down, raise their head and test their anterior neck flexors. The neck flexors are strong, but when they hunch their shoulders forward (which means they're contracting the pectoralis minor), the neck flexors weaken. This occurs when the pectoralis minor interferes with the median cephalic vein entrance to the subclavian where the thoracic duct enters, there's a semilunar valve there, and if that is blocked off the normal sucking pressure of the subclavian is diminished. The lymph starts to back up and very often the stomach gets swollen. Do the anterograde technique on the pectoralis minor, origin and insertion technique or the fascial flush for a stretch weakness, and then the neurolymphatic reflex on a parallel with the xiphoid process at the mid nipple line.

-Leg cramps at night sometimes calls for **calcium and/or magnesium**.

Sometimes its due to foot problems and you want to make certain the patient isn't pronating too much or doesn't have an anterior talus on one side or both sides. Sometimes there seems to be a peculiar type of pattern that some people have where they have a tendency to either pass gas occasionally or burp and when they do that they don't seem to have any leg cramps, but when they don't do that they have cramps consistently at night. That generally means you want to give them **digestive enzymes** to aid in digestion, which somehow seems to cause, I don't call it gas, but seems to cause what I would consider some type of gaseous disturbance in the muscle because the minute you use the digestive enzyme, along with having given them the calcium and/or the magnesium, that situation solves itself. Sometimes its a foot problem but you have to make that choice.

-An open ileocecal valve (ICV) can be diagnosed by therapy localization and is then challenged by pressing up towards the opposite shoulder. Dr. Still, who founded osteopathy, used to tell people the way to help that was to eat some raw bacon. In a recurring open ICV that defies correction, reduction of roughage in the diet and all the usual things, it's a good idea to use some fat soluble chlorophyll three times a day. The water soluble has the magnesium taken out of it. A bilaterally weak pectoralis clavicular accompanied or not with a temporal bulge means that the patient needs priming with HCL. The basis by which the HCL is made is from zinc for the carbonic anhydrase and both B and G from your favorite supplier.

-Some of these things occur so regularly that it indicates that it must be connected with the general population. If you have a recurring posterior ischium, the long leg pattern in the category two or a consistent pattern in the category one requiring the block technique and also a persistent pseudo-category two, those patients respond very well to **vitamin E with selenium** (relatively small amounts, 2 IU of E with selenium).

-When you see calcium precipitation either in the spinal joints, acromioclavicular joints, humeral head and glenoid joints, or in the knee or ankle, generally that's caused by alkalinity of the tissue and generally those patients who have a calcium deposit paradoxically need an **acid calcium** such as Cal-Amo or some of the other acid calciums that are available. That's another factor that is paradoxical as many of those patients have

been told to avoid calcium because of the calcium deposit. You want to check the fatty acids because the **vitamin F** tells the calcium where to go. Patients that have muscle cramps that are variable, shoulder, arm, leg, wrist, ankle, more often one place than another, and who have a generalized weakness and some weight loss many times have a hypercalcemia, their calcium is too high and that means they're not getting enough sodium. The two oppose each other. That sort of thing can come from people being too assiduous on a particular type of diet pattern and avoiding some things that would increase the sodium such as zucchini, celery, string beans and squash as well as actually taking some sea salt. Generally as a rule, when there's a sodium/potassium imbalance, think adrenal. In hypoadrenia, the sodium excretion is high and the potassium is low and very often looking at the adrenal will help a lot of the sodium/potassium patients because that's what generally is at the base of it.

-If you get a blood test back with a microcytic anemia where the cells are smaller than average that's the best indication for **iron**. Another indication for iron is a single muscle weakness on repeated use. When you see the patient with the macrocytic anemia, the cells are larger, that's usually a sign that the patient needs **folic acid/B12**.

-The breathless patient who sighs a lot and seems to get a lump in their throat at the most inconvenient time, sometimes by very minimum emotion, is generally a sign of overactivity of the sympathetic nervous system. On the other side, the patient with alkalosis may exhibit arthritis, bursitis, neuritis, sciatic neuritis especially. Often that patient shows a need for an acid calcium. The **energy index** is a measure of the blood pressure taken sitting, standing and lying down, add the highest levels and the lowest levels and take an average, and then multiply that by the pulse rate. That's a good system for testing if the patient is either sympathetic or mimetic or parasympathetic or mimetic. This is described in my book, *You'll Be Better*, it's in chapter 29, page eight. I say measure the sitting blood pressure, but in some tough cases I found they're different when they're standing and laying down, so on tough patients we average it. Measure the blood pressure sitting, add the systolic and diastolic blood pressures and multiply them by the pulse rate. Example: 120/80 added would be 200 and the average pulse rate would be 72 and multiplied would be 14,400 which is an average level. The normal is 16000 so the way to calculate it is anything below 12,000 is parasympathetic and anything above 18,000 is sympathetic. Usually those patients at 12,000 or below need sources of potassium, pancreatic materials, B1, choline, magnesium, manganese, pantothenic acid, B2, B3, E2, calcium, vitamins C and E to improve that pattern whereas those who are 18,000 or above need calcium, phosphorus, vitamins C, F and B6, and copper. Anything below 12,000 we classify as parasympathetic and anything above 18,000 we classify as sympathetic. The one thing that varies a lot is the relative pulse rate, a little faster in the sympathetic and also the relative elevation of the systolic creating a larger number. If you take the time to look up chapter nine, page eight, the third paragraph has an error in it. It says to improve that overdominant sympathetic activity, it should have been parasympathetic activity.

