Alternative Treatments for Conquering Chronic Pain

Breakthroughs in Chronic Pain Therapy

Dr. Gerald H. Smith
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Introduction

Much has been written on the topics of headaches and chronic pain, their causes and cures. The concepts put forth in this book represent a major paradigm shift that involved an intelligent evolution of breakthrough technologies from the various health fields. This integration of diagnostic and treatment concepts has been applied in a uniquely creative way to discern the causes of headaches and chronic pain and to effect a cure in many cases. Several primary discoveries have enabled this author to weave the major pieces of the pain puzzle together into a coherent treatment approach: The Physiology Adaptive Range Concept (PAR), Advanced Lightwire Functional appliances (ALF), and acid/base balance are the three big keys to solving the pain riddle. These three concepts effectively integrate osteopathic, chiropractic, dental, medical, physical therapy, and nutritional principles. These concepts offer headache sufferers and the chronic pain patient clinically proven, alternative, non-invasive therapies that bring relief in a high percentage of cases. Solving several of the major aspects of the causes for pain represents a major accomplishment in my twenty-five years of research and in my opinion represents one of the biggest breakthroughs in the history of medicine.

Truth goes through three stages before it is widely accepted. The first stage is ridicule. One of the most glaring examples in medical history involved an Austrian physician, Dr. Ignaz Semmelweiss. In the early 1840’s it was this physician’s clinical observation that newborn infant mortalities were fewer within his own group of doctors and nurses than with other practitioners in the same hospital. Dr. Semmelweiss attributed his group’s success to the fact that they washed their hands before going on to the next birthing patient. It was not the accepted medical wisdom at the time to wash one’s hands between patients, and because he lacked double-blind studies, Dr. Semmelweiss was rebuffed by his medical colleagues. He died in the insane asylum, a dejected and depressed man. The second stage that truth must weather is opposition. Resistance at this phase stems from four factors. First, education establishes principles which the student must learn. These “truths” represent the efforts of establishment-oriented thinkers. In time, these principles become gospel and are used as yardsticks with which the student measures new information. Once entrenched, these principles become extremely difficult to change in textbooks. History reveals that a new idea will take at least fifty years before it is generally accepted as the “new gospel.”
Introduction (continued)

The second factor is ignorance. Sir William Osler, the great Canadian physician, summed it up when he stated, “The greater the ignorance the greater the dogmatism.” Conventional thinkers usually offer the greatest resistance because of their myopic views. Thus, most health practitioners in search of a solution will keep digging a vertical hole within their own specialty. The innovative physician, however, has learned to dig laterally in other fields to find solutions to his patients’ problems.

The third stage that truth passes through is self-evidence. The excitement of employing a new concept is in watching it work. As more knowledge is gained, confidence grows and more people will be helped. This last stage can only occur if one is willing to take a chance and get involved.

When diagnostic tests have been exhausted, and the brain scans, magnetic resonance imaging, electroencephalographs, and allergy testing all come up negative, headache and chronic pain sufferers must continue searching for relief. *Alternative Treatments for Conquering Chronic Pain* provides fascinating insights into new sources and cures for acute and chronic pain. Unfortunately, these areas have been overlooked by the majority of the medical and dental establishment, primarily because these concepts represent the new wave of emerging truths.
About the Author

After graduating from Temple University School of Dentistry in 1969, Dr. Smith interned the next two years as a captain in the U.S. Army Dental Corps. Since graduation, Dr. Smith has aggressively pursued his academic studies through postgraduate training in osteopathic, chiropractic, dental orthopedics, orthodontics, nutrition and physical therapy concepts and techniques. Dr. Smith has been in private practice for the past 28 years and now practices his alternative concepts in Langhorne, Pennsylvania.

Doctor Gerald H. Smith is a recognized international authority on cranio-mandibular somatic disorders especially on pain therapy. Doctor Smith is the author of the landmark textbook for professionals, Cranial-Dental-Sacral Complex and best seller, Headaches Aren’t Forever, written for the layperson. Doctor Smith is the originator of several major achievements: the Physiologic Adaptive Range Concept; DORA, the first Dental Orthogonal Radiographic Analysis for measuring cranial changes resulting from treatment; originator and holder of a U.S. Patent for the world’s first physiologic precision attachment that permits cranial bone motion when fixed bridgework crosses the midline of the upper teeth. He also holds a U.S. Patent for a flash adaptor that facilitates taking intraoral photographs. Dr. Smith has written numerous articles for professional journals and coauthored several chapters in other books. He is presently on the board of the Holistic Dental Association and President of the Pennsylvania Cranio-mandibular Society for 1997-98.
Doctor Smith’s journey was greatly influenced in 1982 when he was introduced to the concepts of chiropractic, osteopathy and nutrition. As a member of a study group that focused on an integrated approach to healing, Dr. Smith started to piece the parts of the wellness puzzle together. He was encouraged by several members of the study group to take chiropractic, osteopathic, physical therapy, cranial and nutritional postgraduate courses. Doctor Smith had the good fortune of learning from some of the major innovators in the fields of chiropractic, Drs. Major B. DeJarnette, Marc Pick and George Goodheart, Roy W. Sweat; dentistry, Drs. Alred C. Fonder, Nathan Shore, Harold Gelb, Darick Nordstrom, and John Witzig; physical therapy, Mariano Roccobado, Jeffrey S. Mannheimer, John F. Barnes, PT; nutrition, Dr. Richard Murray, Dr. Walter Schmidt and Dr. Jeffrey Bland; medicine, Janet Travell, M.D. and osteopathy, Drs. John E. Upledger and Viola Frymann.

During the first ten years of his research, Dr. Smith kept digging lateral holes in the various healing arts when finally the light bulb went on. The major missing links suddenly came together after studying the work of a mechanical engineer by the name of Casey Guzay. Mr. Guzay proved through engineering principles that the center of rotation of the mandible was located in the junction of the first and second cervical vertebrae. This functional relationship proved to be one of the major keys that linked the dental complex to the rest of the body. Clinically, Dr. Smith integrated his knowledge to formulate the Physiologic Adaptive Range Concept (PAR). The PAR concept represents a major paradigm shift in the way a health practitioner examines and evaluates his patient. The focus is on diagnosing the major underlying causes of the patient’s symptoms and recognizing the compensatory reactions to the various imbalances that exist. Doctor Smith has shown clinically that by correcting existing major imbalances that may be present in any one of the five principal areas (Cranium, Dental, Pelvis, Physiological and Psychological complexes) the patient’s condition will begin to resolve. Because of the clinical successes that doctors have achieved utilizing his concepts, Dr. Smith now lectures nationally and internationally to members of the various health care professions.
TESTIMONIALS

Success Stories of
“Real People”
(click photo to see movie in your internet-connected web browser)
Supplemental Resource Materials

Click on icon to view document or video in internet-connected web browser.

TMJ and Malocclusion
(Video)

Video-fluoroscopic Documentation
(Video)

Caffeine, Alloxan, and Diabetes

When caffeine, alloxan, or diabetes are combined for an extended period of time, it can cause a variety of effects on the jaw joints. These effects may include pain, swelling, and other symptoms. This section of the document outlines the effects of caffeine, alloxan, and diabetes on the TMJ.

- Caffeine, Alloxan, and Diabetes
  - General information on diabetes and its effects on the TMJ
  - Caffeine intake and its potential effects on the TMJ
  - Alloxan and its role in causing TMJ disorders

Functional Pathological TMJ

- The relationship between functional disorders and pathological changes in the TMJ
- Common functional disorders and their effects on the TMJ
- Pathological changes and their impact on the TMJ

Supplemental Resource Materials

- TMJ and Malocclusion (Video)
- Video-fluoroscopic Documentation (Video)
UNDERSTANDING
BASIC CONCEPTS
AND NEWER METHODS
OF TREATING
CHRONIC PAIN
Physiologic Adaptive Range (PAR) Concept as it relates to pain

The PAR Concept was introduced in 1982. It evolved through the process of intelligent evolution by means of integrating many principles that govern the working of the body. This concept provides an insightful overview for both health care practitioners and those afflicted with dysfunctional relationships that cause pain. The working idea of PAR focuses on the fact that all parts of the body, structural, chemical or psychological work within a specific range for each individual. A comparable example of a functional range would be the gap that is placed in the spark plug of a car. If the gap is too wide or too narrow, the spark plug will not fire properly and the car's engine will not provide the optimum performance that is capable of delivering. Likewise, if the chemical reactions within the body are not within a narrow functional range, it too will not produce optimum performance. A perfect example is the Ph or acid-base balance of the fluids, tissues and cells. If the acidity of the fluid falls below 6.5, then the glucose (normal blood sugar) gets converted to lactic acid. This waste product, as well as others, builds up and accumulates within the cells and tissues of the body and irritates the pain nerve endings. This is one of the reasons that pain sufferers get worse at the end of the day when they are actually less active. The more acid the patient becomes the more the sympathetic part of the nervous system is stimulated. With over stimulation of the sympathetic nervous system comes another symptom associated with chronic pain: dilated pupils. This is the underlying reason for the extreme light sensitivity experienced by most chronic pain patients. Another interesting clinical observation is the fact that the more pain the person experiences the darker the sun glasses they wear. This again is attributed to additional sympathetic stimulation resulting in more dilation of the pupils and more difficulty accommodating to bright light. The end result is that pain patients cannot tolerate
excessive fluorescent lighting, especially in large department stores, bright sunlight, and oncoming headlights at night.

On the other hand if the pH is above 6.5 the same blood sugar converts into four building blocks (adenine, guanine, cytosine, and thymine) which are essential in repairing the DNA within the cells. Functional ranges apply to the normal ranges of motion of the vertebrae of the spine, the 28 skull bones, pelvis, process of digestion, nerve transmission, hormone production, tissue repair, brain function and all other processes throughout the human body. To achieve a state of health the body must be maintained in an alkaline state. The chronic pain patient must eat such foods as fruits, seeds, vegetables (kale, Swiss Chard, parsley, Bok Choy, etc.), pickled radish, miso soup, sea vegetables (dulse, nori, kombu, hijiki, wakame) and drink alkalizing beverages like herb teas (example alfalfa). Increasing alkalinity raises ones pain threshold and reduces the intensity of pain.

**Chronic pain and body chemistry**

The innate intelligence of the human body maintains functional ranges. The process is called homeostasis and is essential to insuring the health of the individual. Chronic pain patients represent a particular group whose homeostatic balance has become abnormal, i.e., various functional ranges have gone beyond the body’s adaptive capacity. In some instances specific reactions of the body deviate too high while others fall below normal function. Those patients who have experienced chronic pain for several years more often than not develop several overlaying pain factors which ultimately cause underactive adrenal glands. These patients present such complex clinical symptoms as chronic fatigue (weak adrenal glands), exhaustion (low blood sugar), feelings of being stressed out (decreased thyroid hormone production), depression (B-complex deficien-
Fatiguing of the adrenal glands result from constant stimulation of the nervous system.

Physiologic Adaptive Range (PAR) Concept as it relates to pain

cies), environmental allergies (decreased anti-inflammatory hormone production), extreme sensitivity to bright light (dilation of pupils), low resistance (nutrient depletion from increased needs of adrenal and other glands), weak ligaments (decreased collagen production and amino acid uptake), bruise easily (bioflavonoid deficiency due to adrenal hyperfunction), generalized joint soreness (lack of proteins for joint repair), slow healing (increased cortisol production by adrenal glands), frequent light-headedness upon getting up from a sitting position (lack of epinephrine and norepinephrine hormone production by adrenals), insomnia (over stimulation of sympathetic nervous system and lack of minerals), stomach ulcers (due to increased levels of cortisol from adrenals), low back pain (enlargement of adrenals located just above kidneys in low back area), cold hands and feet (decreased circulation due to narrowing of blood vessel walls caused by constant release of adrenaline), poor digestion (sympathetic stimulation slows release of digestive enzymes), symptoms mimicking schizophrenia, manic-depression, and paranoia (all three result from B-complex deficiencies due to over consumption by overactive adrenal glands). The last three maladies are also influenced by mineral deficiencies (calcium, magnesium, zinc, manganese, etc.), and low blood sugar. As the pain sufferer lingers they often gravitate to softer more refined foods which result in further nutritional deficiencies and more symptoms. These various symptoms may be caused from anemia, underactive thyroid, underactive pituitary gland, poor circulation, bowel toxicity or brain allergies to specific foods.

Fatiguing of the adrenal glands result from constant stimulation of the nervous system. Stimulation can come from structural imbalances such as TMJ dysfunction or a jaw problem, misalignment of the vertebrae, psychological distress, over consumption of processed food (partially hydrogenated fats, sugar, white bread, coffee, etc.).
Having a system which is too acid lowers the pain threshold so that slight stimuli results in an exaggerated painful response. Attempting to resolve these symptoms with drug therapy will only serve to mask the symptoms and complicate the problem since pharmaceutical drugs serve to suppress adrenal function even more. The answer lies in uncovering those factors which are causing the imbalance and remove them as quickly as possible and correct the structural imbalance if it exists; utilize nutritional support if deficiencies exist; employ acupuncture if energy disturbances are present in the meridian system; and provide psychological counseling if needed. There are no magic bullets in restoring health. One must employ a common sense approach which integrates various therapies that are directed at removing the causes by correcting the imbalances.

The chronic pain patient presents certain patterns which provide clues to the treating practitioner. Of primary importance is the pH of the fluids of the body. Having a system which is too acid lowers the pain threshold so that slight stimuli results in an exaggerated painful response. Assessing the pH can easily be accomplished by the patient utilizing a simple screening test. With the aid of pHydron paper (available from ICNR, Inc. 800 272-2323 cost $9.50 s&h included) one can take their saliva pH at least two hours after eating. Wetting a piece of the special indicator paper with saliva activates a chemical reaction. Within 30 seconds after saturating the paper strip with saliva, the yellow color turns various shades ranging from yellow to dark purple. The color is matched to the supplied color coded bars on the side of the plastic dispenser. Each color represents a specific pH reading. The more yellowish green the color the more acid one’s condition. This signifies a lowered pH, depletion of minerals and lowered pain threshold.

This acid condition stems from continued use of chemical drugs and/or a dietary intake too high in foods that cause acid. These foods include excess
protein (red meats, fish, chicken, turkey, pork, beans, nuts); dairy (cheese, milk, yogurt, cream, butter); fats (potato chips, vegetable oils: corn, safflower, soy); refined carbohydrates (white breads, pasta, grains, sodas, cookies, alcohol, etc.). Correcting this condition requires consuming approximately 60% to 80% alkaline foods: dark green leafy vegetables, fruits, seeds, alfalfa tea and less acid foods. Increasing one’s pH will reduce the build up of lactic acid and reduce the stimulation of pain fibers.

**Carbohydrate Intolerance and Increased Pain**

A brief two week experiment can be easily performed to assess if one has a carbohydrate intolerance. If positive, it can be a major part of the underlying cause of your pain. The process involves removing certain foods (refined carbohydrates) from the diet for two weeks then adding them back one by one to determine which ones are the offenders and at what level they cause the pain. Prior to starting the experiment one must list the various pain symptoms and assign a number for the severity of each. A simple scale involves assigning the number 10 for the most severe and one for the least amount of pain. Each symptom can be graded according to its severity. At the end of the test, the same symptoms can be re-evaluated and your progress assessed by means of comparing the ratings.

The particular foods in question are those that are the precursors for the formation of a chemical hormone called prostaglandins. The culprit in the causation of degenerative diseases and pain is called prostaglandin E-2. It causes pain, inflammation, increases blood clotting, increases blood pressure, and increases tumor growth. The food list includes: red meats, dairy, mollusks, shellfish, cereals, breads, pasta, rice, rice cakes, crackers, potatoes, sweets, legumes (peas, beans, lentils and peanuts), fruit and fruit juices, milk, yogurt partially hydrogenated fats, soy oil, corn oil, and corn based products. Decrease consumption of cof-
fee, caffeinated teas and alcoholic beverages.

The allowable foods include unlimited quantities of vegetables (except potatoes and corn), meats, fish, sea food, cheese, eggs, tofu, nuts and seeds, nut butters and vegetable juices (preferably freshly made). You are encouraged to eat as much of the allowable foods as you want. Do not worry about calories, fat content, or amount during this two week test. Eat at least two or three meals per day. Dining out is not a problem if you abide by the following recommendations: do not allow bread to be placed on the table, request additional vegetables instead of rice or potatoes, and avoid fried foods at all costs. The following menu suggestions are provided as a guide to dining out:

**Chinese**: Steamed vegetable dishes or Moo Shu (no rice, pancakes or sweet sauce).

**Continental**: Filet mignon or other steak, duck, fish or seafood.

**French**: Coquille Saint-Jacques, Boeuf A la Bourguinonne.

**Italian**: Eggplant Parmesan, Veal Marsala, Mussels Marinara.

**Japanese**: Sashimi (raw fish) in place of sushi (rice, vegetables and or raw fish).

At the end of the two week period you can re-evaluate the signs and symptoms and compare your pain levels. If your test is positive, you can slowly add small amounts of unprocessed carbohydrate foods (vegetables, whole grains, honey, fruits, potatoes, corn) back into your diet every other meal. If your pain symptoms reappear, reduce the quantity until it resolves. The reduced quantity of that particular carbohydrate is the level your body can tolerate without causing pain. In effect you are establishing the PAR level within your body for each offending food. This can be repeated with all other carbohydrates. Setting these limits can help maintain a pain free existence.
Understanding Basic Concepts and Newer Methods of Treating Chronic Pain

Non Steroidal Anti-inflammatory Drugs (NSAIDs) Can Contribute to Pain

The more commonly prescribed NSAID’s include: indocin, naprosyn, feldene, butazolidin, clinoril, tolectin and motrin. Use of these prescription drugs or even non-prescribed drugs like Advil or aspirin will act to further acidify the intra and extracellular fluids. As already mentioned lowering the acidity below a pH of 6.5 will increase the production of lactic acid and increase pain. Of clinical significance is the fact that essential fatty acids (EFA) help prevent pain and swelling. Such oils as black currant seed oil, evening primrose oil and borage oil supply gamma-linoleic acid (GLA). These oils are the precursors for the production of prostaglandins E-1, which reduces pain and swelling. Another important EFA group supplies eicosapentaenoic acid (EPA). This group includes, flax oil, walnut oil, Canola oil and oils from cold water fishes. These oils are the precursors for the production of prostaglandins E-3, which also reduces pain and swelling.

Physiologic Adaptive Range (PAR) Concept as it relates to pain

The irony of a chronic pain suffer getting relief from taking NSAID drugs is that it is diagnostic of a deficiency in essential fatty acids. The fact is that aspirin or other NSAID drugs only work when there is an imbalance in the fat metabolism. These imbalances occur when dietary intake of partially hydrogenated fats is high. Most people are unaware that they are consuming these harmful foods. Partially hydrogenated fats are in all margarines, most commercial peanut butters, most crackers, chips, cookies, cakes, and candies and many breads, some mayonnaise and salad dressings. These fats interfere with the normal conversion of the essential fatty acids into the good prostaglandins (E-1 and E-3). Aspirin, acetaminophen and all the drugs that are classified as NSAID (ibuprophen is the proprietary name for Advil) work by blocking the production of the pain and swelling prostaglandin E-2 as well as the formation of E-1 and E-3 which are the anti-pain and anti-swelling substances. When the essential fatty acids
are balanced there is no need to use ibuprofen because the body’s own pain killers are readily available.

Continued use of pain killers comes with a heavy biological price tag – nutritional deficiencies. Use of Ibuprofen (Advil) reduces vitamin C. Continued daily ingestion of aspirin (acetylsalicylic acid) induces additional deficiencies. Aspirin depletes Folic acid, which causes muscle pain, soreness, trigger points, and fatigue. Also depleted is Vitamin K, which is important in the clotting mechanism. Aspirin reduces the tissue levels of vitamin C, which causes fatigue, retards the normal healing response, depletes plasma and platelet levels of vitamin C, and increases urinary loss of vitamin C. The mineral potassium is diminished and often accompanied by symptoms of fatigue and creates the potential for heart arrhythmias. The availability of amino acids is also lessened, which retards healing of muscles, ligaments and soft tissues. Relief may be a swallow away but long term the patient’s overall condition deteriorates.

The Down Side of NSAID’s

The average physician treats 90% of their patients with just ten drugs. Non-steroidal anti-inflammatory drugs are number one on this list of top ten drugs. Not surprising NSAID’s are the most frequently ordered medication throughout the world with a yearly estimated 70 million prescriptions and $5 billion dollars a year in worldwide sales. NSAID’s are used primarily for musculoskeletal pain, sprains, strains, pulled ligaments and swelling. Although portrayed in the media as safe this drug group is associated with serious side effects. These side effect are well established and predictable, but downplayed by the pharmaceutical industry and health care practitioners. The most common side effect is increased permeability of the stomach and intestinal lining with ulcers. This increased intestinal permeability enhances the absorption of macromolecules which
Chronic use of NSAID’s is extremely dangerous.

It is unfortunate that these dangers have been down played, underreported by the medical profession and underrated by the drug manufacturers.

As far back as 1967, the drug indomethacin was linked to accelerating bone destruction in Osteoarthritis of the hip. Subsequent reports were noted in the British Medical Journal, Lancet (July 6, 1985, p.11-13), which has provided additional clinical evidence of the harmful effects of NSAID’s on osteoarthritic hips. Further research has also shown that NSAID’s interfere with metabolism of the cartilage in joints and repair of bone. Other notable adverse side effects include end-stage renal disease (in persons who consume 5000 or more pills during a lifetime), liver toxicity, central nervous system abnormalities (aseptic meningitis, psychosis, cognitive dysfunction, hallucinations, and depression). Chronic use of NSAID’s is extremely dangerous. It is unfortunate that these dangers have been down played, underreported by the medical profession and underrated by the drug manufacturers. The ultimate tragedy is that the public has been purposely misled and ill prepared to make an intelligent informed consent when presented with the recommendation to get the prescription filled.

Homeostasis

The single most important function of the human body is maintaining a state of homeostasis or balance. The human body is constantly undergoing change both inside and out. In order to deal with the never-ending state of change, the body employs the brain which is the most sophisticated computer in the world. The receptors of the
body act as the computer terminals and continually keep the brain informed of position changes of limbs, blood pressure, temperature, acid-base balance of the blood, hormonal levels, mineral balance, toxic waste level, metabolism, and countless other processes.

To accomplish the incredible task of meeting all the demands, the body was architecturally designed to be self-correcting and contain all the machinery, chemicals, energy, healing and defense mechanisms necessary to maintain itself in excellent health. The body’s health status will be maintained as long as the fuel (organic food) placed into it on a daily basis is of high quality.

As viewed by the Physiologic Adaptive Range Concept, the body functions with integration and biofeedback (hormonal and neurologic) mechanisms in five major areas:

1. Cranial Complex
2. Dental Complex
3. Pelvic Complex
4. Physiologic Complex (includes nervous system, acupuncture system, muscle and ligament system, digestive system, lymphatic system, endocrine system, circulatory system, organs of detoxification, reproductive system, etc.)
5. Psychological Complex (includes mental well-being, capacity to cope with distress, and ability to be flexible under various circumstances)

Physiologically, the body functions within ranges in each of these major areas. Any textbook on physiology will contain specific laboratory values for these parameters:

1. Acid-base balance 7.35 to 7.45
2. Blood calcium 9.0 to 11 mg/100 ml
3. Cholesterol 150 to 200 mg/100 ml
4. Triglycerides 0 to 150 mg/100 ml
Understanding Basic Concepts and Newer Methods of Treating Chronic Pain

Functionally, the body has ranges other than the blood values within which it maintains itself:

1. **Body temperature**: 96 degrees F to 99 degrees F
2. **Blood pressure range for a 20 year old**: 110/70-130/90
3. **Cranial rhythm**: 6 to 12 cycles per minute
4. **Impulse firing of the central nervous system**: 75 to 200 impulses per second
5. **Muscle contraction time**: 1/100 to 1/10 of a second (depending on the specific muscle)
6. **Production of cerebrospinal fluid**: 800 to 900 ml/day
7. **A muscle can stretch or contract within a 12 per cent range of its resting length.**

There are many more areas that cannot be presently measured. In the near future, state of the art equipment sophistication will permit scientists to establish these ranges. Some examples are the vibratory rates of cells, auras of specific organs in health and disease, motion ranges of the dural membranes (surrounding the brain and spinal cord), and rate of energy flow along acupuncture meridians. These ranges will offer the physician of the future “normal” ranges similar to the blood studies that are presently available.

The internationally known chiropractic physician, Dr. George Goodheart, has a beautiful way of describing the function of the human body. Dr. Goodheart states, “The body is intricately simple and simply intricate.” The body’s ability to maintain the blood sugar level is a perfect case in point.

Blood sugar is maintained at a reasonably constant value of between 70 and 120 mg. per cent. This occurs despite the fact that irregular amounts of refined and complex carbohydrates (sugars), proteins, and fats are ingested at various times of the day.
Under normal circumstances, the adrenal glands, pancreas and liver function to produce hormones that work to control the blood sugar level. Ingestion of sugars raises the blood sugar level and signals the release of insulin which is produced by the pancreas (beta cells of the islets of Langerhans). Insulin lowers the blood sugar primarily by permitting the transport of glucose (blood sugar) through the cell membrane and into skeletal and heart muscle as well as fatty tissue. When the blood sugar level falls within the lower limits of the physiologic adaptive range, the body’s balancing mechanisms activate.

Low sugar levels are also controlled by the pancreas (alpha cells), which produces a hormone, glucagon. In addition, the adrenal glands secrete the hormone, adrenaline, which functions to slow down the action of insulin. Besides its inhibitive action, adrenaline causes a breakdown of stored liver and muscle starch which then produces the blood sugar, glucose. Of further significance, adrenaline stimulates the breakdown of triglycerides in fat tissue. The resulting fatty acids are then utilized by the cells thus sparing glucose supplies present in the blood plasma. Glucagon, although bearing no structural relationship to adrenaline, has a similar metabolic effect. Its release stimulates the breakdown of liver starch (glycogen), fatty tissue triglycerides, and formation of sugar (glucose) from amino acids. All these processes result in a blood sugar increase. As the blood sugar levels become elevated, the sugar acts directly on the pancreas to inhibit further release.

The fourth hormone factor is cortisol which is secreted by the adrenal gland. Cortisol increases the blood sugar level by inhibiting sugar uptake by many tissues. It also makes it easy for both muscle protein breakdown and conversion of the amino acids into sugar by the liver.

A delicate balance constantly exists within the body. As functions deviate within the physiologic ranges, the body...
remains in the relative state of health. When the body’s adaptive ranges and self-correcting mechanisms are pushed beyond their capacity, physiologic chaos appears and the organism moves into a state of illness. The primary goal of the holistic physician is to remove as many structural, psychological and physiological imbalances as quickly as possible to re-establish health. When the physician accomplishes this goal, the body is better able to function at its maximum potential and cope with the daily barrage of chemical, physical and psychological distresses.
ALF (Advanced Lightwire Functional) Appliances

Represents the biggest breakthrough in the treatment of structural sources of pain in the history of medicine and dentistry.

Important discoveries are often made but few actually impact so many people throughout the world. Doctor Flemming’s discovery of penicillin, Dr. Barnes’ baby food formula, Gutenburg’s discovery of the printing press are all examples of profound breakthroughs that have impacted society. Dentistry has also witnessed many technological advances which have affected the lives of so many people. These innovations have included reconstructive surgical procedures, high speed drills, laser surgery, titanium implants, more esthetic and durable restorative tooth filling materials and cosmetic innovations. Although this progress represents major advancements, organized dentistry has lagged seriously behind in developing a working concept that relates how the position of the teeth and jaws interrelate functionally with the rest of the body. The inception of the ALF$^{1,2,3,4,5,6}$ (Advanced Lightwire Functional) System in 1983 represents that major missing link. A perfectly aligned and level bite provides the self-correcting mechanism for rebalancing the cranial bones and intra cranial membrane system, spine and pelvis. The pieces of this intricate puzzle were supplied by research from Drs. Fonder, Stenger, Frank, May, Jecmen, Stoll, Costen, Gelb, Ravins, Nordstrom, Shore, and other independent dental practitioners plus this author. The composite findings helped piece this vital connection between the direct influence the teeth and jaws have on the craniosacral system (skull, sacrum, and dural membrane that connects the two structures) and physiological processes of the rest of the body. Once the reader gains a basic understanding of the dental/whole body connection they will recognize it to be one of the most significant breakthroughs in the history of dentistry and medicine. This
One of the biggest problems with chronic pain patients is that it is often very difficult for the treating physician to trace the pain symptoms back to their origin. Traditional medicine has made tremendous advances in their diagnostic ability to evaluate nerve, muscle and tissue injury, biochemical imbalances and neurologic dysfunction. However, one of the major areas often overlooked is the area of cranial bone/dental complex dysfunction (28 individual bones make up the human skull). This oversight in part is the direct result of the fact that most professional schools, with the exception of some osteopathic institutions, do not teach the concepts of cranial diagnosis and treatment via manipulation. This information has been in existence since the 1930’s but has not gained wide spread acceptance in traditional medicine, dentistry, chiropractic and even osteopathy from which it originated. The other major void is the fact that organized dentistry doesn’t even recognize the fact that the skull bones are directly related to the normal function of the teeth, jaws and rest of the body. These two major factors are the reason why this information has not evolved from the dental schools but required many years of independent research by many dedicated dental physicians.

Since the skull houses the brain (the higher centers of the central nervous system) changes in the way individual bones fit together and rhythmically move can directly influence how the nerve cell bodies transmit motor and sensory impulses. Another words loss of smell, taste, balance or vision are just a few of the sensory functions that can be distorted. Loss of muscle strength in a leg or arm, coordination of the fingers, slurred speech or poor bladder control...
If the various symptoms experienced by the patient result from a structural origin, these motor and sensory deficits can be treated through gentle manipulation of the cranial bones. ALF (Advanced Lightwire Functional) Appliances represent motor functions that can be altered or lost. Within the delicate architecture of the skull there are compartments divided by two main membranes which function like tent poles. These tent poles help maintain balance between the front and back of the skull and right and left sides. Through these tent poles pass the major blood vessels and all the nerves of the head. Any tension that develops within this membrane system will directly increase tension on the nerves, affect blood and cerebrospinal fluid flow and areas of the brain that deals with speech, vision, thought, memory, emotions and reasoning. In addition to causing loss of motor and sensory function one can be afflicted with chronic pain since these tent poles are themselves innervated with branches from the largest cranial nerve, trigeminal or fifth nerve, and cervical nerves 2, 3 and possibly the fourth.

If the various symptoms experienced by the patient result from a structural origin, these motor and sensory deficits can be treated through gentle manipulation of the cranial bones by practitioners who have taken post-graduate training in cranial technique (osteopaths, chiropractors, dentists, physicians, physical therapists, massage or polarity therapists). Such manipulation often brings a reduction and/or total resolution of the pain. In those situations where patients have been treated with partial relief but results are short lived, a structural distortion may exist that requires physical correction through appliance therapy. Use of special lightwire appliances, ALF’s, can actually change the way the bones fit together and release the strain patterns which are causing the pain.

Up until the early 1980’s the treatment concepts and techniques (dental braces and expansion appliances) used by most dentists to correct bad bites (malocclusions) involved no awareness of the affects their procedures were having on the cranial mechanism. It is unfortunate that even now, traditionally trained orthodontists still have no
Even patients with a history of pain for 40 plus years, who have been told that their headache symptoms were genetic or psychosomatic, have had their symptoms vanish following removal of the strain patterns within their skull.

The clinical research of this author as well as others, has shown that it is now possible for dentists, who have post-graduate training in this new specialty, to actually control, with light gentle forces applied to the skull bones, the movement of specific skull bones and literally resolve the specific tension patterns that exist within the patient's head. This approach is an amazing accomplishment considering the intricate design of the human skull. Even patients with a history of pain for 40 plus years, who have been told that their headache symptoms were genetic or psychosomatic, have had their symptoms vanish following removal of the strain patterns within their skull. These strain patterns are diagnosed at the initial examination visit by means of a palpatory cranial examination, special A-P (anterior-posterior) x-ray, impressions of the teeth and Accu-Liner Analysis (an instrument that can determine if the base of the skull is level). Once all the findings are compiled, a treatment plan is formulated to

Awareness of the functional cranial design, or how to diagnose cranial distortions or how to correct them. Even if orthodontists did have an understanding of what was going on, they have absolutely no control on the movements of the cranial bones or the tent poles (membranes) with their existing level of training or the appliances being used. This is due to the fact that all past dental appliances used and most that are being employed now are not designed to conform to the anatomy of the upper jaw, which is really the foundation of the skull. Some patients in the past and even at present have experienced adverse reactions (headaches, neck, shoulder, eye pain, facial pain, arm and leg numbness, low back pain, inability to think, loss of coordination, ear pain, equilibrium problems, digestion problems, sensitivity to bright lights, low blood sugar and chronic fatigue to name a few) that are triggered off from the adverse effects of the braces distorting the skull and nervous system.

ALF (Advanced Lightwire Functional) Appliances
resolve the underlying causes. Sometimes the bite needs “heel lifts” or build-ups on the teeth to level the foundation; other situations require remake of existing fixed bridge work or existing partial or full dentures to correct the parallel plane of the teeth; some cases require the ALF (Advanced Lightwire Functionals) appliances to correct the strain patterns in the skull. Every patient’s problem is like a fingerprint and requires a different approach for treatment.

Because the ALF System focuses on treating the underlying causes of the patient’s symptoms it will in time supersede existing concepts and usher in a new era in dentistry and medicine. This era will provide more non-invasive, gentle approaches offering true healing and not just relief of symptoms. This innovative technology holds promise for millions of chronic pain sufferers who have run out of treatment options.

The originator of the ALF appliance was a dentist by the name of Darick Nordstrom. When Dr. Nordstrom designed his lightwire appliance he took into account the anatomy of the skull bones, the nature of the stress patterns, the configuration of the appliance design, and the metallurgical characteristics of the special wire and solder used in fabrication. The design of this system is an expression of intelligent evolution over a fifteen year period that involved the integration of various specialties (osteopathic and chiropractic medicine, dental orthopedic, metallurgical and engineering principles). Although highly refined, new designs are evolving and being clinically tested all the time.

Doctor Nordstrom’s ALF concept has been expanded upon by this author who has integrated four cranial indicators and a dental x-ray system to measure the distortions of the skull bones. A cranial indicator is a specific skull bone that is evaluated through gentle touch to determine if that cranial bone is in the normal neutral or deviated position. By feeling the distortions and then confirming it by measurement the ana-
tomical imbalances on the special x-ray can aid the dentist in determining the exact strain patterns that are present.

When treatment is started with the ALF appliances, the patient returns periodically to have the appliances adjusted. At each visit the practitioner must evaluate the position of the cranial strain patterns. Following each adjustment of the ALF appliances the cranium must be rechecked to make sure that the adjustments are releasing the strain pattern. The ultimate objective is to remodel the skull so that it remains in a neutral position, i.e., without strains and pains.

The special x-ray technique is called Dental Orthogonal Radiographic Analysis™. It measures the angles formed by a vertical reference line and the horizontal lines connecting specific points on the cranial bones. The ideal is a right angle, which is the most stable architectural configuration. Deviations within plus or minus 2 degrees are considered to be within the normal functional range. By taking mid-treatment or post-treatment x-rays the dentist can measure the changes and determine whether they fall within normal limits. This objectivity has never before been available to the dentist. The dentist now has a total system that provides a diagnostic ability to define and measure the structural problem and a treatment system that has the capability of correcting the underlying structural imbalances. This system has the precision of a laser guided missile compared to traditional treatment which is comparable to throwing darts at the patients in the form of various medications, exploratory surgery, appliances that have no control and manipulative techniques for the areas of compensation. The traditional approach to treating the patient’s problem focuses only on treatment of the symptoms.

The ALF System employs a special flexible lightwire that must be custom designed for each patient. The appliances (combination of an upper and a lower) attach to the upper and lower teeth. The appliances use the teeth as
Another ingenious advancement that has contributed tremendously to this biologic system was the development of the Accu-Liner instrument. This instrument, invented by Dr. James Carlson of Seattle Washington, enables dentists to determine if the upper jaw is level or abnormally tilted. This approach is similar to having a builder survey the ground prior to laying the foundation of a house. If the area is uneven then correction is made. Through the use of Dr. Carlson’s instrument, dentists now have this assessment capability. The upper jaw (called the maxillae) represents the anterior 2/3 of the foundation of the human skull. If the foundation is crooked, the rest of the spine and pelvis go into compensation (scoliosis or lateral curvature of the spine, disc compression, bulging discs, or herniated discs). The degree of severity of the compensation is directly influenced by the severity of the original distortion (malocclusion and/or cranial lesion) and the nutritional status of the patient’s body. These distortions have the potential for causing disc problems (compression, bulging and rupturing) in the neck and low back and associated pain that accompanies these problems. If the patient’s nutritional status is poor then the deterioration will proceed much more rapidly. In the later case, healing requires diagnosis of nutritional deficiencies and chemical distortions and then appropriate support. The body needs help both structurally and the raw materials, organic food, to repair the damage. Bet-

ALF (Advanced Lightwire Functional) Appliances
The ALF’s unique design, has many advantages over existing dental appliances. It is thin, lightweight, easily cleaned, provides gentle forces and is not bulky. It remains in the mouth 24 hours a day and removable only by the dentist. It is esthetic and does not interfere with speech, eating or brushing the teeth. It also has another advantage in that office visits are generally shorter and times between visits are longer (6-8 weeks). From the patient’s perspective, the ALF’s offer a new technology that has the potential of adding value by increasing the quality of their life.

The ALF System focuses on a three phase approach to solving the cranial/dental malocclusion problem. First, the design features enable correction of cranial distortions (torsion and tension patterns within the skull). These distortions represent an important aspect of patient treatment. Since the maxillae is the anterior foundation of the skull, any distortions in the form of a poor bite will directly influence the rest of the skull bones. These distortions will be clinically reflected in symptoms such as TMJ, neck, spinal and low back structural compensations. These distortions translate into clinical maladies such as headaches, dizziness, muffled sounds, tinnitus, chronic muscle trigger points and varied pain patterns, difficulty breathing, distress overload, circulatory problems, numbness, muscle spasm, blood sugar imbalances, increased blood pressure, faulty digestion, curvature of the spine, chronic fatigue, jaw pain and many other seemingly unrelated problems like sinusitis, loss of hair, constipation, irregular heart beat, astigmatism to name a few.

The second phase of treatment focuses on correcting the unleveled plane of the skull’s foundation-maxillae. A lateral cephalometric (lateral x-ray) analysis, DORA™ (Dental Orthog-
In reality, having a balanced bite with properly aligned teeth provides a direct self-correcting mechanism for maintaining the balance of the skull bones and an indirect system for correcting the spine and pelvis.

Intra oral Radiographic Analysis™: measuring the deviations of the angles of specific skull bones with a vertical reference line), study models and Accu-Liner Analysis and clinical observation provide the diagnostic tools for determining sagittal (anterior-posterior direction) or transverse (side-to-side) tilts, and maxillary rotations. Presence of these abnormal tilts and torsions (twist patterns) directly affects the nervous system, dural membrane system, foramen magnum (opening at base of the skull through which the spinal cord passes), atlas (first cervical vertebra), sacrum (bone at the base of the spine) and temporomandibular joints (TMJ’s). When the maxillae is rotated or not level in an anterior to posterior or side-to-side plane, the forces to the temporomandibular joints are unequal, functional muscle and ligament lengths are abnormal and the pumping action for the cerebrospinal fluid in the brain is diminished. Such changes translate into disturbances in dural tensioning of the cranial nerves, blood flow through-out the skull and motor and sensory dysfunction throughout the body.

