

This is the story of my journey from a near-death bicycle accident in 1988, being in a coma, and being MISDIAGNOSED with a permanent 35-50% disability. During this time, I also developed all the symptoms of fibromyalgia and chronic fatigue syndrome (CFS). After exhausting all allopathic medicine and all sources I could get my hands on in the alternative medicine field, I finally understood how to treat the cause of my condition when I met with Dr. Kurt Vreeland. The key to resolving any condition, especially difficult ones, is to know when to do what type of modality (therapy) or supplement so that it absorbs and doesn't cause a reaction and is specific to resolving the injury. (See Dr. Vreeland's article in NMT update below.) This article was published in 1993 and took us a year to write because we couldn't find adequate research to explain my improvements until I met Dr. Vreeland.

Today, in 2008, we are using his advanced neurological exercises along with lifestyle improvements and neuromuscular therapy that coordinate the body and brain to attain results that previously were not possible. There are amazing techniques that are able to cause incredible improvements in health; however, there is no magic bullet. The key to living in health in an unbalanced world is to have a balanced nervous system and the tools to maintain that balance..Additionally, it is essential to eliminate chemicals and eat organic foods that are not processed to truly be healthy.

--Mike Jones, B.A., L.M.T.

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*The following five articles build on information presented in the one before it and are best read by reading them in sequence.

Healer Heals Thyself

The Man Who Wouldn't Stop Searching

Few people will ever experience the extreme peak of physical performance that Mike Jones, a 36-year-old neuromuscular therapist from Canton, Ohio has experienced as a triathlete. Few will ever experience the extreme physical incapacity that Mike has experienced as a hospital patient lying in a coma. Mike Jones holds an impressive history of athletic performance which can be traced chronologically by the dates on his many trophies, medals and ribbons. They range from high school track records in distance running to a 1987 third place amateur finisher in the Canadian National Ironman Triathlon Championships. His impeccable health consciousness (who else do you know grows wheatgrass in his kitchen?) and devotion to athletic training as a way of life, make him the last person anyone would expect to become physically debilitated. But on May 31, 1988, circumstances dealt him an unexpected blow and he suffered a bicycle accident which left him in a coma for one and a half days. After a month-long hospital stay, Mike began an ongoing, tenacious walk back to health. His will to find solutions to

a plethora of very bizarre symptoms which were universally attributed to “head trauma” led him to many specialists in many disciplines.

In the first three and a half years following his injury, he tried virtually every therapy accessible to him to facilitate his rehabilitation. The result? A lot of dead ends and blind alleys. That was his earliest lesson: there was not going to be one magical answer or therapy. Like many others with severe injuries, he began the arduous task of investigating many therapies and “cutting and pasting”—taking what was helpful in one therapy and incorporating it into his regimen and then taking what was helpful in another approach and incorporating it. Fortunately he took with him a multidisciplinary background having worked in a physical therapy department, a chiropractic clinic and possessing a wealth of knowledge in exercise physiology.

For every two or three consultations with specialists, he found one missing piece to his mysterious health puzzle. Putting the jigsaw puzzle together over a course of a few years, Mike regained a level of health and function that specialists predicted would not be possible. The application of these same techniques to his patients and fellow athletes has earned Mike the reputation of respected neuromuscular therapist, highly motivational coach and multidisciplinary advocate.

“If you want to see what approaches work,” Mike says, “look at the ones that can take people who are already performing at their top level of physical performance and take them higher. Those are the approaches that optimize rehabilitation, too.” Mike is pleased with the fact that ten of the last twelve athletes he has treated using NMT with these adjunctive methods have set personal performance records after treatment. Mike believes that applying these same principles to non-athletic patients affords accelerated and optimal rehabilitation. This article is the story of his journey. Also refer to the article in this site in which he describes his application of this information to his patients.

“I want to emphasize that these are my observations, they are not facts. I hope practitioners who read this will respond with their own observations and theories, which either supplement or contradict what I’ve observed. If I had not wasted four and half years of my own life wandering in blind alleys, and worked on patients who have had similar experiences, I would not feel so strongly about communicating this.”

EARLIEST CONCERNS AND SYMPTOMS

Mike’s earliest concerns after being dismissed from the hospital were how to complete massage therapy school which he had started before the accident. “I had severe dyslexia for two months after my hospital dismissal. I got through that period of school by having people read to me and also having people walk me around by the hand because I’d get confused and get lost so easily,” he recalls.

“The standard medical belief is that the major recovery from head injuries occurs in the first six months. After six months my diagnosis was a 35-50% disability; a combination of both mental and physiological losses and I was still developing new symptoms so that at the three and half year mark I had several bizarre, inexplicable symptoms. The professional prognosis was that, with my condition, I would have difficulty making a living, let alone enjoying a quality lifestyle.”

Nonetheless, Mike decided to resume training for the Ironman Triathlon, which was just four months after his hospital dismissal. From “trauma to triathlon even brain damage couldn’t stop him, though it slowed him down,” reported the local newspaper.

“People think if you do an Ironman competition that you’re okay,” Mike reflects. “The fact that I did the Ironman reflects the excellent shape I was in before my accident. It did not reflect the fact that I was having very bizarre symptoms. My ability to speak fluidly without stammering was impaired. Often during conversations I would be embarrassed to realize that the words I used were not the things I wanted to say and were not even appropriate to the conversation. I had memory loss (incidental and short term, but not long term). When I turned my head I would blank out and forget what I was saying or doing.

“My proprioception, coordination, and balance were abnormal. If I walked into a room that was dark from one that was lighted, I would need to touch a stable object so I would not fall down. For the first three and half years I fell one or more times per week in my home while simply walking from one room to the next. Imagine the panic of walking and in the next second, realize that you had forgotten how to take a step! I would then fall down if I could not immediately grab a railing or something stable. I kept thinking, 'this must be how it feels to those who have had strokes!' I will never forget the paralyzing fear. Additionally, I could only ride a few miles at most in a car without being sick. Eventually I had to sell my car because I could not feel the difference between the gas and the brake. Even during my Ironman training, I had to continually look at my right foot because I couldn’t feel it hit the ground. This was especially dangerous in gravel or grass where an uneven surface could result in a sprain. I couldn’t feel covers on my right foot or tell where it was positioned—my proprioception was so impaired, but only from the knee down.

“I could not walk in a straight line because it was hard to balance. I could not pass a treadmill test or the balance test which consisted of having the therapist push me while I stood still. I could not walk without losing balance. I couldn’t walk up and down stairs without holding onto the railing. About nine months after my accident someone hit my car by running a red light. The officer wanted to check my coordination. As a result, because I could not talk fluidly or walk in a straight line, I had to retake my driver’s test.

Some of the most bewildering symptoms Mike was embarrassed to talk about. “I had chronic diarrhea for three and a half years. On bad days I would urinate profusely up to forty times a day. I would have 20 or more episodes of violent sneezing daily and had to avoid areas where chemicals were being used.”

There was a unilateral inability to heal from injuries, which Mike was sure would be attributed to his imagination were he to discuss it with his physicians. “My whole right side seemed cut off from healing. Cuts would heal on my left and not my right. Once when I fell, the abrasions on my left hip healed in three days, while those on my right persisted a long time. My diaphragm would spasm on the right and not the left. I’d release it and it would come right back. These one-sided things I felt reluctant to even talk about for fear of being told it was my imagination.”

In those first three and a half years he tried every kind of therapy he could think of, but even with repeated treatments, nothing afforded relief for more than a few days. Even taking one year off from training brought no significant improvement.

A FUNCTIONAL DEFICIT DIAGNOSED

Understandably, Mike and his numerous therapists and physicians attributed these symptoms to brain trauma which specialists believed would be permanent and so there

was little incentive to search for additional help. It was not until three and half years after his accident, when Mike sought a second opinion from a neurosurgeon, that anyone questioned this. The specialist concluded, "Mike, I see no brain damage reflected on the EEG or neurological testing. I believe you have a functional problem."

A functional problem implies that there's not permanent damage but full function is not there. Mike set out to find out why. Dr. Jeffrey Fedorko, a local chiropractor told Mike about Dr. Pierce's work in Pittsburgh. "The only thing that he knew was that Dr. Pierce was getting good results with bizarre symptoms and difficult patients," Mike recalls.

Mike traveled to Pittsburgh, Pennsylvania in November, 1991 to be evaluated by Dr. Pierce, a chiropractor nationally acclaimed for the development of Cineradiography and the "Pierce Technique of Spinal Manipulation." At 1/40 of the amount of radiation of a regular x-ray, cineradiography photographs the spine in motion and videotapes the results so that you can re-study the subtleties of the motions. The entire spine can be viewed from the sacrum to the occiput as the machine automatically moves up the spine. The patient is instructed to put the lumbar, dorsal and cervical spine through complete ranges of motion so that individual movement of vertebra, or lack of movement, can be detected. Mike's spinal fixations constellated in the cervical spine.