-When a cell breaks down its RNA and other tissue fragments are picked up by the blood stream, it eventually that goes to the **thymus** and they decide to have a garage sale. If the tissue contains some toxic elements, the body tries to get rid of it. The thymus is an autoimmune gland and it analyzes the RNA to decide if it should be kept or thrown away. One of the indications of the unique capability of the thymus is as a xenobiotic and if anything is foreign it tries to get it out of there. When they do organ transplants, even though they're pretty well matched from the donor to the recipient the thymus has to be heavily irradiated or the patient will get a lot of cyclosporin to prevent the rejection of the organ of the donor. The thymus processes RNA to reuse it like recycling aluminum cans. It processes it and passes it on to the parotid for reuse and recycling, and the parotid then coats our food with it so as it passes down the alimentary tract its absorbed by the intestinal villi. There's the reuse of the RNA configurations necessary in the construction in the forms of the tissue that has recently been broken down and that's really how we retain and regain tissue memory. There is both chemical and neurological memory. The chemical memory, in addition to the crude RNA addition, taking RNA if you don't balance well, is also mediated by the thymus and the parotid. The neurolymphatic reflex for the thymus is at the right fifth interspace and the right fifth interspace transverse and also at the twelfth, we thought it was only at the fifth but you keep learning things as you go. For example, a recent anatomy book showed that females have a cremasteric muscle and not everyone has a pyramidalis muscle, it's absent in the Japanese. So there are some model variations. The neurovascular, which was discovered by my good friend John Diamond, is at the angle of Louis, and the acupuncture point is immediately below that. The thymus is really a single gland even though it has an isthmus and dual structure like the thyroid, whereas the parotid is really a dual gland with one on either side. We found that the thymus and the parotid together seem to play an important part in the neutralization of many left and right brain activities. The inference is that some patients may only have function of one adrenal in terms of repair or one kidney or one side being active and the other being inactive. The thymus/parotid seems to control the capacity to repair or rebuild both sides. The addition of thymus and parotid is a useful thing. Some companies do make a combination product or you can just give it separately which is what I do very often. So, in difficult cases such as Crohn's disease, colitis, asthma, any of the chronic recurring, relapsing conditions, "autoimmune", check the hyoid for both left and right, up or down positions, challenge the neurolymphatic reflex at the right fifth interspace, challenge the neurovascular at the angle of Louis, challenge for the acupuncture alarm point. Many times you'll find that correction of the neurolymphatic reflex at the right fifth interspace will also correct the concomitant glandularly related patterns such as the piriformis or the gonads, or the sartorius/gracilis. It won't correct the quadriceps for small intestine or the peroneus for the bladder indicating the highly selective position the thymus has for glandular reproductive tissue. In many instances, lingual receptor activation by the thymus alone won't do it nor will the parotid lingual receptor activation do it, but the combined lingual receptor activation by both the thymus and parotid in the form of the individual pilotrophic or thymotrophic or parotid and

thymus, parotid, adrenal, and spleen or you can use the thymus, parotid, spleen material from other sources such as Nutriwest. In any condition involving tissue repair, tissue maintenance or restoration, be sure to check the thymus and parotid in their nutritional and structural relationships to the problems involved. The use of the thymus/parotid combinations quite frequently neutralize difficult left/right brain problems which persist despite normalizing hyoid balance and pre- and post-cordial tap. Its a very useful method of insuring proper bilateral adrenal use, proper bilateral kidney use and proper bilateral use of any area of the body, especially the glandular system. Remember that Limbic Technique has an effect on left and right patterns. Naturally you're not going to neglect the primary switching patterns, umbilical/K27 which we often find, nor a Neurocenteric Hologrammic pattern of the quadriceps against the small intestine with the eyes open and closed. The parotid and the thymus relate to a much finer subdivision of the body. You shouldn't get the cart before the horse, but you should pay attention to those primary switching patterns and that's the answer.

-In the text of You'll Be Better, a patient once asked my father how long they would have to keep coming. My father said "Until I get someone to take your place". This represents a dichotomy of thought which sometimes exist from both the doctor's and patient's point of view. The doctor's basic interest is in the help he can provide and the patient is interested in the duration and the economics. Both are a concern. Concern for the patient should be paramount. The aphorism is "take good care of your patients and they'll take good care of you". It was true then and is true now and will remain true and that's part of the answer.

-We measure the oral pH of every patient. It should be 7.6-7.8. I used to think it should be 7.2-7.4, but I've learned in some patients it has to be 7.6-7.8, 7.6 for adults and 7.8 for children. In a university dental school, Hawkins found that children with no cavities had a 7.8 pH and the same was true of adults. My own has stayed at 7.6 and works for me. Many times that's a sign of a failure to absorb the alkaline materials in the diet. The use of the parotid will turn that around, parotid and thymus sometimes is used, as I indicated. In patients with good assimilation, a good rule is to increase the natural fats and oils. Many people have poor assimilation, they have weak quadriceps and weak abdominals against the neurolymphatic reflex, and giving parotid on the tongue lingual receptor simply stops it. I have the patient chew the parotid while I stimulate the neurolymphatic reflex, B&E points for the small intestine. Over a period of time, taking the product for about a month, it turns it around and the patient does real well. I rarely see an alkaline pH in a patient who has a lot of symptoms. I sometimes see it in an athlete who comes in to increase their function. Gastric hypoacidity, a common thing that occurs longer we live, causes reduced pancreatic enzyme level, poor mineral absorption, and basically a lack of ionization. Hypoacidity causes protein putrefaction which then leads to protein deficiency and guanidine poisoning. This can be helped by chlorophyll administration. It's good to get that pH as good as you can. You might have to support the lack of HCL, which is accompanied by a bilateral pectoralis clavicular and a temporal bulge.