The second phase of treatment involves balancing these maxillary planes by means of inter jaw elastics attached to the ALF appliances, bite lifts (resin overlays) on the teeth to support the muscles and upper and lower vertebrae, and open an airway for more efficient breathing. By freeing up the pre-maxillae (bone that houses the upper four front teeth) the increased space allows the 14 facial bones to release and allows skull stress patterns to dissipate.

The third and last phase of treatment involves use of conventional orthodontic braces to align the teeth to stabilize the skull. In reality, having a balanced bite with properly aligned teeth provides a direct self-correcting mechanism for maintaining the balance of the skull bones and an indirect system for correcting the spine and pelvis. This phase is greatly facilitated since the major cranial bones have been previously realigned. Palpation of the indi-
If a structural problem exists in the patient’s skull no amount of drugs, vitamins, or plastic appliances will resolve the distortion.

cators throughout all three phases is mandatory in helping to achieve a balanced dental/cranial bone relationship. Failure to accomplish the first two phases will greatly increase the probability of post-orthodontic relapse and treatment failure.

The following cases are representative of the type of patient seen in my practice. All too often the patient’s symptoms do not respond to medications or typical appliance therapy. The reason is that the practitioner did not diagnose the underlying cause of the patient’s problem. If a structural problem exists in the patient’s skull no amount of drugs, vitamins, or plastic appliances will resolve the distortion. If a nutritional deficiency in vitamin C exists then supplying the needed supplement will satisfy the body’s need and the symptoms of bleeding gums, achy teeth and sore joints will disappear. If the patient has a deep overbite, then building lifts on the teeth will support the muscles and the upper and lower back. By supplying vertical support to the posterior teeth, the spine is tractioned thus taking the pressure off the discs between the vertebrae. Often the patient’s headaches, neck, shoulder and low back pains quickly abate. The point being made is that if a structural problem exists, then structural correction is necessary to solve the problem. On the other hand, if an imbalance of nutrients exists then no amount of structural correction will correct the deficiency. Acupuncture works if there is an energy imbalance, either too much or not enough chi or energy in a particular meridian. Stimulation to the proper points will raise low energies and suppress excess energies. The whole concept that is being dealt with is homeostasis or balance. The body must have what it needs to heal. Masking symptoms with medications does not solve the problem it only makes it worse by creating more toxicity, interference with normal body chemistry and enhancing nutritional deficiencies.

Orthodontic cases that were previously treated by means of amputating
(extracting) four first bicuspid teeth present one of the most difficult of all orthopedic/orthodontic categories to treat. Removal of teeth has a direct adverse influence on the genetic growth potential and it causes stress patterns within cranial bone alignment. Removing teeth during the developmental period is literally removing part of the human skull as well as affecting neurologic connections. The consequences of such action often times adversely influence the growth and development of the skull, spine and pelvis.

The skull is the primary housing of the upper levels of the central nervous system including the brain, cranial nerves, the origin of the spinal cord, the autonomic nervous system (functions like the gas pedal and breaks of your car), and other systems. Treatment is difficult since the clinician is attempting to reverse skeletal changes that were caused by the extraction of teeth. Retreatment of bicuspid extraction poses a challenge to any practitioner and has the potential of exacerbating old symptoms as well as the possibility of creating new ones.

Patient’s who have had four bicuspid teeth removed for braces bear structural distortions throughout life. Since most orthodontic treatment takes place during the teenage years, the symptoms that develop are often attributed to social pressures or hormonal imbalances. Unfortunately the real cause for the symptoms is not recognized and the patient is left to suffer. A case in point was Yvette D.

**Case Study: 1 – Yvette D.**

In October of 1992, Yvette was a 44 year-old white female who 25 years earlier had four first bicuspid teeth amputated to make room to “straighten” the remaining teeth. At the time that she had her teeth surgically removed and the conventional braces placed, she developed migraine headaches. During the twenty-five years of being plagued with migraines she also developed PMS, low back pain, left neck and shoulder pain. The left neck and shoulder pain was also accompanied by a
severe pulling as if a cord was constantly being stretched. Needless to say medical treatments, drugs nor chiropractic manipulation had any lasting affect on the cluster of symptoms.

Yvette’s case involved an overlay of five factors which prevented resolution by conventional treatment. First, there was the cranial distortions caused by the extractions. Second, a deep overbite existed. Third, the planes (foundation) of her maxillae were not level. Fourth, there was psychological distress in her work place. And finally, there were nutritional deficiencies due to a diet high in processed foods. The proposed treatment plan involved a strategy to correct the underlying factors:

Factors 1 & 2: Overlay resins were constructed to support the collapsed vertical and also level the maxillae (foundation).

Factor 3: ALF appliances to correct the cranial distortions.

Factor 4: Psychological counseling to resolve the distress issues at work.

Factor 5: Nutritional support to correct existing deficiencies

During the three years of treatment the strain patterns were gradually taken out of the skull, the tilts of the maxillae were improved, and the stress patterns in the dural membrane system that surrounds the brain were released. The patient was last seen in October 1997 and has been completely free of migraines, neck, shoulder, low back pain and PMS symptoms for the past two years.
**Figure 1:** Amputation of the first bicuspoid teeth caused the maxillary (upper) arch to collapse as seen in the “V” shaped narrowed and distorted form. If extracting teeth was the correct solution, then adequate space should have provided a stable situation and allowed proper alignment of teeth to remain. Removing the teeth worsened the situation by causing the muscles around the mouth to tighten and cause relapse. The pre-maxillae, bone that holds the upper four front teeth, is now jammed and restricts the fourteen facial bones. These restrictions set up stress patterns in the membrane system and skull bones that ultimately affects the neck, shoulder and low back.

**Figure 2.** The upper teeth are being analyzed on the Accu-Liner instrument. Those teeth that do not touch the horizontal stage must be built-up to even the pressures to the skull bone. The technique is analogous to leveling the ground prior to laying the foundation of a house.

**Figure 3.** The ALF appliances are in place. The green orthodontic elastics are being used to correct existing torsions, strain patterns and to move the entire maxillae forward.
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**Figure 4.** Pre treatment: note tilt of the patient's mouth. It is high on the patient's right side. Also note the fullness of the face which occurred as a result of expanding the maxillae (base of the skull) closer to its original size.

**Figure 5.** Post treatment: note the dramatic change on the level of the mouth. Correcting the foundation (maxillae-upper jaw) levels the foundation of the skull, dural membrane system, neck vertebrae and all the associated muscles.

**Figure 6.** Completed case: The dental arches have been corrected by widening the front portion of the arches and the teeth aligned to stabilize the skull bones. With extraction of four bicuspid teeth during the teenage years, the genetic potential for complete facial growth is diminished and total correction of the skull bone distortions is virtually impossible. Even though the distortions could not be totally corrected the pain was totally resolved because the system was put back into a functional range which the body could handle.
Case Study: 2 – 16 Year Old Male

A 16 year-old male hit the left side of his head on a basketball pole while going up for a lay-up shot. Even though the pole was padded the impact was sufficient to cause a concussion and the patient was knocked unconscious for 3 minutes. As a result of the head trauma, the patient suffered severe left sided symptoms: constant headaches, retrobulbar (behind the eye) eye pain, tinnitus, facial pain in the region of the cheek, shooting neck and shoulder pain. The patient also had hyperacusis (normal sounds perceived as loud), insomnia and dizziness. Extensive medical work ups by neurologists, ENT, internists and psychiatrists produced no definitive diagnosis. Various medications were prescribed with no resolution of symptoms. These symptoms were present for a seven month period and prevented the patient from attending school.

Cranial Evaluation

The impact had caused a reversal of the normal pumping motion of the skull bones, decreased expansion on the left side of the cranium, left internal rotation (compression) of the temporal and malar bones, high right sphenoid with torsion in relationship to the occiput (bone that makes up the back of the skull).

Dental Evaluation

The patient had a mild skeletal discrepancy in which the lower jaw was slightly larger than the upper. He had a misalignment of the bite on the right posterior section of teeth. This malocclusion existed prior to the incident but was accompanied without any symptoms. Extensive muscle spasms were present. They involved the right and left external pterygoids, which attach from the neck of the jawbone where it forms the TM joint to a bony plate of the sphenoid bone. The sphenoid bone is very important since it houses the pituitary gland (master endocrine gland) and has an extensive dural membrane attachment. These structures are responsible for many of the undiagnosed headaches, ear, neck and facial pain.

The internal and external pterygoid muscles act as a sling system for balancing the sphenoid bone. Whenever there is an imbalance of the teeth cranium, or upper cervical vertebrae, these muscles, will
TMJ (Temporomandibular Joint)

Lateral Pterygoid
Plate of the Sphenoid

External Pterygoid

Internal Pterygoid

Mandible (lower jaw)

Maxillae (upper "jaw")

Figure 7.
have a great propensity for going into spasm. The constant pull of these imbalanced muscles places tension on the sphenoid bone which affects the pituitary gland (master endocrine gland), dural membrane attachment (all the way down to the sacrum), extensive cranial motor and sensory nerves, all three major divisions of the trigeminal nerve, blood supply to the dural membrane system, tensor tympani muscle to the ear, muscles of the eye and places a drag on the pumping mechanism for the cerebrospinal fluid. These distortions are responsible for numerous neurologic symptoms: headaches, eye pain and visual distortions, conductive hearing loss, tinnitus, hyperacusis, equilibrium problems, memory problems, facial pain, fatigue, low blood sugar, numbness and pain in the neck, shoulder and arms.

**Treatment Sequencing**

1. Cranial manipulation was performed to correct the reversed cranial motion and free up the compressed skull bones.

2. Micro-current stimulation combined with myofascial release techniques were used to release the spastic muscles.

3. ALF upper and lower appliances to correct cranial stress patterns.

4. Glutathione was used to detoxify the patient’s liver from all the medications that were used.

**Prognosis: Excellent**

The hyperacusis or loud sounds were resolved and the headaches greatly reduced following the third cranial adjustment. Following two months of treatment with ALF appliances the cervical and shoulder symptoms and insomnia cleared. The appliances were discontinued following resolution of symptoms.

Use of the ALF appliances affords the dentist a non-invasive means of correcting structural strain patterns which in turn have the potential to cause neurologic and physiologic changes throughout the body. No other medical specialty has the technology to make these types of changes. Use of the ALF appliance complements the osteopath, chiropractor, physical therapist, psychiatrist, orthopedist and neurologist as well as the podiatrist.
Figure 8. The ALF appliances are used to gently expand the upper arch (maxillae) to free up the cranial bones and reduce the internal stress pattern.

Figure 9. The vertical green elastic is used to bring down a high sphenoid bone while the tan elastic is being used to help bring the maxillae forward.

Figure 10. The upper ALF appliance is tacked onto the front teeth by means of light cured resins. By so doing the entire maxillae is treated as a single unit. There is no plastic on these appliances which increases their comfort and does not impair speech.
Case Study: 3 – John K.

John K was a 41 year-old male who presented with a past medical history of five years of cervical pain (with exacerbation during the colder months) that did not respond to osteopathic/chiropractic manipulation, physical therapy, non-steroidal anti-inflammatory or other pain medications. An MRI documented the presence of bulged inter vertebral discs in the areas of C 3-4, C 4-5 and a right lateral disc herniation at C5-6. The patient presented with a dental Class II Div II malocclusion (lower jaw was retruded and upper front teeth were tilted backward) with a severe deep overbite (vertical overlap). The patient presented with a cranial distortion that involved a high right sphenoid, high right transverse cant of the maxillae, high right cheek bone and occiput (back of skull), internal rotation of the right temporal bone (region of the ear and right half of the maxillae (upper jaw) and external rotation of the left temporal bone. Structurally the patient exhibited a loss of the curvature of the upper cervical, dowager’s hump of the upper thoracic (area of the shoulder blades) spine, loss of the curvature of the lower lumbar spine, high left shoulder, short left arm, left short leg and counter-clockwise rotation of the chest and severe forward head posture.

Phase I Treatment:
1. Bilateral, unconnected posterior acrylic removable overlays were fabricated at a physiologic vertical established by means of the Swallowing Reflect Technique developed by Dr. Willie May.
2. Micro-current and soft laser were used to treat the cervical pain.

Phase II Treatment:
1. Maxillary and mandibular ALF appliances to correct cranial distortions.
2. Conventional orthodontic technique to upright and align teeth.
3. Nutritional support maintained.
Phase III Treatment:
Posterior prosthetic reconstruction

Treatment Summary:
Following fifteen months of phase I therapy, the patient’s pain was reduced approximately 90%. An additional 12 months of phase II therapy has totally resolved the cervical pain. Following completion of orthodontic treatment, existing posterior crowns will be replaced to stabilize the occlusion.

Impression:
The work of Dr. Al Fonder(7), Casey Guzay(8), Dr. James Ricketts(9), Dr. Richard Kaufman(10), Victor Stoll(11) and others have shown clinically that altering the occlusion has a direct effect on the upper cervical and spinal column. Integrating past research with present dental orthopedic capabilities of the ALF appliances in correcting cranial base and accompanying cranial distortions, gives the trained dental practitioner the ability to resolve neurologic and orthopedic problems without invasive techniques.

It has been this author’s clinical experience that compression of the cervical and lumbar vertebrae are in part the result of loss of posterior dental support of the bite (molar and bicuspid teeth). Such dental abnormalities are rarely related by most dental and medical doctors to the abnormal function of the neck and low back. It is this lack of knowledge that keeps the chronic pain patient going in circles while their problem deteriorates.
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Figure 11. Pre-treatment.

Figure 12. Post-treatment

Figure 13. Pre-Treatment: Note deep overbite (upper teeth overlap lower teeth). The clinical significance of a deep overbite is that it causes compression of the cervical and lumbar portions of the spine.
Figure 14. Note severe forward head posture.

Figure 15. MRI of cervical shows herniated discs at C5-6 and bulged discs at C 3-4, and C4-5.

Figure 16. Post orthopedic/orthodontic treatment shows a major correction of the overbite. This was accomplished by balancing the upper jaw (maxillae) with the ALF appliances and then erupting the posterior teeth. This procedure decompresses the cervical and lumbar portions of the spine thus relieving tension on the spinal nerves.

Figure 17. Dramatic improvement of head posture following correction of the deep overbite.
Case Study: 4 – J.K.

JK was a 48 year-old psychologist who suffered a whiplash injury in 1994 and was left with chronic unresolved headaches, neck pain and limited range of neck motion for the past three years. Joann underwent osteopathic and chiropractic manipulation, physical as well as massage therapy and medication for pain without any lasting results. In reality Joann was an accident waiting to happen. A severe malocclusion pre-existed the accident however the muscles of the head and neck areas were sufficiently healthy and able to tolerate the imbalances created by the misaligned teeth and jaws. The sustained trauma triggered off muscle spasms which could not be resolved because the muscles were being held in a strained position. This factor alone is one of the underlying reasons why post-trauma victims linger with pain. Additional factors that complicated Joann’s recovery included bowel toxicity (putrefying undigested protein waste in her intestines), underactive thyroid, acid pH of her body fluids and tissues and nutritional deficiencies that included vitamin C, B-complex, organic minerals, essential fatty acids and dietary fiber.

Lacking proper nutrition hampers removal of the normal wastes that build up within muscles and tissues. Injured tissue causes proteins to pass out into the surrounding fluids and attract water thus initiating swelling. The acid pH also created by the tissue injury and consumption of refined foods (pastas, red meats, sodas, cookies, potato chips, white bread and sugar) lowers the oxygen levels within the cells and decreases energy production which retards the healing process. These overlaying components send the patient spiraling into an abyss of pain and suffering.

After exhausting all efforts, Joann was referred to our office by her osteopathic physician. An extensive evaluation dissected out the various related dental/cranial structural imbalances and nutritional deficiencies. Joann’s case was complicated by the three years that elapsed since the accident and extensive dysfunction of her digestive and endocrine systems. Joann’s underactive thyroid was also a major factor causing muscle spasm independently of her structural dental/cranial imbalances. A slow thyroid decreases metabolism of
the entire body, suppresses the immune system and increases the production of mucopolysaccharides, a substance which stagnates the lymphatic or drainage system of the body. Joann’s case was further complicated by an inflamed gall bladder which was caused by dietary deficiencies of specific nutrients that enable the liver to break down fats. Needless to say, it took one year to correct these nutritional imbalances and for Joann to institute dietary life-style changes.

Since there was extensive cranial/dental distortions, ALF appliances had to be used. It is interesting to note that the day these light wire functional appliances were placed, Joann’s headaches, neck pain and limited range of motion all resolved. The rapid resolution of pain and restricted motion resulted from the appliance’s ability to release the existing tension in the membrane system in her skull. This membrane system extends through the base of the skull and directly affects the function of the neck. Treatment will continue for three years to complete the dental and cranial bone realignment. The impact of a total approach is that the body can quickly respond when the major pieces of the puzzle are replaced. Curing pain relies more on the treating doctor having an in-depth understanding of how the body works, than prescribing and popping pills for symptomatic relief.
References


9. Ibid. #3.


Cranial Complex

The adult cranium contains twenty-eight bones: six middle ear bones, eight vault bones and fourteen facial bones. In the living state, these bones are constantly saturated with blood and exhibit a degree of flexibility. These cranial bones are joined together at junctions called sutures. These sutures are viable structures containing nerves, blood vessels, and fibrous connective tissue.

In the past, anatomists have viewed cranial sutures as immovable joints. This concept was developed after studying dried skulls and those of cadavers. It is a well-known fact that at the time of death cranial motion ceases, sutures become restricted and the sutural ligaments calcify. However, the Drs. John Upledger, Ernest Retzlaff and Jon Vredevogd, M.F.A. studied living skulls. (Diagnosis and Treatment of Temporoparietal Suture Head Pain: Journal of Osteopathic Medicine, July 1978, pp.19-26). These researchers conducted microscopic examinations of cranial suture material taken from living adults at the time of brain surgery. Their discovery of the viability of cranial sutures was established in the 1960s and presently is in the opposition stage of acceptance among particular segments of the various health professions.

Evaluation of the cranial complex is accomplished primarily through the use of palpatory skills. Clinicians who are well trained in cranial technique can quickly determine the exact strain patterns by placing their hands on the patient’s skull. Assessment is essential in determining how best to resolve the problem, i.e., through gentle manipulation, dental orthopedics (specially designed appliances that can correct the specific distortions by changing the shape of the palate), cervical adjustment, pelvic correction, restoration of dental anomalies (missing teeth, loss of posterior teeth and/or vertical height, poor full or partial denture design) or any combination of all of the above.
A cranial adjustment was performed during the ... visit. Miraculously both the head pain and deep thigh pains disappeared.

A cranial adjustment was performed during the... visit. Miraculously both the head pain and deep thigh pains disappeared. A post-treatment P/A x-ray was taken to measure the changes that occurred. When the cranial bones are released the dural membrane system is also freed up. This release removes the stress patterns within the skull. Since the dural membrane is tightly attached to the upper three neck vertebrae they too release and permit a more normal alignment as noted in the increased clarity of the structures being viewed in the post-treatment x-ray.

The DORA x-ray system provides a special locator system that enables the technician to duplicate the patient’s head position within 99% accuracy in both the pre-treatment and post treatment x-rays. Any changes that occur as a result of treat-
The DORA™ system represents the first practical x-ray system that can easily record major cranial bone changes.

Understanding Basic Concepts and Newer Methods of Treating Chronic Pain

The spaces between the atlas and axis (first and second cervical vertebrae) as noted by the red arrows increased in the post treatment x-ray. Also of great significance is the maximum opening achieved following cranial manipulation. This increase in vertical height is seen in the comparison of the horizontal lines noting the maximum lower jaw opening between the pre and post x-rays. The DORA™ system represents the first practical x-ray system that can easily record major cranial bone changes.
Understanding Basic Concepts and Newer Methods of Treating Chronic Pain

Figure 18. (Pre-Treatment) Arrow notes compression between the right atlas and axis (first and second cervical vertebrae). The maximum jaw opening was limited.

Figure 19. (Post-Treatment) The space between the atlas and axis increased following the cranial adjustment. In addition the maximum vertical opening of the lower jaw increased considerably.

These before and after treatment radiographs scientifically document the direct influence on the neck vertebrae from correction of restricted skull bones. In this particular patient the restriction was present for a period of thirty five years.
The Orthodontic Headache

Orthodontic treatment affects the cranium in 100 per cent of cases. Tooth movement and accompanying cranial bone changes may be beneficial, detrimental or may place stresses within the system without observable clinical symptoms. These latent structural imbalances will cause the body to be in a constant, active, adaptive state and often be the source for chronic fatigue. In contrast, patients who are structurally balanced, that is, have a stable pelvis, spine, cranium and good tooth alignment will expend less energy to maintain body balance and overall are better able to cope with the stresses placed on their bodies.

Unfortunately, those patients whose body structure has been traumatized previously through the birthing process (forceps delivery, prolonged labor), physical trauma to the skull (fractures, blows, etc.), whiplash injuries, fractures of the pelvis, coccyx, legs, arms or other bones, traumatic dental extractions and surgical operations will have a greater likelihood for structural torquing or twisting of muscles, ligaments and other body parts. Structurally compensated orthodontic patients are the ones who will develop headaches soon after the braces and wires are placed. These head pains should not be confused with the temporary soreness that all patients will experience as a result of dental treatment. Patient complaints of chronic headaches, scalp tenderness, pains behind the eyes, muffled ear sounds, ringing, hissing or other ear distortions, balance problems, nausea, facial tightness, cervical or lower back pain or restriction of neck motion should all be thoroughly investigated for possible implication in cranial distortions, especially if they appear within days after braces are placed.

Because of the body’s tremendous capacity to adapt, these same symptoms may surface within a period of six months to several years.
Case Study: 6 – Astra

Astra came to my office in search of headache relief. She had been suffering head pains for the past seven years and had been existing on Excedrin. The 22-year-old student presented a list of medical diagnoses (from allergies to stress) offered at international pain clinics and by private practitioners. The patient told her doctors exactly what was wrong, however their lack of knowledge regarding the cranium caused them to dismiss the information as meaningless. Astra explicitly told her doctors that when she walked to school she would press her books on the top of her head to relieve her headache. In essence, the jammed cranial sutures were being released by the pressure of the books. A history of the patient’s chief complaint revealed that orthodontic treatment had been instituted seven years earlier and that a night brace (headgear) had been used in treatment. Use of headgear has the potential effect of jamming cranial sutures. Relief came after two visits to my office. Gentle cranial manipulation was provided to release the jammed cranial sutures, which in turn have the effects of creating a torque in the dural membranes that surround the brain and disrupting cranial motion.

Orthodontic Time Bombs

Case Study: 7 – Joann

JoAnne is a 44-year-old woman who came to my office seeking relief from chronic headaches which appeared immediately after a whiplash injury. The patient’s dental examination revealed a malocclusion that had been previously treated orthodontically. The original dental problem involved a retruded lower jaw, a deep bite and horizontal protrusion of the upper front teeth. In dental terminology this represents a class II, division I malocclusion. Typically, these patients have an accompanying forward head posture and loss of the normal curvature of the cervical vertebrae. Conventional orthodontic therapy involved extracting the
upper right and left first bicuspid teeth. This purely mechanical approach was aimed at achieving aesthetics only. In essence, the conventionally trained orthodontist amputated two teeth from a normal-sized upper jaw to make it correspond physically to a deficient lower jaw. The ensuing orthodontic treatment of moving back the upper six anterior teeth caused the restriction of the maxillae, palatine and sphenoid skull bones and created additional stress within an already tensioned dural tube. The physical trauma of the whiplash injury resulted in muscle spasms of the neck which would not respond to conventional drug or physical therapy. The patient’s chronic headaches were being caused by the cervical dural torque which caused a reciprocal tension within the cranial dura. Treatment involved use of an orthopedic dental appliance which positioned the lower jaw downward and forward. This in turn helped restore the curvature of the cervical vertebrae, reduced the dural tension and helped balance skull bone motion. JoAnne’s chronic headaches were resolved and to date have not reappeared.

**Case Study: 8 – Tina**

Tina is a 19-year-old college student whose chief complaints were that her jaw would periodically lock in a closed position, both jaw joints clicked during chewing and moderate to severe ear pains. These symptoms appeared immediately following trauma from an automobile accident. Clinical examination revealed that the patient had four first bicuspid teeth amputated to provide space in order to correct a dental malocclusion. Treatment at two university facial pain centers, plus numerous prescriptions for Valium and muscle relaxers and an upper dental bite plate all failed to provide relief. The real problem, which had laid dormant until the accident, was caused by the conventional orthodontic treatment previously received. Mechanical tooth correction caused the lower jaw to be retruded and the bite to be over closed. Tina’s problems were corrected by bonding dental resins approximately one and one-half millimeters thick onto the biting surfaces of the posterior teeth. This increase of vertical tooth height helped establish a physiologic jaw position for the chewing muscles, provided space for the joint discs and reduced pressure on the nerves inner-
vating the joint. Removing the causative factors resolved Tina’s symptoms.

Case Study: 9 – Renee

Renee was another victim of four first bicuspid amputation. As a young teenager, her malocclusion had been treated by conventional orthodontic wisdom. Removal of four teeth with retrusion of the lower jaw caused a distortion of her cervical vertebrae. Renee’s body adapted well until age nineteen when two whiplash injuries within a year and a half upset the body’s ability to adapt. Traumatic injuries from the second accident caused a tearing of tissue in the right temporomandibular joint.

The resulting cervical muscle spasms caused the patient much difficulty in swallowing. For some time, Renee had been taking Valium before eating to help her relax sufficiently to swallow her food. Chiropractic care, dental support plus full body massage therapy were necessary to enable the patient to eat without the use of a drug. Because of irreversible soft tissue damage, surgery was performed and the right joint pain was eliminated.

Bizarre Patient Behavior

Periodically we hear reports of bizarre orthodontic patient behavior. These are the individuals who have forced orthodontists or general dentists to remove their braces at gun point. Locking one’s cranium with orthodontic braces can be an extremely distressing physiologic experience. The individual’s nervous system becomes overloaded with noxious impulses. This often results in feelings of severe agitation, anxiety, fatigue and exacerbation of low blood sugar symptoms of those afflicted. This abnormal behavior does in fact have a physiologic basis. Because cranial principles are not taught at the university level, most orthodontists, neurologists and other health professionals do not possess the knowledge needed to recognize the
source of the problem and properly treat the patient. Even more appalling is the fact that many university-level professors deny the existence of cranial bone motion and the diverse effects of restricting bone movement.

**Cranial Motion**

Cranial motion was discovered in 1939 by an osteopath William Sutherland. Research by Drs. Melicien Tettambel, David Michael and Ernest Retzlaff, Viola Fryman and others has substantiated the presence of cranial micro-motion. The origin of cranial motion is thought to be in the brain cells. The energy of contraction, relaxation, and expansion (cranial respiratory motion) takes place on a rhythmic basis just as with the lungs. Evidence indicates that there is a normal pulsile rhythm to all living cells. Our body is composed of 80 to 100 trillion cells, each capable of producing its own source of energy.

During cranial respiratory motion, the twenty-eight cranial bones function as a unit. The rhythmic micro-motion occurs within a physiologic range of six to twelve cycles per minute. This motion can be likened to an umbrella that is slowly opening and closing. The cranial motion itself is composed of two basic motions: primary and secondary. Primary motion involves the inherent movement of the brain and spinal cord, fluctuation of the cerebrospinal fluid, mobility of the intra-cranial and intra-spinal membranes, articular motion of the cranial bones and the involuntary mobility of the sacrum. Secondary cranial respiratory motion synchronizes with the body’s breathing cycles of inhalation and exhalation. Inspiration causes a bilateral side-to-side expansion of the cranium, while expiration diminishes cranial size. This coordinated motion of primary and secondary respiration is accomplished by means of the dural membranes.
**Figure 20.** The dural tube is a continuous membrane that surrounds the brain, passes out the base of the skull, attaches to the first three cervical vertebrae, and continues down the spinal cord where it finally attaches to the sacrum. This tube is the source for structural disturbances being transmitted from one part of the body to another. Because the body works reciprocally, imbalances in the skull can influence the neck, lower back, and pelvis and the reverse is also true.
Figure 21. The upper cervical portion of the spinal cord and brainstem represent one of the most important areas of the nervous system. Within this area lie the automatic life sustaining centers—heartbeat, respiration, consciousness, and blood pressure. Also present are centers that control motor and sensory function to and from the face, eyes, mouth, and throat.

Distortion of the dural tube in this vital region has the potential to disrupt cerebrospinal fluid and blood flow to these important centers. Singly or in combination, the effects of vertebral subluxations (malpositions), muscle spasms (due to tension or whiplash injury), dural tension from a rotated pelvis or a dental malocclusion will have far reaching motor and sensory disturbances throughout the body.
If one visualizes the skull as a circus tent, then its supporting poles are the dural membranes. The dural membranes have a vertical and horizontal sickle-shaped component which allows reciprocal cranial bone motion between the sides and between front and back areas of the skull. Essentially, the cranial dura compartmentalizes the brain and furnishes it with a duct system (venous and cerebrospinal fluid) for irrigation, nourishment, and waste removal. Both cranial bone and dural membrane motion provide a synchronous pumping action that supports cerebrospinal fluid flow and insures the health of the entire body.

The dural membrane does not end within the cranium. It passes through the base of the skull, attaches to the first three cervical vertebrae and continues down the spinal cord and attaches to the sacrum (Fig. 1). The sacrum sits between two ilia and forms the pelvic complex. The significance of the sacrum is that it functions as a pump supplying pressure to insure flow of the cerebrospinal fluid up the central canal of the spinal cord back into the area of the brain.
Figure 22. In reality, the body functions just like a slinky. A distortion at one end will be reflected to its area of compensation. For example, the bones of the hands and feet work reciprocally as well as the ankle and wrist, knee and elbow, pelvis and shoulders. One of the main connecting links of the body that enables this slinky effect to occur is the dural tube. Joint receptors and neuromuscular biofeedback provide other means by which the body functions reciprocally.
Case Study: 10 – Jane

Jane is a 49-year-old missionary who works in Alaska. Jane’s accidental injury occurred in 1983 while helping a friend load bales of hay from a barn loft. An unexpected airborne bale struck Jane in the area of the right shoulder and neck. It wasn’t until several months after the trauma that she suffered frequent neck and shoulder pain, shooting pains down the back of the spine and both arms, right hip pain, moderate pain over the right eye, decreased mobility of her neck, dizziness, chronic headaches and right arm weakness that prevented Jane from playing her accordion.

Chiropractic evaluation diagnosed Jane’s symptoms as originating from muscle spasms, fascial irritation and a thoracic outlet syndrome. Manipulative care was successful in achieving a 40 per cent temporary improvement followed by a 10 to 15 per cent long term relief.

An orthopedic specialist was consulted after chiropractic care reached a healing plateau. Jane spent two weeks in the hospital where she underwent daily traction and physical therapy. An antidepressant with an anxiety-reducing, sedative component was given in the form of 100 mg. of Elavil at night. The drug was being used to help insure a deep, restful sleep. Additional temporary relief was achieved following the use of transdermal electrical stimulation to the neck and shoulder areas. Although some resolution of pain was achieved, Jane was still unable to regain full power back in her right arm.

A neurologist provided a third consultation and reaffirmed the diagnosis of a thoracic outlet syndrome. The prescribed continuation of physical therapy, however, was to no avail. Jane’s symptoms persisted and it became obvious that a key factor was missing in treatment.

Jane was referred to a chiropractor in Spring House, Pennsylvania. Additional spinal and pelvic manipulation was instrumental in bringing more temporary relief. Again another healing plateau was reached. The chiropractic physician referred Jane to a cardiologist who recommended further evaluation utilizing EMG,
EKG, CAT scan, and magnetic resonance imaging (the latest in high technique soft and hard tissue imaging utilizing a strong magnetic field instead of conventional radiation). All the tests were negative. The chiropractor then referred Jane to my office for dental evaluation.

At the time of Jane’s first visit to my office, she had been suffering with her original symptoms for the past three years. Presently, her only relief resulted from spinal manipulation followed by transcutaneous electrical nerve stimulation (TENS).

Dental examination revealed extensive cranial sutural jamming and an exceptional upper jaw (maxillae) width deficiency. This represented an orthopedic (bony) problem, rather than just crooked teeth, that pre-existed the 1983 traumatic injury. The narrow upper jaw was primarily the result of a genetic factor and from birth, Jane’s upper cervical vertebrae, muscles, ligaments, remaining spine, pelvis and other associated structures adapted well to the existing structural imbalance. Nevertheless, the dural tube had a definite inherent strain, tension and torque. The injury to the right shoulder and neck upset the previous well-adapted structural balance. Because the scales were over-loaded on the side of imbalance, the body could not recover.

Treating Jane’s structural imbalance required removing, as much as possible, the tension within the dural tube. This could only be accomplished by orthopedic expansion of the maxillae by means of a dental orthopedic expansion appliance. While expansion was taking place, cranial manipulation was provided to release the jammed cranial sutures, soft laser acupuncture and myofascial release techniques were used to ease neck and shoulder muscle restrictions and nutritional therapy was provided to support tissue healing. Within three weeks after insertion of the appliance and adjunctive therapy, Jane started to regain strength in her right arm. The headaches were greatly reduced, the dizziness became much less frequent and she was now able to play the accordion for a minimum of a half hour. Because progress was significant, Jane returned home to Alaska where continuing dental and chiropractic care could be provided.
“Psychogenic Paralysis”

Case Study: 11 – Stephanie

Living under the influence of high levels of psychological distress coupled with structural imbalances will often lead to somatic disorders. This proved to be the case with Stephanie. On the morning of June 7, 1986 Stephanie began to develop symptoms of pain and numbness in her left thigh. Several hours later, these symptoms involved the entire left leg, and the entire left upper extremity. It was under these conditions that Stephanie was rushed to the emergency room.

It was a day in June of 1986 that she will never forget. This once energetic 32-year-old university instructor was now lying in a hospital bed totally paralyzed on the left side of her body. The neurologist’s report stated, “Motor examination revealed that the patient was unable to move the left arm or leg at all. She was unable to move even a finger, let alone lift the arm and leg off the bed. Sensory examination revealed markedly decreased appreciation of light touch and pinprick over the entire left arm, left side of the abdomen, thorax, left leg, and also the left side of the face.” Stephanie became even more depressed when the CAT scan and electromyographic test results came back negative and the neurologist’s diagnosis was left-sided paralysis of uncertain etiology.

Out of desperation, Stephanie’s husband called me and requested a consultation. Since I was not on the hospital staff, I first had to obtain permission to examine the patient. After my examination, I concluded that Stephanie’s paralysis was due to severe cervical, intra-oral and lumbar muscle spasms coupled with a sacroiliac distortion. My clinical experience has taught me that tensions such as these will affect the dural tube which in turn affect the cerebrospinal fluid and blood flow into the brain and spinal cord. Restriction of these vital fluids will cause neurologic motor and sensory deficits. For approximately one and one-half hours, I worked on relieving the cervical and intra-oral muscle spasms by employing gentle myofascial release techniques. During the last part of my therapy, I used cranial manipu-
At completion of therapy, Stephanie regained full strength, sensation and control of her left hand and arm. As I began releasing the various cranial restrictions, Stephanie began getting back the sensation in her left hand which was then followed by twitching in her index finger and thumb. At completion of therapy, Stephanie regained full strength, sensation and control of her left hand and arm. At this point, I recommended that her husband check Stephanie out of the hospital as soon as possible and seek the services of a competent chiropractor. Dramatic results were forthcoming following two chiropractic visits. After the second visit, Stephanie was able to drive and function like a normal person.
Dural Fibrillation

It must be emphasized that all intracranial membranes are influenced by fascia (tough fibrous tissue that surrounds and covers all body parts), muscles, and skeletal stress. Changes at either the cranial or pelvic end, including spinal distortions, will have a definite influence on the dural tube. The cranial dural sickles act as tent poles essential to the function of head movement and as stabilizers to the skull vault bones (Fig. 2). These reciprocal tension membranes are themselves stabilized by the motion of the cranial base mechanism located at the junction of the occipital and sphenoid bones (sphenobasilar mechanism) which also balances the spinal membranes and provides a major pumping action for the cerebrospinal fluid. Dr. DeJarnette has described the reciprocal tension membranes of the spinal column and cranium as the balancing mechanism that permits coordination of the bony parts of each side of the skull and with the spinal vertebrae.

An imbalance of the cranial rhythm (dural fibrillation) will prove very distressing to the patient and even may prove totally disabling. Clinical symptoms may be exhibited in the form of mental confusion, stuttering, chronic headaches, disequilibrium, irrational fears, disruption of sleep pattern, fatigue, forgetfulness, hand tremors, agitation, sutural pain, cranial and facial tightness, scalp tenderness, eye motor dysfunction, color and visual perceptual distortions and many other neurological symptoms.

This author has come to realize the clinical significance of a dysfunctioning cranial dural membrane motion. Often overlooked is the patient whose chief complaints are lack of concentration, balance problems and facial and headache pain attributed to dural fibrillation. An irregular dural membrane motion can be the result of a whiplash injury, physical trauma to the cranium, spine or pelvis, a restricted cranium due to upper dental appliances.
When studying cranial dural anatomy, one realizes the full impact of the potential for disrupting central nervous system function.

Dural Fibrillation

(splinted upper fixed bridgework that crosses the mid-line or an upper cast partial denture) and traumatic or forceful tooth extraction. Such rhythm imbalances have the potential of placing pressure on cranial nerves and disrupting cerebrospinal fluid flow (thus impeding removal of metabolic wastes, flow of blood and nutrients, hormones, neurotransmitters, and other vital substances into and out of brain cells). Ultimately, cranial and sacral bone motion will be disrupted and accompanied by neurological, neuromuscular and organ symptomatology. When studying cranial dural anatomy, one realizes the full impact of the potential for disrupting central nervous system function.
Figure 23. The cranial dural membranes act as stabilizers to the vault bones. Physical trauma (whiplash injuries, falls, blows to the head, forceful tooth extraction, etc.) and dental malocclusions have the potential to disrupt dural membrane balance and normal cranial rhythm. Such changes can cause adverse neurological function throughout the body.
Case Study: 12 – Susan

Susan is a 39-year-old school teacher who was involved in a motor vehicle accident. A whiplash injury occurred and was accompanied by facial pain, chronic post-occipital headaches, lack of concentration, irritability and chronic fatigue. The patient had been suffering these symptoms for a period of six weeks after her accident. A clinical examination revealed cranial bone distortions primarily on the right side, the cranial dura was in a state of fibrillation, and there was a distortion of the sacroiliac joint. Treatment involved gentle cranial manipulation which released sutural restrictions (juncture between skull bones) and balanced the cranial rhythm and dural membrane motion. Upon completion of therapy on the first visit, Susan’s facial pains, post-occipital headaches and lack of mental acuity were immediately resolved.