He recalls, "Six of my seven cervical vertebrae were moving as a unit, not individually. Cineradiography was a miracle to me, showing where the problem was and where to treat. This made sense to me because I had crashed on my bike at 27 mph and landed directly on my head. Fortunately I was wearing a helmet. I had had my neck treated in the past and so I assumed the injury had cleared out. I did not consider the neck as being significantly involved because I had so much pain and dysfunction in the left upper torso and lower right extremity, that all the therapy had been focused there."

After viewing his cineradiographical results, Mike began intensive neck treatments with Dr. Pierce, which consisted of the use of a strong adjustment appliance precisely applied to the spine.

"The experience of not being able to feel was so devastating, that I would have paid ten thousand dollars in cash to have feeling again. The loss had been approximately 40%. In the first two treatments with Dr. Pierce, I had the return of all lost feeling on my right side from the knee down! I regained almost full strength of my right lower extremity and of my left hand grip as measured by muscle testing and my ability to lift weights. Six months after my injury, Cybex testing had shown up to 44% loss on my right side. My proprioception improved greatly. I could run up and down steps even when exhausted without placing my right hand against the wall to steady myself. I could turn around in a circle several times with near normal balance, whereas before treatment, one full turn would be difficult and several turns would cause me to fall. Allergies ceased, no more sneezing. The feeling of constant exhaustion changed to moderate fatigue.

"What is upsetting to me is that I later discovered that the documentation between disturbances in the upper cervical spine and proprioception was not new. In 1959, Cope and Ryan established that the first three cervical vertebrae contain major proprioceptive mechanisms! And yet no specialist or therapist in the first three and half years after my injury made the connection between my proprioceptive difficulties and my neck. And no one before Dr. Pierce ever suggested intensive neck treatments."

NMT PROVIDES ADDITIONAL PROGRESS

After five Pierce technique treatments, Mike's progress plateaued. He continued receiving the treatments, but he realized he needed something more. In his search for his next piece of guidance, Mike sought out Dr. Jay Sandweiss, D.O. from Michigan, an expert in soft tissue dysfunction. Dr Sandweiss's opinion was that because soft tissues control the bones, if Mike was having a curve problem he should get the soft tissues treated.

Dr. Sandweiss further explained that there is a mythology surrounding soft tissues. People think that if a bone wasn't broken, then it's not a serious injury. People assume that soft tissues magically heal if left alone. This is not true. High velocity and sudden acceleration forces cause microscopic injuries in the spindle cells and Golgi tendon mechanisms. These mechanisms, when injured, possess the capacity to feed back garbled messages to the nervous system so that the person is left with a short circuit. One effect is that the resting length of the muscle has been "reset" by reflex changes in the spinal cord. Until this pathological loop is interrupted, muscles will remain spastic and information to and from the nervous system will be inaccurate.

So this time Mike sought out NMT with a different perspective. Instead of focusing on the areas where the pain and dysfunction manifested, the sessions focused on his anterior and posterior neck. Mike noticed that one treatment a week was not sufficient to make therapeutic progress. Therefore, in late June of 1992, he began receiving two to three NMT treatments per week to his neck. "That's when I got the best changes," he recalls. He observed that the neck treatments improved the unilateral abnormalities, athletic performance and his performance on coordination tests.

THE THYROID CONNECTION

Another missing piece fell into place when Mike sought out the expertise of a physician who is known for his knowledge of conventional and alternative diagnostic tools. "I went to him with my blood tests and wanted to know why my blood tests and wanted to know why my thyroid was so low on EAV (Electrodiagnosis by Vol) but on conventional tests it was low normal." The physician said, "If I knew your axillary temperature and your background I would tell you that was not normal and that you are hypothyroid."

As a dedicated athlete Mike had kept a training/performance log virtually everyday since 1974. This log contained miles ran, biked, swam; energy level that day; and heart rate. After his diagnosis of hypothyroidism, Mike began recording his morning axillary temperature in his log.

Without intending it, Mike became his own NMT experiment. When he began documenting his axillary temperature it was 96.0. After the fourth NMT treatment on the anterior neck muscles (longus colli, longus capitis, infrahyoids) with emphasis on the cervical curve, his axillary temperature increased to 96.5 and remained at the new level. "This was enough to let me ride my bike again, but not enough to run because running is weight-bearing and therefore more stressful. It confirmed for me that my thyroid function affected my muscle abilities."

Moreover, he found that he was able to identify through careful observation the things that adversely affected his axillary temperature—high stress, lack of sleep,

overtraining, poor nutrition; and positively affected his axillary temperature—transcendental meditation, homeopathic remedies for the endocrine glands, rest, NMT, chiropractic adjustments, herbs, glandulars and magnet therapy.

Just exactly how the thyroid affects tissue integrity, no one is certain. However, Mike's observations have been corroborated by others. Dr. Robert Gerwin, M.D., a neurologist who specializes in the treatment of myofascial pain was quoted in NMT UPDATE Vol. 5, Issue 1, that "low normal" thyroid was one of the most common perpetuating factors in poor tissue response to therapy.

AYURVEDA

Mike's last major piece of his health puzzle fell into place when he attended an Ayurvedic Seminar in Lancaster, Massachusetts in January, 1993 called "Invincible Athletics." "My biking speed using Ayurvedic Invincible Athletics Training under Dr. John Doulliard, went from 15.5 mph to 17 within a two week period at the same heart rate." He had many other immediate changes: "I'm able to fly in planes without becoming ill and ride in the back seat of a car. I had my highest a.m. axillary temperature (98.3), highest p.m. temp (98.4). I had the second lowest a.m. and p.m. heart rate in my life. My balance improved 50% with the balance test and gradually continues to increase.

By April of 1993, Mike was receiving intensive NMT neck and cervical curve work and following the Ayurveda program. He set new workout performance records— from 17 mph on bike to 21 mph on a straight stretch at the same heart rate; dropped 30 seconds per mile off his running time at the same heart rate; and was able to increase resistance on the swim bench for only the second time in two years and double the length of time that he could workout at that effort.

LESSONS LEARNED

Mike's lessons from being on the other side of the table are a lesson to us all. His biggest frustration as a patient was that "each modality thought theirs was the total answer and knew very little about the benefits of the others." He cites his own case as one that required several healing modalities. He remembers that sometimes there was very direct dismissing of other modalities by practitioners, or at least disinterest in learning how the modalities complement each other. There is a Nigerian saying that "when elephant's fight, it is the grass that suffers." Mike points out that if we do not care to understand or appreciate what exists beyond our own little sphere, it is the patient who falls through the cracks, and that he could have easily been one of these.

We asked Mike how his own case has helped in his work with patients. His response became a second article in this issue. To summarize it, he says:

- 1) In the beginning the person often needs two treatments a week, in order to get a therapeutic effect and break the deadlock of the holding pattern.
- 2) "When you talk about neck involvement, all the weirdest symptoms show up—functional deficits. You turn your head and you forget where you're at; you take a step in the morning feeling good and take another step and fall down. These are signs to look to the neck."
- 3) Most of the origins of functional deficits are not in "big bangs" like his. "It can be a little bang when they are five. People come in looking for the big bang explanation to their symptoms and it's usually not big. It can be a

teacher bending over the desk all day. She never had any trauma, her symptoms start just from poor posture. So now she's lost her cervical curve because her tightened longus colli and capitis have taken the curve out of the neck. Then she starts complaining of functional losses. Chronologically you can follow it. Five months ago I thought only a few people had this. Now I see that in varying degrees of severity, it's everywhere.

- 4) "People will find every way in the world to compensate. It is amazing how they push themselves. The work is full of superchronic overachievers. But there is a price of compensating and that price is people get dissociated from their bodies and do not know how to read the signals their bodies are giving them. Reading body signals has to be relearned.
- 5) "If the problem is coming from the neck, you can treat their local symptoms forever and they will now get well until you do intensive cervical treatments. I mean one to three treatments a week. And it is not sufficient to release the muscles, you must facilitate the cervical curve or nerve function will not be normal."

AND CURRENTLY...

Mike still has mild functional deficits and energy problems, has periodic setbacks, but usually maintains himself. About every two weeks he can see more progress. "The changes are more subtle now than they were in the beginning. When I look at progress now, I look at what I could not do eight months ago that I can do now. I can sprint across the street. I can walk around the treatment table without holding on. I can internally and externally rotate my foot when going from gas pedal to brake, instead of completely lifting it off one pedal and placing it on the other. I can pronounce my last name." Today Mike maintains a busy, full-time NMT practice with a one month waiting list. He continues to pursue his own athletic training, work with athletes as coach and therapist, and maintain a lifestyle that furthers his own healing.

Poor Tissue Response? Might Be Low Thyroid

In *Myofascial Pain and Dysfunction: The Trigger Point Manual, Volume I*, Drs. Travell and Simons devote three pages to the discussion of the role of thyroid hormones on skeletal muscles. Here are summary excerpts from the text.



Patients referred to us with myofascial pain syndromes often arrive untreated for their slightly low thyroid function because they have only mild symptoms of hypothyroidism and borderline low, or low normal, thyroid tests. Experience has shown that these patients are more susceptible to myofascial TPs; they experience only temporary pain relief with specific myofascial therapy. This increased irritability of their muscles and their poor response to therapy are greatly improved by supplemental thyroid, if they have no other major perpetuating factor.