-A patient that sweats at night, has blood shot eyes, jerks when they fall asleep at night, and has hypochlorhydria, may need **vitamins B2 and B3, riboflavin and niacin**. I wrote an article back in 1967 on nutritional factors in chiropractic, produced by AK Classics and edited by Fred Weiner. I said that many doctors and patients suffer from deficiencies in riboflavin and niacin factors of the B complex. Symptoms of riboflavin and niacin deficiency are excessive moodiness, worried, apprehensive, suspicious, depressed, frequent crying for no cause (independent of hypothyroid), bright red tip of the tongue, irritated mucous membranes throughout the digestive tract (you can't see them but you can see the tongue). Lack of digestive juices may inflame the entire digestive tract. With prolonged irritation of the rectum there can be irritation of the vagina. The strawberry tongue sometimes has a purplish tint if the riboflavin deficiency is prominent. Cracking of the lips, cheilosis at the corners of the mouth is a well known riboflavin/niacin deficiency. A common thing is a loss of the upper lip substance which may progressively diminish and disappear. I see that in a lot of old maid schoolteachers who get a smaller and smaller lip, and get meaner and meaner as time goes on. The primary tissue that suffers from the riboflavin/niacin deficiency is the endothelium of the capillary system with a loss of tone and function, thus the strawberry tongue is a result of capillary dilation and a sluggish blood flow. The lips are the highest in capillary numbers which gives them the red color so its reasonable to assume that signs of wrinkling and cracking are signs of a riboflavin and niacin deficiency. These signs at their extreme are in highly specialized mucocutaneous structures in the mouth, rectum, vagina. Loss of capillary tone also produces blood shot eye due to a vasospasm of the vasovasorum which supplies the blood vessels. It seems paradoxical that you need something to dilate the eye blood vessels when it looks like the eye blood vessels are already too dilated to begin with. The association of the eye with the riboflavin and niacin complex is interesting. Riboflavin and niacin are water soluble like their partner thiamine, but thiamine is readily soluble in alcohol and the riboflavin and niacin complex is not. This is the key to the different functions in the enzymes that catalyze chemicals. The riboflavin and niacin complex are catalysts that trigger enzymes for the oxidative processes, they transfer hydrogen and oxygen to suitable receptor molecules and are critical to the eyes for proper function. The lack of oxygen transport that can occur in the riboflavin and niacin deficiency syndrome produces photophobia, itching, burning, and blepharospasm. Some people don't know this, but the cornea can absorb oxygen directly from the atmosphere, but the lack of riboflavin and niacin interferes with the oxygen utilization. Some people see better when they're outside where there's more oxygen. If there's not enough riboflavin and niacin it interferes with absorption and utilization of the oxygen. Stagnation at the capillary level of the eye is easy to see as the blood shot eye or can be observed in a finer less discernable way by examining the cornea for the circumcorneal vascularization that follows minor irritations. Normally these blood vessels are not seen. They can appear following chemical or mechanical trauma and quickly disappear. When they persist it's a sign that more riboflavin and niacin should be included in the diet. This is something I see a lot of and is the reason I carry around an ophthalmoscope. A severe

manifestation of that riboflavin and niacin pattern is when the patient complains that objects come into vision and disappear. They may only see a part of the printed word. There's often a pallor of the temporal or outer half of the optic disc when you examine it with an ophthalmoscope. This is a valuable sign that is often overlooked. The riboflavin and niacin complexes are associated with oxygen transfer and fat metabolism. The thiamine factor is more related to the nervous system. The difference between them was first noted when riboflavin and niacin factors were precipitated out by alcohol from the beri beri preventing factors in food. The riboflavin and niacin factors were identified as protein in character and enzymatic in action. So those riboflavin and niacin complexes also act as a go between in the sugar metabolism crucial to the function of the nervous system which utilizes only carbohydrate as its energy source. Glucose is not directly oxidized but is subject to a series of stepwise changes until pyruvic acid is formed. The proper metabolism of glucose requires the normal amount of B complex that normally accompanies carbohydrate in the normal, unrefined state. The myelin sheath produces the neurotransmitter acetylcholine with the help of the B and E complexes. This neurotransmitter substance helps transmit the nerve impulse. This is why chiropractors should be interested in this phase of nutrition and its effect on our basic therapy. Once acetylcholine has been produced by the action of riboflavin, niacin and vitamin E complex, it is just as rapidly destroyed by the enzyme cholinesterase. This is like a make and break circuit (put the bridge down across the moat in the castle and then pull it back up again) while the body, with its innate intelligence, provides the cholinesterase for just this purpose. The action of cholinesterase is like a two way street to rapidly convert the acetylcholine in the nerve sheath to active form and just as rapidly degrade it into acetic acid and choline. So the absence of cholinesterase can cause lack of function when it's needed. A characteristic of riboflavin and niacin deficiency is a sudden muscle jerking when falling asleep. This is due to failure of inactivation of the residual acetylcholine caused by a lack of cholinesterase. Conversely a patient may inadvertently drop something, I've seen people drop a glass of scotch or glass of water. The dropping of objects represents a lack of cholinesterase failing to inactivate the acetylcholine normally stored in the nerve sheath. The spastic action caused by the deficiency of the riboflavin and niacin complex leads to blood shot eyes from angiospasm. But this doesn't only occur in the eye. A good and very useful, but rather late, severe symptom of this deficiency is seen in the abnormal placement of the second heart sound. It comes too late and too close to the next oncoming first sound embarrassing the blood supply to the heart by not allowing enough time for the circulation to take place. The normal one third to two third relationship of the first and second sound becomes one half to one half. This is only when it's pretty aggravated. Other spastic reactions that occur when there's a failure of sufficient cholinesterase to neutralize the necessary but dangerous acetylcholine are well known, such as gastritis and stomach ulcers. These are medically treated by anticholinergic drugs, but in fact, there's an interference with the nervous system at some point, generally an inadequate production in the amount of cholinesterase due to a riboflavin and niacin deficiency or a lack of uptake. Depending upon what organ system