Case Study: 13 – Mary

Mary, a 48-year-old executive secretary had committed herself to a 30-day program for alcohol detoxification and recuperation from occupational burnout. Mary’s primary symptoms were depression, loss of mental acuity, loss of visual image sharpness, chronic fatigue (sleeping 12 to 14 hours a day without sedatives), upper cervical pains, disequilibrium, digestion problems, distorted and muffled auditory sounds, inability to function normally, lack of incentive, poor self image and lack of internal motivation.

Examination of the patient’s cranium revealed extensive sutural jamming and a state of dural fibrillation. The patient’s upper jaw (maxillae) was restricted in its normal physiologic range of motion because of an upper fixed anterior bridge. A deep overbite (collapsed vertical), due to lack of posterior support of the teeth, further served as a complicating structural problem. The upper cervical vertebrae exhibited lack of normal mobility ranges accompanied by contracture and muscle spasms of the surrounding tissues. In addition, problems with the lower lumbar vertebrae and a weakness of the sacroiliac joint existed.

Treatment focused on correcting the cranial bone distortions, releasing the jammed cranial sutures, balancing the cranial rhythm and dural membrane motion.
Dural Fibrillation

Immediate success resulted from cranial manipulation therapy. The symptoms of a lack of mental acuity, disequilibrium and visual and auditory perceptual problems disappeared the next day. That night the patient slept soundly without drugs and awoke at 7:30 A.M. with mental acuity and no feelings of depression.

Case Study: 14 – Ruth

One year and seven months prior to seeing Ruth she had been suffering from a list of seemingly bizarre symptoms. The 51-year-old patient was leaving the ladies room of a movie theater when the heavy metal door struck her on the left side of the head. The trauma caused her to see orange stars and she became dazed for a moment after the incident. The force was sufficient enough to rip her left earring through the ear lobe. Her right eye began tearing so excessively that she had to remove the contact lens. The patient’s left temporal area swelled and she slept poorly that night.

Following the accident, the patient continued to work for a few months. However, during that period, her symptoms became so severe that she had to terminate employment. Prior to cranial therapy the consulting neurologist recorded the following residual problems:

1. Stuttering
2. Difficulty coordinating thoughts
3. Depression and tension
4. Tremors of the hand
5. Impaired memory (The patient may forget what she was saying in the middle of a sentence. She may forget what she was looking for when she goes into her pocketbook. She forgets the names of people she knows.)
6. Impaired concentration
7. Pains in her jaws and ear canals
8. Pain in the back of the head above the ears
9. Vertex pain on the top of her head
10. Aching pain in the lower back region
11. Extreme fatigue
12. Difficulty staying asleep during the night
13. Abdominal pain
14. Blurred vision
15. Bright lights bother her
16. She has noise in her ears, “like the ocean.”
17. Bad dreams at night
18. Appetite is poor
19. Some hair loss since the head injury

Clinical examination revealed the patient had extensive cranial bone distortions, jammed cranial sutures, an asynchronous cranial rhythm, dural fibrillation, a major dental problem in the form of a collapsed bite (due to absence of many posterior teeth), and a chronic sacroiliac weakness involving overstretching of the supporting ligaments. Prior to the accident the patient’s body was in a constant active state of adaptation. Ruth’s cranium was the principal area of compensation for all her structural defects. The physical trauma to the head took away her body’s major compensatory mechanism for survival, and Ruth’s system went into chaos. With a clinical history as presented, it is no wonder she was viewed as a hypochondriac and malingering.

Treatment had the supreme objective of restoring the patient’s compensatory mechanism - a cranium capable of functioning within a physiologic adaptive range. Osteopathic myofascial release techniques, which employ gentle tractioning of the cervical tissue, were used to relax the neck muscles. The patient’s cranial primary and secondary respiratory rhythms were restored to physiologic harmony. Sacral occipital cranial techniques developed by Dr. DeJarnette were performed to correct cranial bone and sutural distortions. The released muscles permitted the cranial bones to properly function which then allowed the sutural system to respond, thus enabling the dural membranes to ease tensions which, when all totaled, established a more normal cerebrospinal fluid flow and neurologic function. The patient had dramatic results immediately following the first cranial manipulation. After the eighth cranial adjustment, the patient was free of most of her original post-trauma complaints.

A medical doctor who was board-certified in neurology and psychiatry re-exam-
The neurologist reviewed Ruth’s original symptoms and noted the following improvements:

1. There is no longer any stuttering.
2. She has less difficulty coordinating her thoughts.
3. She is less depressed and is less tense.
4. There is much less tremor.
5. The patient is less forgetful.
6. She has less difficulty concentrating.
7. There is diminished pain in the ears and in her jaws.
8. She has less pain in the back of her head and she is able to walk normally.
9. There is less frequent pain at the top of her head.
10. She seldom has pain in the lower back area.
11. She no longer feels as tired. Fatigue episodes have occurred only twice in the past ten days.
12. She now sleeps seven to eight hours normally.
13. There is much less abdominal pain.
14. She has no blurring of vision except when she tries to read.
15. There is less trouble with bright lights.
16. She very seldom hears noises in her ears.
17. She no longer is having bad dreams.
18. Her appetite is back to normal.
19. Her hair is no longer falling out and it is growing more rapidly.

Reviewing this patient’s past medical history revealed an interesting piece of information. In 1976 Ruth was involved in an automobile accident and sustained head injuries. She had amnesia for the event, and suffered with severe headaches and experienced trouble with mental clarity for a three-year period. It is my opinion and clinical experience that symptoms of post-concussion syndrome are the consequences of disruption of cranial rhythm which results from the trauma. As the...
Too often, post-whiplash patients are dismissed from the hospital with a prescription for Valium and a soft collar. Cerebrospinal fluid flow becomes disrupted, the potential for numerous neurological problems materializes. This patient’s suffering could have been easily resolved if emergency room personnel had been capable of administering basic cranial therapy. Too often, post-whiplash patients are dismissed from the hospital with a prescription for Valium and a soft collar.

Possessing even a superficial understanding of cranial anatomy and function as presented, one begins to appreciate the complexity of the human brain and its dysfunction with structural imbalances. Although not voluminous, scientific documentation regarding cranial micro-motion, cerebrospinal fluid flow, and sutural anatomy does appear in the professional literature. In the early 1960s sutural areas between cranial bones were documented by histologic methods to reveal blood vessels, nerve plexus surrounding the blood vessels, connective tissues, connecting fibers from soft tissue into the adjoining bone, and free nerve endings. Gross anatomic dissection by Dr. Marc Pick (SOT chiropractic physician, anatomist, international lecturer) clearly demonstrated that the outer layer of dural membrane that surrounds the brain passes through the suture and forms the fibrous outer layer (periosteum) which surrounds the skull bones. This architectural design permits coordination of cranial bone movement and internal tensions on the dural tentpoles (falx cerebelli, falx cerebri, and tentorium cerebelli). In the well-respected textbook, Gray’s Anatomy, it is stated that these dural membranes are innervated by cranial and cervical nerves. This further substantiates the extensive biofeedback mechanism which constantly functions to maintain body balance. As various physical tensions develop, nervous impulses relay the information to the brain which then fires impulses to corresponding motor nerves which control the skeletal muscles effecting structural corrections.
Figure 24. Scientists have documented the existence of nerves, blood vessels and connecting fibers in the sutural area. Anatomists have also shown the direct physical connection between the inside and outside of the skull. The dural membrane that surrounds the brain communicates with and influences the outside of the skull by means of an outer fibrous layer. This layer passes through the sutures and covers the bony portions of the skull. For this reason, internal tensions have the potential to cause external changes such as muscle spasms (sore scalp) and vice-type pressure. The reverse is also true. Whether the headache is due to physical tension or a vascular migraine, the dural membranes will be affected.
Cranial Involvement in Newborns

An osteopathic physician, Viola Fryman, conducted a study on 1250 newborn infants. (Relation of Disturbances of Craniosacral Mechanisms to Symptomatology of the Newborn: Journal of American Osteopathic Associations, 65:1059-1075, 1966.) Dr. Fryman, whose specialty focuses on dysfunctions of the cranium, observed that 10 per cent of the newborns had severe visible trauma inflicted on their heads while inutero or during labor. Cranial examination of the remaining infants revealed cranial bone strains in 78 per cent of the cases. The study concluded that nearly 90 per cent of all infants had cranial distortions that resulted while they were being carried or that occurred during delivery. Many of these babies were observed in the nursery to have problems with the sucking reflex, vomiting, nervous tension, irregular sleeping patterns, and irregular vital signs such as heart rate and breathing. Osteopathic and chiropractic physicians trained in cranial techniques can effectively treat many cranial bone distortions when infants are only three days old. If allowed to go untreated, these distortions have the potential of providing structural imbalances that can be the source of chronic headaches, hormonal imbalances and other neurological problems that occur during adolescence or adulthood.
Dural Torque Headaches

Case Study: 15 – Carmen

Carmen was referred to my office by her ear, nose and throat specialist. The 33-year-old school teacher had been suffering with facial and stabbing left ear pains. Her facial pain radiated across the entire left side of her face and was not responding to either the Antivert (drug given to alleviate balance problems) or anti-inflammatory medications. Although the symptoms had appeared two weeks prior to her visit, the patient was very distressed. My examination revealed that the patient’s pelvis was rotated creating a functional short left leg. This in turn created in her sacrum a torque which was transmitted up the spinal dura (dural tube) into the skull. This ultimately caused the cranial bones and sutures on the left side to be jammed. If one visualizes the dural tube, which connects the pelvis and cranium, as a towel that becomes twisted and shortened, then one can easily understand how the face becomes affected on one side. All cranial nerves pass through the cranial dura. If the dura is under tension or torqued, then the nerves passing through will be affected and neurologic symptoms will appear. The patient’s problem was aggravated by the fact that she slept on a double pillow. This caused her head to be thrust forward placing additional tension on the dural tube and accentuating the facial pain. Treatment consisted of balancing the patient’s pelvis by means of padded wedges (part of the Sacro Occipital Technic established by Dr. DeJarnette) and releasing the cranial restrictions by gentle manipulation. The facial and ear pains disappeared during the first visit as soon as the pelvis and cranial sutures were balanced and dural tension released. The patient has not had a recurrence for over 18 months.

A torque or twisting type tension somewhere along the dural tube has the potential of pulling the cranial bones inward and jamming the sutural areas between the bones. This may result from a distortion of any of the spinal vertebrae, rotation of the pelvis or displacement of the coccyx (tail) bone due to fracture or trauma from a fall. Another source for jamming cranial sutures comes from the fascia. Fascia is
connective tissue, composed primarily of collagenous and elastic fibers, which surrounds all muscles and other parts of the body. This fascia exists in a state of dynamic equilibrium as it surrounds the entire body. In reality, when the body becomes distorted from a whiplash injury, surgical- or trauma-induced scars, physical trauma or muscle tension, the fascia pulls tight around the body in much the same way that a cellophane wrapper responds to heat. As body musculature tightens, especially the muscles of the upper shoulder and neck (muscle tension headache), the reactive muscles and fascia surrounding the cranium will compress the sutural areas. Because the sutural areas are composed of viable tissue, the outside surrounding fascia of the skull passes through the viable suture and becomes continuous with the dural membranes that surround the brain. The anatomical connection between internal and external structures becomes obvious. The significance of the muscle tension headache is derived from several key factors:

1. Muscles that are attached to cranial bones and are in spasm will put a

drag on the normal cranial bone motion.

2. Spastic muscles that span cranial sutural areas will cause physical jamming.

3. A jammed sutural area will exhibit tissue anoxia (lack of oxygen) and will impinge on free nerve endings (send pain signals) within the suture to cause localized pain.

4. Sutural jamming has the potential of creating tension in the dural membrane system thus affecting the flow of cerebrospinal fluid and blood.

5. Dural membrane tension has the potential of stimulating cranial nerves (parasympathetic nervous system) thus increasing production of histamine (causes dilation of blood vessels), cerebrospinal fluid and causing the throbbing pressure type headache.
Fascial Headache

Case Study: 16 – Virginia

Virginia is a 41-year-old housewife who was involved in an automobile accident and as a result had been suffering for two and a half years. The post-whiplash injuries caused chronic headaches, neck pains, left shoulder pain, and right knee pain. Severe muscle spasms of neck and shoulders prevented the patient from fully rotating her head to the left and resulted in bilateral sidebending restrictions.

Whiplash injuries to the spine may cause a hyperflexion (extreme forward bending) and extension (backward) type of lesion. In addition, a corkscrew effect may occur in the lower lumbar vertebrae which also affects the sacroiliac joint. These forward, backward, and twisting distortions set up muscle spasm patterns that perpetuate bony structural and fascial strains. Conventional healing methods use drugs, hot and cold packs, and electrical stimulation which only serve to mask the patient’s symptoms.

Virginia’s treatment focused on resolving the structural imbalances of the sacroiliac, spastic muscles, and restricted fascial sheaths. Myofascial release techniques were first used to free up the patient’s neck and shoulder tightness. As the gentle manipulations released the cervical restrictions, the spine and muscles began to assume a more normal posture. Releasing the tissue tightness allowed the internal and external fascial connections of the cranium to relax. After Virginia’s first treatment, the headaches were relieved. To insure elimination of the muscle spasm problem, a regimen of natural B-complex vitamins, unsaturated fatty acids and multi-minerals was taken. The patient was then referred for chiropractic care. Stability of the sacroiliac was achieved thus releasing tensions in the dural tube. Successful treatment using non-invasive techniques has enabled this patient to assume a normal life.
Cerebrospinal Fluid

The cerebrospinal fluid (CSF), its production function, and flow represents a separate circulatory system in the body. Cerebrospinal fluid is not just a simple fluid designed to protect our brain. It represents one of the most complex fluids in our body. Scientists have discovered that CSF contains every bioactive substance known - hormones, gland stimulating factors, nutrients, and nerve messengers. Scientific journals contain descriptions of numerous experiments pertaining to cerebrospinal fluid, but the general conclusion drawn is that CSF functions primarily to integrate messages and maintain a physiologic balance for the brain, spinal cord and peripheral nerves to sustain life.

Cerebrospinal fluid is produced by the choroid plexus that line the ventricles of the brain. Within a 24-hour period, approximately 800 to 900 ml. of CSF is produced. The measured volume of CSF that surrounds the brain and spinal cord is only 150 ml. These statistics substantiate the fact that CSF changes five to six times per day. As the brain expands synchronously with each inspiration of the lungs, CSF is released from the fourth ventricle of the brain. The fluid flows up around the brain hemispheres, down the spinal cord and out along each spinal nerve. Recent documentation by Dr. Marshal Rennels at the University of Maryland has shown that the CSF is actually pumped into the brain tissue under pressure. The fluid takes four to five minutes to diffuse through the brain. In additional research, Steer and Horny have traced CSF using radioactive isotopes flowing into the organs and other structures that the nerve innervates. Of further interest is the fact that stimulation of the cranial nerves (parasympathetic portion of the nervous system) will cause an increase in the production of cerebrospinal fluid.
Cerebrospinal Fluid Pressure Headache

Case Study: 17 – Carol

Carol was referred by her son-in-law, a general dentist. When I first examined the patient, Carol’s endocrinologist had recommended that a tube be placed in her brain to drain excess CSF. Carol’s problem stemmed from post-operative sequelae that resulted after the successful removal of a pituitary tumor. The neurosurgeon who performed the operation was reluctant to insert the shunt into the ventricle of the brain and strongly recommended seeking a conservative alternative. Intermittent headaches and limited jaw opening appeared immediately after surgery. Approximately three years following the initial surgery the patient developed constant headaches which she suffered for a year and a half. These head pains came in the form of a pressure build up within the skull accompanied by bilateral pain in the temporal area. The chronicity of the cranial pressure, pains, and limited mouth opening created a very distressful existence.

The practitioner who understands basic functional cranial anatomy and relates it to the trauma incurred during the operation will have insight into achieving a solution. The fact that the patient had been in the operating room for eight hours with her mouth propped open caused severe spasms of the jaw-opening muscles. These chewing muscles attach directly to cranial bones and when in spasm they restrict the normal cranial physiologic motion.

Treatment involved first relieving the muscle spasm problems then correcting the irregular cranial motion. Soft laser acupuncture was used to assist in the release of the associated muscle spasms. This painless, non-invasive technique employs an extremely low wattage laser energy source (1 milliwatt) coupled with an imperceptible galvanic stimulation. This form of electromedicine is directed to the associated acupuncture and muscle trigger points. Myofascial release techniques were then used to reduce the existing cervical tissue tightness. Once the surrounding muscle and fascial restrictions were eased, direct attention was focused on the specific cranial bone distor-
Although discovered over fifty years ago, acceptance of the principles and practical applications of cranial manipulation has been slow in coming. Special emphasis was placed on establishing harmony of the cranial rhythm. This rhythm is essential for the cerebrospinal fluid to properly flow around and into all parts of the brain tissue for proper nourishment, waste removal, hormonal transfer and neurologic function. Balancing cranial rhythm and releasing sutural restrictions reduced stimulation of the parasympathetic nervous system (cranial nerves) which in turn established a more normal production of cerebrospinal fluid and eliminated the constant cranial pressure. After just one treatment session, Carol was able to open her mouth wide enough to bite into a large sandwich. The bilateral head pains disappeared immediately and within a week following initial cranial therapy the head pressure pains were completely gone. For adjunctive and maintenance treatment, Carol sought the services of an SOT (Sacro Occipital Technic) chiropractor.

Although discovered over fifty years ago, acceptance of the principles and practical applications of cranial manipulation has been slow in coming. As a non-invasive therapeutic approach, cranial techniques have resolved many medical problems which are presently being treated purely with drugs to mask the symptoms. Such maladies as migraine headaches, post-concussion syndrome, facial palsy, Bell’s palsy, trigeminal neuralgia, tic douloureux, vertigo, tinnitus, seasickness, chronic earaches without infection, eye pain, jaw pain, sciatica, and idiopathic hypertension all have been lessened or totally resolved when structural cranial distortions are the cause.
The cerebrospinal fluid (CSF) is produced by the choroid plexuses within the ventricles of the brain. Increased production occurs with increased stimulation of the parasympathetic (PNS) part of the nervous system. The PNS is located primarily in the cranial and sacral parts of the body. Distortions of the skull bones or pelvic area have the potential to cause an increased quantity of CSF and raise intracranial pressure.

**Figure 25.** The cerebrospinal fluid (CSF) is produced by the choroid plexuses within the ventricles of the brain. Increased production occurs with increased stimulation of the parasympathetic (PNS) part of the nervous system. The PNS is located primarily in the cranial and sacral parts of the body. Distortions of the skull bones or pelvic area have the potential to cause an increased quantity of CSF and raise intracranial pressure.
UNDERSTANDING THE TRUE NATURE AND NEWER METHODS OF TREATING CHRONIC TENSION & MIGRAINE HEADACHES AND GENERAL PAIN
Chronic pain can have its origin from numerous sources. However, research over the past 25 years (by this author and others) has shown that a high percentage of chronic pain comes from structural imbalances of various parts of the body. Since 90% of the headaches are represented by tension type, the bulk of the problem stems from structural distortions in the skull and jaws.

The human body is architecturally designed to function at right angles. These right angles can be easily assessed by drawing a vertical line down through the center of the body from the tip of the head to the feet. All horizontal lines that connect matching parts (ears, eyes, shoulders, elbows, wrists, pelvis, knees, and ankles) must form a right angle to this center line. Of great interest in this pain puzzle is the fact that the horizontal plane of the upper jaw, maxillae, must also be parallel to these other planes. This discovery provides the basis for understanding the impact of structural imbalances which spread throughout the rest of the body and trigger off the pain receptors.

Structurally the human body functions like a slinky. Any distortion can descend downward over the body and any distortion from below can ascend upward. This reaction conforms to Newton’s Third Law of physics: “For every action there is an equal and opposite reaction.” The first major point of high incidence of imbalance is located in the skull. Skull distortions often result from the birthing process which causes the baby’s head to deform in order for it to pass through the birth canal. Someone once said that, “who ever designed the birth canal never went through it themselves.” Use of delivery forceps, or suctioning devices during the birthing process has the great potential for causing severe distortions of the skull bones. If these abnormalities do not resolve on their own, then that individual’s body will develop structural imbalances that can...
be the potential source of future chronic pain via mechanical stimulation of nerves.

Mechanical stimulation of the nociceptor or nerve pain fibers causes the release of potent chemical substances which trigger off pain and swelling. Some of these substances include lactic acid (metabolic waste), potassium ions (mineral leaks out of injured tissue and stimulates nerve endings), prostaglandin E-2 (increases pain and produces leukotriene C which is a potent muscle contractant), leukotriene B-4 (chemotaxic agent which sensitizes the pain receptors and causes inflammation), glycosaminoglycans (breakdown products of this component of joint cartilage irritates pain fibers), histamine (responsible for redness, inflammation, swelling, and dilation of blood vessels), serotonin (causes blood vessels to constrict), and bradykinnin (produces inflammation by increasing permeability of venous blood vessels). These chemical irritants are in plentiful supply when there is a constant presence of
a structural imbalance. These substances are the source for the pain and use of synthetic drugs to overcome their presence only masks the pain but will not solve the underlying problem. Removing the structural imbalances by means of correcting the horizontal plane of the maxillae and releasing the strain patterns within the head helps stop the production of these noxious chemicals and abate the pain.
The architectural design of the human body has structural balance as its basic theme. When parallelism is lost, imbalances result with potential debilitating symptoms that can occur in various parts of the body.

The song, “The head bone is connected to the neck bone; the neck bone is connected the shoulder bone” and so on reveals functional anatomic relationships that led researcher Dr. James Carlson, of Seattle Washington, to invent an instrument, the Accu-Liner, that literally helps realign the body and reduce or eliminate chronic head, neck, facial and low back pain of structural origin.

The architectural design of the human body has structural balance as its basic theme. When parallelism is lost, imbalances result with potential debilitating symptoms that can occur in various parts of the body. Doctor Carlson observed clinically that patients who did not respond to traditional therapy for chronic complaints of headaches, cervical pain, low back pain and leg pain frequently had parallel alignment distortions of their upper jaw. This misalignment became obvious once the patient’s upper dental model was mounted on Dr. Carlson’s Accu-Liner instrument.

Patients with premature loss of molar teeth with tilting of adjacent teeth, narrowed jaws, deep bites, worn down partials or full dentures offer prime examples of jaw misalignments. The jaw misalignment generates a mechanical problem every time the patient chews or when his teeth, partial or full dentures contact. The upper and lower jaws must work together with the muscles of the mouth, head and neck. If the upper jaw plane is not parallel, the muscles will not work as efficiently. Often the first signs of this imbalance are sore teeth or sore spots under partial or full dentures that will not go away and tightness of the upper neck, shoulders and facial muscles. As the imbalance persists, micro-traumas occur to the soft tissues, nerves and tiny blood vessels surrounding the teeth or in the gums and can result in
J.G. was a 68 year-old female who had suffered severe migraine headaches and lower back pain for 20 years. Muscle spasms. It is these muscle spasms that trigger off the chain reaction causing the spine, shoulders, pelvis and legs to be out of alignment. The domino effect of these chronic imbalances cause additional tension on other muscles, nerves and blood vessels. The pains that develop often do not respond to steroid injections, pain and anti-inflammatory medications, physical therapy, chiropractic or osteopathic manipulations. This author as well as other researchers have found that only when the structural imbalances have been corrected can the symptoms be resolved.

This author has collaborated with Dr. Carlson to refine the clinical techniques maximizing the instrument’s effectiveness. The following cases are presented to emphasize the significance of Dr. Carlson’s discovery and the far reaching effect the dental component can play in curing chronic pain.

**Twenty Year Migraines and Low Back Pain - Case Study: 18 – June**

J.G. was a 68 year-old female who had suffered severe migraine headaches and lower back pain for 20 years. June received a multitude of therapies over the twenty year period that included various medications, manipulation and physical therapy. Unfortunately these approaches only provided temporary relief at best. The patient’s underlying problem was an old set of dentures that were severely worn down in a distorted horizontal plane. The structural imbalances set up by the misaligned dentures were the direct cause for the upper cervical muscle spasms that entrapped the nerves and blood vessels in the back of her head. Within several weeks after new full dentures were inserted that corrected the misaligned horizontal and vertical planes, the patients migraines and lower back pain disappeared.
Ten Year Facial, Neck, Shoulder, Lower Back Pain and Leg Weakness. -

Case Study: 19 – A.C.
A.C. was a 46 year-old female patient who was referred from Ottawa Canada by her orthodontist. Ann had suffered left side pain from the top of her head to her toes. Ten years of traditional therapy by medical and dental practitioners did not produce any lasting relief.

The patient was presently undergoing orthodontic treatment for a poor bite and was wearing upper and lower removable appliances. The upper dental appliance and model of the patient’s mouth were mounted on the Accu-Liner instrument to analyze the parallel planes. The upper appliance was corrected by grinding down the acrylic material to establish a horizontal plane. Within five minutes after inserting the corrected appliance, 90% of the patient’s left sided pain pattern disappeared. Additional nutritional and manipulative treatment was provided during the next several days and increased the relief to a 98% level. During the next several years follow-up treatment was provided by her orthodontist who successfully corrected her malocclusion and the patient has now been pain free for over two and a half years.

Four Years of Incapacitating Facial Pain - Case Study: 20 – B.G.
Mrs. B.G., was a 44 year-old female, suffered severe incapacitating facial pain for a four year period. Mrs. G. was a registered nurse in Pittsburgh, Pennsylvania. She had become gradually affected by facial pain to a point where she had to stop working. The pain affected not only the left side of her face but caused her left eye to completely close. The patient was treated by numerous medical doctors including a complete evaluation at the Cleveland Pain Clinic. As a last resort the patient was put on the new miracle drug Immitrex, for migraine headaches. At $40 per injection, this treatment brought only partial relief.

An evaluation of the patient’s problem revealed that her pain was caused by nerve entrapment from a spastic muscle. The patient’s 15 year-old ill fitting upper denture wore down to a point which reduced the vertical support for the main chewing muscles. The resulting spasm put...
pressure on a branch of the trigeminal or 5th cranial nerve causing facial pain and closure of her left eye. Resolving the muscle spasm and correcting the height of the denture brought permanent relief.

**Forty-four years of chronic headaches. - Case Study: 21 – P.W.**

P.W. was a 78 year-old female who was in a serious automobile accident in 1953. The patient stated that the collision was so severe that it required the rescue team 4.5 hours to untangle the two vehicles and release the occupants. As a result of the collision Polly hit her face on the metal steering wheel which resulted in her jaw being broken in 6 places, eleven teeth being knocked out and her jaw being wired together for four months. She also had a broken collar bone, fractures in the right foot and right knee. The primary chief complaint was a splitting and agonizing head pain that was set off by coughing or just leaning over. This head pain would last anywhere from several hours to over night. Polly described the pain like sharp daggers in the forehead, top of head, sinuses as well as back of head.

Relief was obtained through therapeutic massage, moist heat and chiropractic sessions; however the benefits gained from these two forms of treatment were completely erased by the next coughing session.

From a medical perspective the patient was worked up by neurologists, orthopedic physicians, internists, and all the CAT scans, EEG’s, sonograms exhibited no definitive cause for the headaches. One diagnosis put forth was that the headaches were due to “stress.” The patient was even told to take two months off and chill out.

As noted, the patient had 11 teeth knocked out and they were replaced by upper and lower partial dentures. In addition to the dental problem Polly had cranial strain patterns that resulted from the sustained trauma of hitting her face on the steering wheel. She also had low nutritional levels for vitamin A, thiamine (B-1), riboflavin (B-2), pantothenic acid (B-6) vitamin C, and magnesium. The tip off of the underlying cause for Polly’s headaches was the triggering factor: coughing or leaning over. These activities caused an additional stretching of the dural mem-
brane system which is innervated by sensory nerves. When the upper jaw was analyzed on the Accu-Liner instrument there was a definite tilt to the plane of the teeth. The existing partial dentures were built into this mistake rather than correct it.

Treatment involved chiropractic and cranial manipulation, nutritional support and new upper and lower partial dentures. However this time the teeth on the partial dentures were set up on the Accu-Liner thus correcting the abnormal tilt. Total treatment took four months. The pain level was reduced by 80% and the triggering factor was totally resolved. The patient started driving again and enjoying life once more.
A twelve year study was conducted by a fifteen member research group of Ph. D.’s, physicians and dentists at the Children’s Medical Center, Osaka Japan. This research showed a high correlation between jaw imbalances and varied medical problems. Since 1983, over 20,000 patients have been studied for various medical complaints that had no definite diagnosis for the underlying cause. These maladies included headaches, asthma, allergies, postural problems (scoliosis: curvature of the spine), Parkinson's disease, respiratory problems, epilepsy, gynecological problems, eye problems, facial and neck pains, etc. Each patient was treated with a dental orthopedic appliance which reestablished a corrected jaw position. This jaw position was corrected by means of adjusting the lower appliance until the second cervical vertebrae was stabilized. In 66.6% of the patients treated by this approach there was either a reduction in symptoms or total resolution of their problem. No other form of treatment other than the dental correction of the jaw position was used.

The neuro-anatomy of the head and neck region is extremely complex and integrally related to one’s jaw alignment and position of cranial bones.

The dural membrane system in the region of the skull and upper neck is innervated by numerous sensory nerves which include the trigeminal or 5th cranial and cervical nerves two and three. Stretching the dural membrane and/or the blood vessels in the head can cause intense pain that is recognized as a headache. Once the treating doctor has an understanding of this concept, evaluation procedures of the major cranial bones and accompanied dural membrane distortions must be integrated into the routine examination of the chronic pain patient. Once dentists become trained in this specialized field they will be able to utilize this state of the art technology and complement the services of the medical neurologist.
This concept offers chronic pain patients another non-invasive alternative approach which has the potential of resolving the age old problem of pain.

Figure 27
Reciprocal Membrane System
Migraine Headaches

It has been estimated that approximately 25 million people suffer from migraine headaches. Its victims are all ages and are from all walks of life. Some of the more notable sufferers were the noted psychiatrist Sigmund Freud, novelist Lewis Carroll, philosopher Immanuel Kant and Paul, the Apostle.

The word “migraine” originated more than 2500 years ago during the time of Hippocrates. It was the Greek physician Galen in the second century A.D. who first called the malady “hemikrania,” a Greek word meaning “half skull.” The present day term migraine, was derived from the French. Commonly, the migraine headache is visualized as a throbbing, recurrent pain which affects one side of the head. Although the symptoms of migraine are varied, approximately 10 per cent of the victims suffer the more common classic form. Approximately two hours prior to the onset of pain, the patient experiences prodromal visual phenomena. These may consist of flashing or shimmering lights, visual floaters, zigzag patterns of lines, blind spots in the visual field, and even temporary loss of vision in one eye. Additional early signs may include paresthesia or tingling in an arm or foot that progressively spreads through a portion or entire half of the body on the opposite side where the migraine will strike. Accompanying these early warning signs, may be depression, feelings of helplessness, irritability and impending doom.

A two-hour period will usually pass after the initial symptoms and the beginning pain. The most frequent pain sites appear in the temporal areas, around one eye, or the forehead. Although migraine pain is usually limited to one side of the head, the sufferer may experience a switching of the pain to the opposite side during the same migraine attack or it may appear on the opposite side at a later attack.

Once started, the migraine pain progresses to a pulsating, pounding
Migraines are unique in that the larger arteries and veins dilate while the smaller vessels that carry the blood from the arteries to the veins constrict.

intolerable state. Duration of an untreated classical migraine ranges between four and six hours. As pain escalates and reaches its maximum level within two hours, the severity of the symptoms increases in direct proportion: extreme sensitivity occurs to bright lights and sounds, speech may become slurred, nausea and vomiting may develop, absence of appetite, loss of complexion and profuse sweating may predominate. The visual distortions and accompanying neurological dysfunctions have been attributed to decreased blood supply to the cerebral cortex region of the brain. The cerebral cortex lies near the brain surface and contains nerve cells that are responsible for vision, smell and auditory perception, writing, biological intelligence, body motor and sensory function.

Migraines are unique in that the larger arteries and veins dilate while the smaller vessels that carry the blood from the arteries to the veins constrict. This physiologic response follows a universal principle for every action there is an equal and opposite reaction. The relative increase in blood flow occurs when the normal influx of blood into the head remains the same but the volume exiting diminishes. As the blood backs up within the skull, the larger arteries and veins become engorged. The decreased blood flow leaving the head is the result of muscle spasms at the base of the cranium. This reciprocal action is the body’s means of maintaining balance. The greater the dilation the greater the reciprocal constriction must be of the smaller blood vessels. Although there is plenty of blood available in the brain, the quantity reaching the tissue at any one time is less than normal. This scenario accounts for the pounding head pain and various neurologic symptoms. Without such mechanisms, the body would remain in a constant state of chaos.

Medical doctors have described variations of migraine. Common migraine mimics classic migraine symptoms but without the early warning visual and sensory disturbances. “Migraine equiv-
“Migraine equivalents” exhibit the symptoms and patterns of migraine but lack the headaches. Commonly found in children, this latter variant often is mistaken for appendicitis because of its accompanying fever, nausea, vomiting, and abdominal pain. “Abdominal migraine” also lacks the headache component and includes vomiting, nausea, diarrhea, and abdominal pain. Extremely rare migraine forms include hemiplegic and ophthalmoplegic. In both instances headaches are moderate and symptoms of muscle weakness and paralysis occur on one side of the head and body. Ophthalmoplegic migraines characteristically manifest double vision, eye muscle weakness or paralysis resulting in a drooping eyelid.
Anatomy of a Migraine

My clinical experience in treating headache patients during the past twenty years has revealed another major triggering factor of the migraine headache. This common denominator is dural torque. The excitement materialized when correlating migraine symptoms with the understanding of how the cranium, dural membranes, cerebrospinal fluid, blood flow, dental and pelvic complexes interrelate and function.

As previously described, the skull bones are inherently flexible. This flexibility comes from the fact that the cranial bones are saturated with blood and as stated in the textbook, Gray’s Anatomy, bones derived from membrane (soft and flexible) will function like membrane throughout life. The bones that develop from membrane are those that make up the cranial vault (parietals, frontal, squama portion of the occipital and temporal bones, and greater wing of the sphenoid). (Fig. 28) Cranial bones are joined to one another by means of sutures. These sutures function like expansion joints. Architects and engineers design buildings, bridges, and roads with allowances for motion. For example, the Empire State and World Trade buildings in New York City each have a two foot sway, and bridges have a two inch leeway at either end to permit expansion, contraction and torquing. Why should the body, and more specifically, the architectural mastery of the cranium be any different?

To coordinate one side of the cranium to the other is the function of the dural membranes. These membranes are designed as vertical and horizontal tentpoles and have extensive attachments to the internal surfaces of the major cranial bones (Fig. 29). One source of head pain during a migraine attack comes from the internal pull of the dural attachment on the cranial sutural area. Another source of pain results from the engorged arteries and tension on the dural membranes them-
Figure 28. The cranium is a dynamic structure that is in a constant state of micro-motion. This motion can occur because of the inherent flexibility of bone plus the presence of the expansion joints or sutures that lie between each bone. Architects design buildings, bridges, and roads with specific leeway for expansion, contraction and torsion. Nature, likewise provides for similar allowances in the flexibility of its hard and soft tissues and their interconnections.
Thirty per cent of the venous (unoxgenated blood) drainage from the cranium occurs through the jugular vein. All the membranes are themselves innervated and all twelve pairs of cranial nerves pass through at some point. The dural membranes also make up the extensive venous drainage system of the cranium. Of interest is the fact that the venous drainage out of the cranium occurs through foramina that are located in sutural areas between bones. The cranial bone motion surrounding the exiting vein serves as a pumping mechanism.

Thirty per cent of the venous (unoxgenated blood) drainage from the cranium occurs through the jugular vein. This vein exits by way of the jugular foramen which is located just anterior to the transverse process of the atlas (first cervical vertebra which joins with the base of the skull). Also exiting this jugular foramen are three major cranial nerves: glosopharyngeal (ninth), vagus (tenth), and accessory (eleventh).

The three cranial nerves exiting the jugular foramen have extensive innervations to many vital body areas. The glosopharyngeal nerve supplies taste and sensations to the posterior one-third of the tongue and throat. Neurological dysfunction of this nerve has the potential to cause loss of taste at the posterior one-third of the tongue, loss of the gag reflex, difficulty in swallowing, numbness to the throat, and increased salivation. The vagus nerve has extensive innervations with many important organs: larynx (voice box), heart, lungs, stomach, liver, spleen, kidneys, pancreas, small intestine, and one half of the large intestine. Potential neurological problems include:

1. Difficulty in speaking
2. Difficulty in swallowing
3. Heart spasms
4. Heart arrhythmias (disturbed beating of the heart)
5. Stomach spasms
6. Paralysis of the soft palate
7. Spasms of the throat and chronic hoarseness
Figure 29. The skull bones have reciprocal motion, i.e., when one side of the head is effected, the opposite side will automatically be involved. This action-reaction phenomenon occurs because of the extensive internal dural membrane attachments. These attachments are innervated by sensory nerves and in addition all the cranial nerves will pierce these membranes at some point. Distortions from whatever source will be transmitted throughout the dural membrane system. The appropriate sensory and motor portions of the brain will be activated to bring about the necessary structural and physiologic changes.

During a tension/or migraine headache, the muscles of the shoulders and back of the neck tighten up. The skull bones become pressed together in the sutural areas and create internal tensions within the dural membranes surrounding the brain. The dural tension created has the potential of causing far reaching neurological dysfunction. Any technique that will relieve muscle and dural tensions (manipulation, soft laser acupuncture, massage, rest, nutritional supplements, etc.) will effectively lessen the severity of the headache.
8. Intestinal problems
9. Breathing problems
10. Salivary disorders

Dysfunction of the eleventh cranial nerve involves the cervical musculature and is responsible for neck muscle spasms. These muscle spasms serve to perpetuate the problem since the structures leaving the jugular foramen are constantly being affected.

The dural tube consists of the cranial dural tentpoles (horizontal and vertical membranes), outer membranes that surround the brain, and membrane (dura) that surrounds the spinal cord along its entire length. After the dura exits the skull via the foramen magnum (opening at the base of the skull), it attaches tenaciously to the first three cervical vertebrae (atlas, axis, and C-3). Continuing down the spine, the dura terminates with its attachment to the sacrum (see Fig. 22). The sacrum is a wedge-shaped bone located between the two pelvic bones (ilia) and attached by means of strong ligaments.

The migraine sufferer is plagued by severe head pain and symptoms that affect half the body and may even switch sides during the course of an attack. The mystery of the migraine ceases once the concept of the dural tube torquing is understood (Fig. 30). As dental malocclusion or structural misalignment of the pelvis, spinal vertebrae, or cranial bones occurs, a torquing pattern is set up in the system. Harry S. Truman aptly described the severity of a situation by stating that the buck stopped at the top! Similarly, the cranium is where the torque stops because it cannot go any further. Migraine sufferers have inherent structural weaknesses which predispose them to dural torquing. These predispositions can stem from distorted craniums, dental malocclusions, chronic muscle spasms (will cause distortions to the bony structures to which they are attached) spinal or pelvic anomalies. Every time a migraine episode occurs...
these victims experience the full-blown effects of structural imbalances.

The dominos begin to fall once the dural torquing commences. Tension builds within the cranial dural membranes placing pressure on those nerves within its path. As the torquing increases, the cranial bones are pulled in on one side more than the other. This distortion pattern becomes obvious in light of the fact that the cranial tentpoles provide a reciprocal tension membrane system. As one side tightens, the other side must reciprocate by relaxing. Cranial compensations accompanied by sutural jamming will invariably cause painful and tender areas to appear on the scalp.