Another study identified eight patients with symptoms of fibrositis, defined in a way that included disturbed sleep and was compatible with the diagnosis of myofascial TPs. All eight also showed chemical evidence of hypothyroidism, a low T₄ and/or elevated TSH, but with few clinical indications of hypothyroidism. Six of the eight were relieved of their musculoskeletal symptoms by low-dose thyroid administration, and most of them no longer had difficulty sleeping.

Our observations and these reports suggest that, at least in some patients, the irritability of myofascial TPs is a sensitive indicator of inadequate thyroid function. It also may reflect a specific vulnerability of the muscles to impaired action of thyroid hormones at the cellular level, a condition that apparently occurs even though the levels of circulating hormone are clearly within normal limits.



Patients with inadequate thyroid function generally present incomplete and moderate to mild symptoms of hypothyroidism. These are easily disregarded if the examiner is not concerned about their importance.

Hypometabolism patients nearly always experience **cold intolerance**; occasionally they are intolerant of both heat and cold. They tend to wear additional clothing (a sweater, jacket, or pullover) when others do not, rarely sweat, and frequently complain of cold hands and, especially, of cold feet.

Characteristically, the **muscular complaints** of the patient with hypometabolism are muscular aches and pains or stiffness of muscles, and those muscles are prone to develop persistent TPs. Chronic fatigue, which may approach lethargy is noticeable on arising in the morning and is usually worst at midafternoon. These patients are “weather conscious;” muscular pain increases with the onset of cold rainy weather. Inadequate

folic acid also depresses the basal temperature, but in this case the muscles are not as weather conscious.



Laboratory Tests. Serum hormone studies in hypometabolic patients show marginally low T₃ and T₄ levels, usually within the euthyroid range. Thyroid stimulating hormone (TSH) is rarely elevated. The cholesterol value is very likely to be elevated, if this increase is not counteracted by depression of the cholesterol level due to folate deficiency. Vitamin B₁₂ deficiency is not reported to affect serum cholesterol. The muscle enzymes, creatine phosphokinase (CPK), serum glutamic-oxaloacetic transaminase (SCOT), lactic dehydrogenase (LDH), and aldolase, are elevated in hypothyroidism, indicating that destruction of muscle structure may occur due to a lack of thyroid hormone.



Findings on Physical Examination. Hypometabolic patients are identified by a depressed basal temperature of 36.1 c (97 F) or less. Skin over regions of trauma at the elbows, knees, and behind the heels most clearly show a characteristic dry, scaly roughness. Muscular relaxation after a response of the Achilles tendon is often slow. This is easily tested by having the patient kneel on the seat facing the back of a chair. Hypometabolic patients are subject to myoedema, which is elicited as a local mounding of a muscle in response to a sharp blow as with a reflex hammer. These phenomena appear to be based on delayed reaccumulation of calcium ions in the endoplasmic reticulum and, therefore, delayed disengagement of the actin and myosin filaments. Clinical electromyography does not reflect these abnormalities.

Mike Jones has been there:

When I Called Mike, I Was Desperate. I Couldn't Believe My Ears...He Understood What I Was Talking About!

The title of this article is exemplary of the letters we read from Mike's patients. Said another, "It helps that you are a competitor yourself. You know all the problems." How does he know? He's been there. This 36-year-old neuromuscular therapist from Canton, Ohio walked through a five and half year medical maze searching for answers to his own severe injury. The number of specialists Mike consulted, the miles he traveled to seek their help, and the amount of money he spent probably matches or exceeds the experiences of most of the people he treats.

In the "Hero's Journey" story, the hero descends into darkness, suffers, learns from his suffering and re-emerges with wisdom which he brings as a gift of healing to many. We asked him to give us an overview of his expanded approach.

ASSESSMENT

The mainstays of Mike's assessment are the NMT "tried and trusted" postural evaluation, palpatory examination and patient history. In addition to these, he utilizes the markers that helped him solve his own mystery—supplementary questions in the patient history, applied kinesiology, cineradiography, and the physiological markers. There are four distinct advantages to using these tools. Most obviously, each of these provides Mike with important information about how the case should be approached. Secondly, they provide documentation of pre- and post-treatment changes. Thirdly, the physiological markers provide daily feedback to the person so the person ultimately gains self-awareness of those elements that make her condition better or worse. And finally, the person learns to use the information gained from physiological markers in order to adjust her rehabilitation program appropriately from day to day. We asked Mike to describe each of these.

ASSESSMENT: SUPPLEMENTARY QUESTIONS

"I ask questions which supplement the patient history form that we are taught to administer," Mike says. "I am looking for symptoms that may be related to the person's condition, but that he or she might not think to mention. I ask about bowel movements; frequency of urination; forgetfulness and memory loss; digestive difficulties—dyspepsia, lack of assimilation and flatulence; increased interpersonal discord and problems associating with peers; coordination problems such as walking into things, dropping things and loss of balance in darkness; difficulty following directions, poor reading comprehension and difficulties assimilating new information; dyslexia, spelling and writing difficulties; anxiety and depression; and energy level—either too low or over-stimulated and can't slow down.

"Obviously, these things can be associated with a variety of conditions. Most of the people I see have already been to physicians, many to specialists, and have had negative findings. Therefore, it has already been determined that there is an absence of

neurological or other pathology. I am looking for symptoms here that might indicate a functional problem with a soft tissue component. When I hear 'yes' to many of my questions about the existence of these symptoms, it tells me to look to the neck as part of the solution. I also ask for very specific descriptions of repetitious movements and postures in order to ascertain perpetuating factors."

With regards to the palpatory examination Mike is "big on numbers." "When they first come in, I explain that I need them to help me to help them and that they need to give me accurate feedback. I use ten pounds of pressure when they are giving me feedback, except on the face, where I use five. I tell them that five is in the middle; one is slightly more than just pressure. They assign a number from one to ten to their pain. Now, here's what confuses people. Many mistakenly think that ten is the most pain that they could ever stand. I emphasize that a ten means they want to pull away from the therapist; it's not the most that they can ever stand. I also tell them that I don't want to work deeper than pressure which elicits a seven. I explain that I am concerned about addressing the areas that are two or above."

He continues, "Before they leave after the first treatment I explain that when they come back I want to know what's different. I want them to tune into subtle changes. Assigning numbers to their pain helps them to do this. If the person reports a lot of sevens initially and then on the next treatment the pain threshold with the same ten pounds of pressure goes down to four, then there has been a change. But if I ask this same person how he is, he will probably say, 'I still have pain' and forget to tell or not be able to tell about these subtle differences. Mike also does balance, coordination and breathing tests to obtain baseline measures.

ASSESSMENT: APPLIED KINESIOLOGY

Applied kinesiology (muscle testing) is used to assess the relative strength and weakness of various muscle groups and systems. A "Touch for Health" course teaches the practitioner how to muscle test the basic muscles. The book by the same title by John Thie is an important reference guide. There are certain guidelines which must be followed to make muscle testing accurate.

It is important to not exceed ten pounds of pressure when muscle testing, Mike says. This is equivalent to the amount of pressure that you can exert with two fingers. It is essential to muscle test while the person is exhaling so that other muscle fibers are not recruited for strength. When someone holds his breath and does a muscle test, it will result in a false negative because he has recruited other muscle fibers in order to get strength. Also, people grasp the concept of muscle testing better when the instruction "hold" is used rather than the word "resist."

"When the person is failing a lot of the muscle tests, then I suspect something systemic is happening and that his problem is not just a localized problem. For months, when a person would not respond to the combination of treatments I was using, I would notice that if I treated the neck intensely, then most of the nonresponders would respond. I kept saying, "This cannot be." But it was. And it held true over time that many secrets were held in the neck.

"I use AK as a baseline measure before I begin the first session and then I retest the muscles at the end of the session. Why is this a hint for me to look to the neck? I noticed early on, that even if I just worked the anterior neck muscles, quite often all the

muscles (even in the lower extremities) would test strong at the end of the treatment. I also noticed early on, that those who tested universally weak at the beginning of the treatment and universally strong after treating the neck muscles were a) also those who were likely to show a military neck or reversed cervical curve on cineradiography and b) were more likely to get well with a combination of NMT to the neck and the area of pain, rather than just to an area of pain. Why they muscle test strong after a treatment is probably because NMT applied to the ischemic muscles affects the cervical curve. I also believe that NMT helps to remove functional deficits caused by the soft tissues so that normal messages can be transmitted from the Golgi tendons into the central nervous system.”

ASSESSMENT: CINERADIOGRAPHY

Mike works in collaboration with Dr. Anthony Jones, in Hubbard, Ohio, who performs cineradiography and provides information on the status of the cervical curve. They have collaborated on about 40 cases so far, in which the cervical curve was abnormal (either reversed or military). In the majority of the cases, the restoration of the normal curve correlated with the elimination of symptomology.