is involved, you can see that such spasticity can cause a resulting difficulty and dysfunction in the nervous system. The piling up of acetylcholine and accumulation of biological dynamic conditions provoke vasospastic explosions in various parts of the body with little apparent provocation because this particular form of dynamite comes precapped and ready to blow if it's not defused regularly. Without cholinesterase, there's little chance for the vitally necessary nutrient choline to accumulate in the tissues. Ingestion of natural fats aid in the production of choline, which comes from the partitioning of lecithin, a complement of many fats. The splitting of the lecithin is accompanied by lecithinase, which is found in large quantities of riboflavin and niacin rich foods. That's why we want to increase the quantities of natural fats, just the opposite of what they're telling you these days. The accumulation of acetylcholine produces arteriosclerosis which defies correction until these factors are taken into consideration. Most important, the coronary arteries, probably the most active artery in the body, and the atherosclerosis you see now even in young individuals, is one more example of the acetylcholine biological dynamite which can be defused by an intelligent knowledge and a use of proper dietary regimes. Unavailability of choline interferes with proper liver metabolism which in turn produces digestive disturbances, failure of detoxification of sex hormones and a bewildering complex of other conditions all brought about by a nutritional failure. In the south they had a lot of pellagra not seen in the west. One of the differences was they drank tea in the south and coffee in the west. Coffee is a good source of riboflavin and niacin when it's ground fresh. So not everything is bad that you hear about. The three D's of pellagra are diarrhea, dermatitis and dementia, but there are many subclinical effects that occur. The nerve normalizing effects of B1, thiamine, should be complemented by the vasodilating, antispasmodic and lipotropic actions of the riboflavin and niacin group. These should be in their natural state rather than a synthetic form. Too much thiamine can aggravate the riboflavin and niacin syndrome, so an intelligent appraisal of the patient's history and nervous system workup is necessary. Certain foods are high in the riboflavin and niacin complex. Riboflavin is high in: yeast, milk, egg white, liver, kidney, heart, and leafy vegetables. Niacin is high in: liver, kidney, adrenal, yeast, whole grains, mushrooms and peanuts. Calf brain and sprouted grains are especially helpful in the production of cholinesterase as some authors report. Treat the whole patient and watch the whole response.

-I hate to keep quoting myself all the time, but it seems to me that some people are so interested in finding a way to call or name or rename things, that they sometimes miss the boat and can't see the forest for the trees. That's the reason why I sort of go over these things again, because what is true is true, regardless of how you call it.

-There are many good sources of **manganese** but a good one is the ions that Dr. Isaacs originally used. They're distributed by Viotron International, Ada Michigan 49301. Simply do a leg turn in/out, sprinkle three or four of the tiny ions on the patients tongue, and observe a remarkable change in range of motion. Patients usually respond within a few days or week, and then you can switch them over to less expensive nutrients. Seldon Nelson brought himself out of a very difficult arthritic condition by the use of

these ions. I've never met him but had long phone conversations with him over mutual patients. I told him that most of the trace mineral substances were so big molecularly that it was like trying to put a bowling ball through a keyhole. What we need is something that has ionic penetration and that's why the ion granules are so useful.

-Patients who have trouble flexing the fingers and have swelling with possible numbness and tingling need **B6**. Dr. Ellis' latest monograph on B6 and diabetes says if you can't flex your fingers and touch the pad of your hands that's a sign of B6 deficiency.

-**Vitamin B** stimulates thyroid while suppressing liver function and it's also antagonistic to vitamin A. A lot of people don't know that. Harold Hawkins, who wrote the transcendent book Applied Nutrition, talked about that and the interactions, especially if there's any type of synthetic material. Because of these interactions, it's another reason for using the very low content and concentration of natural sources of vitamin B. When you see patients developing symptoms of night blindness or liver dysfunction, in addition to the normal courses and causes, sometimes it's from what they're taking. Some people think vitamins are as innocuous as wrinkles.

-Sometimes you'll see clotting time increased by **vitamin K**. Symptoms are constant nosebleeds, when they cut themselves, it takes a long time to stop, or especially in patients that have a lot of nausea when they're pregnant. Usually sources of vitamin K are useful. The water soluble chlorophyll is not as useful as the fat soluble is.

-The portal system is a gateway to the liver. All the inferior vena cava material has to go through there. Portal congestion is sometimes caused by excess **vitamin B**. This first needs liver decongestion, and sometimes the collinsonia herbal substance helps, but needs a judicious observation of liver function. Drowsiness after meals and nocturnal urination with no frequency during the day, tight banded feeling around the head, poor breath holding time (the normal is 40 seconds, the highest normal is in Japanese pearl divers at four minutes), frequent yawning, fatigue, bloating and have to loosen your belt after a meal, lack of appetite, muscle soreness after exercise, burning soles of the feet, are all signs of a vitamin B deficiency. Usually you see changes in the pH of the mouth, a slow heart rate (which will be in the fifties), body temperature will also be low, you will often see axillary temperature of 97.2 degrees. That says thyroid, but it also says vitamin B which stimulates thyroid function. When you think of iodine you forget the vitamin B factor in that. Other vitamin B factors are: spider nevi that sometimes accumulates behind the knee, a lack of retention sense - you forget things I just told you, intolerance to noise, and an inability to stay asleep. If you can't fall asleep you need ionic calcium or an acid form of calcium, like calcium lactate, but inability to stay asleep is a vitamin B deficiency. We use to do a starch Lugol's test to see how much amylase was in the saliva. The directions for doing that are in my Collected Reprints. But failing that, the slow pulse rate, low body temperature, and muscle tests are a good way of checking that. Sometimes you need a combination of both calcium and vitamin B. One of the things useful for synthetic vitamin B, 5-20mg as high as 100mg, is in a severe neuritis. Along with that you want to use some calcium, but for a short period of time, just long enough to get the

pain down then shift to a more natural form of vitamin B. Synthetic vitamin B will eventually cause fatty degeneration of the liver.

-When you have to keep fixing a cranial fault over and over again it usually means a lack of **zinc**. We found a correlation between the zinc taste first found on anorexia nervosa and bulimia patients, the serum zinc was normal but the patients couldn't taste a saturated solution of zinc. We found that so many patients were acting as if they had a zinc deficiency that maybe the taste test for zinc was causing it and we found that wasn't so. Recurring cranial faults respond well to zinc.

-With elevation of lactic acid dehydrogenase on a SMAC 21 or 24 blood analysis, you want to think of using a natural form of **thiamine**.

-If you give **vitamin F** from Standard Process, which has quite a bit of iodine in it, you might suppress thyroid function.

-In high cholesterol and sometimes thyroid problems, especially in women, use **iodine** on a tampon. The gonads can suppress thyroid function but before that happens, the body exhausts itself, so if you see the need for iodine and have been using it without success, use the tampon soaked method for three weeks on and one week (during the menses) off. Recall the work of Perkins and his associates at the Lehigh clinic with the dogs mentioned previously.