As the structural distortions progress, the dural pressures will begin to retard the flow of cerebrospinal fluid (CSF) into the brain tissue. The beginning visual symptoms result from the visual centers of the brain being deprived of their normal quantities of flood and cerebrospinal fluid. As toxic metabolic wastes accumulate, neurological dysfunctions begin to abound. Increased cranial distortions will cause excess stimulation of the parasympathetic portion of the nervous system. Such stimulation has been documented to cause an increase in production of cerebrospinal fluid from the ventricles of the brain. The potential for an increased intracranial pressure now exists. Reduced blood outflow will also greatly contribute to the increased cranial pressure. The chain of events that set off the dural torquing will cause the atlas vertebra to distort.

This distortion occurs as a result of the firm dural attachment of the dural tube plus the fact that the atlas functions as a universal gear. In an attempt to reduce the tension on the cranial portion of the dural tube, the atlas will rotate out of position. Now the transverse process of the atlas unilaterally impinges on its anterior space. Occupying this anterior space and exiting the jugular foramen are the jugular vein, and ninth, tenth and eleventh cranial nerves. Tissue contracture and area
Figure 30. Migraine headaches usually affect one-half of the victim’s head. Since the dural tube is a reciprocating membrane, tension or torquing in the skull will cause one side to be in traction while the other side provides the slack. The nerves passing through the tensioned side will be responsible for the varied and extensive pains. The dural torquing can result from a single or various combinations of structural distortions such as the pelvis, spinal vertebrae, dental malocclusion or cranial bone restrictions. These structural problems can be triggered off by emotional, physical, nutritional or physiological stressors (e.g., organ dysfunction, under-active thyroid, muscle spasms or weakness, fixed and removable dental bridgework).
Anatomy of a Migraine

swelling will cause a decreased blood flow out of the cranium further exacerbating the throbbing, pounding migraine headache. A true holistic approach will seek out major and compensatory structural imbalances and correct both. Upper cervical manipulation in conjunction with balancing total body mechanics will have the effect of releasing tensions, facilitating blood outflow and reducing nerve impingement.

Migraine symptoms relate primarily to structural, neurological, and physiological imbalances. When patients complain of facial pains involving half the face, invariably the pelvic complex is involved. Clinically, one ilium will be posteriorly rotated (associated with the functional short leg) while the other ilium will exhibit an anterior position (associated with the functional long leg). Because of the reciprocal dural tube interrelationships, the ilium and the temporal bones of the skull function in a synchronous arrangement. Other structures that follow this reciprocal relationship include the occiput and sacrum, sphenoid and coccyx, and the first three cervical and last three lumbar vertebrae respectively. These inter-relationships follow Sir Isaac Newton's principle, “For every action there is an equal and opposite reaction.” This reciprocal relationship holds true in approximately 90 per cent of the clinical cases involving subluxation or structural displacement patterns.

Of further interest is the fact that of twelve pairs of cranial nerves, nine pairs run in close proximity to the temporal bones. It is no wonder that structural distortion elicits such a wide spectrum of symptoms. The temporal bones are also of vital importance since they house the organs of balance. Dural torquing which distorts one temporal bone more than another has the potential to cause disequilibrium problems and sensations of seasickness.

Symptom location provides an excellent indication of the source of imbalance. When patient complaints focus on mid-line head pains such as between
Another rule of thumb regarding symptoms is that the farther away the symptom is from its source the greater the intensity of the symptom.

Neurologically, the dura affects the central and autonomic nervous systems. The latter system represents the involuntary portion of the nervous system and regulates our internal environment, such as the heartbeat, breathing, saliva flow, and digestion. This system also functions to provide for sudden alterations outside of the physiologic adaptive range. To accomplish this feat it operates in two parts: (1) the sympathetic portion, which supports the body when it is called into emergency action. It provides for increases in blood pressure, heart rate, breathing, slows digestion but increases blood sugar levels, and dilates the eye pupils causing sensitivity to light. (2) The parasympathetic system acts as a counterbalance to the sympathetic system and functions more to provide local changes. Parasympathetic dominance will cause such effects as an increase in stomach and intestinal secretions, contraction of the gall bladder, diarrhea, nausea, slowed heart rate and constriction of

the eyes or back midpoint of the head, vertebral distortions are usually the causative factor. Pains, paresthesias (abnormal sensations), pressures, and other symptoms that occupy one side of the cranium usually involve a pelvic distortion. Another rule of thumb regarding symptoms is that the farther away the symptom is from its source the greater the intensity of the symptom.

Weakness or paralysis of eye muscles usually involves the sphenoid bone and/or horizontal cranial tentpole (tentorium cerebelli). All but two of the muscles of the eye attach to the lesser wing of the sphenoid bone. Structural distortion of this bone will affect these muscles plus the horizontal membrane. Through this latter structure pass the four nerves (ophthalmic branch of the trigeminal [fifth cranial nerve], oculomotor [third cranial nerve], trochlear [fourth cranial nerve], and abducens [sixth cranial nerve]) which innervate all the eye muscles.
Anatomy of a Migraine

eye pupils with possible spasms of the muscles that control focus.

Structurally, the cranium and sacrum provide primarily parasympathetic stimulation while the thoracolumbar areas of the spine provide sympathetic nerve activity. The symptoms of migraine include blockage of nasal sinuses (histamine release), eye sensitivity to light (sympathetic dominance), nausea, vomiting, diarrhea and abdominal pains, all of which are related to over stimulation of the parasympathetic system. The resulting fever is due to the stored toxins which are normally released from the gall bladder into the intestinal track to be mixed and diluted with the passing food. Now, however, these toxins are dumped into an empty intestine and quickly absorbed into the bloodstream. The ensuing fever triggers mechanisms in the body to hasten its removal.

Continued parasympathetic activation will release several digestive enzymes (pepsin which digests protein and lipase which splits fats are the two most important) plus hydrochloric acid (HCL) within the stomach. The combination of pepsin and HCL functions as the “power” in breaking up protein. Over stimulation of the parasympathetic system will increase pepsin-HCL production. With little or no food in the stomach, this excess will cause nausea and irritation of the stomach lining resulting in abdominal pain and eventual ulceration. Vomiting is the quickest means by which the body’s reflex mechanism can evacuate this irritant.

Pancreatic digestive enzymes plus bile from the gall bladder empty in the duodenum (first portion of the small intestine that connects to the stomach) to continue the digestive process. Parasympathetic stimulation from the cranium and/or sacrum also will release these enzymes. The combination of bile salts (which alone will cause diarrhea) plus all the liberated powerful digestive enzymes undiluted by food, presents the body with an extremely noxious and potentially dangerous situation. Because these substances are capable
of digesting the small intestinal lining, the body reflexively evacuates these chemicals via the process of diarrhea.

**Cranial Migraine**

**Case Study: 22 – Sandra**

Sandra is a 43-year-old account executive who was referred by her psychologist for evaluation of post-whiplash symptoms. Prior to her motor vehicle accident, Sandra suffered from classic migraine headaches. In addition, she was sensitive to both alcohol and monosodium glutamate (MSG). Both substances would bring on violent headaches accompanied by nausea and vomiting. The physical trauma sustained in the automobile collision transformed the existing periodic headaches into a constant head pain, and in addition introduced the symptoms of frequent ringing noises in the left ear, dizziness, visual floaters, memory loss, and jaw clicking during chewing.

Examination of the patient revealed extensive jamming of cranial sutures, restricted cranial bone ranges of motion, signs and symptoms of a weakened sacroiliac, and restricted cervical rotation and side bending movements. Palpation of her cranium revealed a disruption of both the primary and secondary cranial rhythms. There were also extensive spasms of the chewing muscles.

The patient was under the care of a chiropractor who had achieved a level of stability of the sacroiliac joint. My treatment consisted mainly of cranial manipulation to restore the cranial rhythms, release the sutural restrictions, and increase the ranges of motion. One week following the first cranial correction, the patient experienced tremendous relief. The headaches were completely gone, the ringing in the left ear was completely resolved, the dizziness was greatly reduced, her memory improved, and the visual eye floaters were also greatly diminished.
Pelvic Migraine

Case Study: 23 – Edmund

Edmund, a 35-year old customer service representative came to my office in desperation. He admitted suicidal tendencies which stemmed from the severe headaches and body pain he had endured for the past 20 years.

In 1966 Edmund began experiencing headaches while in the armed services. These head pains appeared primarily on the left side of the head in the temporal bone area above the ear. In late 1969 he began experiencing severe cervical pain primarily on the right side. Between 1969 and 1974 the severity of the headaches increased along with upper cervical and lower back pains. By 1974 the intensity of the pains provoked thoughts of suicide. All diagnostic testing was negative. A neurosurgeon presented Edmund with the prognosis that future surgery would be necessary to correct the progressive paralysis. He was placed on the drug, Motrin, for the pain. A consulting orthopedic surgeon attributed the pains to cervical trauma and instituted cortisone injections into the symptomatic area of the cervical spine. Additional medical consultations elicited no further clues. The last consultation performed by a neurologist at the University of Pennsylvania suggested that Edmund’s problem was psychosomatic.

When Edmund presented himself for evaluation at my office, the entire left side of his body was affected with tingling and mild pain. He was experiencing severe deep pains in the upper right cervical area and entire left hemisphere of the skull. His neck and shoulders were always tight. Every morning he spent at least 15 minutes taking a hot shower to increase mobility of his neck and shoulders. He took ten milligrams of Valium daily prior to bedtime, Zantac, for occasional stomach pains, and 12 aspirins a day (which probably caused the stomach problem) for his headaches.

Clinically, the patient presented with a chronic sacroiliac weakness in which the left pelvic bone was posteriorly rotated causing a functional short leg. An interesting observation was that the patient always carried his wallet in his left pants.
As a patient, one must always be cognizant of the fact that when a structural problem exists no amount of drugs or surgical intervention will solve the problem.

Pelvic Migraine

The moderately thick billfold had the effect of further rotating the pelvis posteriorly greatly exacerbating the structural problem. Needless to say, he no longer carries his wallet in that pocket. Dentally, Edmund had a deep overbite and retruded lower jaw, both caused by the loss of several molar teeth. The cervical vertebrae exhibited restricted rotational and side-bending motions as compensations for both the dental malocclusion and sacroiliac weakness. Except for the torqued dural tube, the cranium presented only minor compensatory restrictions.

Exceptional results were achieved with the initial treatment. Utilizing the techniques discovered by Dr. DeJarnette, Edmund’s pelvis was structurally corrected by padded wedges judiciously placed under each pelvic bone. This non-invasive, atraumatic approach permits the body's own weight to correct the distortion. The patient was instructed to place an ice bag over the sacroiliac area for 15 to 20 minutes every 5 hours for the next three days. This is designed to help reduce the inflammation in the joint area. During the following visit the patient informed me of tremendous reduction in both the cervical and headache pain. He was able to reduce his aspirin intake from 12 to just two per day and the Valium was reduced by half to 5 mg. At the second visit, dental support was provided by bonding resins on the biting surfaces of the back teeth. This procedure was designed not only to reestablish a physiologic jaw posture but to stabilize the cervical vertebrae, dural tube, and sacroiliac joint.

As a patient, one must always be cognizant of the fact that when a structural problem exists no amount of drugs or surgical intervention will solve the problem. When a structural problem exists, correction can come only from manipulative techniques that focus on stabilizing the entire body.
Dental Migraine

Case Study: 24 – Mary L.

Mary L. is a 38-year-old restaurant hostess who had suffered migraine headaches for the past twelve years. In 1980 the patient came to my office seeking help. Mary was at the end of her rope. She was addicted to Valium and pain killers. The drug effects were short-lived and she was getting desperate. She was also plagued with cervical and lower back pains which were getting progressively worse.

A severe dental malocclusion existed. Mary had lost a few molar and bicuspid teeth through the years. The remaining posterior teeth never fully erupted and she had a receded lower jaw. As a hostess she developed a few bad habits along the way. Mary would always cup the telephone between her shoulder and ear, and she invariably would bite on the end of her pen or pencil during her telephone conversations. Also, a poor diet which included numerous cups of coffee, donuts and other refined carbohydrates throughout the day raised havoc with her blood sugar level.

Treatment focused on reducing the quantity of caffeine, sugar, and other refined foods being consumed. The headaches, neck and lower back pains, diminished tremendously once dental support was provided by the fabrication of a lower partial denture. The appliance was physiologically designed to support the head and cervical vertebrae posture. Dental stability released the cranial and cervical torquing of the dural tube thus permitting the musculature to establish proper balance, and the cerebrospinal fluid to better circulate within the brain and restore neurological function.
Psychological Migraine

Case Study: 25 – Rose

Sometimes even the well trained practitioner loses sight of a major migraine factor. This was the situation that happened when I embarked on treating a woman who had suffered severe migraines for fifteen years. Since she was in a severe automobile accident, focus was directed toward the physical and nutritional distortions. Just about every technique I ever learned was used on Rose. This list included laser acupuncture, cranial manipulation, microcurrents, nutritional support, and various dental appliances. Unfortunately nothing worked during the year and a half that Rose was in treatment and since we were not making any progress, treatment was discontinued. Four years later, I received a call from Rose who proceeded to tell me that her severe migraine headaches were cured. Being inquisitive and wanting to know what solved her problem, I asked Rose what drugs or techniques were used in her successful treatment. My hopes of learning a major breakthrough technology were quickly shattered when Rose told me that her migraines disappeared the day her husband died. All too often we overlook the potential impact that the psychosomatic component plays on chronic pain.

Scarring, Muscle Spasms, and Headaches

Case Study: 26 – Mary S.

In December 1985, Mary S. had surgery for the removal of a small tumor. The lump was located in a saliva gland just beneath her lower jawbone on the left side of her face. Prior to the operation, Mary had a few mild symptoms which included an occasional shooting pain up the left side of her face, which stopped over her left eye, mild pains on the back left side of her head and upper portion of the neck, mild left ear pains, and a moderate hearing loss of one year duration in the left ear that was discovered after a hearing test. Soon after the operation, all of Mary’s symptoms worsened to the point that the pains became severe, constant, and unbearable.
Mary S. had been wearing full upper and lower dentures for the past 18 years. The lower denture fit poorly, irritated her lower gums and presented a major problem in chewing. In March of 1986, Mary had a consultation regarding the insertion of a lower dental implant which would stabilize the lower denture and improve chewing. The consulting crown and bridge specialist, Dr. Anthony Rinaldi, recognized that Mary’s pain problem had some relationship to a structural imbalance of her jaw, neck and head. Dr. Rinaldi referred Mary for evaluation.

When Mary presented herself for examination at my office, she was experiencing severe pains in the left ear, left side of the jaw and face, and left side of the upper neck and base of the head. After examination, it was determined that Mary’s problems stemmed from a distortion of her upper cervical vertebrae, muscle spasms, scar adhesions, and loss of a proper bite.

Because Mary S. lived out of state and travel time was extensive, treatment was started at the first visit. In order to resolve the muscle spasms and release the tissue tightness created by the four-inch scar, a non-surgical soft laser beam was used on related acupuncture points, the actual scar, and the spastic muscles in the neck and facial areas. Within minutes after using the painless soft laser, the pains were completely erased, the muscle spasms began releasing, and Mary instantly regained her hearing in the left ear. The conductive hearing loss was due to a spastic muscle that controlled the opening of the left eustacian tube (tube that equalizes pressure between the middle ear and back of the throat) as well as of muscles that balance the tensions on the eardrum. In addition, gentle soft tissue release methods (myofascial techniques) were used to ease the neck tightness. These procedures were followed by gentle cranial manipulation to balance the cranial rhythm, release tensions in the cranial membranes, and free up the motion between the cranial bones. To improve dental support and help maintain the structural balance that was achieved, the lower denture was built up with a soft lining material. Mary left the office completely out of pain and with her hearing restored.
Scars are one of the body’s repair mechanisms for self healing. As the cut or torn tissues begin mending, the healing tissues knit a tight weave of fibers. The tightness of the scar has a local pulling effect on the muscles and also influences the entire elastic fibrous covering (fascia) that surrounds all body parts from head to toe. An example of fascial tension can be easily visualized by the motions of a nylon stocking in action on one’s leg. The fine nylon filaments in a weave pattern provide flexibility to the stocking similar to the fascia of the body. If the stocking is pulled tightly at the top, an equal tension must occur somewhere else. The body’s fascia acts no differently. In most people, the tensions are subtle and not sensed. However, if the scar is located over an organ, over a vital nerve area, or in individuals who have other structural imbalances, scars have the potential to worsen existing symptoms or cause new ones like headaches.

Case Study: 27 – 36 Year Old Female

Dr. John E. Upledger, an internationally known researcher and lecturer in the field of cranial osteopathy, successfully treated a 36-year-old female patient who had suffered migraine headaches for 20 years. During the examination, Dr. Upledger discovered an abdominal restriction. Upon questioning, the patient gave a history of an appendectomy at age 12. Menstruation began at age 13; however, the headaches did not start until age 16. As with many patients, this woman visited many reputable clinics, exhausted most conventional therapeutic treatments, and was in the process of accepting her incapacitating migraines as the result of a deep-seated, psychoneurotic disorder. While examining the scar, it was discovered that placing deep, medial pressure on the scar produced the headache and deep lateral pressure brought headache relief. The tensions within the scar tissue were released by treating with deep but gentle pressures. The patient remained headache-free during the 18 months following therapy and the publication of the report. In addition, following treatment of the scar, the woman experienced spontaneous
relief of low back pain, menstrual disorders, and chronic and recurrent cervical problems.

At first glance, unconventional and unorthodox methods may seem bizarre and farfetched to the layperson and to many health professionals who have not opened their minds to such wisdom. On the other hand, the American public is unaware of the fact that only 10 to 20 percent of all orthodox procedures currently used in medical practice have been shown to be effective by controlled experiment. This information appeared in an article entitled “Assessing the Efficacy and Safety of Medical Technologies” (Office of Technology Assessment, Publication #PB286-929, p.7, Sept. 1978). Skepticism on the part of highly trained physicians to accept that which is different stems from the present day medical model which is practically terrorized by so called analytical science. Doctors have become blind to elementary clinical observation which they label as subjective. One of Canada’s great researchers on stress, the late Dr. Hans Selye, aptly described such judgmental insecurities when he stated, “If I throw a rock out of a window and it goes up instead of down, how many double-blind studies do I need to show the statistical significance?”

Laser Therapy

For over fifteen years, actinotherapy, the therapeutic use of light, has been commonly used with great success in Europe. Because of its great therapeutic benefit, the non-surgical helium-neon laser has been introduced into the United States. The ultra-low power (1 milliwatt) cold laser (also referred to as soft laser) is being used primarily for the reduction of acute and chronic pain, elimination of muscle spasms as well as enhancement of tissue healing.

The actual way in which laser light works has not yet been determined.
One theory, however, explains the healing phenomenon in terms of a “biologic field.” According to the Soviet scientist and originator of the theory, A.G. Gurvich, an energy field exists around all living cells, tissues and organs. The entire body as a whole influences the various organs of our body, which in turn influence the surrounding tissues. When an area is not functioning properly, the energy level is lower in that particular area. Directing the laser beam into acupuncture points as well as into the affected area will raise the energy level and help the body to resume normal function.

Presently, Germany, the Soviet Union, and the United States are engaged in clinical evaluation on laser safety. To date, all preliminary reports reveal that use of the ultra-low power laser has no harmful effects on living tissue when utilized properly. Testing indicates the intensity of these soft lasers to be equivalent to forty per cent of the intensity of a 100-watt light bulb, when the center of the bulb is held four inches from the skin. With virtually no heat output from the laser, living tissue will not become dehydrated or experience damage.

Because of the exceptional research and clinical successes in pain control by Joseph Kleinkort, a physical therapist in San Antonio, Texas, the United States military has adopted use of laser therapy. At present, lasers are in use at the Wilfordhall Air Force Base and the Walter Reed Army Medical Center in Washington, D.C. Through Mr. Kleinkort’s lectures and workshops, many physicians and other health care practitioners are making laser therapy more accessible to the public.

Preliminary research findings show laser therapy to be beneficial in wound healing, migraine and vascular headaches, reduction of localized pain and inflammation of arthritis, shingles, muscle spasms, tendinitis, bursitis, postherpetic pain, and reduction in pain and swelling in patients suffering with rheumatoid arthritis.

**Case Study: 28 – S.J.**

S.J., a 32-year-old white male, married, was in a state of good health until September 21, 1977. The patient was holding on to the boom of a heavy crane which came in contact with a high power line of approximately 220 volts of electricity. He was immediately rendered unconscious for approximately 90 minutes. The patient was hospitalized with electrical burns involving the chest and both upper arms. In addition, the patient presented with right upper arm paralysis. Numbness and impairment gradually resolved in three to four weeks.

The patient was initially seen on March 21, 1982 with complaints of severe headaches. The headaches occurred daily, were dull and steady in nature and increased in severity to a point that the patient became socially reclusive.

The patient described the headaches as burning in nature with a diffuse, throbbing and radiating pain from the neck region to the top of the head. The patient also complained of mild sensitivity to light, nausea, and vomiting. In response, the patient would retire to a quiet, dark room and pull the covers over his head.

All medical tests including CAT scans, myelograms, and neck and skull X-rays were normal. The patient was taking Clinoril and approximately four Empirin III and four Percodan tablets per day, which provided only minor relief. In addition, Fiorinal, Valium, Motrin, Indocine and Parafon Forte had been ineffective in bringing any relief of the symptoms.

The patient was started on a series of laser treatments to the neck and various other acupuncture points. A TENS (transcutaneous electrical nerve) unit was used for pain control. A detoxification program was used to clear out the medications from the body. Various physical therapy techniques were initiated to correct muscular...
restrictions in the neck, chest and upper arms.

Following a series of ten visits, the patient was totally free of all symptoms. The patient experienced no further headaches and required no medications. Significant improvement was noted in the patient’s social life, to a point where he enjoyed an overall increased quality of life.

**Case Study: 29 – Gloria**

Gloria is a 49-year-old female who had been suffering upper left neck and shoulder aches and pains for over a year and a half. The injuries occurred while on duty as an undercover policewoman at a local hotel. While walking down a flight of padded stairs, Gloria reached for the railing for support. The railing, unfortunately, was not secured and pulled away from the wall causing Gloria to tumble down fourteen steps.

The orthopedic examination and x-rays revealed no broken bones and all other diagnostic tests were negative. Gloria followed through with the initial drug therapy of muscle relaxers and pain killers; however she could not function because of the drowsiness caused by the medication. The next step involved physical therapy in the form of heat packs, ultrasound, transcutaneous electrical nerve stimulation (TENS), muscle massage and joint mobilization techniques. Although some temporary relief occurred, Gloria still experienced pains and stiffness, especially when there was a change in the weather.

Gloria discontinued conventional treatment after six months because no lasting relief was achievable. At this point, Gloria gave up hope, resigned herself to the fact that she would have to live with the pain and was skeptical that she was ever going to recover from the injury. Approximately nine months elapsed when Gloria’s sister-in-law told her about the benefits she had received from soft laser therapy. Although somewhat skeptical of obtaining any major cure, Gloria set up an appointment.

At the first appointment, Gloria made it clear that she came more out of curiosity about what her sister-in-law had told her than from the belief that she was really going to be helped. Because of the chronic muscle tightness, I employed osteopathic myofascial release techniques in conjunction with the soft laser. The first visit
Laser Therapy

lasted about one hour, and Gloria left with minimal discomfort and a definite increase in neck mobility. Because the relief lasted longer than any previous treatments, Gloria followed up with two additional one hour sessions approximately one month apart. At the end of that three-month period, all her symptoms had resolved, including the flare-ups that occurred with weather changes. Needless to say, Gloria’s skepticism vanished quickly.

Dear Dr. Smith:

Thirteen months ago I was rear-ended while stopped at a traffic light. At first the impact seemed to be only a passing shock but then I felt a severe burning sensation shooting up my head and down my back.

During the eleven months following my accident I was treated by 13 different doctors and spent 9 days in the hospital in traction. All the medical tests kept coming up negative, but still was in a lot of pain.

My life turned into a real nightmare. I couldn’t even find a comfortable position let alone stay awake from the prescribed muscle relaxers.

In desperation, I began praying for someone to help me. My chiropractor, Dr. Cobb, took five of his patients, including myself, to have soft laser treatments by you.

Since those treatments, my headaches have disappeared and my body pains have been reduced tremendously. Now that I am getting better I feel I will again be able to live a more normal life. Thanks go first to God for giving me the strength to come through all the pain and suffering and second for giving you the knowledge to uncover this medical maze.

A grateful patient,
Barbara S.
Micro-Current Therapy - The “Magic Wand” That Can Reduce Pain and Stimulate Healing

Since the beginning of time, man has endured pain and sought resolution. Aristotle referred to pain as “the passion of the soul” and those unfortunate sufferers know how easily it erodes the framework of one’s existence. Although scientists have devoted many years of research to the mechanisms of pain, major breakthroughs have only come within the last 30 to 40 years.

During the past 40 years, researchers have discovered the existence of micro-current fields within injured tissue and observed their effects on the healing process. Thanks to the dedicated scientific work of C. A. L. Bassett, Robert O. Becker, MD, Bjorn Nordenstrom, M. D., Dr. Richard Borgens, Thomas Wing, DC and others, a new paradigm supported with scientific documentation has been proposed. Because of their unwavering efforts the field of electro-medicine has been rekindled.

We now know the body has a micro-current “circulatory system” that provides intercellular communication through electromagnetic signaling. Becker has documented that our bodies present a positive polarity along the central axis (brain and spinal cord) and a negative polarity in the peripheral structures (arms and legs). He has also shown that this polarity is reversed in hypnosis, during general anesthesia, and following an injury which creates a positive potential at the site of trauma. Becker has speculated this polarity reversal sets up a current of injury which initiates and signals the beginning of tissue repair and regeneration. Doctor Becker believes this current of injury is conducted by means of direct micro-current signals passed along the outer covering that surround the nerve cell bodies.

The internationally known radiologist and researcher, Bjorn Nordenstrom, describes tissues as biologic
batteries within our body. This concept is well known and accepted by many researchers. Nordenstrom believes that an electrical voltage potential difference exists in the body which is created by a separation of oppositely charged ions. He states that the electrical energy of this biologic battery can be tapped once this circuit is closed. The closed circuit permits the flow of electricity between oppositely charged areas. In his book on bioelectricity, Nordenstrom describes the activation of these biological semiconductor circuits following muscle activity and injuries both of which cause a build-up of positively charged ions. Researchers have benefited greatly from the discovery that the body functions on a micro-current level. Scientific studies utilizing micro-currents have documented its ability to reduce pain, stimulate and even shorten the healing process. Research by Cheng, et al.,\(^2\) at the University of Louvain in Belgium, have shown that a current of 500 micro-amperes can raise the energy level (ATP- adenosine triphosphate) within cells almost 500\% and increase protein synthesis and membrane transport of nutrients and waste products in and out of the cell. The Bourguignon study\(^3\) documented the intracellular influx of calcium within the first minute of micro-current stimulation followed by an uncapping of insulin receptors on the cell membrane and enhancement of protein and DNA synthesis. Nester and Mass\(^4\) in their study used seven micro-amperes of direct current to speed tissue repair and regeneration of excised rabbit tendon. Their stimulated group showed a 255\% increase in a chemical marker (hydroxyproline) that indicated increased protein uptake compared to the baseline controls. Examination under the microscope confirmed the repair process had been enhanced by electrical stimulation.

Micro-current therapy emerged in the 1960's as the brain child of Dr. Thomas Wing, an internationally renowned electronics inventor. Doctor Wing discovered and patented a special wave-
Micro-current treatment has been used successfully by health care practitioners worldwide. It has been shown to be beneficial in the rehabilitation of:

- Acute and chronic pain
- Whiplash injuries
- Neck pain
- Hiatal hernia
- Wound healing
- Limited range of motion
- Bruises
- Carpel Tunnel Syndrome
- Bursitis
- Headaches
- TMJ pain
- Low back pain
- Swelling and inflammation
- Broken bones
- Burns
- Muscle spasm
- Post-surgical healing
- Joint pain
- Fibromyalgia
- Sprains and strains

Micro-currents are similar to what the body uses to initiate a normal response to stimulate the healing process. The effectiveness of Dr. Wing’s instrument came from ultra low frequencies (.3 Hertz) combined with subsensory stimulation (1 millionth of an ampere). The specially patented electronically stimulated tidal waveform, Tsunami® (polarity reverses every 2.5 seconds), is the basis of today’s micro-current therapy. Micro-currents also differ from traditional TENS (Transcutaneous Electrical Nerve Stimulation) in that it has a lower voltage (around 60 volts) and its electrical current level is one thousand times less intense than TENS, which puts out currents in the milliampere range. These two factors permit the low level of current to easily pass through the skin to start the healing process by stimulating cellular activity.

Micro-current treatment has been used successfully by health care practitioners worldwide. It has been shown to form which helped promote healing of injured tissue with extremely low levels of energy. The effectiveness of Dr. Wing’s instrument came from ultra low frequencies (.3 Hertz) combined with subsensory stimulation (1 millionth of an ampere). The specially patented electronically stimulated tidal waveform, Tsunami® (polarity reverses every 2.5 seconds), is the basis of today’s micro-current therapy. Micro-currents also differ from traditional TENS (Transcutaneous Electrical Nerve Stimulation) in that it has a lower voltage (around 60 volts) and its electrical current level is one thousand times less intense than TENS, which puts out currents in the milliampere range. These two factors permit the low level of current to easily pass through the skin to start the healing process by stimulating cellular activity.

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Micro-current and laser stimulation are effective in reprogramming the injured tissues. On this basis, it has been extremely effective when used on acupuncture points. The big advantage is twofold: first no needles are required and second, the stimulating point does not have to be exactly over the acupuncture point. The currents flow across the skin and like water flowing into a funnel, the currents literally find the point and enter the acupuncture meridian system. Stimulating the master acupuncture pain points are effective because it causes a release of beta-endorphins, which are several hundred times more potent than synthetic morphine. These endorphins are site specific and will be attracted to pain receptors in the areas being treated. The release of these natural pain killers usually occurs thirty to forty minutes following treatment. At the appropriate settings, micro-currents cause an immediate release of endorphins. To sustain the pain relieving effect three procedures are recommended: first stimulate with the specific settings for pain on the micro-current unit, then use the appropriate healing settings and re-stimulate the symptom area and appropriate acupuncture points. Second, use of soft helium laser initiates a delayed endorphin release for longer lasting pain relief. The third procedure involves stimulation of the ear acupuncture points. This combined approach maximizes the level of success.

Clinically the therapist stimulates each body point with micro-currents for approximately one minute then follows up with a 30 second stimulation to the appropriate ear points. Laser stimulation can be applied for 30 seconds to one minute to the acupuncture points and involved areas. It must also be understood that in most cases of chronic pain micro-current and laser treatment are adjunctive, i.e., the underlying causes must be sought out and corrected. Micro-current and laser stimulation are effective in reprogramming the injured tissues. When tissues function normally their feedback signals report that all is OK and the com-
Micro-Current Therapy - The “Magic Wand” That Can Reduce Pain and Stimulate Healing

**Figure 31:** Acupuncture Points for Chronic Pain (Front of Body)

**Figure 32:** Acupuncture Points for Chronic Pain (Back of Body)
plex of fibers (fascia, muscles, ligaments, nerves in the blood vessel walls, sensory endings and nerves traveling through the area) can relax and stretch within normal limits without eliciting pain. When applied to the acupuncture points, micro-currents and soft helium neon laser (632.8 nanometers - energy level of normal healthy tissue) helps balance the flow of vibrational energy throughout the body assisting in the maintenance of homeostasis.

The are many micro-current units on the market and trying to find a therapist that has the best unit will require much research. The following features are those which have proven to be most beneficial in the treatment of pain.

1. **Range of frequencies**: .1 to 990 Hz (Hertz). The frequencies represent the number of oscillations or pulses that occur per cycle. The higher frequencies are beneficial in releasing adhesions or increasing circulation within tissues. The lower frequencies are beneficial in helping to restore and balance the energy of injured tissue. The human body functions between a frequency range of 62 to 68 Hertz.

2. **Output Current**: 10 to 600 microamperes. The higher levels (500 microamperes) increase the uptake of amino acids, building blocks for tissue repair, increase energy levels and calcium uptake. They also enhance endorphin release, body’s own natural pain killers. Lower levels stimulate endorphin production over a longer period providing longer lasting pain relief (48 hours or more). The lower microampere settings enhance healing while the higher ones are more effective for pain control.

3. **Constant Current Generator**: Provides an output current that fluctuates within a very narrow range. The selected current setting is more accurately main-
tained providing better clinical results.

4. **Maximum Output Voltage:** The most effective treatment results occur when the unit has a voltage of 50 and is capable of fluctuating when the resistance of the tissues change. Having the ability to vary the voltage maintains a constant current.

5. **Polarity:** Units should have the flexibility of putting out currents with a positive, negative and/or alternating form of positive and negative. Negative current produces dilation of the blood vessels and has a heating effect. Negative polarity softens trigger points, scars, destroys bacteria and improves circulation. Indications include: adhesions, fibrotic nodules, chronic irritations, numbness and infections. Positive polarity works to decrease circulation and has an “icing” effect. It is effective in decreasing inflammation, reducing nerve irritation, and it has a more analgesic effect than the negative polarity. Indications include: nerve root irritation, swelling and acute injuries.

6. **Waveform:** The most effective waveform is one that is gentle and has a longer duration as compared to units that provide a brief, sharp, spiked pulse stimulation. The patented “Tsunami” waveform provides a longer direct current pulse duration which translates into subsensory stimulation.

7. **Independent Channels:** This feature enables the creation of interferential stimulation. In layman’s terms it means that each generator puts out separate frequencies which combine. This combination produces additional frequencies by addition and subtraction. For example, using two frequency settings of 3 and 5 Hertz produces the following
combination: 2, 3, 5 and 8 Hz. Using interferential currents has proven clinically to be extremely effective in treating soft tissue injuries.

8. **Biphasic Polarity:** Having a unit capable of alternating polarities from positive to negative enhances healing by flushing out waste products resulting from injury plus the chemical factors that cause pain. In reality it is like alternating ice and heat in the area of injury.

Contraindications: These include the presence of an electric demand-type cardiac pacemaker or use on a patient with cancer because of the possibility of stimulating new cell growth. Also the FDA has stated that the safety during pregnancy has not been established. Other suggested warnings include use on patients with suspected heart problems or epilepsy. Caution is urged with transcerebral application, use over the laryngeal and pharyngeal muscles, transthoracic application over the heart, treatment over the carotid sinus, or treatment over areas with a tendency to hemorrhage.
Micro-Current Therapy - The “Magic Wand” That Can Reduce Pain and Stimulate Healing

Figure 33. Precision Micro Unit: Professional model.

Figure 34. Home Unit: This unit provides many of the features of the professional model but at a fraction of the cost. The features include: Full range of micro-currents (40 to 600), wide frequency range (.3 to 90), constant current generator, Tsunami wave, soft waveform for healing and sharp waveform for pain control, and alternating positive and negative current. It also provides probes for treating localized areas and acupuncture points and connection for self adhesive pads.

(Both units available from ICNR, Inc. (800) 272-2323.)
Case Study: 30 – Chronic Tennis Elbow

Ellen had been suffering from a chronic right tennis elbow and right shoulder pain for over a year. Traditional medicine verified the diagnosis but was unable to resolve the problem with drug therapy. This problem created major unwelcome daily life-style changes. When healthy, most people do not consider all the movements necessary to carry on daily living. When a structural limitation occurs, one’s perspective is quickly altered. Reduced function of the right shoulder and arm severely curtails one’s daily activities. Routine activities such as using a hair drier, combing one’s hair, putting on a pull over sweater, lifting packages, placing a dish in the cupboard, and driving were all experiences that produced pain every day of this patient’s life.

Ellen was referred to our office by a personal friend who suggested taking an alternative approach. She presented herself for examination and evaluation of her problem. As is often the case in patients who suffer with chronic pain, they are walking time bombs. That is they have structural and nutritional imbalances that coexist with relatively healthy muscles that can tolerate the existing distortions. However at some point in time, the dike breaks. And that was exactly what happened in Ellen’s case. She presented with a dental abnormality in the form of a lack of proper support on the posterior right back teeth, nutrient deficiencies in vitamin C, A, E, micro (manganese, zinc, chromium, etc.) and macro (calcium, magnesium, potassium) minerals and quality protein in her diet. The lack of proper dental support on the right side set off a domino effect:

1. A compression of the right side of her cervical vertebrae.

2. Muscle spasm of the strap muscles on the side of the neck which sandwich the brachial plexus of nerves that supply the arm.

3. Nutritional deficiencies that perpetuated the muscle weakness and spasm.

In order to resolve Ellen’s problem, all the variables had to be dealt with at the same time. Dental support was provided in the form of building small lifts on the biting surfaces of the back right teeth. This procedure corrected the abnormal tilt of the upper which reestablished balance to the foundation of her skull. This in turn
Within fifteen minutes following treatment, Elizabeth was completely out of pain.

realign the dural membrane system, which works like strings on a puppet and directly affected the upper three cervical vertebrae to which it attaches. Rebalancing the dural tube neutralized the tension on the muscles, blood vessels and nerves of the neck and restored full function back to Ellen. To aid the muscle spasm, nutritional support was prescribed (natural vitamin C, organic minerals and a natural anti-inflammatory formulation). These nutrients are essential in supplying the raw materials for the muscle fibers to remove the excess waste products that have accumulated, repair any injured tissue, and relax the fibers. The final piece of the puzzle was provided by direct micro-current stimulation to the local painful areas and acupuncture points. The Tsunami waveform plus low current helped flush out waste products, reset the nerve sensory system, relax muscles, and stimulate endorphin release. Within ten days Ellen was back to normal without pain or limitation. Diagnosing the factors that caused the problem and focusing on correcting them helped cure the patient as opposed to masking the pain symptoms and hoping the problem goes away.

Case Study: 31 – Acute Rib Fracture Pain

Elizabeth was suffering from a broken rib. Her physician took a chest x-ray and made the confirming diagnosis. Since conventional medicine has no definitive treatment for a broken rib, the patient was told to grin and bear it. A prescription for pain was issued as needed.

While in our office for a routine visit Elizabeth had shared her story of woe. The concept of how micro-currents worked was explained and Elizabeth consented to treatment. The soft cotton tipped probes were applied through the rib cage where the fractured rib was located. The sub-sensory current was applied in various directions through the painful area. The patient was instructed to raise her arm up until the pain was at its maximum. At that precise position additional micro-currents were applied to the fracture site. Within fifteen minutes following treatment, Elizabeth was completely out of pain. She was able to cough, raise her arm and rotate her upper body without any pain. One fifteen minute treatment was performed and the
patient had no return of any pain or discomfort from that visit on.

Case Study: 32 – Chronic Seventeen Year Severe Migraine

During the past seventeen years, Crystal had run the gamut of conventional medical treatments for severe daily migraines. Being a registered nurse, Crystal sought out top headache specialists both in Canada and the United States. In 1995 Crystal hit bottom. She was hospitalized for hallucinations which were the direct result of a toxic drug interaction from several of the prescribed medications. During the two years following that frightening episode, Crystal’s life went down hill; unable to function because of daily migraines, overlaid with potent medications, her daily existence consisted of just getting through each day.