“In the majority of the cases, I could predict through palpating the small, deep muscles of the neck (interspinales, intertransversarii, multifidi and rotatores) which necks would show up as abnormal curves on cineradiography. Likewise, over a series of treatments, I could feel the changes in these tissues and in the subtle movements of each spinal segment as the movements of each spinal segment as the curve was returning to normal and could usually know when the curve had normalized. The value of cineradiography is that it is one of the few instruments that measures anterior/posterior vertebral positioning. It verified my palpatory findings and has increased my own sensitivity. Additionally, it verified treatment effects.”

ASSESSMENT: PHYSIOLOGICAL MARKERS

Mike instructs his patients to record their daily morning measurements of 1) axillary temperature, 2) heart rate, 3) pain thresholds as measured by the poke test and 4) morning perception.

Axillary Temperature

Mike explains that 97.8 to 98.2 is considered normal range. The most important thing is that each person has to ascertain within that general range what his normal range is. When a person calls for the appointment, Mike tells him on the phone to start recording his axillary temperature every morning before arising so that he comes to the first session with two weeks of baseline measurements.

It is best to take the axillary temperature and heart rate upon awakening, before rising. Rising up can raise the heart rate and temperature.

Heart Rate

The heart rate is taken each morning in order to measure how the person is responding to therapy. The best way to take your pulse is to hold your finger lightly on the carotid for a full minute. If you do it heavily it can slow the pulse and you will get an

inaccurate rate. Do not take the pulse for 15 seconds and then multiply by four because you can miss up to eight to ten beats that way.

As a general rule the average is 78 beats per minute for females and 72 beats per minute for males. If your heart rate is up, then it means that you are wearing yourself down and your body is under stress.

For athletes who do endurance training the pulse will be lower than a sedentary person. Mike's pulse, for example, is 44 beats per minute.

Poke Test

"I teach them what ten pounds of pressure feels like. I have them feel the ten pounds of pressure in different places where they know they have a chronic or acute problem. I ask them if it's tender, how tender? They then learn how to do this to themselves in the morning before arising. They apply ten pounds of pressure to their chronic or acute areas and assign a number between one and ten to the pain intensity.

"Now here is the interesting thing. Almost always, there is an inverse correlation between axillary temperature and the heart rate. On days when pulse is higher than normal, axillary temperature is lower than usual. When this occurs, if the person traces back the last 24 hours, he can almost always discover what made his physiology go awry. Over time, he will have a list of things that affect his own physiology positively and adversely. Each person's list will be different and it is important that each person learn about his own body. On days when axillary temp and pulse are not normal, usually the patient will also report hurting more than usual on the poke test. This teaches them firsthand how their pain thresholds are tied into their physiology and that there are a lot of choices in the course of a day that determine how they will feel.

"The poke test is also used to determine when to begin stretching and strengthening. I don't usually start them on stretching until they are consistently a three in the morning on the poke test. This usually indicates that most of the ischemia is gone."

Morning Perception

"The morning perception is the most important measure for the patient to master in order to have a self-sustaining recovery. It is important that the patient do the morning perception before measuring the physiological markers. I give the person an internal reference point by which to compare their current sense of well-being. I say, 'think of the best you ever felt without something extraordinary happening as being a ten. What are you today in comparison to that?'"

"Morning perception takes into account somatic conditions, energy level, and psychological feeling of well-being. When people first start doing this most will say they are an eight or nine. But when they measure the physiological markers and do the poke test, results will reveal otherwise. This is because people are so dissociated from their bodies that they are not accurate in their perceptions. The mind is so adaptable that a person can feel lousy and think it's normal.

"Over time, people get very accurate with morning perception. Some get so good at it, they can predict their pulse rate and axillary temperature even before they measure them. The value of having the person match their inner sense with the external markers, is that it sets up a biofeedback loop. Once the person has an accurate morning perception, he carries an accurate inner sense 24-hours a day. He knows then whether something is

helping or hurting him. Every case is different and the person must learn to read their own body signals.”

Perceived Exertion

“This is a concept I use with athletes, not nonathletes. Athletes have a knowledge of what their maximum heart rate is and a kinesthetic sense of what it feels like to exert themselves to this maximal capacity. From this kinesthetic knowledge, they can estimate what percentage of maximum exertion they are currently at during a workout. This estimated percentage of maximum is the “perceived exertion.” Suppose the athlete estimates that his perceived exertion is 75% of maximum. Then his heart rate should reflect 75% of maximum. There should be a close correlation between perceived and actual. The trouble starts when there are big gaps between perceived and actual. For example, if an athlete has a perceived exertion of 90%, that means that he feels he is working pretty darn hard and nearly at maximum capacity. But if he takes his heart rate at that moment and it is only at 75% of his maximum capacity, then something is off. Usually that “something” is the adrenals or the thyroid.

“With neck problems the perceived exertion does not correlate heart rate. John M. is an example of this. He is an athlete who came for treatment with symptoms of low grade irritation throughout his body, tightness and cramping in legs, big toes and shoulders, residual pain after a workout and a beginning axillary temperature of 96.0. After five repeats of swimming 100 yards his performance dropped terribly. By his tenth repeat his time was down from 1.15 per 100 yards to 1.30. This is not good. His perceived exertion showed that he felt like he was going out 85% or 90% during the workout, but his heart rate showed he was working harder than that. By getting NMT cervical work and applying the principles of Ayurveda, his axillary temp went from 96.0 to 97.2; he set new personal records every race this year; he seldom cramps; his comprehension is improved; and his perceived exertions correlate now with his heart rate.”

TREATMENT CONSIDERATIONS:

TREATING THE NECK IS IMPORTANT IN COMPREHENSIVE CARE

“I have found the neck to be a missing piece in so many cases where the person was not even presenting with pain in the neck, that I believe neck treatment should be considered in every case. If the problem is coming from the neck, you can treat their local symptoms forever and they will not get well until you do intensive cervical treatments. I mean one to three treatments a week. And it is not sufficient to release the muscles, you must facilitate the cervical curve or function will not be normal.”

How does Mike determine neck involvement? If they show more than a few of these: palpatory exam which shows restrictions of the cervical curve; global muscles weakness with AK testing that becomes strong after neck treatment; restricted cervical ROM; curve abnormalities on cineradiography; functional deficits such as abnormalities in proprioception and coordination; soft tissue that releases very poorly no matter what methods you try; and injuries that do not respond well and/or return easily with little or no activity of that injured site.

Regarding poor soft tissue releases, Mike comments, “I believe this is often thyroid related. There is already good documentation that subclinical thyroid deficiency

makes poor tissue integrity and poor treatment response. There are numerous cases I have seen, including by own, where as peoples' axillary temperatures increased their treatment responses were better."

Mike cites the case of Adam, a young man who presented with lower lumbar pain and tingling down one leg, as a case that illustrates how injuries that do not respond well and/or return easily with little or no activity of that injured site might respond to neck treatments. "I treated his back a few times and each time the symptoms resolved. But each time he came back all his symptoms had returned. Then I looked to the neck. This was one of the first cases that taught me about the importance of the neck. He had anterior and posterior cervical muscle involvement and a poor cervical curve which was verified with cineradiography. When I devoted 75% of the treatment time to his neck and 25% to his back he got excellent results and his treatments held. I saw him about six times after that and his symptoms resolved. Now I treat him once every two to three months for maintenance.

"What I learned from his case is that if I suspect neck involvement then I spend most of the treatment on the neck until the person is stabilized. By stabilized I mean that the cervical curve is 50% improved; muscles consistently test strong for a few sessions; and pain and irritation in the neck has been reduced. Then I spend more time on the localized areas and less on the neck."

He uses the case of Joey V., a dentist and world class athlete for the triathlon, as a case illustrating how discoordination may be a sign of neck involvement. "Six months ago Joey told me he could not do PNF stretches on his right side and he was not increasing in flexibility. He also said that when he turned his head to the left in swimming, he'd lose his coordination with his kick. He would fatigue way too early in his training program. This is usually a sign that there is more involved than just improper training. Examination showed restricted cervical ROM, and AK showed a unilateral right side weakness of both upper and lower extremities."

After neck treatments the unilateral weakness has disappeared, everything tests strong, discoordination is resolved and he has qualified for the world championships for the fourth time. In order to maintain positive treatment effects, Joey had to learn proper body mechanics, such as bending at the knees instead of the torso, when bending over patients in the dental chair. Another important perpetuating factor which was crucial to identify was that Joey would fall asleep every night in front of the TV lying on his right side on two big pillows. He had to eliminate this in order to respond to neck treatments. (See Joey's letter).

The case of Chris K., a construction supervisor who is currently undergoing treatment illustrates how several of the above signs—global muscle weakness, balance difficulties, low axillary temperature and abnormal cervical curve—cluster in one person. "Chris is a body builder who was bench pressing 430 pounds just two months before he came to see me for his shoulder problem. Then he had to stop pressing because of his shoulder. My assessment showed that his neck and shoulder ROM were poor, his muscles of his shoulder girdle (deltoid, serratus anterior, pec minor, triceps) tested weak with AK, as did the rest of his body (such as gluteals, TFL, sartorius) although he came in only for a shoulder problem. Axillary temperature before starting treatments was well below 97. The clincher was that although he is a construction supervisor he reported that he could not climb a ladder because his balance was so poor it was dangerous.