-Sometimes you see all the signs of an overactive thyroid, nervousness, etc. Measurements of T3 and T4 simply represents the transport system and not the function. It doesn't mean if they're normal that all is well. Sometimes there is a need for both **vitamin A and thymus** in hyperactive thyroid patterns. In almost every case where there is thyrotoxicosis or hyperthyroidism, where the use of an atomic cocktail to lower the function is contemplated, a trial of vitamin A and thymus is good, if you have a way of measuring things.

-Fever in children who fail to respond to usual measures, (thinking that it's a virus or some infective process) represent a lack of **calcium lactate and vitamin F** especially if they're cutting teeth. In some of the childhood diseases, taking calcium on an empty stomach and then as needed is helpful.

-A lot of night blindness is caused by people not getting enough **fats**. If they don't respond in a few days, give them **silver ions**. They often have trouble seeing a restaurant menu in a dark restaurant or trouble adapting after coming out of bright sunshine and going into a dark theater, they find themselves sitting on people. Sometimes its failure to absorb and you have to think of a small intestine problem. Many times using the silver ions helps that come along much faster. You may find a pectoralis sternal weakness and if you fix that they get better from the improved lymphatic drainage of the liver.

-People who bite their fingernails and chew their hair, and kids that eat dirt have pica. This usually means a need for **trace minerals**. Organic Trace Minerals is a good one to use, but you may have to use the ionic form. You may have to pick the main one, which is very often potassium, and the secondary one is often calcium. Any signs of calcium deficiency that doesn't respond to calcium is usually a magnesium deficiency. Baker from the Princeton Bio Center in NJ; article on magnesium and trace minerals,

1991-92, pp1251 to1262, editor in chief is BML Turin in NY, published by S. Kreiger in Basel, Switzerland. The signs of a magnesium deficiency are a little unusual, not too many people are aware of that particular thing. Symptoms and signs of magnesium deficiency are: Muscle twitches, cramps, tension, soreness; a ubiquitous kind of a backache, neck pain, tension headache, or TMJ dysfunction; they say they can't take a deep breath, have to think about breathing, and kids are always sighing; constipation; urinary spasm (they can't urinate or can't get it started); menstrual cramps; a difficulty in swallowing (which is often associated with potassium); globus hystericus where they want to swallow and can't, and get hysterical about it (that often comes from sugar); driving at night they have difficulty adjusting to oncoming bright headlights (in the absence of any eye disease); loud noises make them jump because of the stapedius muscle under tension; insomnia; anxiety; they're always moving and are restless (restless legs is seen in vitamin E deficiency but is also seen in magnesium deficiency); panic attacks when, for example, the patient can't stand in line in a grocery store and fear of closed rooms; menstrual irritability; breast soreness and numbness and tingling and they get some kind of zips and zaps; they'll be sitting there and all of a sudden they just jerk a little bit like you see in riboflavin and niacin deficiencies; cardiac symptoms - palpitations, arrhythmias, a vasospastic angina that's helped by the G factors but it has a tendency to come back, usually there'll be a hypertension along with that, they come in with the diagnosis of mitral valve prolapse; they say I crave salt, but it makes me worse; they crave carbohydrates, that's what causes me to have these jumpy symptoms with sugar, and they have intolerance to carbohydrate. What works best are the magnesium ions from Dr. Seldon Nelson's lab Viotron International.

-Patients with bone pain and perspiration from their head, especially at night and only from their head, when calcium doesn't work and you've tried vitamin F, they generally need **vitamin D and calcium**. They may also need **thymus** which is a good source of silicon and that often helps calcium utilization. When people have soreness in the morning not related to exercise, and it doesn't go away after moving around during the day, they wake up with a backache and have it all day long, that's generally a sign for calcium metabolism, and thymus and parathyroid. You can check the levator scapula with **parathyroid** substance (Calma Plus). Placing parathyroid substance on the tongue will take the pain out of palpation when that's the cause. In the regard all this talk about sunscreen, this represents to me a simple lack of fatty acids, **vitamin F**, and other fatty acids. Fever blisters from too much sun or restlessness is from increased amounts of vitamin D by the sun. With or without sunscreen they also need vitamin F and calcium lactate to help that. Anterograde lymph drainage problem that needs succussion: you have the patient raise the head up and bring the shoulders forward and down, if that weakens the anterior neck muscles, it means the subclavian, the median cephalic vein portion of the entrance of the thoracic duct is blocked or partially blocked by a pectoralis minor stretch weakness. **Zinc or trace minerals** and **vitamin A** helps that. Naturally you do the origin and insertion technique of the pectoralis minor. Then do the succussion. Press the chest while the patient takes a breath and keep the chest from expanding and then

suddenly let it go and that sucks that lymph back into the vein despite the obstruction. For the nutrients to go where they should, they have to be absorbed. This may require NEHT, thymus, parotid and sometimes RNA. Sometimes in a dual organ like the kidney, only one is asleep. You can check that against the neurolymphatic activity and only one weakens when the patient closes their eyes. The same with the sartorius/gracilis test. That's another way of showing it.

-Some patients with low temperature show achilles response of a hyperthyroid which is paradoxical and that's common. The RNA lets the thyroxine into the cell. The stuff is all out in the blood stream and not in the cell. That's the cause of the paradoxical thyroid test.

-Remember in reactive muscles you want the **phosphatase** material from raw veal bone or raw potato or both. In some patients when they have excessive sugar and it disturbs them for several days (four days), it means they need calcium, but they won't see a result for about four days so don't make haste.

-A patient with a sore back, stiff and aches until moving around, you want to check the bowel. The unfriendly bacteria have taken over. They need an enema after a bowel movement, a quart of water and two teaspoons of salt or the juice of lemon, either one, regardless of how good their bowel movement is just to change the bacterial population. They also need an acid calcium.