As fate would have it, a friend of Crystal’s husband lent him an audio cassette program on the PAR (Physiologic Adaptive Range) Concept. After listening to the information, he felt that his wife’s migraines could in part be due to a combination of structural and nutritional imbalances. Another twist of fate occurred when I was lecturing in Canada. Through several mutual friends a meeting was arranged at the hotel were the seminar was held. After gathering a brief medical history, personal interview and cursory examination of Crystal’s cranium and dental misalignment, I was convinced that her chronic migraines were directly caused by cranial, dental and nutritional distortions. With these positive preliminary findings, I suggested that Crystal make plans to visit my office.

Several weeks later Crystal presented herself to my office for an in-depth evaluation. The results of the 24 hour urinalysis showed the patient to have a very low level of calcium and an alkaline pH which prevents uptake of minerals in the intestine. The Accu-Liner Analysis revealed that the foundation of her skull deviated from normal- it tilted upward on the right by only 2 millimeters while the lower left was deficient by 2 millimeters. The patient also had a sacroiliac weakness on the right side, which coincided with the decreased vertical support and severe spasm of the external pterygoid muscle (attaches to the disc in the temporomandibular joint). Clin-
By the end of that three hour session, Crystal’s headaches were greatly diminished.

ically, the patient also gave a history of an under active thyroid and under function of the anterior pituitary gland. A treatment plan was formulated and treatment was provided during the next three hours.

To enhance calcium uptake, the patient was given both an easily assimilatable form of calcium (calcium lactate) and a plant enzyme to acidify her system. A natural thyroid hormone (Naturthyroid-Jones Pharmaceutical Company) was given at the dosage of 4 grains per day. To address the anterior pituitary imbalance, a pituitary protomorphagen was given. Protomorphagens are made from raw glandular material from an animal. It supplies the blue print for the repair of the organ it was derived. The patient’s cranium and pelvis were corrected. Microcurrents were used to reduce the muscle tightness in the cervical and shoulders and stimulate the master pain acupuncture points. Lastly, the teeth were built up to provide proper support and level out the foundation- the maxillae. The treatment plan focused on replacing, as quickly as possible, as many bricks that were out of alignment. Since the patient had been suffering for the past seventeen years, abnormal muscle patterns had developed and served to lock in the muscle spasms in the head, neck and shoulder areas.

By the end of that three hour session, Crystal’s headaches were greatly diminished. By the next day Crystal stated that she could not believe how great she felt. On her way home she upgraded her airline seat to first class and indulged herself with some wine, which previously would have triggered a severe migraine but now it had no painful effect. Within one week after the initial visit Crystal lost ten pounds without changing her life-style. Now that her thyroid was being supported her body metabolism kicked in and excess weight just started to melted away. As the underlying problems started to be pealed away, Crystal also discovered another source for her headaches- diet soda. What most people do not realize is that NutraSweet, artificial sweetener commonly used in many soft drinks, breaks down into formaldehyde in the body. This substance is the same chemical used to embalm dead bodies. It is very toxic and can even trigger off epileptic seizures. Crystal’s healing journey is not yet over. Many choices regarding life-style changes must be made in the way
she eats. In order to totally resolve the other headache variables Crystal’s body must be detoxified with specific nutrients, consumption of natural foods and drinking good quality water.

These cases reveal both the complexity of the human body and also its simplicity. By reestablishing balance of the major components of the structural body and rebuilding the body nutritionally and erasing the old memory patterns stored in the muscles, the patient’s system is capable of rebounding quickly to a physiologically adapted state of health.
References


Auriculotherapy

This form of therapy was discovered back in the early 1950s by a French physician, Paul Nogier. Dr. Nogier’s research uncovered the astonishing correlation of the structure of the ear to that of the rest of the human body. When visualized, the fetus’ body can be projected onto the auricle. The head is situated at the bottom of the ear while the hands and feet can be found at the top of the auricle. Not only is the shape similar but every point of the body has a corresponding ear point. The corresponding points are noticeable only when palpated and the individual is not healthy. During the initial stages of dysfunction, localized sore spots will be present on the ear. As the body becomes more chronically ill, specific projections will appear and become painful.

Looking at the ear closely, one sees that it is shaped exactly like a human embryo and in essence represents a microcosm of the whole body. Acupuncturists consider the ear one of the most important parts of the human body. As noted in the third diagram, the ear contains tiny acupuncture points which correspond to every part and organ in the body.

The connection between the ear and the various body parts is explained by the extensive innervation of the ear and the multiple connections with the central nervous system. This interrelationship provides the basis for auriculotherapy. As stated by Dr. Nogier, “The ear is both a dashboard and a control center by means of which the illness can be treated.”

Therapy is applied by means of physical agents, e.g., massage, acupuncture, electrical stimulation, and cauterization. This author has expanded on Dr. Nogier’s original work by utilizing soft laser in combination with galvanic stimulation (therapeutic use of direct current). The results have been tremendous.

Use of soft laser on the auricular points has been very effective especially in treating patients with acute and
Victims of whiplash injuries, falls, sprains and strains, and TMJ related muscle pain respond well to auriculotherapy.

chronic muscle spasm pain. The post-trauma patient is frequently plagued by such suffering. Victims of whiplash injuries, falls, sprains and strains, and TMJ related muscle pain respond well to auriculotherapy. Laser treatment is remarkable in that the acute pains are often alleviated almost immediately. In those cases in which the pain pattern was not completely resolved, the severity of the pain was lessened to a great degree.

Case Study: 33 – Anna

Anna, a 66-year-old practical nurse, was involved in a motor vehicle accident. The car in which she was a passenger was struck from the rear. As a result of the impact, Ann’s head hit the inside roof of the car. Immediately following the injury, Anna began suffering with frontal headaches, bilateral neck pains, right shoulder pain, shooting pains across and down her lower back and along her right leg. In addition, she experienced symptoms of “jawlash” which included painful jaws and bilateral pains in the temporal area.

Treatment focused on a combination of galvanic stimulation in conjunction with soft laser acupuncture. Specific points on Anna’s ear, upper neck, hand, TMJ, and painful muscle trigger points were stimulated. The patient experienced immediate relief of pain and increased mobility of her neck. When Anna returned two weeks later for follow-up therapy, she stated that her headaches were completely gone, the shooting pains across and down her back and right leg were gone and that she never felt better.
Figure 35. Dr. Nogier has stated that, “The ear is both a dashboard and a control center by means of which the illness can be treated.”
**Case Study: 34 – Esther**

Esther came to my office seeking relief from upper back pains which resulted from a fall. While shopping in a local supermarket, Esther reached for a product on an upper shelf. There was a puddle of water in the immediate area and before she realized it her feet went out from under her. On the way down, she apparently struck two shelves causing trauma to her back about the level of the upper portion of the shoulder blades. In addition, the left leg and knee were injured. As a result of her inability to function without pain, Esther could no longer perform her duties as a dance instructor.

Conventional drug therapy and physical therapy were used by previous doctors, but to no avail. Esther was also tired of taking the pain killers and muscle relaxers. The medication not only failed to relieve the pain but made her too drowsy to function. Even though her problem was chronic and lasted over a year, immediate relief resulted from the first soft laser treatment. As with previous pain patients, all the associated acupuncture points were treated. By the third treatment session, the patient’s pain pattern had been reduced enough for her to begin slowly working out to get back in shape so that she could resume teaching dance.

It is this author’s opinion that traditional medicine has reached its peak of sophistication. The advances in chemotherapy, exotic surgery, and new generation computer assisted tomography (CAT) scans have brought tremendous changes to the healing arts. The next phase within the healing professions will witness utilization of laser acupuncture therapy, cranial and structural manipulation, electromedicine, nutritional support, and a return to more natural eating habits as the principal means of restoring and maintaining health.
Potpourri of Unsuspecting Sources of Pain

Blockage of acupuncture meridian energy - Case Study: 35 – 25 year old Female

During my 25 years of clinical experience treating pain patients, I have witnessed some odd causes for chronic pain. In oriental medicine pain signifies a blockage of energy at a particular point. That blockage can result from scar tissue due to a previous surgery. A case in point involved a female patient who suffered 24 years with burning pain down the left sciatic nerve. The medical history noted an exploratory surgical procedure for low back pain. At the age of 24 the patient was surgerized for constant low back pain that did not respond to traditional medical treatment. Following surgery the patient was left with an unrelenting burning pain down the left leg. Contact with clothing in the area of the scar exacerbated the burning pain. Scars represent an area of dense fibrous tissue that can block energy flow through an acupuncture meridian if it happens to cross its path. Also in approximately 60% of all cases, pain fibers within the scar become entrapped as the healing tissue contracts. An eighteen inch scar was present in the low back area. Cold helium neon laser light was applied over the full length of the scar in a sweeping motion. The first treatment session lasted five minutes and brought a 60% reduction in the burning pain. The next day an additional 5 minute treatment was performed and the burning pain totally resolved never to reappear.

Thyroid and gall bladder pain - Case Study: 36 – Texas Female

A patient from Texas was brought to our office by her husband. The wife had been suffering with chronic pain for a period of seven years. Two distinct pain patterns were present. The first involved diffuse localized areas of pain, multiple trigger points. The worst ones were located bilaterally on the side of the patient’s head. The second focal pain area was located between the shoulder blades. The source of pain for the diffuse trigger points was a combination of two factors: an underactive thyroid coupled with a misalignment of the teeth. This was quickly
resolved in two days by providing proper dental support on the back teeth and also prescribing a natural thyroid hormone, NaturThyroid. The second site of pain was located at the fourth thoracic vertebrae. This area is the direct nerve innervation for the gall bladder. Placing three AF Beta-food tablets (derived from beet roots and leaves) under the patient’s tongue and allowing them to dissolve for three minutes the pain between the shoulder blades completely resolved. The patient had been suffering from an undiagnosed chronic gall bladder problem for the past seven years and the pain was being referred back along the fourth thoracic nerve which innervates this organ.

**Mercury Headaches - Case Study: 37 – Ray**

A poison by any other name is still a poison. Mercury is the second most toxic substance on this planet second only to plutonium. Ray was a regular patient in my practice who sought my services after reading an article telling of the adverse affects of mercury fillings. He was amazed to learn that 50% of the so called “silver” filling was mercury and only 30% was silver. He was also astonished to learn that when one has gold crowns present in the mouth, he had several, the galvanic currents created by the presence of the dissimilar metals causes the mercury to leach out 10 times faster than if only mercury fillings were present. Alarmed and also suffering from chronic headaches for the past 20 years, he decided to have his mercury fillings replaced. Following the removal of all his metal fillings, Ray’s headaches completely disappeared forever.

**Faulty lens fabrication - Case Study: 38 – Joann**

For the past several months Joann suffered unrelenting neck pain on the right side which appeared suddenly. A prior history of a whiplash injury had caused her chronic head and neck pain for the past three years. However the neck pain was 98% resolved before the new episode. When questioned Joann could not relate any recent triggering events such as trauma, strains, etc. Joann was a treating
Immediately following correction of the lenses, Joann’s neck pain vanished.

**Multifactorial sources of pain - Case Study: 39 – Joann**

Prior to Joann’s episode with her eye glasses, she had suffered with chronic headaches and muscle spasm for a three year period. Often times patients who have chronic symptoms have several underlying factors which are causing the symptoms. A good diagnostician must be able to literally peel away the different layers in order to resolve the patient’s symptoms. Another basic concept is that most people have structural and/or borderline nutritional deficiencies prior to the triggering incident. In Joann’s case she had a pre-existing malocclusion, bad bite that was perpetuating a strain pattern within her skull and neck. She also had a gall bladder problem due to her liver’s inability to produce bile, which helps digest fats, and an underactive thyroid. A gall bladder problem will cause pressure in the chest area simulating a heart attack. It will also refer pain to the spine between the shoulder blades and up the back of the neck following the gall bladder acupuncture meridians. Head pain located at the crown of the skull can also accompany the patient’s right eye more lateral than normal. This distortion caused the eye muscles to be pulled too far to the right which distorted the sphenoid bone. The sphenoid bone makes up part of the orbit of the eye to which all the muscles of the eye attach except two. With the abnormal position of the sphenoid comes distortion of the dural membrane system which directly attaches to the upper three neck vertebrae and thus the muscle imbalance and pain was created. Immediately following correction of the lenses, Joann’s neck pain vanished.
other symptoms. Headaches associated with an underactive thyroid are usually worse upon arising and get better as the day progresses. An underactive thyroid also causes a generalized spasm of muscles and makes it virtually impossible to calm down cervical soft tissue injuries due to whiplash.

**Chronic Bone Infections - Case Study: 40 – Shelly**

Shelly was doing fine until her dentist cemented permanent dental bridgework that replaced a recently extracted upper front tooth. That dental appointment was the beginning of a fifteen year saga of facial pain. In an attempt to resolve the pain, root canal therapy (removal of the nerve) was performed on the upper left canine tooth. This problem still persisted and Shelly was thrust on a journey through a maze of medical and dental specialists seeking a solution. The patient was referred to my office for an evaluation and consultation. Previous x-rays of the upper bridgework were reviewed. Several areas in the bone around the previously extracted tooth and the root canaled upper left canine tooth revealed suspicious sites hinting the presence of bone cavitations. Bone cavitations represent areas of chronic infection and necrosis (deteriorating bone due to an inadequate blood supply coupled with a minimum regenerative capability) that lingered long after the tooth was removed and the nerve taken out. Often times these involved areas are not detected in routine x-rays and must be evaluated under local anesthesia. After being told of the likelihood of the presence of a bone cavitation problem, the patient went for a second opinion to a major dental school. Their verdict was that no such thing as cavitational problems even exist. Puzzled the patient returned home to her family dentist who after much deliberation proceeded to extract the upper canine tooth. The day Shelly’s dentist removed that tooth was the day her pain disappeared. The unfortunate point is that many patients seek out major universities for their expertise when in reality most lag seriously behind in the field of alternative therapies. The public relations departments of research hospitals and universities have created an illusion that their institutions have the latest advances in
medicine when in fact they have been instrumental in suppressing effective therapies through the years. Motivation for these institutions to enter the field of alternative health care is based purely on economics and the fact they have been losing market share.

Research on cavitation problems was pioneered by Dr. Eugene J. Ratner back in the 1970’s and twenty-seven years later the major universities are still ignorant of its existence. Research by Glueck, McMahon, Bouquot et al (The pathophysiology of alveolar osteonecrosis of the jaw, Journal of Laboratory Clinical Medicine, pp. 481-88, May 1996) proved scientifically that intravascular clots, inability to breakdown these clots, and the body’s inability to repair the degenerating bone cells are major contributing factors in NICO (Neuralgia-Inducing Cavitation Osteonecrosis).

Figure 36. Referred pain pattern associated with the lower posterior molar teeth: The predominate referral is to the region of the temporomandibular joint. Rarely is pain referred to the opposing teeth. In several instances involving both dental and bone breakdown, there was extension of the referral path to the upper front region, including the eye region of the same side.
Figure 37. Referred pain pattern associated with the upper front region: For the central and lateral incisor teeth, the pain-distribution path is vertically up to the lower margin of the eye, then directly upward to the upper margin of the brow, or indirectly upward around the inner opening of the eye lid. A periodic component of lesser intensity may pass vertically downward to the lower jaw. For the upper canine region, the pain-distribution path is vertically up to the lower margin of the eye and then laterally, in a reverse “C” shaped curve around the outer corner of the eye, to the superior margin of the brow. A periodic component of lesser intensity may pass vertically downward to the lower jaw.
Figure 38. Referred pain pattern associated with the upper posterior second and third molar teeth: The pain distribution path is to the lateral surface of the cheek bone, with a possible diffuse upward component to the temporal region, which may extend to the top of the head. There may also be a referral pattern behind the ear and curving up and around it. There may also be a horizontal component that extends anteriorly and horizontally to the upper canine tooth, and an anterior-inferior component to the anterior-lateral margin of the tongue.
Figure 39. Referred pain pattern associated with the upper premolars and first molar: The pain-distribution pattern is predominantly up, with diffuse termination in the temporal region. A less frequent component may extend down from the premolar region in a reverse “C” shaped path lateral to the corner of the mouth, to terminate in the lower jaw region.
Arthritic joint pain - Case Study: 41 – Charles

Extensive joint pains throughout the body caused Charles to cut his Alaskan fishing trip short. The cold weather wreaked havoc with his painful arthritic joints. The patient was not a happy camper especially since he was on several potent medications prescribed by his physician and assured that the pain would not be a problem during his fishing trip. Out of desperation Charles reluctantly came to our office after being referred by his sister-in-law. A basic 24 hour nutritional urinalysis revealed a severe deficiency in vitamin C. Three clinical symptoms of a vitamin C deficiency are: bleeding gums, fatigue, and sore joints. Charles was placed on 3600 mg. of a natural vitamin C (foodform matrix) per day. In just six weeks all the arthritic pains were gone. Charles soon became a believer and has faithfully taken his nutrients and had not experienced any further arthritic pain in over three years.

Over acidity and twenty year migraines from faulty partial dentures -

Case Study: 42 – Blanche

One of the medical fad diagnoses of the late 1990’s is acid reflux. Blanche was tagged with this label for a series of symptoms which included a chronic condition of projectile vomiting soon after eating, severe heartburn, severe stomach pain and constant sour taste. Blanche was told that she would have to live with the problem. To help ease her pain during sleep she was advised to use two pillows to prop up her head to help reduce the acid from affecting her esophagus. Blanche was referred to our office for severe migraine headaches which she had for the past twenty years. The acid reflux condition came up during the course of taking her medical history. A 24 hour urinalysis uncovered that she had an extreme acid condition which explains why she would have projectile vomiting soon after eating. Ingesting food stimulated additional secretion of acid worsening an already too acid condition. At first the migraine symptom appeared unrelated to the stomach problem. However, her bad bite caused dysfunction of her upper neck which in turn stimulated the sympathetic nervous system. When the sympathetic nerves are
Potpourri of Unsuspecting Sources of Pain

Nickel is toxic to humans.
It can cause cancer, rashes and pain.

Activated a major hormone is released from the adrenal glands, cortisol. This hormone in turn causes the secretion of hydrochloric acid in the stomach. By correcting Blanche’s bite her twenty year migraine problem disappeared in three weeks. Prescribing organic minerals and natural B-complex vitamins helped alkalize her system. Within six months her acid reflux and projectile vomiting vanished. Blanche also had trouble sleeping because she was always too wound-up at bedtime. The homeopathic remedy, gelsemium, was prescribed and her sleepless nights resolved as fast as her migraines.

Nickel sensitivity headaches - Case Study: 43 – Sally

Sally developed headaches soon after she received her new pair of eye glasses. My first impression was that a problem existed with her lenses. But after kinesiologic testing it turned out to be the metal frames of her glasses. Who would ever think that the metal alloy could have this type of an effect. The key factor is the nickel content of the metal frames. Different manufacturers use varying amounts of nickel as a hardening agent to prevent bending. Nickel is toxic to humans. It can cause cancer, rashes and pain. Sally’s optometrist was puzzled over the entire incident but agreed to replace the frames with a pair that kinesiologically tested OK for Sally. The same lenses were used but placed in a frame that was compatible and did not disrupt Sally’s electromagnetic field. As soon as the new frames were worn Sally’s headaches dissipated.

Twenty year head pain due to trauma - Case Study: 44 – Richard

Richard suffered head pain for twenty years. While in the military, someone attacked Richard and hit him on the top of his head with a huge truck monkey wrench. The thunderous blow started the unrelenting pain that plagued him for the past twenty years. Neurologists, numerous pain specialists, psychiatrists and anyone who had a plausible treatment or new medication was sought. By chance one of our patients who was a neighbor referred him to our practice. Since the original
trauma was a physical blow to the head it was only logical that a cranial distortion was present. An unwinding cranial technique was employed to release the jammed sutures, the interconnections between the skull bones, were freed up and the dural membrane released. Within five minutes after treatment began on Richard the headache completely subsided never to return again.

**Trigger zone for chronic knee pain - Case Study: 45 – Jimmy**

Jimmy could not squat down for the past fifteen years because of an old injury to the right knee. The pain was unbearable anytime he had to bend the knee even slightly. Jimmy’s wife was being treated at our office for cervical pain and related her husband’s story. She asked if the same laser treatment that worked so well for herself could benefit Jimmy’s knee pain. Since laser therapy is non-invasive, I suggested that we had nothing to lose by trying. Within fifteen minutes after treating the knee area with the soft helium neon laser light, I asked Jimmy to perform a full squat. He looked at me as if I was crazy but he quickly realized that the only way we would know if the treatment worked was to try it out. Sure enough, Jimmy started down slowly at first and then rapidly to a full squat. To his amazement he experienced absolutely no pain whatsoever in performing the maneuver. That one treatment totally resolved his chronic knee pain. It has been six years since that miraculous day and Jimmy is still pain free.

**Carpel Tunnel and left side body pain - Case Study: 46 – Beverly**

Beverly suffered from pain down the left side of her entire body for a ten year period. She also suffered from carpal tunnel symptoms in her left hand. A physical therapist who had evaluated the patient referred her to our office. The patient had a severe malocclusion which caused tension of her dural membrane system and compressed the muscles in her neck which was pressing on the brachial plexus of nerves. This bundle of nerves supplies the entire arm, wrist and hand. Even though the symptom was located in the wrist/hand region the problem was being generated
From the neck. Once the bite was corrected by means of temporary resin build-ups, the carpal tunnel problem disappeared. The patient has been pain free for the past 8 years.

**Keyboarding and Carpel Tunnel Syndrome - Case Study: 47 – Julia**

Another carpal tunnel saga involved a computer technician, Julia, who spent much of her day key boarding on the computer. With no prior history of any wrist or hand pain or dysfunction, Julia’s symptoms appeared out of the blue. Although her problem only had a two month duration it severely hampered her work and potentially threatened to end her career. When examined Julia had an underactive thyroid condition. When the thyroid is not functioning properly, the muscles throughout the body become weakened. Since Julia’s daily activities over stressed the muscles of the wrist and ligaments this site became her weak link. Julia was tested with various nutritional supplements but responded stronger with a thyroid gland protomorphagen which supplied the precursor nutrients for the production of thyroid hormone. Julia was on the nutritional support for just two weeks when all her symptoms of pain, tightness and aching disappeared and she was able to resume working full time on the computer without any restrictions.

**Case Study: 48 – James**

James suffered severe daily headaches for fifteen years and also suffered the symptoms of carpel tunnel. James’s problem also stemmed from a deep overbite and retruded lower jaw which was responsible for triggering off the cervical muscle spasms and entrapment of the plexus of nerves that supplied the hand. Within several months after insertion of a lower soft mouth appliance the severity of James’s migraines were reduced by 50% and he experienced a 75% reduction in his carpal tunnel pain.

The last three patients all had similar symptoms but from different causes. Allopathic or conventional medicine treats all symptoms the same way. Most physicians use 10 different drugs.
Figure 40. As noted in the anatomic drawing, the plexus of nerves that leave the spinal cord in the neck passes through two muscles as it descends down to the arm, wrist and hand. With malocclusion comes a compensatory distortion of the cervical vertebrae and spasm of the muscles that attach in this region. Nerve entrapment is the cause for the Carpel Tunnel symptoms experienced by the patient.

Reprinted from Myofascial Pain and Dysfunction The Trigger Point Manual Janet T. Travell, M.D. and David G. Simons, M.D. Williams and Wilkins.
to treat 90% of their patients. If the blood pressure is elevated they use a diuretic as their first line of defense. If the patient is suffering pain and swelling they prescribe a non-steroidal anti-inflammatory. If the patient has gall stones then surgery is the treatment of choice. They are indoctrinated to use set protocols for specific symptoms regardless of the cause. Although this form of practicing medicine is conducive for treating large numbers of patients, it does not face up to the physician’s true responsibility of diagnosing the underlying cause. Each patient’s cluster of symptoms can be caused by different factors and will not always respond to the same treatment. One size does not fit all when it comes to treating humans.

Chronic shoulder pain due to an underactive thyroid - Case Study: 49 – Charlie

Charlie is a dentist who was plagued with chronic right shoulder pain for almost a year. The deep pain within the joint was more than just a nuisance because it made practicing dentistry painful as well as effecting the quality of his tennis. Charlie’s dental office was in the same professional building were his orthopedic doctor practiced. Because conventional therapy was unable to modify the pain and limited motion, Charlie was scheduled for an exploratory arthroscopic surgical procedure. By coincidence, Charlie was attending one of my office seminars that dealt with diagnosing the origin of chronic pain. When a volunteer was requested for demonstration, Charlie was the first to come forward. Demonstrating the use of applied kinesiology uncovered that Charlie had an underactive thyroid gland. The muscle that relates directly with this organ is the teres minor muscle which attaches directly into the shoulder joint.

The area note in red (Figure 42) represents the referred pain pattern that occurs when the teres minor muscle is in spasm and/or the thyroid gland is functioning below par.
Figure 41. The teres minor muscle is one of the rotator cuff muscles; functionally it is linked to the thyroid gland.

Figure 42. Reprinted from *Myofascial Pain and Dysfunction The Trigger Point Manual* Janet T. Travell, M.D. and David G. Simons, M.D. Williams and Wilkins.
Potpourri of Unsuspecting Sources of Pain

**Essential fatty acid and B-complex deficiency headaches - Case Study: 50 – Amy**

Amy suffered chronic headaches for a thirteen year period from age five to eighteen. The headaches pre dated her four bicuspid extraction that were carried out for orthodontic treatment to straighten her teeth. Two key factors in Amy’s case was a history that when ever she ate sugar or refined carbohydrates she was wrecked. Whenever any one feels worse after eating sugars they have a deficiency in B-complex vitamins. The other factor was the relief from non-steroidal anti-inflammatory drugs. Whenever a patient gets relief, it signifies that the patient has a deficiency and imbalance in essential fatty acids. Amy was placed on natural B-complex vitamins and black currant seed oil. The B-complex supplements helped break down the sugars and simple carbohydrates while the black currant seed oil provided the precursors for the production of prostaglandin E-1, which reduces pain and swelling. Providing the correct raw materials enables the body to self correct and heal itself. If the physician listens to the patient long enough and asks the right questions, the patient will tell the doctor what is wrong with them.

**Fibromyalgia - Case Study: 51 – Lisa**

Lisa was tagged with another popular pain label of the 1990’s- Fibromyalgia. She had diffuse pains throughout her body accompanied by generalized stiffness. Traditional medicine had no definitive answers for Lisa who was told to live with the problem. When checked out with an ingenious diagnostic technique called CRA (Contact Reflex Analysis) Lisa tested positive for having an underactive thyroid gland. Various nutrients were tested to determine which one was needed to kick start the thyroid. The one item that tested the best was organic iodine at a dosage of one tablet three times a week. To Lisa’s amazement all her symptoms disappeared in ten days.
Folic acid deficiency, depression and a misaligned bite - Case Study: 52 – Patricia

Patricia suffered depression following a riding accident, the death of her favorite cat, and the death of her grandmother. Just prior to her grandmother’s death she had been thrown from her horse and incurred an injury to her right shoulder. The severe pain prompted her to be hospitalized and thoroughly checked out. For six days she underwent a full range of testing with no positive findings. She also was being prescribed a narcotic for the pain. By the sixth day she pleaded with her mother to take her out before the doctors made her into a drug addict. Pat’s blood work-up from the hospital was evaluated during her visit at my office. It was interesting to note that she had a documented deficiency of folic acid and the doctors at the hospital were giving her antidepressants along with the Demerol for pain. If a gas station attendant told you your car was low in oil and then recommended that you put water into the crank case you would be pretty upset. It is a commonly known fact that a folic acid deficiency can cause depression along with fatigue, muscle spasm, painful trigger points, poor memory and generalized stiffness. It seems a little absurd to recommend a medication in an attempt to mask a clinical symptom that is being caused by a known nutritional deficiency. Patricia was placed on a natural supplement of B-12/Folic acid and in ten weeks her depression resolved. The cervical and shoulder pain completely resolved ten days after her teeth were built up with resins to correct a loss of posterior vertical height and a cant of the maxillae. Although the misaligned bite pre-dated the accident the muscles were healthy and able to handle the structural imbalance. Another interesting side effect was that Patricia did not require any further chiropractic care following the dental correction. She had been treating twice per week on a regular basis for the past year. To date it has been over two years and she has not required any manipulative treatment. When the main structural components of the body are in parallel alignment, the rest of the body has the ability to self correct.

NutraSweet- How sweet it’s not

Aspartame is a chemical compound composed of three main substances: phenylalanine, aspartic acid, and meth-
anol (wood alcohol). When stored under high heat conditions (1200F) or when it is ingested the wood alcohol, methanol, is chemically transformed into formaldehyde and formic acid. Formaldehyde is the same substance used to embalm the dead. Formic acid is the substance that is produced by ants and causes the sting when bitten and wood alcohol is what causes blindness and death in many skid row alcoholics. Aspartame has been well documented by H.J. Roberts, M.D. in his book, Aspartame, Is It Safe? as well as other medical researchers. The FDA has listed 92 known major symptoms that are directly attributable to the intake of aspartame. These include: Headaches, irritability, muscle spasms, dizziness, ringing in the ears, insomnia, vertigo, memory loss, joint pain, weight gain, blurred vision, depression, fatigue, grand mal seizures, brain tumors and other cancers, disability and death, blindness, birth defects, Alzheimers and is deadly for diabetics to name a few. Many patients have commented on the reduction and elimination in their headaches upon the discontinuance of Aspartame. This is one poison that humans can certainly do without!

Case Study: 53 – Mike

Mike is a physical therapist who had severe migraines since he was twelve years-old. Now in his early thirties, Mike was motivated to take action. After his wife’s headaches of seven years duration were totally resolved, he made a commitment to get to the bottom of his own problem. A series of diagnostic tests were performed to determine nutritional imbalances that might be the source of Mike’s headaches. He had an extremely acid pH condition which was the direct result of drinking a minimum of two liter bottles of diet soda a day. He certainly had more than his share of aspartame along with the other non-nutritional substances supplied in sodas. All sodas are made acidic (pH 2.6) for two reasons: first the manufacturer can increase the carbonation of the beverage when the solution is acidic; second, when the pH is 2.6 it acts as a preservative that is nothing will grow in it (bacteria or

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viruses) so it extends its shelf life of the product. Mike also was depleted in organic minerals and natural B-complex vitamins. Life-style changes were instituted, natural supplementation was started and within six weeks Mike’s migraines were gone. Better living is achieved through natural chemistry that is derived from food sources and not chemistry derived in test tubes.

MSM- Miracle supplement - Case Study: 54 – Alyce

During a routine visit, one of our patients complained of generalized pain, severe allergies to food and problem with fatigue. These symptoms had plagued her for over a year. What made her situation even worse was the fact that she was a waitress and exposure to the various foods evoked typical allergy reactions of runny nose, watery eyes and a general malaise. In addition, when ever she worked a double shift on the weekends she would crash on Monday in total exhaustion. Clinically it has been observed that patients with allergies have a deficiency in organic sulfur. Since most if not all the organic sulfur is destroyed with cooking and deterioration of the food from the time of harvest, a natural replacement was needed. MSM (Methylsulfonylmethane) was recommended since it has an incredible ability to coat the lining of mucous membranes (preventing allergens from entering), repair cell membranes, improve the influx of nutrients into cells and expulsion of waste products, detoxify organs, reduce surgical adhesions, reverse arthritic pain, eliminate asthma and scars. Alyce was placed on MSM with the precaution that she start with a low dose and progressively increase the number of capsules. Starting with a high initial dose will cause a rapid detoxification with the adverse side effect of headaches, flu symptoms and fatigue. On the tenth day, Alyce was shocked at the sudden disappearance of her allergies, pains and fatigue. It is marvelous to witness the magnificence of the human body. When the correct nutrients are provided, the innate intelligence takes over to heal itself. Methylsulfonylmethane, MSM, is not a medicine, a drug, or a food additive. It is a food component, a pure white sulfur powder. It is a nutritional food supplement found in all foods. It also comes from the
Within three minutes the pain totally resolved never to return.

Ocean and is water soluble. Sulfonyl sulfur is found in plants, meats, dairy products, and vegetation. Broccoli has a high concentration of MSM in its natural raw state. During normal preparation of food, MSM is lost because it passes out with the escaping moisture in the process of washing, drying, and steaming. It is the third largest ingredient found in your body after water and salt. The vitamin—people missed it because there was so little in their assay samples that they never thought it was important. They did however find a lot of sulfa which has been used effectively in wounds to burn and cauterize the tissue. Another derivative of sulfa is sulfites which food manufacturers put in meats to enhance the red color and in corn flakes to prevent the bugs from eating the flakes and they put sulfates in sausages as a preservative. People may be allergic to sulfa’s such as the sulfides and sulfates however sulfonyl, which is also in the sulfur family, is an essential nutritional factor that rarely if ever causes an allergic reaction. Everyone needs MSM on a daily basis to provide our bodies with the proper building materials it needs to maintain healthy, flexible cells every hour of the day. With the decline in the health of the cell comes the onset of degenerative diseases. The best prevention is to provide the raw material the body needs to repair itself.

Healing pain with magnets - Case Study: 55 – Barbara

A nurse who had knee surgery was left with post-operative pain. Following the operation the pain got progressively worse and lingered for three years until she was seen in our office. Barbara was receptive to an alternative approach especially since it was non-invasive. Researchers such as Robert O. Becker, MD and Bjourn Nordenstrom and others have discovered that injured tissue develops an excess of positive charges. Understanding this concept, the negative surface of a special ceramic healing magnet (4000 gauss) was applied over the area of greatest pain and another ceramic magnet with the positive side was placed directly opposite the area of pain. Within three minutes the pain totally resolved never to return.

Polarity distortions represent a definite triggering source for causing pain.
The use of acupuncture and laying on of the hands are other techniques that directly affect the energy of an injured area and should not be discounted just because there are not enough double-blinded studies to scientifically prove the effectiveness of the treatment. As a matter of fact only 10 to 20% of all procedures currently used in medical practice have been shown to be efficacious by controlled trial. This is according to the Office of Technology Assessment Publication #PB286-929 as reported in Assessing the Efficacy and Safety of Medical Technologies.

These case histories have been presented in an attempt to open the eyes of those chronic pain patients who have run out of medical specialists and hope for solving their problem. These approaches are by no means a guarantee that they will resolve all of your problems. They do however offer new perspectives based on the latest clinical advances into the healing mechanisms of the body. Those chronic pain patients seeking out relief must do their homework to locate well trained practitioners who have good credentials and clinical experience. Networking with other patients who have had a positive experience is an excellent referral source. In addition, if you already are being treated by a natural healer, they may provide a referral to someone who has expertise in a field that may be beneficial to you. Also an established health food store usually is in contact with natural healers of various disciplines in their locality. Although small in number there is a growing number of medical doctors who have become enlightened, knowledgeable and receptive to natural healing. As with any health problem, the patient must learn to take responsibility and research as best they can to learn about their illness. The best patient is an educated patient. Some mistakes will be made along the way and the journey will be a definite challenge but in the end it will be rewarding.
A New Specialty Is Born

A NEW SPECIALTY IS BORN
Physiologic Dentistry

A grass roots movement has been developing within the ranks of the dental profession within the past thirty years. These professionals represent the pioneers in a field that has gone beyond the parameters of drilling and filling teeth, treating gum disease, extracting teeth, fabricating mechanical replacements for missing teeth, and teaching plaque control. As creative thinkers, these men have painstakingly linked various medical problems to a common dental origin—malocclusion. Researchers like Dr. Nathan Shore, Willie May, Harold Gelb, Alred Fonder, Harold Ravins, Stephen Smith, Carl Mestman, Justin Jones and many others have discovered the significance of the patient’s bite and its relationship to the rest of the body. Proper tooth alignment and bite helps establish:

1. A physiologic muscle length for the chewing muscles as well as those of the throat, neck, and shoulder.

2. A self-correcting mechanism for balancing cranial bones.

3. Sufficient vertical forces into the cranium which aid the pumping mechanism in distributing cerebrospinal fluid around and into the entire brain.

4. Proper head, neck, shoulder, spinal and pelvic posture.

5. Stability of the sacroiliac joint and pelvic complex.


7. Adequate blood and oxygen supply to the brain.

8. Neurologic balance of the sympathetic and parasympathetic nervous systems.


10. A patent airway within the eustachian tube (connects the middle ear and throat).
A malocclusion presents the body with a constant structural imbalance which translates into a state of distress. As defined by Dr. Hans Selye, distress always refers to an activity that is damaging. In 1936 Dr. Selye discovered the general adaptation syndrome in which all stressors such as physical, chemical, or psychological damaging agents will provoke a reproducible nonspecific body response. Although his original experiments were conducted on laboratory animals, the exact results have since been verified in humans. The body’s defense system provides a three-tier reaction:

1. Alarm stage: The body exhibits characteristic changes resulting from exposure to the stressor. The body’s nonspecific reactions involve a three phase response. First, the adrenal cortex (outer layer that produces hormones such as cortisone) becomes hyperactive and enlarges. Second, the thymus gland and lymphatic tissue shrink (these tissues relate to the body’s immune system). Last, gastrointestinal ulcers appear.

2. Resistance stage: Body resistance will follow if continued exposure to the stressor (malocclusion for example) results in adaptation. The signs of the alarm stage will disappear and resistance will be maintained.

3. Exhaustion stage: Long-term exposure to the same stressor, to which the body had previously adapted, will deplete the stores of adaptation energy. The signs of the alarm stage will reappear, may become irreversible, and if the individual or body fails to eliminate the causative factors, death usually results.

Selye defined stress as a state within the body which produces observable symptoms, not just vague or general
nervous tension. It was Selye’s contention that each of us tends to respond to stress with a particular set of signs. He believed that when these signs appear it is nature’s way of telling us to change our activity and find diversion. The following is a list of self-observable signs of stress:

1. General irritability, hyperexcitation or depression
2. Pounding of the heart
3. Dryness of the throat and mouth
4. Impulsive behavior; emotional instability
5. The overpowering urge to cry or run and hide
6. Inability to concentrate
7. Feelings of unreality, weakness, or dizziness
8. Predilection to become fatigued
9. “Floating anxiety” (being afraid but not knowing exactly of what)
10. Emotional tension and alertness; feeling of being keyed up
11. Trembling; nervous tics
12. Tendency to be easily startled by small noises
13. High-pitched nervous laughter
14. Stuttering and other speech difficulties which are stress induced
15. Bruxism, clenching or grinding of the teeth
16. Insomnia
17. Hyperkinesia (increased tendency to move about without any reason)
18. Sweating
19. Frequent need to urinate
20. Diarrhea, indigestion, queasiness in the stomach, and sometimes even vomiting
21. Migraine headaches
22. Premenstrual tension or irregular menstrual cycles
23. Pain in the neck or lower back due to muscle tension
24. Loss of or excessive appetite
25. Increased smoking
26. Increased use of legally prescribed drugs
27. Alcohol or drug addiction
28. Nightmares
29. Neurotic behavior
30. Psychoses
31. Accident proneness

The body reacts to any and all types of influences by entering a state of stress. Whether distortions of the cranial, dental or pelvic complex, physiologic or psychological dysfunctions exist, the three stages of symptoms are specific as mentioned previously. As these stress-related responses go beyond the physiologic adaptive range of the body’s ability to cope, a transition into distress occurs with clinical manifestations.
Dental Distress Syndrome (DDS)

Patients who have been labeled as hypochondriacs often suffer from the dental distress syndrome. Dr. Fonder has stated that “DDS is produced by maloccluded teeth (Figs. 43 and 44) and the resultant spasms and malfunctioning of the musculature of the jaws, head, neck, and shoulders routinely cause pathological alterations throughout all systems of the body and mind.” Many of these patients complain of chronic headaches (including migraine), dizziness, hearing loss, depression, eye pains, facial pains, anxiety, nervousness, forgetfulness, chronic fatigue, insomnia, sinusitis, indigestion, frequent urination, stomach ulcers, dermatitis, allergies, kidney and bladder complications, cold hands and feet, vague and distinct body pains and numbness, suicidal tendencies, sexual failures, and gynecological problems.