Additional functional losses included memory loss and discoordination while driving that nearly caused a collision with a pedestrian. The constellation of these symptoms told me to look to the neck.

“Currently in his recovery, he’s on PNF stretching and there is no discomfort in his shoulder or neck. Soon he’ll start on strengthening.”

Not all neck involvements are as complex as Chris’ case. By contrast, one of the simplest cases was Carl D. who continually presented with deltoid pain that he reported as a “two” on a one to ten scale. Repeatedly Mike would work the deltoid area, and after treatment it still tested weak and Carl still reported pain in it. His entire upper extremity on the involved side tested weak with AK. Mike reports that it is common with a primary neck case, that the person will report pain in an area, but upon treatment, there is little or no pain at the site, and the pain that is there will not resolve with localized massage.

Carl ceased his karate practices and did no upper extremity activity. When Mike finally examined his neck, he found only one small section of ischemic tissues and that the corresponding spinal segment did not have good flexibility. Three treatments on his neck resolved the localized ischemia and also his deltoid pain.

“I believe that the improper neck biomechanics is the major perpetuating cause of other improper biomechanics. It is so important, that I would rank it as number one, even above the pelvis, as having the potential to cause and perpetuate biomechanical difficulties all the way down the postural chain to the feet. As I mentioned, it has been documented for about 30 years that the upper three cervical vertebrae play a major role in normal proprioception—the sensation of where the limbs are in space. Consider this: suppose when I walk or run that my foot is not hitting the ground normally. Upon assessing it, the therapist decides that it is action of the posterior tibialis that is off. Often the temptation is to apply NMT to the posterior tibialis. However, suppose that the problem is in my neck and that the proprioceptors there are giving inaccurate information to my lower extremity about where my lower extremity is in space and the ways it must adapt to correct itself. In that case, all the work on the posterior tibialis will not correct the inaccurate feedback loop which is perpetuating poor biomechanics.”

Mike is quick to point out that when there is neck involvement with an abnormal cervical curve, applying NMT to the soft tissues plus facilitating the curve as taught in NMT I (see instruction video for review of this) is the most effective. “I was glad when I saw Dr. Turchin’s description of the dynamic relationship between the muscles and the vertebrae. It describes what I see in my practice everyday.”

POSTTREATMENT HOMEWORK

In addition to patients receiving NMT in the office and recording their physiological markers every morning, Mike recommends homework for the majority of his patients which includes stimulating the AK pressure points for weak muscles; meditation; movement therapy; and the regular use of the Ayurvedic sounds pronounced “why, ya, you, yea” repeated ten times slowly. Regarding the latter, Mike has observed by AK testing and ROM that the use of these sounds (used in Ayurveda for TMJ release) usually make the neck muscles test strong and increase ROM. Regarding movement therapy, the goal is to break dysfunctional movement patterns. Mike says that movement therapy to enhance athletic performance is not new and has been done under another

name since 1976 when the Olympic shot-putter was doing the “cross crawl” to increase his performance.

“Stimulating AK points treats specific muscles whereas movement therapy addresses broader areas of the body, such as the whole upper extremity or lower extremity,” responds Mike when asked why he uses both AK points and movement therapy. What movement therapies are useful? “In addition to the traditional cross crawl, the movements described on pages 34-35 in the NMT I Manual are a good place to start. AK testing shows people test strong after doing these.”

REHABILITATION: WHEN TO BEGIN STRETCHING AND STRENGTHENING

“Proper rehabilitation requires removing the ischemia from the soft tissues before you go to the next steps. In my experience, people with neck involvement must be ten times as careful as other people when starting rehab because it is often these people who relapse. In order to maintain the gains achieved with NMT, it is important to assess the patient’s biomechanics and make sure activities are being done properly—standing, moving, lifting, bending, even sleeping. Then move into flexibility routines and start conservatively.

“The first week I have the person do nothing more than ROM in slow motion so that the person feels a stretch in every direction. He is instructed only to go to a level of mild discomfort. The second week, I introduce him to Bob Anderson stretches (see reference for how to order the book) which are done in addition to the ROM stretches from the first week, but only to light discomfort. By the third week if all has gone well, the stretching regimen continues, but to moderate discomfort. If a person can handle the stress of stretching to moderate discomfort, then by the fourth week he is ready for PNF (proprioceptive neuromuscular facilitation) stretching.”

PNF stretching is much more efficient than regular stretching and will save time in rehabilitation and training, believes Mike. PNF is added to the regular stretches: 1) before the person stretches a muscle, he contracts that muscle for five seconds, 2) then he stretches the muscle for five seconds by using his hand to pull the muscle into a stretch, 3) then he contracts the muscle for five more seconds, 4) then he stretches it using his hands again for five more seconds, and finally 5) he does the final assist where he moves into a fuller stretch by contracting the opposite muscle to the one being stretched. So, in the final assist of an adductor stretch, the TFL is contracted. In the final assist of a pectoralis major stretch, the posterior deltoid is contracted; and in the final assist of a quadriceps stretch, the gluteus maximus is contracted.

“I don’t tell them all of this about the specific muscles, I just tell them that on the final assist they need to keep stretching in the same direction that they are already going and use the muscles that will allow that to happen. The only concern that I have is sometimes a person goes too far and he does not know it until he relaxes. The whole idea is to get 30 seconds stretch total, so the person holds the final assist a few seconds, and then holds the relax part of the stretch for a few more seconds after releasing the assisting muscles. That’s when the person knows if he has gone too far. He will not feel it during the final assist, only afterwards.

“People should not do strengthening until the tissue irritation is gone and they are easily handling the effort of PNF stretching. PNF stretching is a lot of stress on the body. If they can handle that, they are ready for strengthening.”

II. REHABILITATION: USING PHYSIOLOGICAL MARKERS TO INDIVIDUALIZE A PROGRAM

The physiological markers—axillary temperature, heart rate and poke test—can be used to effectively individualize a person’s rehab program on a day to day basis. “There is almost always an inverse correlation between heart rate and axillary temperature,” Mike notes. “If the axillary temperature is down, the heart rate will almost always be up. As a general observation, an increased pulse that is less than ten beats above normal correlates to one half degree decrease in axillary temp. Usually increases of ten beats or more correlate with a whole degree loss in axillary temp.”

There are various classifications of exercises to choose from: 1) nonaerobic, nonweight-bearing; 2) aerobic, nonweight-bearing; and 3) aerobic, weight-bearing. Each type is more physically demanding respectively. Once patients understand this concept, they can adjust their programs on a daily basis. Nonaerobic exercises include movement therapy, stretching and pranayama breathing. Aerobic, nonweight-bearing exercise includes rowing machines, water running, biking or swimming. Aerobic, weight-bearing exercise includes walking, stair climbing machines, treadmills, running and rebounding. Rebounding is easier on the body than walking or running.

There is one of four choices for the patient or athlete to select on a given day in rehabilitation or training. 1) Take the day off; 2) do a lighter than usual workout; 3) do a regular workout; or 4) do a regular but shorter workout. The latter option is always good to do if the person is recovering from injury or illness because the tissue isn’t as good. Mike’s theories of effective rehabilitation emerge from athletic training. Refer to Robb Sleamaker’s book “Serious Training for Serious Athletes” for additional information.

If a person is eight to ten beats above normal on pulse rate, he is likely to be nearly a degree lower than usual in axillary temp. According to Mike, “that’s serious.” What could cause this change? Being tired, being under emotional stress, eating the wrong foods. This particular profile means that “they have to take it easy—go lighter than usual that day. This is true for athletes in training or patients in rehabilitation. There are many ways of making a lighter workout. An easier day would mean doing nonaerobic activities such as meditation, a nap, movement therapy and stretching. It is preferable not to do a weight bearing aerobic activity when the heart rate is up and the axillary temp is low, “because a person is two to seven times his body weight when he is running, so if he is tired, the little weakness will have more of an adverse impact,” he explains.

An easier program might mean that during stretching the person goes to mild discomfort instead of moderate; or, if the person is usually doing stretching and strengthening, an easier program would mean doing just the stretching and more pranayama breathing techniques.

“If the patient’s pulse is ten beats above normal, I recommend that the patient take the day off. Furthermore, I encourage the person to follow the Ayurvedic rule to make an effort to give something back to the body—rest, good food, supplements, meditation,

relaxation tapes, or expression of emotion.” By using the physiological markers, a patient knows on a daily basis, how he or she should proceed with rehabilitation that day.

*Mike welcomes comments and questions. Please correspond to him at his work:
Telephone:(330)-498-0544
For information on cineradiography practitioners in your area call: 216-448-8672.*

Chiropractic Discovers the Soft Tissues

Before the advent of scientific inquiry into chiropractic, it was believed that bones out of place (subluxations) put pressure on nerves. Early chiropractors thought this pressure would interrupt the flow of life energy, disturb body function and create disease.

Many chiropractors still believe these out-of-date theories. They still believe, contrary to modern science, that injuries put bones out of place and that chiropractic adjustments realign them and straighten the spine.

Newer scientific research has shown that injuries create a disturbance in the soft tissues that stabilize joints. These soft tissues (discs, ligaments, joint capsules, fascia, muscles, etc.) become scarred, stiff, and dysfunctional.