-When the patient has a painful bursitis, femoral head, humeral head or olecranon bursitis or a painful knee, ankle, or toe, they need an **acid calcium**, one every hour until they yawn, and 2 IU of **vitamin E with selenium**, four to six a day. Immobilize the joint for three or four days. If it's in a shoulder, put them in a sling. Have them bend forward so their back is almost horizontal with the floor and then with the other hand move the bad arm up and down to keep the joint loose because the joint capsule has to maintain a normal function. If you don't keep moving it will tighten up. Do that four or five times a day.

-Aerobic weakness needs **iron** and the anaerobic needs **pantothenic acid**.

-If the patient is dehydrated, overweight, eating too many fatty foods, and are a little too tense in their attitude towards things, they need some help in thinning the bile. This is over and above simple hydration. We give them **vitamin A and F and betafood** which causes the gallbladder to contract and flush itself.

-People who have frequent urination with small volume may need **vitamin B**, especially if it's at night. This is in women who don't have prostate or cystitis or a man who urinates at night but not during the day, it's obvious it's not the prostate, it's a **vitamin B** deficiency needed for the tone of the muscle.

-If you're checking for glandular dysfunction always crosscheck other endocrine areas by therapy localization to make sure you're not getting a bicameral or multicameral relationship. Sometimes you have to do more than one if you have more than one.

-My father taught me that iodine thins secretions, if your saliva is too thick or you have sinus problems, **iodine and vitamin A** in Sjogrens syndrome works real good.

-If your nose runs when you lean over a patient (some chiropractors have to take vasoconstrictors to keep from spilling onto patients, **bile salts and iron** rapidly thicken the secretions.

-A way to find a need for calcium is to listen for an absent heart sound (a lub and no dup). That's a **calcium and vitamin F** need.

-An increased heart sound usually means the need for more **sodium and adrenal**. Take the time to listen.

-With bladder infections a natural multi source of **vitamin A** helps. The bladder membrane gets like a dried up river bed and it should be like thick newly piled velvet. You need more A and better assimilation. It helps to acidify if the urine is alkaline and alkalize if its acid. Be sure to clear out the bowel in those conditions.

-People who get nauseated real easy, if they get irritated, if they get tired, or take a long car ride is a need for **orthophosphoric acid**. It also helps the thyroid function as well.

-If you get bloated and have to loosen your clothes or have episodic diarrhea unrelated to food intake you usually need **HCL** and probably **zinc**.

-When people have gas fifteen to thirty minutes after a meal, you want to loosen up the interscapular area on the left side especially and pull the scapula as far away from the spine as possible with the patient sitting up. Get under the scapula and stretch it out. Then give them **bile and AF Betafood**. If they have gas later than that (an hour or longer after eating) its usually the lower digestive area and they need **lactic acid yeast** to help the bowel or some **digestive enzymes** that are basically pancreatic because that's lipolytic, amyolytic and proteolytic.

-When you measure the pH you can use bromthymol blue or **pH** hydrion paper and when you have an acid bowel it causes atonia, you have a dilated, atonic, colon and when it's alkaline it causes spasm. Many times that's the difference between an open and closed ileocecal valves. Bromthymol blue is available from your local pharmacy, it changes color with pH.

-A last but frequent thing is as people get older they get pruritus ani which usually needs **hydrochloric acid and zinc**, local help for the irritation, and sometimes need some help for the liver.

DR. GOODHEART'S RESEARCH TAPES

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-You're all familiar with the technique of treating the diaphragm which we originally used. It was indicated when the patient had a vital capacity below 85% on the vital capacity meter (the bellows device that McJesson first put out), or with decreased breath holding time (which was occasionally a factor). We would look for decreased lateral expansion of the rib cage due to hypertonicity of the psoas on that side. This represents a confluent reaction between diaphragmatic crura and the psoas. We had a system of therapy localizing just below the xiphoid. We sometimes looked for disturbance in the heart meridian alarm point. We'd test for a strong muscle weakening while the patient forcefully inspired and expired, in addition to looking for cranial faults, we felt the diaphragm was involved. If we did find that, therapy localization to the diaphragmatic reflexes all over the sternum and on the tenth rib one inch lateral to the spine usually fixed that. We'd see increased rib cage expansion. We'd also therapy localize the sagittal suture for the vascular circuit. That was a fairly effective technique, but did not encompass or release all the problems.

-We did a study on the diaphragm and felt it was the major muscle of respiration, When the diaphragm contracts, it diminishes the anterior to posterior dimensions and increases the side to side dimensions. We breathe in by contracting the diaphragm. As the individual fibers contract or shorten, the whole double dome contracts and flattens, and this creates a vacuum in the chest. The lungs, which are soft spongy tissue containing air, expands as the pressure outside the lungs increases. As the inside of the lungs expand, its pressure drops below the pressure of the atmosphere and then the outside air actually pushes air into the lung. We don't suck air into our lungs, it's really pushed in. In addition to the diaphragm, the external intercostals, the tiny muscles between each rib, alternately contract and lift and expand the rib cage. This increases the vacuum in the chest and more air is pushed into the lungs. Then we exhale by relaxing the diaphragm and intercostals and the diaphragm ascends again to its original position increasing the pressure in the chest. The intercostals also relax and the rib cage shrinks in size also increasing the pressure in the chest and the increased pressure squeezes the lungs which expells the air. We could expell the air in our lungs more forcibly by contracting the antagonists to the diaphragm, these are the abdominal muscles - the rectus abdominis, obliques and transversus, and the chest muscles - the internal intercostals, pectoralis major, serratus anterior, and the back muscles - consisting of the serratus posticus inferior and serratus posticus superior. You can tell that the list of muscles that exhale is much greater than the ones that inhale.

-In athletes we measure the circumference at the level of the umbilicus, at the top of the costal arch at the level of the xiphoid, and also at the nipple line. We try to increase those, especially in swimmers, by stretching the muscles that oppose inhalation. We'd have the patient lie on their back and use a stretch we called pullover. Then we'd have the patient take about eight or ten pounds in each hand with their head just over the edge of the table, let the arms slightly flex and taking the weight, holding the arms hanging down,

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we'd stretch the ribs and stomach by inhaling as much as they could and then exhale completely with ten repetitions.