Dr. Al Fonder clinically observed and documented a host of structural body distortions routinely associated with an improper bite:

1. Lateral spinal curvature (scoliosis)
2. Forward spinal curvature (lordosis)
3. Humpback or backward spinal curvature (kyphosis)
4. Pelvic rotation
5. Uneven shoulder height
6. Side head tilt and forward head posture
7. Displaced organ position due to skeletal structural distortions
8. Reduction of blood, oxygen, and lymphatic flow in the head and neck

Dr. Fonder also observed clinically that removal of the dental distress allowed the body, in many cases, to self-correct - structurally, chemically, and psychologically (Figs. 44a, 44b, and 44c).
Figure 43. The deep overbite (loss of vertical posterior tooth support) represents one of the most common improper bites that cause the dental distress syndrome. Loss of support from back teeth can have a genetic factor or may come from premature loss of teeth, lack of adequate eruption, normal wearing down of the chewing surfaces of either dentures or natural teeth, clenching and grinding one’s teeth (bruxism), dental equilibration (grinding of the chewing surfaces by a dentist to correct an improper meshing of teeth), extraction of bicuspid teeth for orthodontic treatment, and intrusion of teeth due to prolonged use of a TMJ orthopedic appliance.
Figure 44. The retruded lower jaw represents another malocclusion that has the potential to distort body posture. (44-a) Dental structural distortions of this form are usually caused by either a narrow upper jaw (44-b) or backward tilting of the upper front teeth. (44-c) All dental malocclusions have the potential, to varying degrees, to alter total body functioning. Some areas directly affected include the cranium, chewing muscles, neck vertebrae, spine, pelvis, nervous system, immune system, digestive system and psychological performance of the individual.
**Figure 45a.** The before and after radiographs represent those of a 16-year-old boy who had a malocclusion. Dr. Fonder restored the boy’s bite by adding 1/2 mm additional height by means of an amalgam filling material on the lower second molar teeth. The after treatment x-rays reveal a definite decrease in the lateral spine (scoliosis) and backward bend spinal curvature distortions.
Figure 45b. A 21-year old student presented with a deep overbite malocclusion accompanied by an inward tilting of the upper and lower back molar and bicuspid teeth. Also present was a structural spinal misalignment in the form of a scoliosis and kyphosis (humpback). Treatment utilized upper and lower dental orthopedic expansion appliances which uprighted the back teeth and raised the jaw height. The before and after x-rays reveal the changes that took place.
Figure 45c. This chronically ill and despondent homemaker presented the following chief complaints: severe headaches, intense backaches, difficulty in negotiating stairs, balance problems, blurred vision, hearing loss, gastrointestinal problems, gynecological disturbances accompanied by severe premenstrual cramps. The headaches caused her to spend many days in bed. The backaches prevented her from raising her arms above the shoulders. Because conventional therapy was unable to alter her symptoms, she was advised to seek psychiatric help. At one point, the woman contemplated suicide. (continued next page)
Physiologic dentistry grew out of thousands of clinical observations like those made by Dr. Fonder. The honors must go to the small percentage of inquisitive and persistent dentists who had the courage to pursue their investigations. These pioneers noticed the disappearance of many medical problems once their patients’ malocclusions were corrected.
Dental “Hatband” Headache

One of the most frequent violations of the cranium occurs when conventional dental techniques restrict cranial bone motion by crossing the maxillary mid-line with fixed bridgework. Because each maxilla is connected to nine other cranial bones (malar, frontal, ethmoid, vomer, palatine, lacrimal, sphenoid, inferior nasal concha, and the other maxilla) it represents direct contact with 45 per cent of the cranium. In essence, locking the maxillae will restrict, to varying degrees, the entire craniosacral mechanism. Since each patient’s physiologic adaptive range varies, the clinical extent of the symptoms will ultimately depend on the levels of distress. Patient complaints of severe headaches, facial pain, chronic fatigue, mental confusion, eye pains, irritability, disequilibrium and many more seemingly unrelated symptoms have been resolved once the mid-line restriction was removed and normal cranial rhythm reestablished.
Case Study: 56 – 42 Year Old Female

A 42-year-old female was referred to me for evaluation of numerous chronic symptoms. The dental history revealed extensive fixed upper bridgework fabricated by a board-certified prosthodontist. The patient’s symptoms began after cementation of fourteen units of fixed upper bridgework and included a high fever for several days afterward. Some symptoms appeared immediately upon bridge placement while others were progressive. The permanent bridgework was completed fourteen months prior to my evaluation. The following chief complaints were presented by the patient:

1. Constant “hatband” headache - immediate
2. Facial and skull tightness - immediate
3. Generalized feeling of stress and irritability - immediate
4. Upper cervical neck pains - immediate
5. Limited right and left rotation of the head - immediate
6. Disequilibrium - progressive
7. Generalized chronic fatigue - progressive
8. Generalized muscle weakness - progressive
9. Paresthesia (abnormal sensations) in the arms and legs - progressive

The patient’s medical history at the time of examination was unremarkable. Her past medical history revealed only some minor surgery. The medical report revealed all of her systems to be essentially normal. A blood work-up showed all values to be within normal limits. Clinical examination revealed numerous tender sutural areas on the cranium, 45-degree rotational restriction of the head to the right and left, and a 20 per cent hearing loss in the low frequency range (125 and 250). Videofluoroscopic motion studies revealed a definite restriction of movement of the first two cervical vertebrae, primarily in flexion-extension positions.

The diagnosis made was dural torque. The cause was cranial restrictions stemming from the fixed bridgework. Emergency treatment was rendered by cutting the maxillary mid-line connection between the central incisor crowns (two front teeth). Immediate relief was felt as soon as the cast connection was separated. The
“hatband” headache, facial and cranial tightness, head rotation restriction, upper cervical pain, cranial stress disappeared immediately. Within ten days the paresthesia in the arms and legs diminished such that only a slight residual effect remained in the right arm. In approximately two weeks, the remaining symptoms of disequilibrium, chronic fatigue, and muscle weakness resolved.

The hearing test conducted after the bridgework was cut revealed an increase of 20 decibels in the low frequency range (125 and 250). Since hearing was immediately restored to normal upon releasing the cranium via cutting the bridgework, it is apparent that the middle ear bone restriction was due to the restriction of the cranial bones. Post-treatment video-fluoroscopic radiography revealed even more interesting results with an increase in flexion - extension movements of the head.

The question of whether cranial bone motion exists is no longer an issue. The issue now is how not to violate this physiologic motion when restoring the teeth. Cranial restrictions have far reaching effects on potentially the entire physiology of the body including cranial rhythm, flow of cerebrospinal fluid, blood flow, dural membrane torque, and pressure on cranial nerves, cervical vertebrae, and sacrum.

Similarly, patients who have partial upper dentures and are unable to tolerate the appliance for any length of time are victims of cranial bone restriction. The partial upper denture, especially if fabricated of a cast metal, is rigid and will restrict normal physiologic cranial motion.

**Case Study: 57 – Mike**

In 1980, Mike underwent full mouth dental reconstruction for the second time. Fifteen years previously, all his teeth had been capped. Wear and tear plus the loss of a few teeth due to gum disease necessitated redoing the existing bridgework. Because of missing upper posterior teeth bilaterally, a removable partial denture was constructed. The partial upper denture was retained by means of precision
attachments which connected it to the remaining bridgework. The fit was like that of a surgical glove. Because of the rigid cast bar that spanned the roof of his mouth, the cranium was locked in position. Mike was unable to tolerate the appliance in his mouth for even a short time. The restriction of normal cranial motion created such an excess of neurological stress within his head that his body could not cope with the overload. The solution at the time was to discontinue wearing the appliance.

**Dental Malocclusions**

Dental malocclusions present as either skeletal or dental problems. Skeletal problems develop from genetic factors. These are usually observed as discrepancies in jaw size. Problems of this nature must be dealt with through the use of dental orthopedics, surgery, or a combination of both. On the other hand, malocclusions of dental origin can be treated orthodontically by straightening the teeth or by the use of either removable appliances, such as partial dentures, or fixed crowns or bridgework.

Malocclusions are viewed as discrepancies in any one or any combination of three planes: vertical, horizontal or front to back. The majority of these problems stem from the “western civilized diet” consisting primarily of refined and processed foods. Drs. Price and Pottinger have documented these
changes in recent generations of primitive people and have shown that in the span of just one generation the first offspring developed malocclusions when their parents were placed on a refined food diet. The lack of adequate minerals such as calcium, magnesium, zinc, manganese, etc., and the lack of unaltered protein, various vitamins, and dietary fiber prevents the dental arches from fully developing.

It has been my clinical experience that the greatest discrepancy exists in the vertical plane (deep overbite) and narrow width of the upper jaw (maxillae). Loss of jaw height is commonly described by the layperson as a deep overbite. Viewed dentally, the upper teeth overlap the lower teeth by three millimeters or more. The discrepancy may not seem like a major structural problem until one visualizes the entire structural interplay. A lack of vertical support will cause the jaw joint (temporomandibular joint) to move upward. As a result of this overclosure, the disc that normally sits on top of the jaw joint lacks sufficient space, becomes compressed, and eventually is displaced. Constant pressure generated over a period of time will cause wear and tear on the head of the joint, resulting in what is commonly referred to in medical jargon as osteoarthritis. Joint compression affects the nerves, blood supply, and lymphatics and causes micro-trauma to the joint tissues. As the upper and lower jaws come closer together, so do the muscles that are attached to the jaws. Davis’s Law now comes into play: “The shorter the length of the muscle, the stronger it becomes.” As these muscles tighten up and become spastic, they pull harder on the bony structures to which they are attached. Those chewing muscles that are anchored on the cranium will greatly influence cranial motion, cranial sutures and dural membranes. Dr. DeJarnette has always taught, “Muscles affect bone, bone affects sutures, the sutures affect the dura and the dura influences the function of the brain.” The chewing muscles
that extend below the jaw will affect the shoulder girdle to which they are attached. Other muscles that attach from the shoulder girdle extend to the upper cervical vertebrae. Cervical distortions result in head postural problems, distortions of the lower lumbar vertebrae, changes within the spine and changes in the pelvic complex, which also reciprocates with the shoulder girdle. The nerves of the chest portion of the spine supply all the major organs of the body. Because of jaw mis-alignment, the receptors of the TM joint become activated along with all the other joint receptors of the body. They become functional to insure total structural balance. The seemingly insignificant loss of a few millimeters of jaw height sets off a domino effect that ultimately has the potential to involve the entire structural, neurological and physiological aspects of the body.

**Dental Ear Connection**

Over thirty years ago Dr. Fonder conducted a study which demonstrated that hearing loss and ear problems were related to malocclusion of the teeth. His initial pilot study demonstrated a definite hearing loss pattern in every malocclusion patient tested. A follow-up study involving 1500 children (3,000 consecutive ears tested) with dental malocclusions demonstrated a loss in hearing acuity in every individual tested.

Many anatomic relationships connect the functioning of the ear and the dental complex. The first involves a small ligament (Pinto’s ligament) that extends from the medial pole of the jaw joint to the neck of one of the middle ear bones. The middle ear bones, or ossicles, transmit sound vibrations from the eardrum to the internal ear. Distortion of the jaw position has the potential to affect the transmission of vibrations over the ossicles and reduce
hearing in the lower frequency range (Fig. 46). Hearing loss is not always apparent until after dental corrections re-establish jaw posture. Patients often remark that they are able to hear sounds not previously perceived.
Figure 46. The jaw joint lies in close proximity to the middle ear. Distortions of jaw position due to an improper bite, muscle spasms, or a retrusion of the jaw resulting from a whiplash injury has the potential to cause ear problems (ear noises - ringing, hissing, buzzing, conductive hearing loss, increased pressure, and pain).
Case Study: 58 – Eleanor

Eleanor is a 45-year-old nurse who noticed a progressive conductive hearing loss over the past several years. Initially Eleanor sought dental services to restore missing back teeth, as well as defective capping and decayed teeth. As posterior teeth were lost because of extensive caries, the bite began collapsing. One sequela of lost vertical jaw position involves the dysfunction of the oral musculature. Often affected is the tensor veli palatini muscle which governs the opening of the eustachian tube. The middle ear pressure is equalized during swallowing by the passage of air via the eustacian tube, from the throat to the middle ear. A spastic tensor veli palatini muscle or distorted temporal bone has the potential to restrict the opening of the eustacian tube thus preventing equal atmospheric pressure on both sides of the eardrum. Under such conditions, the inability of the ossicular chain and eardrum to vibrate effectively causes a conductive hearing loss.

Eleanor underwent extensive restorative dentistry which involved capping all her remaining upper teeth and constructing a partial lower denture. Upon completion of treatment, the patient had returned for a postoperative adjustment. During that visit Eleanor remarked that her hearing was better since her bite was restored with the fixed and removable partial lower appliance.

Another interesting anatomic relationship involves one of two muscles of the middle ear. The tensor tympani muscle originates from the sphenoid bone and extends to the malleus bone which attaches to the eardrum. The function of the two muscles is to prevent the middle ear bones from transmitting excessive noise. The lower jaw interrelates with the sphenoid bone via the external pterygoid muscle. It is this muscle that most often goes into spasm when there is a loss of jaw height. Spasm of this muscle will refer pain into the ear, mimicking an earache, and may cause many unsuspecting physicians to treat the patient’s complaint with antibiotics and pain killers as if a middle ear infection existed. Spasm of this muscle will also distort the sphenoid bone, and in
turn the tensor tympani will spasm, affecting the ossicular chain, reducing hearing, and possibly causing ear noises.

**Case Study: 59 – Muriel**

Muriel is a 34-year-old housewife who had been suffering severe left ear pain in addition to pain in her upper and lower left molar teeth. Visits to the family physician and to an ear, nose and throat (ENT) specialist ruled out the possibility of any infection or pathology. In desperation, Muriel presented herself to me for a dental evaluation to seek a possible cause for the pain. Radiographs of the teeth revealed no decay, and no broken fillings or abscesses. However, examination of the chewing muscles uncovered the presence of a severely painful upper left external pterygoid muscle. This muscle, which governs mouth opening and attaches from the head of the jaw joint (located in front of the ear) to the lateral pterygoid plate of the sphenoid bone, was in spasm. Spastic muscles always have trigger points (small nodular extremely painful areas within the muscle) which refer pain to other areas. The referral pain pattern of this muscle includes the ear, and upper and lower molar teeth.

Resolution of Muriel’s problem was relatively simple once the proper diagnosis was made. Treatment consisted of a technique called “strain, counter-strain.” Finger pressure is applied to the painful trigger point while gently thrusting the head forward. This particular procedure is painful, but the relief is dramatic and immediate. Muriel left the office pain-free and very grateful.
Case Study: 60 – Louise

At age 51, Louise suddenly became plagued by constant tinnitus. The constant ringing in her ears made it difficult for her to function. She was first treated by her family physician with antibiotics for a suspected middle ear infection. When the tinnitus did not clear up, Louise was referred to an ENT specialist who proceeded to drain fluid from her middle ear. The problem still persisted after all conventional methods of treatment failed.

When Louise presented herself for evaluation, her chief complaints were general fatigue, ear stuffiness, post-occipital headaches, sinus congestion, neck stiffness, and popping and clicking of the jaw joints. Dental evaluation revealed many missing posterior molar and bicuspid teeth. When consulted, her family dentist stated that the patient had been uncooperative in that she had never followed through with her proposed dental treatment. The patient expressed her reluctance to submit to any form of dental treatment that did not address itself to solving her problems. When presented with an approach to resolve her complaints, there was no hesitation to embark on therapy.

Treatment consisted of functional dental orthopedics to reposition the mandible and alleviate pressure in the temporomandibular joint next to the ear. This change in position allowed the normalization of function involving the ossicular chain (three little ear bones: malleus, incus and stapes), blood flow, muscular balance, neurologic impulse flow and lymphatic drainage. Within one week the ringing in the ears completely disappeared. The cause was definitely structural because the ringing returned within fifteen minutes after removing the orthopedic appliance. Twelve months of wearing the appliance caused structural changes that prevented the jaw from being displaced upward and backward. The second phase of therapy involved fabrication of a partial lower denture to support the new jaw height. Not only has Louise’s ringing stopped, but also the sinus congestion, fatigue, ear stuffiness, neck stiffness, headaches, and joint noises have all resolved.
Vascular – Ear Connection

Since the blood vessels that supply the ear represent some of the smallest in the body, they are often the first to be narrowed by plaque. This internal corrosion consists of deposits of cholesterol, fats, calcium, heavy metal toxins, such as aluminum, cadmium, lead, guanidine (a toxic by-product of protein metabolism) and by-products of drug metabolism. As the circulatory system of the ear clogs, a progressive hearing loss develops. The circulatory system is also adversely affected by a deficiency of vitamin F (unsaturated fatty acids; linoleic, linolenic, and arachidonic). Natural fats are destroyed by the processing and refining of foods and the heating of oils during cooking. Vitamin F is essential for normal functioning of many organ systems and specifically is needed to push calcium into body tissues. Without adequate amounts of vitamin F, calcium is deposited in the lining of blood vessels, in body joints, and within the synovial joints between the middle ear bones causing a reduction in their mobility. Common ear problems that arise are tinnitus and conductive hearing loss.

From a functional dental aspect, the blood vessels to the ear branch off the internal maxillary artery whose beginning branch is opposite the neck of the mandibular condyle. Dental malocclusions will distort the condylar position; this distortion in turn, has the potential to disrupt blood flow to the ear. Whiplash injuries are another source for causing jaw distortions. Because of the muscular interrelationship among the neck, shoulder girdle, and mandible, the resulting spasms of neck muscles will force the lower jaw into a more retruded position. This also has the effect of disrupting normal muscle balance and cranial dura, bone and suture position, head posture, neurologic function, blood and lymphatic flow, and total body balance resulting in the gamut of physiologic aberrations. Physical traumas to the head or jaw may have similar influences including

Without adequate amounts of vitamin F, calcium is deposited in the lining of blood vessels, in body joints, and within the synovial joints between the middle ear bones ...
pelvic distortions resulting from dural and muscular interrelationships.

**Dental – Physiologic Connection**

**Case Study: 61 – Heather**

Heather, a 7-year-old, was the youngest headache patient I had ever treated. Heather’s mother had brought her daughter to my office for a routine dental examination. One look at the child’s malocclusion prompted a whole series of inquiries. The mother seemed puzzled that a dentist would be asking questions regarding headaches, constipation, allergies, and other medical problems. After the initial shock wore off, the mother expressed an interest in her child’s dental problem especially since Heather had been suffering from several major problems that later were revealed to be related to the malocclusion.

Prior to the family’s moving to our area, Heather had been treated for five years by an allergist. This medical specialist had been injecting the child with serums in an attempt to alleviate the severe headaches, earaches, constipation, and general allergies. The mother told me that Heather would lie in bed and cry because the headaches were so severe. A major clue to the problem was the observation that the biting surfaces of her primary teeth had been severely worn flat. When questioned, the mother stated that her daughter would grind her teeth so loudly at night that it was noticeable from outside Heather’s room.

Heather’s dental problems of a decrease in jaw height and retrusion of her mandible started the fall of her physiologic dominoes. Because the bite was overclosed, the chewing muscles were not at their proper length. As the muscles shortened they went into spasm and strengthened (Davis’ Law). In Heather’s case, the temporalis muscle, which is a large fan shaped muscle located bilaterally over the temporal region, went into severe spasm. Since this muscle spans the temporoparietal suture, which connects the temporal and parietal bones by a long bevel joint, it caused a
physical jamming. Squeezing the sutural area caused compression of the nerve endings which affected blood supply and resulted in severe headache pain. The grinding and clenching of the teeth was nature’s reflex mechanism attempting to release the jammed suture. Grinding, clenching, and clamping the teeth together has the effect of causing the jaw-opening muscle, the external pterygoid, to go into spasm, which then refers pain into the middle ear.

A jaw imbalance will effectively place noxious stimuli into the nervous system and institute the triad effect that Dr. Selye spoke about in his General Adaptation Syndrome. The constant stress will cause the thymus and other lymphatic tissue to shrink, the adrenal glands to become hyperactive and the stomach to ulcerate. The lymphatic tissue is vital to the body’s immune system and if hypoactive it will predispose the host to disease. The adrenal glands perform many functions, one of which is to maintain balance within the body when inflammatory agents like histamine are released. Ulceration of the stomach lining will permit undigested protein to enter the bloodstream and initiate an allergic response. Poor digestion will also exacerbate an allergy problem by not breaking down the proteins into the simpler amino acid form. One of the effects of chronic sympathetic stimulation is the reduced motility of the intestines, which in turn causes constipation. An increase in waste evacuation time increases the level of body toxicity. If attempts are made with drug therapy to mask the symptoms of physiologic imbalances, then the body will be fighting a losing battle. True healing occurs when the cause of the problem is removed, allowing the body to heal itself.

The great French philosopher, Voltaire, appropriately summed up the body’s healing capabilities when he stated, “The art of medicine is to amuse the patient while the body heals itself.”

Although Heather presented various symptoms that at first appeared to be unrelated, there was a common denominator to her medical problems. That underlying factor was her dental malocclusion. The goal of therapy was to remove the structural imbalance as quickly as possible and allow the body to heal itself. Heather’s bite discrepancy manifested a loss of jaw height accompanied by a retrusion of the
mandible. Treatment involved use of a functional dental orthopedic appliance. The Bionator appliance used served to orthopedically reposition the jaw downward and forward and simultaneously allow the posterior permanent bicuspids teeth to erupt without interference from spastic chewing muscles, the tongue, or the cheeks. One week after the insertion of the corrective appliance, Heather’s severe headaches, ear pain, and constipation were gone. Five months into treatment all her allergies disappeared. Completion of orthopedic treatment required two and one half years.

**Case Study: 62 – Ezra**

Ezra was 12 years old at the time his mother brought him to the office. The chief concern was the possibility of a cavity in a permanent molar tooth. Clinical evaluation established that no decay was present. However, Ezra presented a severe malocclusion which involved deficiencies in the vertical, horizontal, and sagittal planes. A board-certified orthodontist recommended removing the first four bicuspids teeth to make space for the remaining crowded front teeth. Fortunately for the child the mother was reluctant to have any teeth extracted.

At the time of the initial visit, the mother was questioned about various symptoms that related to a malocclusion. The mother then proceeded to tell her tale of woe. Ezra was plagued with chronic severe headaches, severe allergies, and a hip joint that would always pop out during his participation in active sports. She presented a list of the various clinics, physicians, chiropractors and other health professionals she had sought to relieve Ezra’s problems. Although some symptomatic relief was obtained, complete resolution never materialized. Treating symptoms with drugs and manipulating compensatory structural imbalances will only temporarily relieve the clinical symptoms. Therapy must focus on correcting the primary causative factor. In Ezra’s case the keystone of the entire puzzle was the malocclusion.

The narrowed upper jaw physically restricted the lower jaw from coming forward. In addition, the “V” shaped maxillae created restrictions of cranial bone mobility and torqued the dural tube. The dural
tension in turn placed a restriction on the sacrum. Since the sacrum sits between the two hip bones, they become dysfunctional and affect the hip joints and ultimately leg lengths. The temporomandibular joint (TMJ), like all the other joints of the body, possesses nerve endings which function to alert the brain of constant body positional changes and malfunctions. These receptors enable the body to limit joint motion as a reflex protective mechanism when one or more joints develops an abnormality. When traumatized, nature protects an injured joint by initiating spasms in those muscles that enable the joint to move. Because the body works in a reciprocal arrangement with other body parts, restrictions in the ranges of motion will occur to preserve the integrity of the whole system.

Ezra enjoyed soccer. However, every time he played his hip joint would go out. It was almost a ritual that after a game he would go to the chiropractor for an adjustment to correct the hip joint. The correction would hold only until the next game or other demanding physical activity. An interesting change took place about midway through dental orthopedic treatment. At the time, the upper jaw, which is composed of the two maxilla, had been widened by an orthopedic expansion appliance. The increased horizontal change in bone structure was adequate enough to release the cranium and torquing on the dura allowing the sacrum to assume a more normal position. Ezra, his mother, and the chiropractor were all amazed that his hip joint did not go out of alignment after several consecutive soccer games.

During the initial phase of treatment, Ezra’s headaches disappeared. This was attributed to the repositioning of the lower jaw forward and an increased height. After orthopedic treatment to expand the bone structure, orthodontic therapy was used to align the teeth. Another fascinating aspect of the case materialized during the latter phase of treatment. The severe allergies that had previously plagued Ezra began to subside. All previous attempts to alleviate the allergy symptoms utilizing vitamin therapy and serum injections had failed. To date Ezra describes his allergy problem as only a minor nuisance.

The frightening aspect of this case and others similar to Ezra’s is the “dental wis-
The treating physician’s primary objective should be to relieve the pain and suffering by removing the causative factors and to recommend any beneficial life-style changes.

dom” possessed by many university orthodontic programs and their subsequent graduates. Conventional concepts focusing primarily on nonphysiologic, mechanical treatments are being presented to parents. In most instances the concerned parent want a better aesthetic result. Although extraction of first bicuspid teeth is a necessary approach in a small percentage of cases, it has been used too frequently as a expedient method of correcting crowded teeth. If Ezra had been subjected to extraction of all four of his first bicuspid teeth, his problem may have been exacerbated. Ezra was already in trouble structurally and would have been made worse by conventional orthodontic techniques. Closing the extraction spaces by bringing his front six teeth backward would have jammed the lower jaw farther back and worsened the overbite. The cranium and cranial sutures would have become more restricted and torquing of the dural tube would have increased. The added physical and neurologic stress to his system would have exacerbated the existing symptoms and created many more.

When a patient presents symptoms to the physician, it means that a state of dysfunction exists. The treating physician’s primary objective should be to relieve the pain and suffering by removing the causative factors and to recommend any beneficial life-style changes. Frequently however, physicians as well as dentists concentrate on treating just the symptoms with mechanical appliances and drugs. When the symptoms resolve, we are led to believe that a “cure” has been established. In reality, eliminating the symptoms only forces the body to compensate over a prolonged period with potentially damaging consequences. For example, giving aspirin to suppress a fever only serves to mask the symptom. The fever is the body’s own reflex mechanism to rid itself of toxic wastes. By suppressing a natural healing mechanism with drugs, the original toxins plus those added by the breakdown of drug products remain in the system longer and further stress the body. To prevent being treated
symptomatically, the patient should question the doctor regarding the proposed dental treatment. Some thought-provoking questions are provided to stimulate the doctor/patient rapport:

1. Is my body deficient in any of the drugs that you are recommending to treat my symptoms?

2. What vitamins or natural substances can be used to treat my symptoms?

3. How important is my present diet in relation to my symptoms?

4. What natural healing alternatives are available?

5. Will osteopathic, chiropractic, or physical therapy treatments be of benefit in my TMJ therapy?

6. Is the recommended dental orthopedic appliance designed to treat the symptoms or effect a dental correction?

7. Will prolonged use (six months or more) of the dental orthopedic appliance depress my posterior teeth?

Many dental appliances presently being used will work well as a temporary measure. They are primarily designed to separate the teeth in an attempt to relax spastic muscles. Unfortunately, some patients discontinue dental treatment because of the false sense of being cured. They reason that since the symptoms have disappeared, they no longer have the problem. Dependence on the appliance often creates a heightened state of fear in which the patient believes he cannot exist without it, is afraid of damaging it, or even worse, of losing it. When the patient reaches this state of dependence there is a very good chance that the posterior molar and bicuspid teeth supporting the appliance have been depressed into the supporting bone. At this point the patient
is worse off than before treatment was started.

8. Is the derangement in the temporomandibular joint caused by my collapsed bite or is it due to direct trauma or disease within the joint?

Often the symptoms of pain, clicking, swelling, etc., are localized in the joint itself. However, the actual source of the problem may be a loss of posterior tooth support, malocclusion, cervical distortions (misalignment of vertebrae and muscle spasms), pelvic rotations, or cranial bone misalignment. Some specialists may attempt surgery as a primary means of correcting the problem. I am not against surgery if documentation, e.g., by arthrogram (an x-ray that is taken after an opaque dye is injected into the TM joint to help confirm a torn ligament, anteriorly displaced joint disc or disc perforation) of joint derangement really exists. Even if true joint derangement is confirmed, the poor bite may have been the cause and may have to be corrected prior to surgery. Stability of the joint may require osteopathic and chiropractic manipulation as well as dental support. Surgery alone may create more problems since it does not correct the length of the chewing muscles, cranial, neck and pelvic areas.

9. Will I require orthodontic treatment utilizing full braces in connection with orthopedic therapy?

10. Will it be necessary to rebuild my bite with capping, partial, or full dentures at the completion of treatment?

Warning: These questions may be detrimental to your doctor’s ego.

The information presented represents a level of knowledge on the lead-
A New Specialty Is Born

A physician must be open-minded enough and willing to dig laterally for the solutions. Many of the clinical approaches have resulted from integrating osteopathic, chiropractic, physical therapy, and nutritional concepts. A physician must be open-minded enough and willing to dig laterally for the solutions. My experience with most universities and practicing physicians has been just the opposite. Some even have gone so far as to label such concepts as quackery. This I believe stems from ignorance, insecurity, and an unwillingness to admit that maybe some of the conventional teachings are incorrect. This arrogant attitude is clearly seen in the statement “... aerodynamically, bumble bees cannot fly.” Obviously, bumble bees do fly but not so obvious is the fact that perhaps the accepted principles of aerodynamics are not yet wholly complete.

The Ten Year Dental Earache

Case Study: 63 – Alice

Alice was referred to our dental practice by our hygienist. The patient’s chief concern, at the initial visit, was to have her front teeth capped for cosmetic reasons. Dental evaluation revealed a collapsed bite and distorted lower jaw posture. As a teenager, she had lost several teeth and the remaining teeth had shifted into a convenience position. For a 45-year period, the patient’s body had the awesome task of adapting to change. The altered dental complex had placed a heavy burden on the cervical vertebrae, musculature, and associated structures. The added dimension of time provided wear and tear, and a point was reached beyond which the body could no longer cope with the structural imbalance. When this overload prevailed, the symptoms appeared as warning signals.

While gathering information regarding past medical history, some major complaints surfaced. Alice had been suffering for a 10-year period with the problem of radiating right ear pain and numbness in the right cheek that had defied all medical attempts to diagnose or resolve. Interrelated and connected to the ear problem was a restricted cervical rotation to the
Once the dental bridgework was completed, Alice remained pain free and retained the flexibility of her neck.

left. Although Alice was skeptical about my interpretation of the dental-ear connection, she nevertheless agreed to proceed with a diagnostic appliance.

Therapy began with an orthopedic upper appliance that was designed to expand the maxillae. Four months of treatment brought about a miraculous change. Both the radiating ear pain and facial numbness completely disappeared. Another welcome surprise was the disappearance of the neck stiffness and rotational restriction. Alice remarked, “I didn’t realize the extent of the cervical restriction until it vanished.” The most noticeable change occurred while driving her car. Prior to treatment, “... it was always an effort to turn my head to see if traffic was clear. In order for me to effectively maneuver my head around I had to rotate my chest.” Convinced of the efficacy of dental correction Alice agreed to continue with orthodontic treatment to properly align the teeth. A slight setback occurred when the orthodontic braces were removed. The ear pains and neck problems returned, however, not at the original intensity. The difficulty arose because of a lack of posterior vertical tooth support. Orthodontic techniques were incapable of forcing the molar and bicuspid teeth out sufficiently to provide the physiologic vertical support.

The next phase of treatment focused on restoring all the upper teeth. By fabricating and applying fixed dental bridgework, the problem of an insufficient vertical support was overcome. As added insurance, a special micro-precision attachment was used between the two front caps. The purpose of this device was to permit the physical connection of the two front teeth and at the same time allow for normal micro-motion of the cranial bones. Once the dental bridgework was completed, Alice remained pain free and retained the flexibility of her neck.
Dizziness and Malocclusion

Case Study: 64 – Marie

Marie came to the office somewhat panicky and deeply concerned about dizziness and other seemingly unrelated symptoms. In the week preceding her office visit she had experienced a severe dizzy spell at work which completely incapacitated her. As a precautionary measure, she had been taken by ambulance to the emergency room at a nearby hospital. A neurological evaluation was negative and the attending neurologist recommended a dental evaluation for possible TMJ dysfunction. Prior to this emergency, Marie sought medical evaluation for complaints of facial numbness and tightness, chronic headaches on the back right side of the head, and ear, and lower back pain.

As is so often the case in patients with TMJ dysfunction, Marie presented a deep overbite and retruded lower jaw. The whole domino scenario with reciprocal structural changes came into play. The collapsed and retruded bite cause the cervical vertebrae to stack up straight like a military neck. The head goes into a forward head posture to reflexively open the airway for improved breathing. Muscle spasms result from the shortened posterior neck muscles while the anterior ones stretch and weaken. The structural impact of all these distortions is torquing of the dural tube which ultimately will have an influence on the cranial bones. Since each temporal bone houses an organ of balance and most likely each will be distorted in a slightly different plane, severe dizziness will result. Other factors such as stress, low blood sugar, hypoadrenia, decreased blood supply to the brain (caused by crimping of the vertebral artery as it passes through the distorted upper cervical vertebrae) and distortions of the head and neck can have major implications. Systemically the body experiences severe structural, physiologic and mental distress with an end result of chaos.

Overlaying Marie’s structural distortions were a stressful job and poor eating habits. Applying the principles of the Physiologic Adaptive Range Concept, effort was made to remove as rapidly as possible those factors over which we had
some degree of control. Cranial manipulation was performed to release jammed cranial sutures. Myofascial release techniques were employed to resolve the tissue contracture present in the cervical musculature. Marie was also instructed to eliminate, as much as possible, the basic nutritional stressors like caffeine, refined sugar, white bread, dairy products (because they have a tendency to clog up the lymphatic system) and saturated fats (margarine, butter and hydrogenated oils). Nutritional support in the form of natural B-complex vitamins, calcium, magnesium, trace minerals, and vitamin F (unsaturated fatty acids) were supplied. The pelvis was balanced by a non-invasive sacro occipital technic which utilizes padded wedges under each pelvic bone. The key disruptive dental factor was eliminated by supporting the patient’s bite in an improved physiologic position. Cold helium neon laser therapy was directed to the master acupuncture, auricular (ear acupuncture points developed by the French physician Paul Nogier), TMJ and muscle trigger points. This approach goes beyond the conventional wisdom of Western medicine which focuses on treating the symp-

- caffeine, refined sugar, white bread ... have a tendency to clog the lymphatic system.

Caffeine, Alloxan, and Diabetes (click above icon)
The $18,000 Headache

Case Study: 65 – Edna

When Edna first came to my office, she was in severe pain and had contemplated suicide. The seemingly unrelated chief complaints of left ear pain, severe right upper and lower tooth pain, severe left facial pain, chronic neck and shoulder pain, lower back pain, and pains in both feet brought Edna to her peak of pain tolerance. Fate apparently was on Edna’s side because the day she visited her family dentist to check out the tooth pain, he received my TMJ brochure in the morning mail. The dentist x-rayed the involved teeth but found no decay or abscessed teeth. He then referred Edna to my office for evaluation.

Edna’s story of woe began in August of 1980 when she was treated by a podiatrist. The original complaint was pain in both feet. After a thorough examination of the localized areas of the pain, the podiatrist recommended surgery to reconstruct the bone to alleviate the pressure on the nerves and thus eliminate the pain. Following surgery, the patient was instructed to wear custom-designed shoe inserts. Within a week, Edna began experiencing lots of pain, first in her legs, then in her hips, and finally it settled in the lower back. Approximately two weeks following this episode, the pains subsided and her body entered the resistant stage of stress which required a myriad of structural and physiologic compensations.

Chaos began on March 5, 1981. Edna was suddenly struck with severe pains in the stomach, chest, and upper arms, and she began experiencing weakness in both legs. The family doctor immediately put Edna on the drug, Tagamet, for what first appeared to be an ulcer problem. To confirm his tentative diagnosis, an upper gastrointestinal test was performed. The results were negative. On March 18th, Edna was sent home from work because of severe chest pains and increased blood pressure. Her physician ordered a complete blood work-up and electrocardiogram and placed Edna in the hospital for four days for observation. On March 22nd, she was dismissed from the hospital and instructed to take eight extra strength
Tylenol per day, Sorbitrate four times per day (used for angina attacks) and Nitrostat when needed for angina attacks. The extensive series of tests conducted by the hospital were all negative. These included stress test, SMA-25 blood work-up, gall bladder, liver, and pancreas studies. During April and May Edna’s symptoms subsided again.

In June of 1981, Edna’s symptoms exacerbated. The cervical pains worsened and the leg weakness became so severe she could hardly walk. A neurologist was consulted. X-rays of the involved areas revealed only a slight arthritic condition in the cervical area but proved negative regarding any structural abnormality or frank pathology. It was becoming apparent to everyone involved that Edna’s situation was deteriorating.

In July of 1981, an osteopathic physician was consulted for possible relief of the severe pains in the back, jaw, ear and arms. The diagnosis was lumbosacral strain and osteopathic manipulation was provided. The manipulative techniques brought relief for the first time since the whole incident started. However, with the relief of the back pain came exacerbation of severe pain in upper and lower right tooth segments. Edna was now coming to the realization that she may have to live with this pain.

In October of 1981, the family dentist was consulted to evaluate the increased intensity of the pain as well as other facial areas that were being affected. Edna was now experiencing pains under the border of the right side of the jaw, bilateral pains behind the ears, right side facial pain and pain behind the right eye. Accompanying these symptoms was paresthesia which began affecting the right side of the face intermittently. All basic dental problems were ruled out.

In desperation, the patient went back to the podiatrist for an evaluation. His observations proved fruitless and he stated that he could find nothing wrong.

On November 3, 1981, Edna presented herself to me for evaluation. She was at her lowest point, suffering from frustration, depression, and hopelessness and was in severe facial pain. Because of Edna’s obvious state of desperation, a dental orthopedic appliance was fabricated out of silicon putty. The patient was instructed to wear the appliance as much as possible.
Another appointment was scheduled to continue the examination and try to solve the puzzle.