This damage creates a disturbance in musculoskeletal function, causing pain or other neurological symptoms. The joint dysfunction and its associated physiological ramifications are called the “subluxation complex.” It is important to note that this is a dynamic model as opposed to the old static model with “out of place” vertebrae. Chiropractic adjustments rarely straighten spines.

The chiropractor “adjusts” or manipulates the joints to restore normal intersegmental motion. By creating normal movements in the tissues the chiropractor creates a healthy environment to stimulate the growth of pliable, elastic tissue. Without this mobility the tissues will stiffen and create the painful, stiff areas so characteristic of mechanical back pain.

It is important to note that manipulation affects soft tissue. The deep connective tissues surrounding joints are made more pliable through manipulation. Yet, the bulk of the superficial and intermediate myofascial system is relatively unaffected by manipulation. Massage therapy is often the treatment of choice to soften and stimulate these superficial and intermediate layers of tissue.

Excerpted from the article entitled Chiropractors: The Good, The Bad and the Ugly, by Dr. Curtis Turchin, D.C. which appeared in Massage Therapy Journal, Spring, 1993, p.37

Letters and Testimonials

Michael Jones started to coach me in December of 1987, prior to that time I had participated in running events and Triathlons with only limited success. After following a carefully set up training program by Michael I accomplished the following:

- 1) Ran my fastest marathon ever, running nine minutes faster at the age of 52 than I did at the age of 32—3:12:0*
- 2) Ran my fastest 10K—40:16*
- 3) Qualified for the World Long Course Triathlon Championship “The Ironman” in Hawaii*
- 4) Finished 20th in my age group in “The Ironman”*

I attribute most of my success that year to the information Mike passed on to me in running, training techniques, workout schedules, diet, etc. Also, during this period I received NMT from Mike, which was a very important factor in my success.

The following year, two weeks before the Boston Marathon, which I had qualified for the previous year, I was hit by a car while riding by bicycle. The orthopedic surgeon who treated me said it was the most severe hamstring injury possible.

Once again, I returned to Mike who then put me on a rehabilitation program, and began NMT for my injured leg. Again, numerous NMT treatments and specific weight lifting techniques, stretching exercises, long recovery runs, etc. My leg has dramatically improved. Although the orthopedic surgeon was pessimistic about chances for a full recovery, I now have 100% strength of the muscle and running as well as ever.

All of this has been possible because of the positive effects of Mike’s professional NMT treatments and his extraordinary knowledge of the treatments for these types of injuries.

Sincerely,

Dr. Joseph D. VanHorn, D.D.S.

***With one visit, my headache was gone,
With two visits, my back pain disappeared.***

My name is Peggy Barry, and I am 34 years old. I have had a history of back pain, since a back injury sustained in 1978. In December of 1991 I gave birth to my third child. After delivery I suffered with enormous back pain and a chronic headache that would not go away, even with medication. I also suffered from chronic fatigue. The doctors nicely told me that these symptoms were perfectly normal after childbirth, and to take Tylenol for pain, and to get plenty of rest. The pain persisted for several weeks along with the fatigue, with no improvement. At this point in time I felt like a complete vegetable, and the fatigue was worse. It was all I could do to get a bath and the bare necessities. I was not able to rise in the morning to wake my son for school, and I was having to depend on John for everything.

I have always been the kind of person who does more in one day than most people do in a week. My neighbors refer to me as "HE-WOMAN" because I was always doing something strenuous and out of the ordinary for a woman. For example, I dug out my backyard for a pool, leveled it, using a wheelbarrow and a shovel moving a ½ ton of dirt and hauling it away by myself. I then proceeded to cut down the trees blocking the sun from my pool, and hauled them away, again, by myself. I never considered any task impossible or depended on anyone to help me with anything. Now I suddenly had to depend on everyone for everything, and with three small children to take care of I was in big trouble. I didn't even have the energy to put on my make-up or fix my hair or even get dressed. I was nursing my baby and at six weeks I had to quit because I was too tired to hold him, so I would prop a bottle in his mouth. I didn't clean, cook, or nurture my family. Projects became a thing of the past. I wasn't able to stand for any length of time. I was either in bed or on the couch with the heating pad. The pain would not ease up, and the fatigue continued to get worse.

After several calls to the doctor's office, they sent me to the pain management clinic. They determined that I had just had a baby and I could expect back pain. They ruled out epidural headache, and said the back pain was also unrelated to the epidural. They gave me aspirin with codeine and said to come back in two weeks. The follow up visit was similar.

My sister referred me to Michael Jones in January, as she was going to him and getting excellent results. She explained my case to him and he said he thought he could help. I made an appointment, and with one visit my headache was gone, with no medication, and with a second visit my back pain disappeared and the fatigue was easing up. I also wasn't shedding any weight from my pregnancy, so we began working the reflexes that control the thyroid, pituitary, and the adrenals, which also helped improve the fatigue problem. I have begun to shed the weight and I have been free of the pain since January and I am functioning at a much better rate. I wear make-up again, cook,

clean, and nurture my family again, and with continued therapy, I intend to return to a very busy life, full of projects. I thank God and Michael Jones for my life back.

To Mike Jones we say thank you, what you have done for Kevin has no price...

To Whom It May Concern:

Kevin injured his tail bone and left glut in a violent fall at camp in August, 1992. He was rushed to the emergency room where an excess of THIRTY x-rays were taken. Later he was taken to an orthopedic surgeon and upon examination was told it would take some time, but Kevin would be fine. After three months, Kevin was NOT fine. The swelling had diminished some, but his pain was still acute and his left foot began "toeing in," and he began to walk with a limp. The orthopedic doctor sent him to the hospital for physical therapy. The therapist stopped therapy when it became obvious that Kevin was in too much pain to continue. Returning to the orthopedic surgeon, Kevin received more x-rays; an MRI; a Cat Scan; and was sent to a neurologist for an EMG. All of these tests were negative. I also took him to a fine chiropractor who took more x-rays and several treatments were given, still there was no improvement. No one could explain why Kevin was in such pain or why his body was becoming distorted. As a last resort the orthopedic surgeon suggested exploratory surgery by a neurosurgeon.

Kevin's condition had so deteriorated that the orthopedic surgeon gave Kevin a medical release for the remainder of the school year. After nine months and a barrage of doctors and tests, Kevin's activity was reduced to bed rest, sitting on a soft sofa, and absolutely no physical activity. It was getting more hopeless as time went by. No one could find out what was wrong with Kevin, but everyone agreed that something was seriously wrong. It was suggested by the neurologist that I contact a therapist who had done "wonders with injured athletes." He gave me the number of Mike Jones to call.

When I called Mike, I was desperate. I related to him what had happened to my son; what tests had shown; and the fact that he hadn't responded to therapy. I couldn't believe my ears...he understood what I was talking about! An appointment was made for an evaluation to be done. Mike's approach to Kevin's injury was totally different than the doctors we had previously seen. Mike educated us first. We were shown some films showing injuries and their treatments relating to Kevin's problem. It was also important to Mike to know as much as possible about any previous injuries Kevin may have experienced. Mike began testing Kevin's muscle strength and discovered Kevin had two major problems; his neck and his lower back. His suspicions were confirmed when Kevin related to him three separate accidents in which he was knocked unconscious.

Mike began treatment on Kevin twice weekly. Improvement was noticeable immediately! We noted Kevin's improvement with every session and soon Kevin's pain began to lessen and after several weeks he was actually pain free! Kevin is now able to begin rehabilitation. Mike is monitoring him carefully to prevent further injury and to enable Kevin to again play basketball without fear of relapse.

At this writing, Kevin is totally pain free and is enjoying normal activities and shows no symptoms of the accident. Without the insight and personal involvement of Mike Jones, Kevin would still be limping and suffering the extreme pain that had sidelined him for nine months. I am writing this letter as public record to the amazing effectiveness of Mike's knowledge, treatment, and care.

To Mike Jones we say thank you, what you have done for Kevin has no price and the words of praise that we share with others are humble tokens of our appreciation.

Sincerely,

Flo S., Kevin's Mom

When I first met Mike, I was unable to even drive to his office. I had severe pain in my feet whenever weight bearing and could not walk more than 15-20 feet at a time. I was very limited in what I could do and, as the mother of four young children, the quality of my life and theirs was compromised. I had spent the previous three years searching for answers among conventional doctors who could not figure out what was wrong with me. I had been to podiatrists, chiropractors, neurologists, allergists, physical therapists, rheumatologists, nutritionists, and even an acupuncturist. I had x-rays, bone scans, MRIs, numerous orthotic devices, many tests and many medical bills. Eventually I sought out alternative, holistic medicine and some answers were forthcoming but it wasn't until I started seeing Mike that all the pieces of the puzzle fell into place. By then I had spend about \$30,000 on health care.

First, I knew I had an unstable pelvis which a year and a half of therapy had been unable to stabilize. In ONE neuromuscular treatment, Mike corrected this problem and my corresponding long leg, and to my amazement, it remained stable.

Secondly, Mike used Applied Kinesiology techniques to determine that the source of my problem was not in my feet.