-We talked about the downward pull of the relatively unsupported viscera and weak abdominal muscle pattern. We would test that by either the stretch pattern or contraction pattern and would make the correction of fascial flushing/B12-folic acid, or strain counterstrain/glycine, fatty acids, or RMAPI/wheat germ oil. We then suggest that the abdominal stretch exercise be continued for a long time.

-We measured leg turn in and the diaphragmatic crura relating to the psoas and talked about the muscular balance being weighted towards external rather than internal rotation. We felt that a great deal of restriction of chest expansion, usually unilateral but sometimes bilateral, was related to that psoas/crura interaction.

-We found that in a supine position, the upper body in slight flexion of about 20 degrees with rotation to the left and right accompanied by deep inspiration would weaken test muscles in diaphragm problems. Therapy localization of K27 anteriorly and B10 and B12 posteriorly would temporarily negate this weakness. We found that leg turn in would parallel those observations. Deep manipulation of K27, B10, and B12 would improve and balance leg turn in, chest expansion, and diaphragm function.

-Now we've added another element which is more functional and which is a welcome addition because it has far reaching effects. I'll describe that now. We identify diaphragm disturbances on patients with abnormal as well as normal or even above normal vital capacity. With the patient supine, doctor on the right side of the patient, place your right hand over the lower border of the patient's left rib cage and the left hand over the same area on the right rib cage. Move the rib cage from left to right with the right hand and right to left with the left hand. We've found consistently in two hundred patients that the function moving the rib cage from right to left is greatly restricted, in fact we have not yet found any disturbances on the left, although I'm sure we will. The same has been true of my partners and associates, so it's a rather predominate restriction of movement from right to left. Sometimes we don't see this so we measure it also when the patient is resting or standing on the high low table. We sometimes see it in weight bearing when it doesn't show in the resting supine position. Rarely do we see it in the prone position but not in the supine or standing. We tried to parallel that with the previous patterns and there was not always an absolute corollary. Sometimes there would be an apparent leg turn in coincident with failure of the chest to move from right to left, but not consistently. Many times we found failure of rib expansion but it would take very careful measurements whereas previously there was no question in difference of rib movement. So this must represent a different type of activity than what we've previously shown in diaphragmatic problems.

-We would find consistently, if we tested the abdominal muscles, that the average patient might show weak abdominals or repeated muscle action. Consistently we found the external obliques to be quite strong. When we would position the supine patient in a

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comma position, with the patient's head and feet to the right, the hips to the left with their legs elevated about ten or twelve inches above the table, then pushing their extended feet and legs from right to left while pushing the pelvis in an opposite direction, testing the transversalis, we would find weakness. Neurolymphatic activity for the abdominals at the medial thigh on the left would neutralize the (opposite side) weakness but would not affect the decreased rib cage motion from right to left so we knew that wasn't all of it.

-When the baby is coming down the birth canal it continues to get its oxygen from the umbilical artery and vein which is cut when its pulsations cease. The diaphragm then starts to move and the first inspiration is accompanied by a cry. Based upon that concept, and through trial and error, we found a definite relationship between the umbilicus and the diaphragm. We use a therapy localization with the thumb in the umbilicus and a simultaneous four finger contact just below the xiphoid and this produces a remarkable weakness. But this does not seem to be a neurolymphatic reflex. It requires that the doctor press down and in and up (cephalward) on the umbilicus and from A to P with four fingers at the xiphoid contact. This technique is taken from Dr. Robert Fulford, a 92 year old osteopath, who was a contemporary of my father. Dr. John Diamond acquainted me with this approach initially and Dr. John Brimhall who produced a paper a few meetings ago and made tapes of Dr. Fulford available to me aided in the development of this technique. Dr. Brimhall previously pointed out, as advised by Dr. Fulford, that using the technique seemed to work better on women if the doctor positions himself to the left of the patient and to the right with males. This seems to make it work more rapidly. It takes a little bit longer doing it from the right side on female patients but that's not too significant. We still use the neurolymphatic reflexes that we spoke of earlier with the same methods of identification. The sternal neurolymphatic reflex is all over the sternum with more sensitivity at the aortic sinus area. The rib pattern is at the tenth rib just an inch lateral to the spine, and if you find the failure of rib expansion on one side, that's the side you use it on. The effect of this on vital capacity is excellent. It seems to be accompanied by a very unusual pattern and it is very consistently on the right. Sometimes I find it on the left but never on the left alone.

-With the patient supine, passively checking the humerus range of motion straight laterally, it is frequently diminished, along with weakness of the middle deltoid. (The patient may be able to move more actively by changing the direction of abduction anteriorly or posteriorly slightly.) Using a fascial flush from the deltoid dimple upwards for about a minute or by using the Fulford percussion hammer, you get a change in the gel pattern, sort of a molasses in January concept in the hollow tubules of the fascia. This produces a remarkable change in the passive range of motion of the humerus and seems to influence the motion of the chest. The muscles that expell the air mentioned above also seem to be a factor in the movement of the upper rib cage, the upper chest, the upper four ribs. These patients seem to have a mental dullness, a lot of fatigue, and their vital capacity isn't abnormally low, usually 85% or slightly higher, but when we correct that diaphragm problem there's a remarkable increase in the motion of the diaphragm, vital

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capacity, the motion right to left (ordinarily good motion from left to right but very poor from right to left both in the supine and standing position, and occasionally in the rare case in the prone position). It still requires the neurolymphatic activity for the transversalis. When you couple that with attention to fascial flushing or percussion of the middle deltoid you get remarkable changes and the patient immediately says "Oh I can breathe so much better", and you can observe that measured vital capacity and breath holding time is increased. There seems to be a type with chronicity, long standing hiatal hernia, etc. Have the patient take a few deep breaths and if it comes right back you need to repeat the technique, use wheat germ oil, and pay more attention to origin/insertion, but that's the exception. Another thing that you'll see for the upper four costal segments are the subscapularis, serratus posticus superior and inferior and occasionally the serratus anterior. When you stretch those muscles, they weaken dramatically and they require fascial flushing or the Fulford percussion unit. I'm indebted to John Diamond for having graciously given me one of the early percussion units that Fulford had recommended. Fulford uses it to achieve his result based upon what he feels is the piezoelectric effect. I find that the percussion unit accomplishes fascial flushing as easily as the hand and doesn't require any lubrication. By altering the frequency of the unit you can do that to very thinly muscled individuals, to small children and infants. It's very pleasant, reliable and requires less time on muscles requiring fascial flushing. This continues to require the usually nutrient for fascial flush, B12/folic acid and for strain counterstrain, the folic acid/glycine or fatty acid factors. The folic acid/B12 is appropriate for the trigger points and folic acid by itself is good when the body has forgotten how long the muscle should be.