Edna returned for her next scheduled appointment. During the period of one week, 75 per cent of the facial pain had resolved. The patient was ecstatic but was made to understand that a cure was not at hand. The examination revealed some interesting findings. Although the bite appeared normal, x-rays of the temporomandibular joint showed the jaw joint to be displaced upward within the confines of the joint space. In addition, the cranium had jammed sutures and cranial bone distortions. Compounding the problem was the existence of an unstable, weak sacroiliac joint with hypermobile ligaments. Accompanying the structural imbalances were organ and nutritional problems. The prolonged stress to the entire system had caused the adrenal glands to be in hypo-function. There was a liver-gall bladder problem as evidenced by the patient’s inability to handle fatty foods. There was an overconsumption of refined foods, too much protein, and a lack of minerals such as calcium, magnesium, zinc, etc. If one case ever had to be selected from my files as a model representing an all-encompassing dysfunction of the five major areas (cranial, dental, pelvic, physiological and psychological complexes) Edna’s would have to be the one.

With the assistance of Dr. Steven Lesse of Marlton, New Jersey we assisted Edna’s body to heal itself over a period of a year. To help stabilize the jaw posture, an orthopedic appliance, a bionator, was used. Concomitantly, cranial adjustments were performed. In addition, Sacro-Occipital blocking techniques were used to re-establish stability to the sacroiliac. Dr. Lesse also corrected cervical and thoracic vertebrae distortions. The patient was put on an exercise program to be carried out at home. Diet modification was recommended and carried out with a high degree of compliance. Nutritional supplementation provided support for the adrenal glands, liver and gall bladder, weak ligaments, mineral deficiency and poor digestion. After about six months of treatment, Edna began to stabilize; however, adjustments to the sacroiliac would only hold for a period of several weeks and some of the symptoms would reappear. Out of frustration, I called my good friend Dr. Nelson DeCamp in
Lakeland, Florida. After explaining our predicament, he suggested that foot levelers be fabricated to help stabilize the pelvis. This man’s chiropractic genius solved the puzzle by providing the key factor that served to stabilize the entire structural frame.

In retrospect, Edna’s scenario unfolded like a textbook case. The multitude of complaints definitely interrelated with the structural domino effect which occurred in her body. Edna’s primary structural problems focused on a lowered vertical jaw position and a weakened sacroiliac joint. Prior to the appearance of foot pain, Edna’s body was able to adapt to these structural imbalances. Interestingly, one of the first clinical signs of an unstable sacroiliac joint involves pains in the knees, ankles, and feet. What the podiatrist diagnosed as a local problem was in reality a major area of compensation. The invasive surgical procedure served only to upset the total body structure by traumatizing the area of compensation. The patient’s problems progressively worsened. This resulted from other compensatory areas having to bear the burden of the original weakness plus the overlay of the disturbed balancing ability caused by surgery on the feet. Distortion of the spine and torquing of the dural tube forced the cranial bones to further compensate. Pressure on the fifth cranial nerve (trigeminal) which supplies the upper and lower teeth, gums, and jaw bone caused the previously unexplained pains. The seventh cranial nerve (facial) also became involved, thus accounting for the facial pain. The patient’s body was in chaos and incapable of adapting. Only through a truly holistic approach utilizing the efforts of a well-trained SOT chiropractor, dental orthopedics, nutritional support, dietary changes, and the cooperation of the patient, was success achieved.

Edna has once again become a productive human being. She has been able to return to full-time employment and now leads a normal life. The irony of this case is the fact that the insurance companies paid $18,000 in workman’s compensation, diagnostic tests, doctor, hospital, and drug bills but refused to pay the dental fee of $950.00 to get the patient well. To add insult to injury, the final physician’s report for the workman’s compensation board purposely deleted both the dental and chiropractic
findings and therapeutic procedures. Incidences like this one certainly give one the impression that the establishment healers do not want to recognize unconventional approaches to healing, especially when they are successful.

**Ten Sets of Dentures and Still No Relief**

**Case Study: 66 – Marcelle**

You would think that after having ten sets of full upper and lower dentures a patient’s problem would be solved. Marcelle’s nightmare started 23 years ago when all her remaining upper teeth had to be removed because of gum disease. Six front teeth in the lower jaw were left and a partial denture was constructed. Within days after the dentures were inserted Marcelle began experiencing pains in both ears and in the head. Her medical merry-go-round had just begun. Specialists in many fields including neurology and ENT (ear, nose and throat) were consulted. All tests and clinical examinations were negative. As with many of these patients they are told they must live with the pain and accompanying symptoms.

Four years following the onset of the symptoms, Marcelle was still searching for relief. In desperation another dentist was sought for construction of a second set of dentures. At the time of the initial examination, this dentist felt the problem was due to lack of space between the back part of the upper and lower dentures. In an attempt to correct the problem, Marcelle was referred to an oral surgeon. The surgeon proceeded to remove “excess” bone and gum tissue to increase clearance between the dentures. The surgery created more room and the dentist went on to make the new dentures.

The second set of dentures brought no relief. Marcelle was still plagued by chronic ear and head pains. Through the years her situation continued to deteriorate. Marcelle’s original symptoms now became overlaid with periodic general malaise, cloudy thinking, and neck and throat pains which worsened after eating and talking. The only source of relief was removing the dentures whenever possible. Marcelle went through at least eight more
sets of dentures during the next 19 years. While the last two sets of dentures were being fabricated, she insisted that the bite be increased, but each time the dentist refused to comply.

In the end perseverance paid off. Marcelle got lucky and hit the jackpot. Fate directed her to a dentist who not only specialized in dentures but also was knowledgeable about the many symptoms associated with improper denture support. This prosthodontist referred her to my office for evaluation.

While Marcelle was telling her story of woe, it became obvious why she was experiencing such a wide variety of symptoms. In fact, it was the patient who actually provided the key information that enabled her problem to be solved. Examination revealed motion restrictions in the neck plus severe spasm of two muscles involved in opening the jaw. Treatment consisted of myofascial release techniques to release the tightness in the neck. The spasms of the jaw-opening muscles were resolved, and Marcelle’s lower denture was relined to increase the denture height. The patient walked out of the office feeling immediate relief after suffering needlessly for more than 20 years.

At the follow up visit, Marcelle stated that her head, neck, and ear pains were gone and that she was more clear-headed and able to read the newspaper in the morning. Reading the newspaper is taken for granted by most people; however, Marcelle was unable to function adequately to accomplish this simple task. Another positive change was noticed by her husband, who commented on how her whole disposition had changed for the better. All this occurred within one week of correcting the denture height and eliminating the muscle spasms.
“Jawlash”

In the 1970s the term “jawlash” began appearing on dental reports as part of the sequelae of whiplash injuries. Because the jaw is attached to the skull and shoulder girdle through numerous muscle attachments, it easily becomes misaligned when the involved muscles go into spasm.

In a study conducted by the Preventive Dental Research Foundation, 500 whiplash injury cases were reviewed and considered “closed” after conventional treatment. The unfortunate victims, however, did not consider themselves cured, for they still suffered from a multitude of symptoms. According to the president of the research group, Dr. Harold Ravins of Los Angeles, the chief complaints included:

1. Pains of the head
2. Burning sensations of the forehead and scalp
3. Facial pains
4. Clicking, popping, or cracking sounds in the jaw
5. Buzzing, ringing, and roaring sounds in the ear
6. Stuffiness or itchy feeling in the ears
7. Balance problems
8. Difficulty in swallowing
9. Pain in the roof of the mouth
10. Blurred vision
11. Sensation of pressure around and behind the eyes
12. Sensitivity of the eyes to light
13. Reduction of arm and shoulder movement
14. Tingling sensations in the arms and fingers

Dr. Ravins and the other members of the Foundation traced these symptoms
back to the violent, uncontrolled forces that had snapped the patients’ heads around and misaligned their jaws.

The actual mechanism of whiplash involves a very complex, dynamic series of stretching, compressive and twisting forces dissipated throughout the skeletal structure and living soft tissue. A simplistic view portrays the event as a forward hyperflexion, and backward hyperextension with a corkscrew effect on the spine, sacrum, and pelvic complex. The sudden pulling and jerking motions created by the impact have the potential to cause ruptures and micro-tears within the muscle tissue. The microscopic changes within the muscle serve to exacerbate the pain. They include:

1. Decreased circulation of blood to the area
2. Decreased oxygen supply
3. Decreased ability of the lymphatic system to clear the traumatized area
4. Reduced nutrient supply
5. Increased metabolism of the involved tissue
6. Increased build-up of waste products
7. Increased muscle fatigue
8. Inflammation
9. Swelling

These changes account for the prolonged symptoms of muscle soreness and pain. The aftermath of the trauma also is characterized by latent secondary effects such as pressure on nerves and blood vessels from spastic muscles Neurologic pressure will produce clinical symptoms of muscle weakness and tenderness, numbness, hypersensitivity, burning sensations, heaviness, paresthesia and shooting pains. Vascular pressure, on the other hand, will lead to decreased blood to an area, discoloration (such as in cyanosis), swelling and nutritional changes.
Whiplash injuries are not always the result of motor vehicle accidents but can result from falls, direct traumas to the skull, or moving forces applied to various parts of the body such as those which occur in contact sports. Whiplash should not be thought of as a typical syndrome, nor any particular injury but should be looked upon only as the mechanism of the injury. From a total structural perspective, other common symptoms include:

1. Restriction of neck motion
2. Blackouts
3. Chronic fatigue
4. Heaviness of the head
5. Mental fogginess, light-headedness, poor memory and inability to concentrate
6. Nausea and other gastrointestinal problems
7. Low back pains
8. Pain between the shoulder blades
9. Cold hands and feet, numbness of the arms, hands, feet and shoulders
10. Stress-related symptoms of extreme nervousness, palpitation, insomnia, excessive sweating, anxiety, depression, tremors, and pallor

Recent clinical experience indicates that as many as 80 per cent of whiplash injuries induced by rear-end motor vehicle collisions will also include associated TMJ trauma. These jaw joint problems do not necessarily appear immediately after the accident. In fact, some patients may not be plagued until months later. The primary trauma comes from the forces generated by the hyperextension phase. As the head is forced backward, the lower jaw is pulled forward and open. The TMJ joint ligaments and chewing muscles become overextended inducing micro-tearing within the tissue; then spasm and disc derangement occur within the temporomandibular joint.
Follies of Conventional Whiplash Therapy

Case Study: 67 – Pat

Pat was involved in a motor vehicle accident a little over one year ago. Like most whiplash victims she had no previous history of neck pains or headaches. However, she did have a malocclusion which predated the accident. Pat’s dental problem involved an extremely deep overbite partly due to genetics and partly due to missing molar and bicuspid teeth. The improper bite was compounded by the backward tilt of the two upper front incisor teeth. The reversed inclination of these teeth physically restricted the lower jaw into a retruded position. The compensatory mechanisms caused the following changes: The normal 17 degree cervical vertebral curve was straightened; a forward head posture was induced; and a muscular strain was placed on the shoulder girdle and all involved musculature. Pat’s body was able to adapt to these imbalances until the whiplash injury. The muscle spasms that resulted from the trauma overloaded an already compromised body.

The patient was subjected to all the conventional drug therapies which included muscle relaxers, anti-inflammatory drugs, and pain killers. In addition, all forms of physical therapies were tried: diathermy, ultrasound, cryotherapy, moist heat, and massage. Even osteopathic manipulation was used in an attempt to release cervical vertebrae distortions and muscle spasms. Out of desperation, the treating osteopathic physician brought the patient into the operating room and under general anesthesia attempted to release the severe cervical restrictions. The efforts were futile.

As a last resort, Pat was finally referred to my office. After fifteen months of symptomatic treatment, the original complaints were overlaid with chronic compensatory changes such as fatigue and depression. The chief complaints presented at the initial visit to my office were:

1. Chronic headaches (2 to 3 per week)
2. Extreme heaviness of the head
3. Chronic neck pains and spasms (Under physical stress the left side of the neck would balloon out and reach the size of a grapefruit)
4. Cracking of right and left TM joints when chewing and talking
5. Painful muscle on the right cheek area
6. Mental fogginess and forgetfulness
7. Deep seated ear pains
8. Periodic dizziness
9. Difficulty in opening the mouth

Examination of cranial function revealed a disharmony in the primary cranial rhythm (motion of the brain) and also in the secondary motion which was asynchronous with the normal diaphragmatic or breathing cycle. The cervical tissue contracture was severe, and rotational head movements were restricted and painful. The patient’s diet included a high percentage of refined sugars and saturated fats, but lacked fiber, fresh complex carbohydrates, and minerals.

Treatment was aimed at first balancing the cranial rhythms by means of gentle cranial manipulation. Myofascial techniques were used to help release the long-standing cervical muscle spasms and fascial restrictions. The patient was instructed to avoid harmful refined foods and stimulating and depressant drugs like caffeine and alcohol. Nutritional support was provided in the form of concentrated food supplements. An all natural B-complex was given to help metabolize the excess lactic and pyruvic acid accumulation in the spastic muscles. Calcium, magnesium, and trace minerals helped restore muscle tone to a more normal relaxed state. Unsaturated fatty acids assisted in the diffusion of calcium into the muscle tissue. Because of the chronicity of the patient’s problem and predominance of physical fatigue, the adrenal glands were supported with protomorphagens, substances that provide the building blocks for healing of the organ tissue and stimulate the hormones they produce.

Since the cervical area was dysfunctional from two sources (the dental malocclusion and the spasms brought on by the whiplash injury), support to the causative area (dental complex) would be necessary to resolve the symptom area (neck). First, resin bonding was placed on the biting surfaces of the remaining posterior teeth. This
served to prevent the jaw from overclosing and disrupting the integrity of the temporomandibular joint. It also established a more normal physiologic length for the chewing muscles as well as those of the neck and helped correct the compensatory forward head posture. Further support was provided with the use of an orthopedic appliance. Although the appliance was removable, the design enabled the lower jaw to be held in a stable position in much the same way as a cast holds broken bones. The bionator orthopedic appliance functioned also to help restore, as best as possible, the normal curve of the cervical vertebrae. Dental support was the keystone to the structural imbalance. Within three visits, mobility in Pat’s neck started to improve. To assist in the release of muscle spasms, soft helium laser was directed to the meridian acupuncture points in the web spaces of the hand, ear acupuncture points, specific TMJ acupuncture points and the Ah Shi (muscle trigger) points.

Since physiologic dentistry was implemented, the patient has had a dramatic turn around of symptoms. The extreme heaviness of her head has virtually disappeared. Ear pains have vanished. The headaches have been tremendously reduced in frequency and intensity. The ballooning of the left neck flexor muscle has been reduced to the size of a golf ball instead of a grapefruit. Pat’s mental clarity has improved, and she now sees light at the end of the tunnel.

This case, as well as the others, points up what the author has been emphasizing throughout this book - find the causes and treat them. Unfortunately for the American people, Western medicine focuses its attention on treating the symptoms and tries to control them with drug therapy. The other frightening aspect of the traditional medical delivery system is their interpretation of a holistic approach. Basically it espouses the philosophy of shipping the patient from one specialist to another until each runs out of his/her bag of tricks or drugs. A true holistic approach entails treating the total patient with as non-invasive an approach as possible. Manipulative techniques, good nutrition, nutritional support, psychological counseling, dental support when necessary, cranial therapy and acupuncture all of which must be integrated with the sophisticated techniques of modern medicine. Each has
its place, and the deciding factor in utilizing one approach over another should not be based on the practitioner’s economic status or inflated ego but the welfare of the patient.

**Case Study: 68 – Dolores**

Dolores was first seen in my office on an emergency basis. The immediate problem was severe cervical pain and bilateral jaw pain. At this visit treatment was rendered to help alleviate the patient’s pain. Cold, helium-neon laser was directed to the associated acupuncture, auricular, TMJ and muscle trigger points. Myofascial release techniques were used to free up the cervical muscle tensions caused by spasms. The patient was then asked to return for an extended visit for a thorough evaluation. Dolores returned in a week and presented the following chief complaints:

1. Constant pain at the lower left angle of the jaw
2. Chronic headaches
3. Chronic neck pains
4. Ringing sounds, primarily in the left ear
5. Limited range of neck motion

As is so often the case with whiplash injuries, the cranial rhythms become disrupted. The combination of muscle spasms, distorted motion of the original trauma spread along the dural tube, and distortions of the pelvis, sacrum, vertebrae and cranium all have the potential to cause an irregular motion of the primary and secondary rhythms. This motion distortion in turn impedes nerve impulse transmission, and normal flow of cerebrospinal fluid into the brain, down the spinal cord, and out along the spinal nerves. The potential for motor and sensory problems plus disruption of normal physiology anywhere in the body is great.

Dolores exhibited an irregular primary and secondary cranial rhythm. Complicating this already disturbed motion was the existence of extensive jamming of cranial sutures. In addition, numerous cranial bones had restricted ranges of motion. In essence, the skull’s motion was diminished while the cranial bones were being pulled inward by the dural tube which was torqued from the trauma of the accident.
A New Specialty Is Born

Cranial manipulation was performed to release the jammed sutures.

A pre-existing dental malocclusion placed the patient into a structurally compromised state of adaptation. Lacking proper dental support because of several missing molar and bicuspoid teeth helped reduce the normal curve of the cervical vertebrae. Dolores’ body was constantly fighting to maintain some semblance of balance without any trauma. The whiplash injury tipped the scales to such a degree that the body could not recuperate on its own. It is for this reason alone that such patients are bounced around from one specialist to another without responding to conventional therapy. Proper occlusion or bite relationship is one of the major factors in maintaining proper body balance (among the skull, spine, sacrum and pelvis). If this vital link is broken, structural integrity is lost and the patient may be labeled a hypochondriac, malingering, neurotic, or other convenient classification. Even worse than being labeled, some of these unfortunate souls are subjected to exploratory surgery when all else fails.

Dolores also had distortion of the lower lumbar vertebrae and pelvis. Of interest in patients with this distortion is the consistent finding of a painful first rib head (located on the back side bilateral to the spine about the level of the shoulder). When the sacroiliac goes out, increased motion occurs at the point where the rib attaches to the spine and usually results in pain. Furthermore, a pelvis distorted by rotation with one ilium posteriorly rotated (short leg side) and the other in anteriorly rotated (long leg side) will cause one leg to be functionally shorter than the other. If by chance the quadratus lumborum muscle (which extends from the eleventh and twelfth ribs and attaches to the five lumbar vertebrae and superior crest of the ilium) is in spasm it also has the potential of creating a functional short leg.

To assist the patient in achieving structural balance, the pelvic complex was corrected with the use of Dr. DeJarnette’s padded wedges which allow the body’s own weight to make the change. Cranial manipulation was performed to release the jammed sutures. Next, dental support was provided. Myofascial release techniques were then used to release the cervical area. Soft laser was directed to the associated acupuncture points and muscle trigger points.
Dolores was placed on a vitamin regimen for muscle spasms and counseled nutritionally. To support structural correction, the patient was referred for full body massage therapy and chiropractic care. Within a period of two months, the headaches and cervical pains were greatly reduced.

One major variable that played a continuing role in perpetuating the patient’s muscle tension problem was psychological distress. The emotional aspect was related to personal family problems. Often this information surfaces only after the doctor has gained the patient’s confidence. Nevertheless, the patient must attempt to lessen the impact of the emotional upsets in order to achieve a higher degree of treatment success. In Dolores’ case a plateau has been reached in therapy and progress will now depend on the patient’s efforts.

Case Study: 69 – Jo Anne

Jo Anne is a 44-year-old homemaker who had suffered with chronic headaches for the past ten years. Her medical history seemed at first uneventful. However, approximately two years prior to her visiting our office, Jo Anne had completed orthodontic treatment for a retruded lower jaw and deep overbite. The treatment plan required the removal of two upper first bicuspid teeth to provide space to retract the remaining six front teeth. Although the bilateral spaces were adequately closed and the teeth aligned, the lower jaw became physically restricted in the retruded position. Also the deep overbite was not sufficiently corrected. The malpositioned lower jaw set in motion the entire adaptive body posture. The previous headaches worsened as a result of the structural change.

About a year after completion of orthodontic therapy, Jo Anne was involved in a motor vehicle accident. The whiplash injury not only exacerbated the pre-existing headaches but also established severe neck pains and constant toothaches. The conventional treatment package of a soft neck collar, Valium, and physical therapy did nothing to relieve the pains.

While at a social gathering, Jo Anne mentioned to my secretary that she had been suffering for a number of months with headaches, neck pain, and toothaches. Knowing the potential involvement
of the jaw, neck, and headaches in whiplash injuries, my secretary recommended that Jo Ann set up an appointment for an evaluation.

The examination revealed the fact that the jaw joints were posteriorly displaced and were putting pressure against the ear canals. When kinesiologic muscle testing techniques were used, they verified that the over-closed and retruded lower jaw posture was aggravating the spastic neck muscles. The combined effect of the perpetuated malocclusion and whiplash injury was torquing of the dural tube. The original headache was caused by a collapsed bite which was due to incomplete eruption of the natural teeth. The additional induced traumas served to heighten the distortion. To effectively alter the strained musculature and lost cervical curve, a removable orthopedic appliance (bionator) was inserted. By the third month, the symptoms were greatly alleviated. Continued wearing of the appliance for another six months virtually erased the complaints.

**Case Study: 70 – Shelly**

Shelly was referred to our office by her physical therapists. In 1981, she was involved in a motor vehicle accident in which she was struck from the rear. In the emergency room she was provided with Valium and a soft collar. Next came traditional physical therapy which included ultrasound, Hydroculator packs and electrical stimulation to the sore muscles. These treatments brought minimal relief.

When Shelly presented herself for evaluation her main complaints were:

1. Left ear pains especially upon awakening
2. Pain and pressure behind the left eye
3. Shooting pains starting from the left shoulder and progressing to the back of the head
4. Constant dry mouth
5. Limited opening of the mouth
6. Constant tightness of the chewing muscles

Examination of the dental structures revealed that her jaw was retruded as a result of the spastic neck muscles and straightening of the cervical vertebrae. The jaw joints were compressing against
her ear canals, especially on the left side. All the chewing muscles were in spasm and her jaw opening was limited to 35 millimeters (normal 50 to 60 millimeters). The right and left jaw joints had audible clicks. The left joint also produced crepitation (grinding noise similar to that produced when walking on pebbles). The chiropractor’s report stated that Shelly’s cervical spine had a right rotational fixation of the first two cervical vertebrae, and palpation of her cervical and thoracic spine revealed areas of exquisite tenderness throughout with numerous trigger zones. The blood chemistry showed low readings for the red blood cells, hemoglobin, and sugar levels. The white blood cell count was high which indicated an infection.

The clinical composite, which included muscle pain, tightness, and limited ranges of motion, job-related stress, and inability to sleep and eat properly, quickly caused Shelly’s physical and mental status to deteriorate. To get the patient back into a better physiologic adaptive range, treatment focused on nutritional support, chiropractic manipulation, and dental orthopedic support.

Nutritionally, the patient was given B-complex vitamins (help to break up the metabolic waste products within the muscles), vitamin C (great detoxifier, supports the adrenal glands, aids healing of tissue, and in high doses acts as an antihistamine), an adrenal concentrate (to support adrenal function), Hemadyne (a product which supports the production of red blood cells), digestive aids (hydrochloric acid and pancreatic enzymes), calcium (for tissue integrity and spastic muscles) and vitamin B-6 and magnesium to act as a natural diuretic (helps reduce swelling due to fluid build up). The patient responded well to the combined treatment. By the sixth week most of the symptoms were gone. The dental orthopedic appliance was discontinued since the muscle tightness and limited jaw opening had resolved. The irony of the whole case was that although the physical therapists were delighted with Shelly’s rapid recovery, they stopped sending referrals. Their reason was based on the fact that they were getting their referrals from an orthopedic surgeon who did not hold chiropractors in high esteem.
Facts Concerning Tissue Injury and Repair

Tissue injury associated with whiplash creates a period of crisis for the body. The physiologic demands needed to protect the organism and repair the damage are increased manifold. Under normal circumstances, the 100 trillion cells of the body are breaking down at the rate of 24 billion per day. In each cell there are between 300 and 800 power plants called mitochondria. Within each mitochondrion (in the liver) there are approximately 5,000 respiratory units, while each mitochondrion in the heart contains as many as 20,000 respiratory units. The 70,000 miles of blood vessels that transport the body’s fluids contain 30 trillion red blood cells. The normal, healthy individual produces 15 million red blood cells per second to replace the same number that are destroyed. That turnover represents 900 million red blood cells per hour. Cognizant of this awesome complexity, one must give serious concern to the quality of food ingested to support this magnificent machine and the potentially harmful effects of drug therapy.

In order for a cell or group of cells to be replaced, the following conditions must exist:

1. A constant blood supply for the delivery of oxygen, and nutrients for the removal of metabolic wastes and carbon dioxide

2. A constant nerve supply with nerve impulses which activate and regulate cellular function as well as regulate the blood supply

3. An adequate supply of:
   a. a full spectrum of naturally occurring vitamins
   b. a full spectrum of minerals
   c. a full spectrum of trace mineral activators
   d. a full spectrum of enzymes

4. Proper lymphatic drainage of tissue spaces and required white
blood cells to assist in local defense of an invader and for tissue repair.

No matter what the cause of the tissue injury, the body must utilize several biochemical and physiologic activities to replace or repair the damaged tissue.

The first stage in tissue injury is the process of inflammation. Defined by Dorland’s Illustrated Medical Dictionary, 25th Edition, inflammation is “a localized protective response elicited by injury or destruction of tissue, which serves to destroy, dilute, or wall off... both the injurious agent and the injured tissue.” In the acute form, inflammation is characterized by the classical signs of pain, heat, redness, and swelling.

Another respected source of medical information is the Textbook of Medical Physiology by Arthur Guyton, M.D. In the 6th Edition published in 1981, Guyton states on pages 70-73: “Inflammation is a complex of sequential changes in the tissues in response to injury. When tissue injury occurs... large quantities of histamine, bradykinin, serotonin, and other substances are liberated by the damaged tissue into the surrounding fluids.” The released histamine functions to increase blood flow into the injured area causing a state of “brawny edema” (thickening of inflammation) or congestion in the spaces surrounding the injured cells. Dr. Guyton continues, “It is clear that one of the first results of inflammation is to ‘wall off’ the area of injury from the remaining tissues.” And, “...the intensity of the inflammatory process is usually proportional to the degree of tissue injury.”

Based on these two sources of information, it would be a safe assumption that inflammation is a necessary and essential protective response in the healing mechanism. Why then would a physician prescribe an antihistamine drug to reduce the swelling of a post-whiplash injury? It would seem logical that such a drug would interfere with the first stage of healing. Even ingestion of large amounts of ascorbic acid will have a disruptive effect. Increased
quantities of ascorbic acid pharmacologically act as a neutralizer of histamine. The accumulation of histamine functions to activate the second stage of the healing process.

The second phase of healing involves the state of hyperemia. As the volume of blood to the area of trauma increases, the traumatized area becomes reddened and warm. The elevated temperature is also part of the healing process. Dr. O.P.J. Falk, assistant professor at St. Louis University School of Medicine, said, “Fever represents an effort by the body to accelerate the metabolic process ... any attempt to control fever artificially, is defeating nature’s purpose.” The biochemistry of inflammation requires the presence of the fever as an essential part of the repair process. This truth was substantiated by a double-blind study conducted by Dr. Falk. He found that flu patients who were given aspirin were disabled twice as long and had 3 1/2 times more complications than those patients who were given sugar pills.

Exercise, sexual activity, and eating will cause a normal increase in body temperature, while a drop will occur during an individual’s deepest sleep. In conditions of cold weather and in the early morning, body temperature may reach a low of 96°F. At the other extreme, Guyton cautions of the possibility of cellular damage when the temperature exceeds 106°F to 108°F.

In the July 1980 issue of the Journal of Clinical Therapeutics, it was stated that most authorities regard temperatures below 106°F as harmless and those over 108°F as potentially harmful.

A University of Colorado pediatrician, Dr. Barton D. Schmitt, conducted a study which revealed that most people are overly concerned about fever. Dr. Schmitt feels that these fears are unjustified, since serious complications are rarely produced by fevers (Am J Dis Child 134: 176-181, 1980).

Robert S. Mendelsohn, M.D., author of Confessions of a Medical Heretic, stated emphatically that, “Temperature
taking is virtually useless because there are innocuous diseases that carry very high fevers. Roseola, for example, is a common disease of infancy, absolutely harmless; yet it frequently carries a temperature of 104° or 105° F. On the other hand, there are life-threatening diseases, such as tuberculosis meningitis and others, that carry no fever at all, or even subnormal temperature.”

Rothenburg, a physiologist, and Dr. Kluger, at the University of Michigan Medical School concluded, that taking drugs to reduce fever may well impair the body’s own protective defense facilities. Aspirin may combat pain, but indiscriminate use to reduce fever may be a serious human error.

When the body exhibits heat and fever, it indicates that the first line of defense is functioning. The acutely ill patient who lacks a fever is the one to be concerned about.

The third stage witnesses the influx of white blood cells (WBC) which have the capability of digesting foreign bodies. These white blood cells begin the task of cleaning up the area of damaged tissue. If not interfered with, the process of inflammation can continue until completed. However, administration of antibiotics and/or steroids actually hinder the phase. From the book *The Influence of Antibiotics on the Host-Parasite Relationship*, comes the realization that antibiotics impair the body’s immune system. These antimicrobial drugs will prevent the migration of white blood cells to the area of inflammation, and will impede the ability of the scavenger white blood cells to engulf and destroy foreign bodies.

Dr. Widmann of Johns Hopkins and many others have revealed that the majority of antibiotics are antimetabolites and actually function to inhibit cell membrane synthesis. Laboratory tests show that antibiotics work differently in the test tube than in the body. Antibiotics will kill microorganisms in the glass petri dish by weakening their cell walls. Within the patient, however, the real effect of antibiotics is to block enzymatic reactions of cellular bio-

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Aspirin may combat pain, but indiscriminate use to reduce fever may be a serious human error.
chemistry needed for tissue repair or replacement. In summing up the effectiveness of antibiotics, Dr. Richard Murray was accurate when he stated, “The administration of antibiotics during the course of an inflammatory process is analogous to putting out a fire by dousing it with gasoline.”

If an antihistamine is taken to prevent swelling, the first stage of inflammation is disrupted and tissue repair will be delayed. Prescribing an antipyretic (aspirin or similar drug) will stop the hyperemia (increase of blood volume) with its accompanying heat and fever, but again the repair process will be retarded. Administering an antibiotic or steroid will provide symptomatic relief but without any tissue repair. Unfortunately most patients treated thusly will be delighted because their symptoms have been controlled. In the long run, however, the patient’s body will pay the price.
NUTRITIONAL ASPECTS OF HEADACHES AND DISEASE
The age of specialization has produced health practitioners who deliver medical services in much the same way that fast food chains provide their patrons with goods and services. Professional training is so specialized that practitioners never really get a total concept of how the body interrelates physiologically, structurally and nutritionally.

The typical American diet is high in protein, refined sugars, and saturated fats and low in natural fiber, whole grains, fresh fruits and vegetables, nuts and seeds, high quality protein, and unsaturated oils. In reality, Americans are functioning on “low-octane” fuel, and are developing widespread degenerative diseases at a young age. The solution to our health problems was provided by Hippocrates over 2500 years ago when he stated, “Thy food shall be thy medicine, thy medicine shall be thy food.” Nutritional deficiencies when coupled with environmental pollutants, stress of daily living, and structural imbalances set up individuals for their medical problems.

GENETIC OR DIETARY DETERIORATION?

The old saying that American is the land of plenty aptly describes our nation’s health status - plenty of degenerative diseases. Approximately one-half of our population is afflicted and suffering from such maladies as cancer, heart disease, stroke, hypertension, diabetes, arteriosclerosis, cirrhosis of the liver, obesity, mental illness, cataracts, arthritis, multiple sclerosis, tooth decay, gum disease, and loss of teeth. Of the top ten leading causes of death in the United States, six (heart disease, cancer, stroke, diabetes, cirrhosis, and arteriosclerosis) are degenerative diseases. Over one million Americans will die each year of heart attacks and strokes. Diabetics now number in excess of 10 million. Over 5 million Americans are victims of arthritis. Approximately 33 million people are considered to have succumbed to men-
The number of children classified as hyperactive, retarded, and schizophrenic is steadily on the rise. As bad as this may appear, drug consumption is even more alarming. Americans consume an estimated 37 million pounds of aspirin each year. We lead the world in chronic headache sufferers with an estimated 45 million. We also swallow 1 1/2 million pounds of tranquilizers and 836,000 pounds of barbiturates. Americans shell out over one-half billion dollars a year on Valium and other so-called headache remedies. Degenerative disease is not due solely to the fact that we are living longer, because today more than ever, our young people suffer from these same chronic illnesses. We are touted as having the highest standard of living among the nations of the world but our people are truly the sickest to walk this globe.

At no point in the history of civilization has man been subjected to such cruel and unusual punishment in the form of processed foods. Man’s body has been pushed to its physiologic limits in attempting to adapt to adulterated food. In its wake, the ravages of degenerative diseases have appeared.

Based on the United States Department of Agriculture surveys from 1910-1976, American consumption of wheat fell 45 per cent, corn 85 per cent, rye 78 per cent, barley 66 per cent, buckwheat 98 per cent, beans and legumes 46 per cent, fresh vegetables 23 per cent, and fresh fruit 33 per cent. During this same period intake of beef increased 72 per cent, poultry 194 per cent, cheese 322 per cent, canned vegetables 320 per cent, frozen vegetables 1,650 per cent, processed fruit 556 per cent, ice cream 852 per cent, yogurt 300 per cent, corn syrup 761 per cent, and soft drinks 2,638 per cent. To further add insult to injury, the intake of chemical additives and preservatives since 1940 has risen by 995 per cent.

At the turn of the century, man’s demise was due primarily to infectious diseases such as pneumonia, tuberculosis and influenza. At present, too many
Americans are so heavily burdened with degenerative diseases that their energies have been diverted from pursuing the good life. For some, seeking symptomatic relief via allopathic (traditional) medicine has become a full-time endeavor. The vast majority, however, seem to be sputtering through life like a car whose motor pings from the effects of low-octane fuel. The chosen few who return to consuming food of the highest quality will reap the good feelings that so many others in our society attempt to derive from mood-altering drugs. The afflicting scourge will continue its devastation until man changes his diet back to a balance that is in harmony with nature. Only when we resume the consumption of whole grains, fresh vegetables, freshly prepared soups, beans, and sea vegetables, and quality protein will the disease statistics begin to abate.

Since there are no time outs in this great game of life, we must live each day with quality by embarking upon it with a good positive attitude, physical health, high-octane nutritional foods, and pursuit of our goals. (See below “One Life to Live”)

These words may sound familiar. They make up a song that was popularized by Lou Rawls. Its lyrics make up a creed to live by. One of its writers, Kenneth Gamble, had this to say about One Life to Live: “Life—the most precious gift of all. The chance to experience physical things and spirited things at the same time. The Creator of life is greater than life. There is no greater treasure than a life of awareness - being aware of the purpose of life. That purpose is to glorify and exalt the Creator; to be humble, to be caretakers of the physical condition. We are blessed every day we wake up. To destroy life is a sin; to destroy the earth is a sin.

“Just as every snowflake has a different design, so do the patterns of life. There has never been another you, or another me, on this planet before. We’ve got one life to live … so let’s live it in peace, truth and [nutritional] harmony.”

“Thy Food Shall Be Thy Medicine”
ONE LIFE TO LIVE*

You’ve only got one life to live
So live it in peace, live it in truth, live it in love

And then you live each day
Like it’s your last one
You take control of your emotions
All your doubts and fears

And just as the world, and all it’s sadness
And replace joy for those salty, bitter tears

‘Cause you’ve got one life to live
So live it in peace, live it in truth, live it in love

And you greet every day
with a little love in your heart
You go and do all the things you desire
All the things you dream of
Because today is the beginning of a brand new life
You have to fail sometimes
In order for you to succeed

You got one life to live
So live it in peace, live it in truth, live it in love

If you’re feelin’ down and out let’s sing
If you’re sad I’ll make you laugh

And if you become puffed up with too much pride
Remember that everything, everything must pass

You got one life to live
So live it in peace, live it in truth, live it in love

You’ve got one life to live
So give it your all

Give it a lot
Give it your best shot

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“Thy Food Shall Be Thy Medicine”
There are No Magic Bullets Against Disease

Present day state-of-the-art medicine has led the public to believe that the medical practitioner alone has the magic bullets against disease. Unfortunately these magic bullets are falling short of their targets. As a nation we have dropped from seventh in the world to sixteenth in the prevention of infant mortality; in female life expectancy we have dropped from sixth to eighth; in male life expectancy, we have dropped from tenth to twenty-fourth. We are failing despite spending more than 75 billion dollars on medical care. That is more money being spent than by any other country on the face of this globe. Emmanuel Cheraskin, M.D. summed up our plight when he made the statement, “The plethora of such pronouncements makes it now abundantly clear that health is the fastest growing failing business in these United States.”

The well-documented work of Drs. Weston A. Price and Francis C. Pottenger [available from Price-Pottenger Nutrition Foundation, 5871 El Cajon Blvd., San Diego, CA 921151] brings to light the effects of cooked protein on the degenerative process. Their study was conducted on two groups of cats. One group was fed a diet of cooked protein and pasteurized milk while the other group ate only raw protein and raw certified milk. After three generations of cats, the clinical findings were observed to mirror man’s present nutritional plight. The group of cats fed the cooked protein exhibited during their life span many of the degenerative diseases of man. They suffered from arthritis, cirrhosis of the liver, colitis, ulcers, gum disease, loss of hair, heart problems, clogged arteries, cancer, cataracts, constipation, tooth loss, and other diseases. The toxins produced, (a result of the breakdown of cooked protein) in these cats were so poisonous that even noxious weeds would not grow where they defecated. The second generation of cats from those fed cooked protein exhibited malformation of the upper jaw, and bone deformities; some were
stillborn, while the remaining cats suffered many ills and died prematurely. The frightening aspect of this experiment was that there was no third generation of offspring from these cats.

On the other hand, the group of cats raised on the raw food enjoyed a healthy normal life. They reproduced healthy offspring who lived a normal life expectancy and who went on to produce a healthy third generation. Review of the degenerative disease statistics in this country will lead one to believe that the status of health in present day Americans parallels the second generation of the first group of cats.

The body’s inherent ability to heal itself is tremendous. To support this innate power, one must combine knowledge, a positive attitude, quality food, exercise, and manipulative osteopathic or chiropractic care. The information in this section will provide insight into healing the body. By eating unprocessed foods the body will gradually detoxify itself and help reduce potential sources of headaches and other chronic pain symptoms. It should always be remembered that “the road to health is through your kitchen, not the pharmacy.”

**Quality of Food**

When discussing nutrition, we are in essence dealing with only three principal groups: proteins, carbohydrates, and fats. Establishing a diet that is right for you will require a basic understanding of each of these food sources plus some nutritional principles to follow.
Proteins

Proteins are probably the most controversial of all nutrients in the field of nutrition. Whether a high or low protein diet is the most beneficial, or whether animal protein is superior to the vegetable form, or which protein is complete or incomplete seem to be the areas usually debated. Through a better understanding of the nature of the beast, you will be able to make your own final judgment.

Proteins are probably the most complex of all the known biological substances. They are the only sources of nitrogen complexes necessary to build protoplasm which constitutes the physical basis of all living cells. Proteins provide the chemical structure for the body’s enzymes, antibodies, hormones, blood plasma, lymphatic fluid, and other substances. There are simple proteins like albumins and globulins and complex ones represented by nucleoproteins which are the basis of ribonucleic acid (RNA) and deoxyribonucleic acid (DNA). Other complex proteins are phosphoprotein, which is the principal protein of milk and egg yolk. Additional examples are chromoproteins (hemoglobin), lipoproteins (in brain tissue), metalloprotein (iron-containing protein) and others.