The most important thing Mike discovered was the fact that many of my symptoms might be stemming from my neck. Through his work he has shown that this can be responsible for a variety of seemingly unrelated symptoms, including lower extremity problems. Once he started neuromuscular therapy on my cervical curve, I felt more normal than I had in a long time. The pain level was reduced significantly and I had more energy. I was able to walk longer distances and maintain a program of exercises to strengthen and build muscles that hadn't been used in a while. I am currently employed full time, something I would have considered impossible before meeting Mike Jones!

Kathy N.

Understanding Afferentation and Deafferentation: Neurophysiology Presents a Model for Manual Medicine

Dr. Kurt Vreeland, D.C., D.I.B.A.K., D.A.B.C.N., has served as the team physician for the U.S. Olympic Ski team for the past three years; is board certified in neurology and applied kinesiology and board eligible in orthopedics. He is currently authoring a manual on nutrition and neurology for ski instructors and a book on nutrition and health. He is a Diplomat of the International College of Applied Kinesiology and a Diplomat in the American College of Chiropractic Neurology. He has been practicing for 18 years in Norwich, Vermont; teaches for the International College of Applied Kinesiology; and is documenting manual treatment results using brain mapping and evoke potentials.

In 18 years of practice, Dr. Vreeland has “seen a lot of things come down the pike.” Having a reputation for treating difficult patients which are referred from other professionals, Dr. Vreeland has made it a life mission to apply neurophysiology to manual medicine and document treatment results.

“It is important to understand which pathways are being facilitated,” Dr. Vreeland says. “To understand treatment results you have to look at central integration, brain stem reticular formation, cerebellar nuclei, subcortical motor nuclei, and thalamic functions. We are not just talking about relieving pressure on nerves, we are talking about changing the whole central activity such as the postural centers in cerebellum, brain stem itself and the cranial nerve nuclei—even the cortex itself.”

Of those we asked, Dr. Vreeland gave us the best neurophysiological explanation of a “functional deficit” which he describes as “a physiological lesion or electrical lesion which results from deafferentation to a brain center.” He presented a model (the text of this article) which provides a conceptual framework for all who practice manual medicine; explains the seeming unrelatedness of Mike’s symptoms such as diarrhea, proprioceptive disturbances, memory loss and hypothyroidism; and offers reasons why manual medicine resolved many of these symptoms. He adds, “If there’s interest out there, I would like to be able to add input to research and clinical activities,”

For information regarding Dr. Vreeland’s upcoming book or seminars contact:

*Vreeland Clinic
RR2, Box 59D
Norwich, VT 05055*

THE MAJOR PREMISE

The major premise of this article is that until you change the central integrative state you don't get permanent results in treatment or rehabilitation. The central integrative state is changed by increasing afferent input. The basal ganglion, cerebellum, thalamus, even the cortex—everything is receptor sensitive. The major receptors which feedback afferent information to the central nervous system are the 1) joint mechanoreceptors and 2) the 1-A afferents in the muscle spindles. The effects of each of these will be discussed.

JOINT MECHANORECEPTORS

When you work with mechanoreceptors in the cervical vertebrae, it produces results far removed from the site of injury. There are more joint mechanoreceptors in the cervical spine than anywhere else in the body. C1 has the most abundant supply of mechanoreceptors, C2 has the second most abundant supply, C3 has the third most abundant supply and so on. From C1 to the sacrum the number of mechanoreceptors on each vertebrae number most to least respectively. Therefore, the neck is richly involved with sending afferent messages to the cerebellum. In fact, about 99% of the central integrative state of cerebellum is maintained by joint mechanoreceptors and 1-A afferents from the muscle spindles. Because these are the most plentiful in the cervical spine, cerebellar dysfunctions such as balance, proprioception, and dizziness often respond when the cervical spine is appropriately treated.

THE GOAL IS AFFERENTATION

These receptors are of two categories: tonic and phasic. They are adaptive. Tonic receptors adapt over a long period of time to stimulus; phasic receptors adapt quickly. When you put your socks on, at first you feel the cloth against your skin, then your receptors adapt to the sensation and you no longer feel it. This same analogy holds true for how receptors can adapt in a joint with a limited range of motion. But in the case of the latter, what has really occurred is that that joint has lost the ability to afferentate (put nerve stimuli into the central nervous system) and this results in deafferentation (a decrease in the afferent barrage to certain brain centers).

When you are restoring joint motion, you are relieving tight muscles, so the joint is then going to go through greater range of motion. Then the mechanoreceptors on the facet joints of zygoapophyseal joints, instead of adapting by touching the same place all the time, will now have a lesser probability of adapting because there is more afferent input. This relieves the deafferentation.

The goal is to increase afferentation and the cervical vertebrae are amply equipped to transmit afferent impulses to the cerebellum. Why is the cerebellum important? Within the cerebellum contains the bulk of the extrapyramidal pathway. This is the nerve pathway that is 100% below conscious control. All the spinal curves are directly related to the slow twitch signals that are maintained by the cerebellum. The whole antigravity system is dependent on the joint mechanoreceptors via the cerebellum and the extrapyramidal pathway, specifically the vestibulospinal tracts. A message can go into the cerebellum, then into pons and down the cord via the efferents without even going into the cortex. In this tract, there is not even a pathway to the cortex. This is the reflex system. So you cannot tell your C5-C6 rotatores to contract consciously because

the tone of the rotatores is solely maintained by receptors: the 1-A afferents and the large diameter myelinated mechanoreceptors.

THE EXTRAPYRAMIDAL AND PYRAMIDAL NERVE TRACTS

The extrapyramidal pathway governs the muscles that you cannot contract or have a difficult time contracting, especially the deep spinal muscles that maintain the spinal curve and act as antigravity muscles. These reflex muscles of posture—the rotatores, multifidi, interspinales, intertransversarii, iliocostalis lumborum and the deep muscles of the cervical spine—do not have a pathway that governs conscious contraction. This occurs by receptor input. So, if someone has a scoliotic problem, it makes sense to work to increase afferentation to the cerebellum thereby affecting the central integrative structure which governs the spinal curves, in order to ultimately restore the normal curve. In contrast to the extrapyramidal pathway which carries the messages from anything that you can consciously contract—a biceps, pectoralis, or gastrocnemius. Your ability to voluntarily contract these is vastly different than your ability to contract a rotator muscle. Afferent messages are carried in the sensory long tracts to the cortex via the thalamus. But lest this get too over-simplified, there is a group of muscles, such as the large extensor muscles—the gluteus, latissimus, and sacrospinalis which are under both pyramidal and extrapyramidal influence. The pyramidal influence is the voluntary contraction. The extrapyramidal influence is the reflex component: If a person trips and is falling to the right, his semicircular canals detect that he is going to the right side, and he reflexly extends his right arm without thinking about it. That's a reflex—a postural righting in the labyrinthine system. If he were falling face first he would extend both arms without thinking about it. These kinds of reflexes are tonically active because of the extrapyramidal influence.

MUSCLE SPINDLE AFFERENTS

The other major source of afferent input in addition to the mechanoreceptors in joints is the 1-A afferents in the muscle spindles. These are the fastest conducting and largest nerves in the body. The only thing that conducts as fast as the 1-A afferents is the alpha motor neurons. The 1-A afferents are extremely accurate and fast in adjusting posture. The 1-A afferents in muscle spindles are one of the most complex receptors in the eye and the cochlea receptors in the ear are more complex than these 1-A receptors.

The lengthening of muscles is what facilitates the 1-A afferents. Therefore, if a muscle does not elongate or shorten, then the signaling from the 1-A afferents is inhibited. With that event, the mechanoreceptors within the joint itself do not fire either—so deafferentation occurs. Either a joint or muscle dysfunction can come first and cause the other. For example, if the primary dysfunction is in the joint, from joint disease, and the facet joint is immobile, then the joint mechanoreceptors have little afferent input. Suppose a rotator muscle rests at a length of 1 inch. It wants to shorten (contract) but because there is a fixation in the facet joint, it cannot. Then the muscle spindles have little afferent input. Or suppose a different scenario: that same little rotator is contracted to half its length due to an impact injury. Therefore, afferent input is decreased from 1-A afferents. Additionally, a contracted rotator muscle will decrease the mobility of the corresponding facet joint. So there is little afferent input from the joint mechanoreceptors. In either scenario, the net effect is deafferentation.

This principle holds true for muscles and joints throughout the body, not just in the spine. If an elbow joint is fixated from arthritis and the person tries to contract biceps, the ability of the biceps to contract will be limited by the fixation in the joint. So there would be little input from 1-A afferents in the muscle spindles surrounding the joint via agonist and antagonist action because the spindle would not elongate or shorten. There will also be little input from the elbow joint mechanoreceptors.

THE HYPOTHALAMUS DEPENDENT ON KINESTHESIS

A lot of afferent impulses from the joint mechanoreceptors go to the thalamus in addition to going to the cerebellum. The thalamus functions basically to field all primary perceptual experiences. It is a relay station for kinesthesia, vision and hearing. It sends its signal onto the cortex, basal ganglia, and the hypothalamus. This is important! The hypothalamus depends on the central integrative state of the thalamus, which is dependent on kinesthesia (movement). The hypothalamus drives the endocrine and autonomic nervous system. So there is the hypothalamus sitting at the very top of the endocrine system and ANS; it is dependent on kinesthesia!