-When the patient takes a deep breath it may torque the patient and effect pelvic and cranial faults. If the patient is in a standing position with feet apart as wide as the shoulders you will find reduced passive rotation of the patient to the right (nine times out of ten it's to the right). The latissimus dorsi on that side will show a stretch weakness requiring fascial flushing of the whole latissimus. The latissimus fibers at the humerus are twisted so that the lower and upper fibers from below are reversed at the upper attachment at the humerus. The opposite latissimus (left side usually) will often show a compensatory hypotonus with a contraction weakness requiring strain counterstrain and this is done on expiration with a wide contact on the belly of the latissimus. This is often seen in recurring dorsal fixations and subluxations. It also helps chronic symptom patterns in adults and children along with lumbar and pelvic lesions. This is common enough to check on the average patient and is a common accompaniment of the new diaphragm technique just described, but may occur separately. Use of the appropriate nutrient helps prevent recidivism. I've never had to repeat the technique more than twice.

-The diaphragmatic problem and the decreased range of motion of the arm usually occurs on the right, rarely on the left, although you may find the arms affected on both sides, but so far none on the left without the right occurring. There seems to be a definite pattern and to the frequency of the side involved.

-The percussion unit I use is the Fordham Electric Co., 16 Stony Hill Road, Bethel, CONN 06801, telephone 203-792-8622, fax 203-790-9832. The cost of the Fordham unit (the 973, portable one) was \$450. The unit is different than the standing unit that John Diamond gave me for use, but its an excellent unit. It was demonstrated by Dr John Brimhall a few years ago and is effective in the rehab of many patients.

-It seems to fit the pattern described by Janet Travell in her original text with David Simons, Volume 1, Myofascial Pain, chapter one introduction: She discussed the myogelosis. Circumscribed firmness and tenderness to palpation in muscles is called a myogelosis, a name derived from the concept that the regions of circumscribed firmness was due to a localized jelling of the muscle protein. Focal tenderness and palapable taut muscle fibers are also characterized and are characteristic of myofascial trigger points. Most patients diagnosed as having gelosis would also be diagnosed as having myofascial trigger points. In Travell's original text there are seven different areas on pages 3, 7, 9, 10, 16, 35, 58, and 64 where she talks about this pattern. I think its fairly constant. You should read especially page 64 on low back problems as it may give you a new opinion on what may be involved.

-The difference in the texture of the fascia lata before and after treatment is very evident to the fascia as hollow fibers and sometimes they have the pattern of the gel. When you do the fascial flushing or use the percussion unit you get the change from a gel to a sol.

-Check for very slight joint motions: ankle, fingers, in flexion and extension, or in small motions of the patella. In the supine patient with the feet in normal position, measure the distance of the posterior malleoli from the table you'll be surprised how many times the posterior malleolus (the lateral fibula portion) will be closer to the table even though the foot is not in that position. Use the percussion unit around the ankle at the extensor of the large toe or the attachments of the flexor movements on the sole of the foot, especially in a plantar fasciitis. The change in the relative position of the fibula and tibia from the table top become more even. These small movements seem to be a source of great disability and it always seems to be accompanied by the same pattern of the muscles involved showing weakness on stretching.

-I don't know of a source of the Fulford tapes but I'm going to be meeting him soon through the good graces of Dr. Diamond and I'll report on that to you in the future.

-Dr. Fulford has an excellent book called "A Touch Of Life", by Pocketbooks, available through bookstores. Andrew Weil, MD, Author of a New York Times best seller ("Spontaneous Healing") says in the introduction that "Readers will not only learn the personal history of a remarkable healer but will also discover many practical secrets of health and vitality from the importance of proper breathing to the value of simple stretching exercises as a superior tonics for nerves and muscles. Now in his nineties, Bob Fulford embodies and exemplifies his own wisdom about health and healing. He has a led a remarkable and vigorous life without need for medical interventions. His emphasis on vital energy and healing power of nature concepts that animated medical inquiry from the

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time of Hippocrates throughout the last century is completely missing from medical education today. If medicine is to come back into alignment with the great healing traditions, satisfy the needs and desires of those who are sick, it must rediscover the truths that Bob Fulford expresses in these pages." I remember my father speaking of him. One of the exercises he mentions in the section on exercises on page 178, exercise four, is to keep the lower part of the body pliable. You sit on a chair with thighs parallel to the floor, lower legs perpendicular to the floor, bend over, place your elbows on the inside of your knees, your hands between your feet, turn your palms away from each other, touch your fingers under the arch of each foot with your thumb over the top of your foot, and let your spine fully stretch in this position. Breathe fully and slowly for five minutes. Do this once a day and you'll notice that walking is much easier, you can stand up straighter, and your back feels lighter. If you're limber enough to stand up and do this exercise it's ok, but don't let it aggravate a pain in the sciatic nerve. In patients who weaken on split brain activity or who is continually switched and needs cross crawling and so forth, this exercise works better than cross crawling. It is very effective especially in chronic switchers. That's only one of the exercises. This is an excellent book. It's something that Fulford does but doesn't give much explanation for it. But on close examination of what he's done, it fits very nicely with the concepts of AK, especially the diagnostic value of the need for fascial flushing. The type of patient that he seems to find the value in his particular form of treatment, the division of patients who weaken on stretching and contracting muscles, fit nicely into his ideas. It's just another piece of the jigsaw puzzle as Sheldon Deal has so aptly said.