This explains a recent patient that Dr. Vreeland treated. A patient who had not seen all his life gained vision after a series of treatments. This patient presented with severe scoliosis. It was determined that the lesion was in the thalamus. By increasing proprioception, so that the central integration was at a higher resting state, the signals from the mechanoreceptors, instead of staying in the thalamus, were sent on to the occipital lobe. The first chiropractic adjustment by Dr. Palmer, was observed to restore the person's hearing. The explanation back then was that the pressure on the nerve was relieved. What really happened was that he changed the central integrative state of the thalamus so it was able to pass signals to the temporal lobe.

THE CORTEX GETS DEPRESSED

In patients who have injuries for a long time and they are depressed, they are told that the injury is psychological. What is not acknowledged is that the cortex gets depressed when it does not get enough afferentation from the thalamus. The depression is an electrical event that simply occurs because of thalamic deafferentation.

MANUAL MEDICINE BASED ON REINSTATING HEALTHY LONG LOOP POTENTIALS

This is a model of manual medicine based on neurophysiology as we know it today. All techniques that work, whether they are muscle manipulation or spinal manipulation, are increasing afferentation. It is not a matter of technique; it's a matter of quantum of input. You need to have critical mass—a quantum of input, to regenerate these long loop potentials in the 1-A afferents of muscle spindles and joint mechanoreceptors. Going back to the elbow example, suppose the person has a hypertonic biceps that is so tight that he cannot extend his arm all the way. He has lost a quantum of input from the elbow joint because he is not firing those receptors. So as he changes the tone of the biceps, so that the elbow can extend, then he facilitates the mechanoreceptors in the joint, and the result is more afferentation going to cerebellum and thalamus.

With better afferentation, the efferentation improves and the healthy loop continues to propagate itself. Usually injury or joint disease will break into that loop and disrupt its function. As nociception starts, muscle spasms commence and the loop stops. Then the negative feedback loop perpetuates itself just like the healthy feedback loop perpetuated itself: decreased movement in a joint means deafferentation which means decreased efferent output from the cerebellum or thalamus which means decreased signals down to the muscle. So you get a dysfunctional feedback loop because there is not enough afferent information going into the cerebellum or thalamus to yield an adequate efferent output. When the input is enough, and the loop is complete, you get better tone and better muscle activity. The pathology may be in the neck or back or leg from the injury, but the lesion is in the cerebellum or thalamus. We are not talking about ablative lesions but physiological lesions at the electrical level—an electrical event.

The physiology of a neuron says that there are EPSPs (excitatory postsynaptic potentials), and IPSPs (inhibitory postsynaptic potentials). A neuron rests or sits at a central integrative state just integrating the signals of excitation and inhibition and depending on the bombardment of afferents, the net result is that the neuron either 1) fires on to another neuron or 2) it does not fire on and the signal stops there. That is the basis of the central integrative state. If a person loses a quantum of EPSPs then the IPSPs override it inhibition occurs.

SYMPTOMS OF DEAFFERENTATION

Deafferentation syndromes produce central effects—nausea, dizziness, diarrhea, constipation, movement disorders, chronic pain syndromes, depression—just about everything that can be classified as a functional disorder. Deafferentation can result in hypothyroidism, adult onset diabetes, changes in tone of common bile duct producing referring pain, headaches, vasospasm, skin rashes, or skin lesions. The model says central effects of afferentation or deafferentation are secondary to mechanoreceptors in the joint or muscle spindle. People come in, they say, “I’m depressed, cannot hear.” These are common symptoms of a thalamic lesion. They say, “When I read I cannot absorb the material.” There has been a change in EPSPs or IPSPs.

INFLUENCING THE CRANIAL NERVES

The cerebellum and pons are very interconnected because they derive from the same embryonic tissue. The cranial nerves come from the brain stem. So all the cranial nerve nuclei and reticular formation can be readily affected by the changes in the central integrative state of the cerebellum. That’s how we change cranial nerve problem is not coming from an ablative lesion such as a tumor, and then strive to affect the pathways from 1-A afferents in the muscle spindles and large diameter joint mechanoreceptors.

RESEARCH

In the research setting these electrical events are measured using visual evoked potentials, somatosensory evoked potentials, and brain mapping. Changes in cortical activity show up with brain mapping. In the clinical setting these electrical events are observed by using reflex hammers, pin wheels, blind spots, tuning forks, Romberg’s signs, and so on.

In research, you have to look at wave form and measure one side against the other in the same person. In general, there are typical normal wave form patterns. However, just as some people have big noses, some people have different numbers or sizes of axons in pathways, so their wave form will be different. Therefore, you cannot compare wave forms between people only within the person. There are certain normal values, a normal range, and most neurologists will say an evoked potential is normal if it falls in the normal range. But when you are dealing with functional difficulties, you have to look at both sides of the same person, because the person may fall within normal ranges, but there may fall within normal ranges, but there may be a big difference from one side to the other. When you observe that there is much less EPSP activity on one side than on the other side, you have to ask, “Why is that and how can we change that?”

MANUAL MEDICINE IN THE NEAR FUTURE

Up to this point in manual medicine, we have had to shotgun techniques—apply techniques and hope they worked. Today, believes Dr. Vreeland, with neurophysiological knowledge of the complexity of nerve tracts, (such as which ones are crossed or uncrossed, and where their destinations are), we can decide whether the physiological lesion is in the cord, brain stem, thalamo-hypothalamo-reticulo-spinal pathway, cerebellum, or cortex; influence the EPSPs or IPSPs at a certain central neuron; and influence the tracts with the highest probability of facilitating a particular outcome. In the near future, we can learn to be selective with manual medicine.

INFLUENCING THE SYMPATHETICS: AN EXAMPLE OF SELECTIVITY

Within the spinal cord, the primary neuron for all parasympathetic and sympathetic activity is called the IML (inter medialateral neuron). It runs from the mesencephalon down to the caudal cord in lamina VII. This IML is also the interneuron for all cross extensor, flexor reflex afferents, flexor withdrawal responses, monosynaptic responses. It is the IML which is responsible for antagonist inhibition—that which, for example, tells the triceps to relax when you are contracting the biceps.

Remember that one of the long loops we previously discussed passes signals from the afferents to the thalamus to the hypothalamus to the reticular formation and down the spine. This pathway is abbreviated to be thalamo-hypothalamo-reticulo-spinal pathway. The last portion of this pathway—the reticulospinal pathway—activates the IML which consequently influences the sympathetics. We can increase the probability of generating EPSPs or IPSPs by influencing the IML at the segmental level (in the cord), too.

Before demonstrating a segmental influence on the IML, there are two important points to understand. The first important point is the anatomy of the sympathetics. When the very caudal portion of the cranial parasympathetics is activated at the dorsal motor nucleus of the vagus, it inhibits the rostral portion of sympathetics. The sympathetics run from T1 to L2. So T1 is a powerful button to regulate parasympathetic/sympathetic activity. When the caudal portion of sympathetics is activated (at L2) it inhibits the sacral parasympathetics. So when you fire the sympathetics powerfully, you inhibit parasympathetics in the sacral system.

The second important point is that the autonomic nervous system can be stimulated by peripheral influences. Each day we see manifestations of this at work. A person does biceps curls and begins to sweat. The peripheral influence of contracting the

biceps repeatedly ignites the sympathetics and sweat results. These two important points remind us that the autonomic nervous system can be stimulated segmentally, and that there are certain spinal segments that are powerful ANS switches.

Dr. Vreeland uses an example from chiropractic to demonstrate the concept of selective manual medicine. Suppose that a person presents with severely restricted circulation in the right upper extremity. We know that the sympathetics constrict blood vessels centrally and dilate blood vessels peripherally. If there is too much EPSP then the sympathetics might be powerfully constricting central arteries, so the hand is starved for blood. Or, if there is not enough EPSP, then the sympathetics are not sufficiently activated to dilate the peripheral blood vessels. The symptoms are the same in both cases—not enough circulation to the skin and muscles, but the cause is different. Selectivity in this case, might mean that the practitioner take the person's blood pressure of both sides of the body and compare the two sides to ascertain if the sympathetics on the involved side are more activated than on the noninvolved side. If the sympathetics are activated, the practitioner would not want to do a manipulation that powerfully fires the sympathetics at the IML at T1. However, if the sympathetics are not activated and the cause appears to be in the peripheral circulation, then a manipulation at T1 which fires the sympathetics and dilates blood vessels peripherally would bring a good deal of relief.

IN SUMMARY

For permanent changes, one must change the central integrative state. Receptors in the muscle spindles and joints have profound effects on the central integrative state. One major pathway of receptor influence is the thalamo-hypothalamo-reticulo-spinal pathway. The hypothalamus is at the very top of the endocrine system and autonomic nervous system and because it is heavily influenced by receptor stimuli it is movement dependent. Influences on the autonomic nervous system can occur supra-segmentally and segmentally.