All proteins contain carbon, hydrogen, oxygen, and nitrogen; most of them also contain sulfur, and some contain phosphorus. Elements such as iron, iodine, copper, manganese and zinc are also present but their presence depends on the nature of the protein. The basic building blocks of protein are the amino acids which become available to the body during digestion of protein. There are an estimated 435 trillion different combinations that can result from the 22 amino acid units which comprise the thousands of formed proteins. The body can produce all but eight of the 22 amino acids (L-Tryptophan, L-Phenylalanine, L-Lysine, L-Threonine, L-Valine, L-Methionine, L-Leucine and L-Isoleucine). These eight are referred to as the...
essential amino acids and must be supplied by the diet. In addition, all the essential amino acids must be present simultaneously and in proper ratios in order for the body to produce proteins.

**Denaturing and Coagulation of Proteins**

Denaturing of protein refers to the rearrangement of the amino acids that occurs within the protein molecule when the protein is subjected to heat, acid, alkali, or other physical forces. On the other hand, if their solubility is lessened, the proteins are considered to be coagulated. The protein of an egg, for example, is coagulated and denatured when it is fried or hard-boiled. Similarly, when milk is pasteurized, its protein becomes denatured and the destroyed enzymes (phosphatase) prevent the utilization of calcium by the body.

An experiment conducted on newborn twin calves produced a result which strongly suggests that long established “scientific” dogma should be questioned. From the very first day, both calves were fed their mother’s milk but one calf’s portion was pasteurized. At the end of 60 days, the calf fed the pasteurized milk died.

Meats, poultry, and fish undergo the same denaturing process when cooked. It is estimated that 80 per cent of the protein is destroyed by the act of cooking. When protein foods are cooked, 6 amino acids are inactivated. Five of these are essential and non-synthesizable by the body. Reheating these foods will serve to reduce what little nutritional value is left. Although not yet documented, use of microwave cooking has the potential to be more detrimental to health than conventional gas or electric cooking. Because microwaves are high energy waves they serve as more efficient means of protein destruction.

Most people consider hamburger as a convenience food and a source of nutritional protein. In reality, it is one of the more toxic decayed forms of ingested substances. As soon as the animal is slaughtered, the carcass begins
to deteriorate. This decay process is slowed down by freezing; however, the formation of ice crystals within the tissues causes tearing and rupturing of cells which then liberate enzymes and other substances that hasten spoilage. The time factor must also be taken into consideration. Weeks may elapse from the time the animal was killed, shipped to meat packing plants, and redistributed to local markets, before it reaches your dinner table. The additional act of grinding the meat to create hamburger will release more enzymes and cause further tissue degeneration. Ingesting this toxic waste produces a major source of body odor while putting a strain on the organs of detoxification (liver, kidneys, colon, and skin), and the body’s immune system, and provides a potential source of toxic headaches.

To derive the maximum nutritional value from protein, it should be cooked only minimally. Those individuals who have acquired a taste for sashimi, the Japanese delicacy of raw fish, are really obtaining one of the highest qualities of protein. Those concerned about the problem of parasites from eating raw or rare protein foods can greatly reduce the chance of this by taking a nutritional supplement called Zymex II (available from Standard Process Laboratories, 2023 West Wisconsin Ave., P.O. Box 62, Milwaukee, Wisconsin 53201; tel.# [414] 933-2100). As a proteolytic enzyme (capable of breaking down protein), this product is an excellent aid in the digestion of parasites.

Protein Digestion

Of the three principle food groups, proteins are the most difficult for the body to digest and utilize. Protein is handled in the stomach and small intestine. The chemical process by which proteins are digested is called hydrolysis. During hydrolysis there are a series of intermediary components with the end product being amino acids. Essential to this process is hydrochloric acid and a proteolytic enzyme—pepsin. The hydrochloric acid sets the chemical stage for activity while the
pepsin helps break up the proteins into simpler amino acids. As gastric emptying occurs, protein digestion is carried on by excreted pancreatic enzymes and intestinal secretions. The amino acids are rapidly absorbed through the intestinal wall into the systemic circulation for transport to the liver for detoxification and then to needed sites throughout the body.

Consuming a diet high in refined foods requires less hydrochloric acid for digestion, and therefore the body produces less. As production of this acid diminishes, the body’s ability to handle proteins becomes a problem. Exacerbating this situation is the intake of sugars along with proteins at the same meal. The sugars disrupt the digestive process setting the stage for improper breakdown of protein in the body. Partially digested protein causes fermentation and toxic waste build-up which leads to a multitude of symptoms: acid indigestion, stomach bloating, sour taste, putrefied breath odor, foul-smelling bowels, itchy rectum, toxic headache, stomach ulcers, abdominal pain, diarrhea, colitis, increase of arthritic pains, fatigue, and others. Increasing age also brings about a reduction of hydrochloric acid production. Both factors result in a diminished quantity of available protein to the body. As protein deficiency ensues, the aging process progresses more rapidly.

**Protein Requirement**

Ten to 15 per cent of the daily caloric intake should be provided by quality protein. From a standpoint of maintaining health, a daily consumption in the range of 30 grams (equal to 1 ounce or 2 tablespoons) to 70 grams (equal to 2.5 ounces or 5 tablespoons) of an unaltered protein (minimally cooked) will be satisfactory for both males and females. Needs vary according to daily physical activity, age, and climatic conditions. Living in a colder climate will necessitate a higher protein consumption than someone residing in a tropical zone. As a general guide, a more exact figure can be calculated using the ratio of 1 gram...
 Proteins

(.04 ounces) of protein daily for each kilogram (2.2 pounds) of body weight. Since youngsters are in a rapid growth period they may require 2 grams (.07 ounces) per 2.2 pounds per day. Elderly people are usually in a state of negative nitrogen balance and will also require 2 grams (.07 ounces) of protein per kilogram (2.2 pounds) of body weight.

Research has established the fact that approximately 30 grams (1.06 ounces) of body protein are metabolized and used for daily body maintenance. This loss must be replaced by a new source of quality protein for daily energy and tissue replacement. Protein reserves can be maintained if the daily intake is 50-70 grams (1.75 to 2.45 ounces). An important point to keep in mind is that unaltered, complete protein is needed. However, individuals who are primarily vegetarian may be ingesting only partial proteins and may require an increase of complementary protein. A complementary protein is a protein that supplies the amino acids missing in another partial protein, thus making the combination more complete. As an example, brown rice is high in the amino acids Methionine and Cysteine but lacks Lysine. The Japanese food, tofu (soybean product), is high in its Lysine content. Combining brown rice and tofu at the same meal will provide a protein source that is approximately 92 per cent complete in all the amino acids.

The process of combining proteins was discovered long before the existence of the National Academy of Sciences, Food and Nutrition Board. Looking back in history, all traditional societies used protein combinations as the basis of their diets. The Asians combined soy foods with rice, wheat, millet, or barley. Middle Easterners consumed recipes which included bulgur wheat with chick peas, or pita bread felafel with humus (combination of whole wheat, chickpeas and sesame seeds). The Latin Americans were noted for their corn tortillas with beans or combination of beans and rice. The following

A complementary protein is a protein that supplies the amino acids missing in another partial protein, thus making the combination more complete.
general categories are offered as a guide for combining proteins:

- Whole grains (millet, oats, brown rice, buckwheat, etc.) +
  - Legumes (peas, beans, lentils)
- Seeds and nuts (sesame, pumpkin & almonds, chestnuts, etc.) + Legumes
- Whole grains + Milk products (preferably raw certified)

Ideally people should eat only when hungry. This results in smaller meals throughout the day. The big advantage is that complementary proteins eaten within a few hours of one another would still be available for protein combining. In addition, less stress would be placed on the body’s digestive and detoxification systems. For a more in-depth study of complementary proteins and their nutritional value, you are urged to read Diet for a Small Planet by Frances Moore Lappé.

Because of the widespread use of drugs in the beef and poultry business, consumers are urged to choose organically raised livestock. The antibiotics and steroid drugs ingested by eating contaminated protein will prove detrimental to health. As the quality of our food continues to decline, our immune systems become less able to deal with the common everyday variety of bacteria and viruses and even less capable of handling the more resistant strains.

From an everyday practical standpoint, one can obtain a high quality source of protein from eggs, seafood and complementary plant proteins. Following Benjamin Franklin’s philosophy of “everything in moderation” would aptly apply to adding small amounts of a quality animal protein like turkey or fish to vegetarian delights.

**Protein Excess**

Research indicates that most Americans consume twice the recommended quantities of protein per day. Today’s typical diet provides twice the recommended daily allowance of 5 ounces per day for a 154 pound male and 4 ounces...
per day for a 128 pound female. The average healthy individual can tolerate such excesses for only so long before nutritional side effects start appearing. These side effects manifest themselves in the form of vitamin and mineral deficiencies. A daily protein excess of 70 grams (2.5 ounces) of protein above the recommended allowance, coupled with 60 per cent refined carbohydrates and saturated fats (typical American diet) will lead to vitamin B-6, B-3, calcium, and magnesium deficiencies.

The University of Wisconsin’s Department of Nutritional Sciences conducted a study on young men. The study revealed that significant levels of calcium were present in the urine when these men consumed a high protein diet. Low and medium protein consumption, however, caused no loss of calcium. It was the opinion of the researchers that a state of osteoporosis (porous, brittle bone due to demineralization) would occur as a result of excess dietary protein over a period of a decade.

Fast food restaurants have changed the eating habits of Americans and have contributed their share of the daily protein excesses (sales in excess of 55 billion hamburgers). The significance of lower levels of calcium and related mineral depletion is seen in the increased state of hyper-irritability among the general public. Decreased calcium levels allow muscles to go into spasm more easily, set the stage for tension headaches, provide the source for itchy skin during the winter months, fever blisters and cold sores during the summer, unexplained low grade fevers, and cramping of calf muscles and toes during the middle of the night. Further compounding the problem is the addition of carbonated sugar drinks. They have the effect of further reducing the blood serum calcium level. From an overall health standpoint, the average American is being set up, via numerous degenerative diseases, for pain and suffering with a greatly shortened life expectancy.
Presented in the lists that follow are symptoms of vitamin and mineral deficiency frequently caused by excess protein consumption.

**Symptoms of Vitamin B-6 Deficiency**
- Loss of hair
- Water retention during pregnancy
- Numbness and cramps in arms and legs
- Slow learning
- Temporary paralysis of a limb
- Increase in urination
- Muscle weakness
- Depression
- Cracks around the mouth and eyes
- Visual disturbances
- Neuritis
- Arthritis
- Heart disorders involving nerves
- Irritability
- Dermatitis

**Symptoms of Vitamin B-3 Deficiency**
- Muscular weakness
- Indigestion
- General fatigue
- Various skin eruptions
- Loss of appetite
- Bad breath
- Small ulcers
- Irritability
- Recurring headaches
- Canker sores
- Nausea
- Tender gums
- Insomnia
- Vomiting
- Strain
- Tension
- Deep depression

**Symptoms of Calcium Deficiency**
- Nervousness (one of the first signs)
- Muscle twitching
- Muscle cramps, numbness, and tingling in arms and legs
- Heart palpitations
Proteins

- Slow pulse rate
- Excessive irritability of nerves and muscles
- Osteoporosis
- Bone malformation
- Joint pains
- Insomnia
- Impaired growth

Symptoms of Magnesium Deficiency

- Coronary heart disease
- Blood clot formations in heart and brain
- Calcium deposits in kidney, blood vessels and heart
- Apprehensiveness
- Tremors
- Disorientation
- Muscle twitching
- Confusion

Excess protein is metabolized to produce energy in the same way that carbohydrates or fats are converted to calories. Once digested, amino acids are highly reactive and reorganize rapidly within the cell to form new protein. Newly formed excess protein is stored primarily in the liver, kidneys and intestinal lining. When protein consumption surpasses an optimum point, that is amino acid and energy requirements have been met, the protein is converted into fat by the liver and stored within its cells. As the protein reserve site overloads, toxic products empty into the bloodstream. The metabolic wastes establish an acidic condition within the cells, bloodstream, and extracellular fluids, which are normally alkaline. Maintenance of an acidic environment will lower the resistance of the immune system, produce clinical symptoms of fatigue, headaches, and chest pain and will ultimately lead to degenerative diseases such as cancer, arteriosclerosis, cataracts, mental illness, and others.

An interesting case in point, is the decline of the incidence of cancer in Holland following the food shortages
during World War II. A Dutch epidemiologist, Dr. F. de Waard, correlated the cancer decline (35 per cent to 60 per cent), which occurred in Holland between 1942 and 1946, to the food shortages. During the German occupation, most of the protein sources—cheeses, butter, milk, eggs, and meat, were requisitioned. The Dutch people were forced to survive on their homegrown vegetables, bread and other staples. Following the war, the routine protein sources were again available and the cancer rates returned to their original prewar levels.

Below are listed many of the effects of excessive protein consumption:

- Disruption of healthy intestinal bacteria
- Increased occurrence of diarrhea
- Distortion of the acid-base balance of body chemistry
- Liver function impairment
- Indigestion
- Increased quantities of uric acid, urea and toxic purines (cause depression)
- Increased fat in bloodstream (reduces available oxygen levels to organs, tissues, and cells)
- Hardening of the arteries
- Pyorrhea
- Arthritis
- Osteoporosis
- Premature aging
- Deficiencies of vitamin B-3, B-6, calcium, and magnesium
- Ammonia production (demonstrated to be highly carcinogenic)
- Depletion of pancreatic enzymes, depression of function of pancreas and interference with insulin production
- Increased nitrogen production (hazardous with any type of kidney problem)

International research has shown that the highest life expectancies (90-
Proteins

100 plus years), occur in those countries where protein consumption is low. Countries having diets high in protein correspondingly have the lowest life expectancies. Of all the industrialized countries in the world, the United States has the highest protein intake for adult males and ranks 21 in life expectancy. This poor showing is believed by many nutritional authorities to be the result of our high protein diets.
Carbohydrates

The body’s chief source of energy is derived from carbohydrates. Structurally, carbohydrates are composed of organic compounds including carbon, hydrogen, and oxygen and are represented as sugars, starches, and cellulose in the foods we eat. Carbohydrates exist in three basic forms: the simplest, monosaccharides, of which glucose is the most important; the second form, disaccharides, are composed of two monosaccharide molecules and represent sucrose (cane sugar), lactose (milk sugar), and maltose. The most complex group, the polysaccharides (glycogen, starch, and cellulose), are made up of enormous molecules of monosaccharides. Polysaccharides are obtained by eating natural complex carbohydrates (whole grains, fresh fruits and vegetables) and offer the added bonuses of minerals, enzymes, vitamins, and fiber. In comparison to proteins and fats, carbohydrates are the most easily digested and burn 100 per cent clean when releasing their energy.

Consumption of complex carbohydrates will provide the body with the most efficient source of energy. Eating whole grains such as brown rice, oats, rye, millet, buckwheat, and raw or lightly steamed fresh vegetables will produce a slow constant supply (estimated at two calories per minute) of glucose into the bloodstream. This occurs as a result of many digestive processes. Polysaccharides must first be broken down into simpler sugars and finally into monosaccharides before they can be absorbed. In contrast, monosaccharides and disaccharides are rapidly absorbed through the intestinal wall appreciably raising the blood sugar level. As an example, intake of four ounces of glucose will be absorbed within fifteen minutes whereas the same quantity of fructose (complex sugar contained in tupelo honey) requires about four hours. Once in the bloodstream, glucose becomes an efficient fuel. Being highly soluble, it can be transported anywhere in the body.
and utilized directly by body tissues. Excess amounts of glucose will be stored by the liver, muscles and other tissues in the form of a complex starch, glycogen. Upon demand, the liver and other tissues are capable of converting the glycogen reserves back into glucose.

When the immediate energy needs of the body are met and the limited storage depots are filled, excess glucose is converted into fatty acids and stored in the form of triglycerides. Although the body has a limited capacity to store carbohydrates it has an unlimited capacity to store fat. The conversion of glucose to triglycerides depends to a large degree on the quantity of insulin available. In cases of hyperinsulinism, insulin production is high and glucose is easily transformed into storage fat. A double crisis now evolves. First, the excess fat will infiltrate and surround organs decreasing their ability to function. Second, the high insulin production quickly lowers the blood sugar levels to a point where the body begins craving sugar. Even though the individual is physically full, the blood sugar demands have not been met.

The typical American diet, which is high in refined carbohydrate foods (white bread, pastas, donuts, candy, cakes, dried cereals, etc.) has the potential to oversensitize the beta cells of the pancreas forcing it to produce large quantities of insulin. The end result is an erratic blood sugar level which sends the individual on an emotional roller coaster ride and sets the stage for disease. Since the simple sugars are quickly absorbed, an overabundance of glucose occurs within the cells. This results in an imbalance of oxygen and causes incomplete combustion of glucose and production of organic acids (lactic, pyroracemic, butyric, and acetic). The cellular environment is now in a condition of acidosis compounding and already acid condition caused by the consumption of excess protein. When coupled with the acidic intra- and extracellular fluids, metabolic toxins will hasten degenerative diseases.
such as arthritis, cataracts, gum disease, diabetes, and cancer.

Daily carbohydrate consumption should comprise 50 to 75 per cent of the bulk of our diet. However, the exception to this would be for those individuals who live in colder climates. Since a colder environment requires the body to produce more heat, protein and fat intakes will have to be increased to meet the individual’s needs.

Selection of complex carbohydrate foods should be based on several important factors. Only those foods that grow within your locality or similar type climate should be consumed. One just has to view the eating habits of animals to see this universal principle in action. Another universal principle is based on the ancient oriental philosophy of yin (expansive) and yang (contractive). Eating tropical fruits (yin) during the winter (yin condition) months is out of balance if you reside in Nebraska, Vermont, or other geographically cold areas. It is just as inconsistent for a Floridian to consume daily portions of beef, chicken, buckwheat, millet, or wheat (yang foods), while living in a warm (yang) climate.

Another serious consideration is the elimination of all vegetables or fruits that have been canned or frozen. The processes of pasteurization, freezing, and the latest “technological breakthrough,” food irradiation, all have the effect of destroying whatever little nutritional value is left in the food. A concerted effort should be made to purchase organically grown fresh fruits and vegetables. Large commercial farms have depleted the soils by improper crop rotation and a lack of organic fertilizers, and they have contaminated our food supply with the use of pesticides and synthetic fertilizers. Finally, choice should also be based on the acid- or alkaline-forming properties of the food.

**Toxic Effects of Sugar**

The major concerns of the patient suffering from whiplash type injuries are twofold: (1) to reduce the intake of
As a refined carbohydrate, sugar is devoid of vitamins, minerals, essential fats, and proteins. It supplies the body with little more than calories but has a damaging effect on the body.

Toxic, processed foods and (2) to increase natural healthy foods which enhance tissue repair.

One of the biggest sources of toxicity comes from the intake of refined sugar. In 1982, the world population consumed over 92 million metric tons of sugar. Americans ingest sugar at the rate of 8 tablespoons every 24 hours. Sugar sources include processed foods and soft drinks which supply approximately 45 pounds of corn sugar per person swallowed each year while the sugar bowl accounts for an additional 77 pounds per person.

As a refined carbohydrate, sugar is devoid of vitamins, minerals, essential fats, and proteins. It supplies the body with little more than calories but has a damaging effect on the body. Since the refining process of sugar strips away the potassium, vitamins and trace minerals, the body becomes depleted as it must provide these nutrients for proper combustion. This noxious substance, sugar, has a direct effect on the health of the intestinal track by destroying the natural bacteria flora. These normal bacterial inhabitants are responsible for producing the B-complex vitamins, vitamin K, and glutamic acid. By forming lactic acid, their presence protects the intestine from the formation of bacteria of decay and disease. Once breakdown begins, the normal healthy Bacillus acidophilus, Bacterium coli and others transform into toxin-forming organisms. Their poisons are reabsorbed into the bloodstream and cause such symptoms as headaches, fatigue, nausea, colitis, fowl-smelling stools, bad breath, bladder infections, cracks in the corner of the mouth, constipation, burning tongue, bruising, nose bleeds, pruritis ani (itchy rectum), yeast infections, and others. These problems are also caused by antibiotic and steroid therapy since both drugs will destroy the normal bacterial flora.

As far back as 1948, Harold Lee Snow, M.D. documented the effect of refined sugars on the body’s blood chemistry. For a period of 6 days after the ingestion of 4 ounces of candy, Dr.
Snow graphed the blood serum levels of calcium and phosphorous. His findings showed that during the first six hours, the usable serum calcium dropped from a level of 78 per cent to 54 per cent. It wasn’t until the fourth day that it returned to a level of 72 per cent and two additional days were needed to reach the original level of 78 per cent. Likewise, the serum phosphorous level decreased from 3.5 mg/dl to 3.1 mg/dl and required 5 1/2 days to return to normal. This information has more significance than most physicians and patients realize. Calcium, for example, is present in every cell of the body and plays an important role in the health of that cell. In addition, calcium is contained in the blood serum and helps maintain the acid-base balance of the body, is essential in the clotting mechanism, transmission of nerve impulses, and the contraction of muscle fibers, and prevents muscle cramping, helps prevent convulsions, maintains heart rhythm, is important in cell division, organ function, prevention of osteoporosis, anxiety, muscle pains, conjunctivitis, sunburn, sinusitis and helps to counteract heavy metal toxicity and radioactivity.

Phosphorus, like calcium, is also present in every cell of the body. The body’s use of phosphorus is closely interrelated to its use of calcium and a constant ratio of 2 1/2 parts calcium to one part phosphorus must be maintained for optimum health. Phosphorus is necessary for the assimilation of fats, protein, carbohydrates and digestion of vitamin B-3 (niacin) and B-2 (riboflavin). Disrupting the calcium/phosphorus ratio will have disastrous effects on the body. According to Dr. Melvin E. Page, researcher and author of Degeneration and Regeneration, calcium/phosphorus imbalances will bring about such degenerative diseases as arthritis, pyorrhea, tooth decay, muscle weakness and others.

Dr. Snow summarized his testing with the following statements: (1) Refined sugar reacts like a drug not a food; (2) Sugar is obviously the cause of
Emotional stress will not only influence the entire body but will also compound the effects of sugar on the availability of calcium.

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many diseases of childhood and infancy; (3) Sugar is addictive like alcohol; (4) Refined sugar is responsible for vitamin and mineral deficiencies; (5) Its use results in tooth decay, diabetes, indigestion, intestinal gas, skin diseases, anemia, obesity, respiratory membrane weakness, arthritis, tuberculosis, cancer, high blood pressure, fatigue, and (6) refined sugar is extremely difficult to avoid since it is added to most packaged, canned, and processed food. As a general rule, all people must avoid the intake of refined sugar, especially those patients who are suffering the ills of whiplash trauma and/or any existing malady. Research by Emanuel Cheraskin, M.D. has documented sugar’s effect on the immune system. Dr. Cheraskin’s work showed that consuming even small amounts of refined sugar will effectively lower the white blood cells for a period of time. The body’s white blood cells represent the defensive system that attacks and destroys foreign bodies, such as bacteria and viruses, that enter the blood stream. Essentially, one’s overall resistance is lowered and susceptibility to infections increased as a result of sugar consumption.

Emotional stress will not only influence the entire body but will also compound the effects of sugar on the availability of calcium. Anxiety, fatigue, and nervous tension will produce the metabolic waste lactic acid. Lactic acid, in turn, will combine with the stored calcium in the muscle tissue. In order for muscle contraction to occur, calcium must be available to activate a specific enzyme. The accumulation of waste products within the muscle perpetuates the spasms, which prevents nutrients, oxygen, and blood from gaining access, places pressure on nerves, and slows lymphatic drainage. The end result is muscle tension, spasms and delayed healing.

With the use of the electron microscope, scientists have discovered that each cell in the central nervous system has a shell of some calcium compound within its cell wall. As the integrity of
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the cell wall is disrupted, the cell becomes irritable. When the calcium shell thins out, the nervous impulses become dissipated causing faulty motor and sensory activity. When such functional disturbances are coupled with diets high in refined foods, problems usually worsen and recovery is prolonged.

The brain differs from all other organs in the body in that it is nourished solely by sugar (glucose). Researchers Fabrykant and Pacella have shown that changes in the blood levels of sugar and calcium are accompanied by definite changes in the electrical activity of the brain. The brain also is more sensitive to changes in the level of sugar than any organ in the entire body. The ingestion of refined sugars will produce rapid high quantities of sugar which enter the bloodstream only to be counteracted by an increased production of insulin. This scenario of sugar highs and lows creates an emotional roller coaster ride for its victim. It becomes very obvious that a junk food diet, which is lacking in many essential nutrients, will have a major impact on the functioning of the brain and may cause many behavioral dysfunctional abnormalities.

Chaotic Effects of Hypoglycemia

One of the most devastating maladies affecting Americans today is functional hypoglycemia. According to the United States Department of Agriculture, one person in every ten is adversely affected by sugar. Functional hypoglycemia involves a low blood sugar level which is not adequate to support the normal function of the nervous system and brain. Those afflicted will exhibit an unbelievable variety of symptoms:

1. Nervousness
2. Irritability
3. Exhaustion
4. Syncope (fainting, dizziness, cold sweats, feelings of weakness)
5. Depression
6. Vertigo  
7. Drowsiness  
8. Headaches  
9. Digestive problems  
10. Forgetfulness  
11. Insomnia  
12. Anxieties  
13. Mental fogginess  
14. Tachycardia (rapid heart beat)  
15. Muscle pains  
16. Numbness  
17. Indecisiveness  
18. Unprovoked crying spells

A general guide to establishing a true diagnosis of hypoglycemia must satisfy the three criteria of Whipple’s Triad:

1. Many of the above symptoms must be present during a hypoglycemic attack.
2. A serum glucose test should be performed while the above symptoms are present; an immediate blood glucose level of less than 50 mg./dl must be recorded.
3. The ingestion of glucose will result in dramatic relief of symptoms.

True hypoglycemia is caused by pancreatic beta cell tumors, severe liver disease, pituitary or adrenal insufficiency, hypothyroidism, or excess alcohol consumption which prevents the formation of glucose. If the symptoms are primarily acute and occur infrequently, the disorder constitutes a functional, reactive hypoglycemia rather than a true hypoglycemia. The individual who is a functional hypoglycemic is the one who usually is wrecked by the ingestion of refined sugar. These people are the victims of vitamin B-complex deficiency which prevents the body...
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from properly metabolizing the sugar. It is extremely interesting to note the symptoms of a B-complex deficiency as presented by Thomas Spies, M.D. and others:

1. Muscular weakness
2. Lassitude
3. Irritability
4. Depression
5. Memory loss
6. Headaches
7. Nervousness
8. Tachycardia
9. Anxiety
10. Apprehension
11. Morbid fears
12. Mental confusion
13. Rage
14. Hostility
15. Hypochondria
16. Noise sensitivity
17. Constant fear of impending doom

In reality, many people are being misdiagnosed and improperly treated. The principal objective in treatment of hypoglycemia is to remove the offending substances from the diet (refined carbohydrates such as candy, cakes, donuts, ice cream, white breads, sodas, etc.) and replace them with quality complex carbohydrates, proteins and fats. Diets such as the one proposed by the late Nathan Pritikin or the macrobiotic diet or any other eating concept that espouses consumption of natural whole grains, fresh vegetables, fruits, nuts, beans, and unprocessed, unsaturated fats will assist the body in maintaining an even blood sugar level. Excessive high and low blood sugar levels are avoided because complex carbohydrates metabolize more slowly and release a more constant supply of calories. If willing to accept responsibility for the nutritional aspect of therapy, the patient can become actively
involved in the healing process and greatly increase the chances for success.

**Acid-Alkaline Balance**

Acid- and alkaline-forming elements are properties of all natural foods. The predominant inorganic matter is the principal factor that determines whether a food will produce an acid or alkaline residue. The acid-forming elements include sulfur, phosphorous, chlorine, and iodine. The alkaline-forming elements are sodium, potassium, calcium, magnesium, and iron. Although a food such as grapefruit may be acidic, its organic acids will be reduced to carbon dioxide and water. When metabolism is completed, the inorganic alkaline elements remain and neutralize the acids.

Paradoxically, acid foods will reduce body acids. On the other hand, animal protein is high in the sulfur-bearing amino acids and phosphorous, and most whole grains are high in phosphorous. Digestion of these foods will leave sulfuric and phosphoric acid, and therefore they are classified as acid-forming foods. The typical American diet, with its excess animal protein and refined carbohydrates, provides large quantities of acid forming foods. Consuming a daily regime of such foodstuffs has the potential of establishing an acid blood and extracellular environment. Clinically, the beginning stages will be observed as tiredness, loss of mental sharpness, and lowered resistance (frequent colds). As the fluid environment becomes more acidic, the symptoms will worsen and manifest as generalized pains such as headaches, chest pain, stomachaches, etc. For more information on this subject, read *Acid and Alkaline* by Herman Aikara (published by the George Ohsawa Macrobiotic Foundation, 1544 Oak Street, Oroville, California 95965).
From a practical nutritional approach, it is safe to consume a diet that is 60-80 per cent alkaline and 40-20 per cent acid. For convenience, an acid-alkaline chart is provided. Focusing on the selection of the proper complex carbohydrate foods will totally eliminate the need to count calories. Eating quality complex carbohydrates will provide a sense of well being and fullness without the bloating that accompanies ingestion of refined foods. Those making this change may experience intestinal distress (for weeks or months) in the form of increased gas formation. Past abuses of eating highly refined foods reduce the body’s need to produce large amounts of hydrochloric acid and also help destroy the natural, healthy bacteria that live in the lower intestine. These bacteria are needed to break down the complex carbohydrates. To alleviate this problem it is recommended that a digestive aid, betaine hydrochloride, be taken with each meal. Until the stomach adjusts to the increased fiber and complex carbohydrates, two tablets may be necessary with meals. Such products are readily available at your local health food store. Additional help in relieving flatulence will come more quickly by restoring the normal, healthy bacteria. This can be accomplished by taking lactobacillus acidophilus, which is also readily available in health food stores. The ingestion of this supplement will convert carbohydrates to lactic acid in the gastrointestinal tract and make it easier to digest proteins, absorb calcium and iron, and assist in the detoxification of the body.

**ALKALINE FRUITS**
- Apples and Apple cider
- Apricots
- Avocados
- Bananas
- Berries
- Cactus
Nutritional Aspects of Headaches and Disease

• Cantaloupe
• Carob (pod only)
• Cherries
• Cranberries (slightly acid)
• Currants
• Dates
• Figs
• Grapes
• Grapefruit (acid)
• Guavas
• Kumquats
• Lemons (ripe)
• Limes
• Loquats
• Mangoes
• Melons

ACID FRUITS
• Bananas, green tipped
• Cranberries
• Fruits, glazed with raw sugar
• Fruits, sulphur-dried

• Nectarines (ripened, speckled only)
• Olives, sundried
• Oranges
• Papayas
• Passion fruit
• Peaches
• Pears
• Persimmons
• Pineapple, ripe and fresh
• Plums (slightly acid)
• Pomegranates
• Prunes and juice (slightly acid)
• Raisins
• Tangerines
• Tomatoes

• Jellies, canned or preserved with sugar
• Olives, pickled green
ALKALINE VEGETABLES

- Artichokes
- Asparagus, ripe
- Bamboo shoots
- Beans, green, lima, or sprouts
- Beets and tops
- Broccoli
- Cabbage, red and white
- Carrots
- Celery
- Cauliflower
- Chard
- Chicory
- Chives
- Collards
- Cucumber
- Dandelion greens
- Dill
- Dulse (sea lettuce)
- Eggplant
- Endive
- Escarole
- Garlic
- Horseradish, fresh
- Kale
- Kohlrabi
- Leeks
- Legumes (except peanuts and lentils)
- Lettuce
- Mushrooms (slightly acid)
- Okra
- Onions
- Parsley
- Parsnips
- Peppers, green and red
- Potatoes (all varieties)
- Pumpkin
- Radishes
- Rhubarb (oxalic acid forms an insoluble calcium salt)
- Sauerkraut
- Sorrel
- Soy beans (slightly acid)
Acid-Alkaline Balance

**ACID VEGETABLES**
- Spinach (oxalic acid)
- Squash
- Taro, baked
- Turnips and tops
- Water Chestnuts
- Watercress

**ALKALINE DAIRY**
- Acidophilus (natural bacteria found in dairy products)
- Buttermilk
- Whey
- Yogurt

**ACID DAIRY**
- Butter
- Cheeses
- Custards
- Ice cream and ices (due to high refined sugar content)
- Cow’s milk (boiled, cooked, pasteurized, malted, dried, or canned)

**ACID PROTEIN FOODS**
- Gelatin (from animal protein sources)
- Gravies
- Red meats, fowl and fish
- Seafood
Acid-Alkaline Balance

ACID CEREALS
- Barley
- Buckwheat
- Breads, all types
- Cakes
- Corn, cornmeal, cornflakes, and hominy grits
- Crackers
- Doughnuts

MISCELLANEOUS ALKALINE SUBSTANCES
- Agar (a white gelatin derived from a species of seaweed)
- Alfalfa products
- Ginger, unsweetened, dried
- Honey, raw tupelo (absorbed more slowly than most honey and can be tolerated by most diabetics)
- Kelp (can be used as a seasoning or condiment)
- Teas, unsweetened
- Alfalfa
- Clover
- Mint
- Oat
- Oriental
- Sage
- Strawberry
- Yeast cakes

MISCELLANEOUS ACID SUBSTANCES
- Alcoholic beverages
- Dumplings
- Flour products
- Grapenuts
- Noodles (Macaroni and spaghetti)
- Oatmeal
- Pies and pastry
- Rice
- Rye-krisp
- Candy and other confectionery
Nutritional Aspects of Headaches and Disease

**Acid-Alkaline Balance**

- Cocoa and chocolate
- Coffee
- Condiments (curry, pepper, salt, spices, etc.)
- Drugs
- Eggs (especially the whites)
- Flavorings
- Food Preservatives: Benzoate, Brine salt, Sulphur, Vinegar, Smoked Foods
- Ginger, preserved

**ALKALINE NUTS**

- Almonds
- Chestnuts, roasted

**ACID NUTS**

- Nuts, all others (increase in acidity with roasting)
- Coconut, fresh
- Coconut, dried
- Peanuts
- Jell-O (contains 95% white sugar)
- Marmalades
- Mayonnaise
- Sago (starch)
- Smoked foods
- Sodas (loaded with sugars and phosphoric acid to increase both carbonation and shelf life)
- Tapioca (starch)
- Tobacco (juice, snuff, smoking)

With respect to intestinal health and headaches, the body benefits tremendously from a diet high in complex carbohydrates. By providing the intestinal tract with roughage in the form of cellulose, the muscular tone of the intestinal wall is maintained while the transit time of toxic wastes is shortened. By
preventing constipation, the liver, kidney, and skin (largest excretory gland in the body) are spared the awesome task of removing the noxious wastes. In addition, the normal bacterial flora is preserved, which in turn produces the B-complex vitamins, vitamin K, and glutamic acid (essential for brain function) and enables the normal flora (acidophilus yeast) to convert the carbohydrates to lactic acid. The lactic acid will promote the growth of other healthy bacteria and will block the growth of toxin producing organisms. Taking bakers’ yeast or brewers’ yeast should be avoided since they will convert the carbohydrates into alcohol and carbon dioxide (cause of bloating) rather than into lactic acid.

Also blocked by lactic acid is the formation of guanidine, which is one of the most alkaline and toxic products in the body. This substance has been implicated as a contributing factor in toxic headaches, arthritis, hypertension, convulsions, muscular dystrophy, and epilepsy. Guanidine has the potential to cause calcium deposits in arthritic joints, muscle pain, arteriosclerosis, and is a specific calcium precipitant in body fluids and a cause of muscle fatigue.

Another poison prevented from release in the bowel is histamine. As a dilator of blood vessels, it can cause a histamine headache as well as bring on allergy symptoms and bloating of the colon.

For optimum nutritional value, complex carbohydrates should be eaten raw. A word of caution at this point will help avoid much intestinal distress. Although raw foods represent the highest quality carbohydrates available, an abrupt change may not be well tolerated by most people. A history of consuming primarily refined foods, increased amounts of protein, accompanied by various degrees of gastritis will in most cases decrease the body’s ability to handle a high-fiber diet. A more successful transition will be made by utilizing nutritional supplements that support gastric and intestinal healing.
and by slowly introducing high-fiber foods that have been lightly cooked. Cooking lightly involves steaming or boiling for 3 or 4 minutes to soften the fibrous contents while still preserving most of the nutritional value. The following is recommended as an initial approach to alleviating gastritis and gastric ulcer problems.

- Okra-pepsin capsule (recommended dosage: one capsule with each meal; in cases of acute gastritis, one capsule every half hour until pain subsides)
- Gastrex capsule (recommended dosage: two capsules 15 minutes before each meal)
- Formula #21 (general plant enzyme combination – if gastritis or ulcers exist take Formula #601 instead).

The supplements are available from International Center for Nutritional Research, Inc. (800-272-2323). These natural supplements will provide the raw materials for stomach repair. Relief should come within 7 to 10 days. This is based on the fact that the stomach lining is completely renewed every 4 to 7 days. A period ranging from 3 months to a year or possibly longer may be required for the digestive system (including the enzyme-producing organs-pancreas, stomach, and liver, which manufactures bile for fat digestion) to adequately heal itself and to become capable of handling the more fibrous foods.

With the exception of the possible contamination by pesticides and the small percentage of deterioration due to transit time, raw foods offer the least toxicity of any substances we put in our body. With the exception of the possible contamination by pesticides and the small percentage of deterioration due to transit time, raw foods offer the least toxicity of any substances we put in our body. A major benefit is that our organs of detoxification do not have to work as hard to keep our internal system clean. This translates into a more efficient immune system, a lower rate of degeneration and fewer illnesses. Maintaining this state of balance is achieved by eating 60 to 80 per cent alkaline-forming foods. The essential alkaline-forming elements (calcium, sodium, potassium, and magnesium) are essen-
Crucial to the maintenance of health is the availability of calcium and sodium. Essential for the body chemistry to maintain its acid-alkaline balance. As the cells function, a constant stream of acid waste products are released. This presents no problem as long as there is a plentiful supply of alkaline-forming elements. Crucial to the maintenance of health is the availability of calcium and sodium. Both minerals have demonstrated their ability to insure cell vitality and increase resistance against bacteria.
Fats

Fats, also known as lipids, provide the most concentrated source of energy in the diet. When broken down, fats release 9 calories per gram (30 grams = 1 ounce). This energy release represents twice the calories furnished by either carbohydrates or proteins. The chemical structure of fats includes carbon, hydrogen, and oxygen but no nitrogen. Fats are not soluble in water. As lipids, they also function as carriers for the fat-soluble vitamins, A, D, E, and K. Fats assist the conversion of carotene to vitamin A and also enhance vitamin D absorption making calcium available to body tissues. As a whole, fats function in three main areas: (1) to insulate, protect, and support organs; (2) to participate in biochemical reactions within the body; and (3) to store additional energy.

Fats have a definite effect on the digestion of foods. When present in meals, fats will reduce stomach secretions, delaying the digestive process and the emptying time of stomach contents. This has the effect of maintaining the feeling of fullness and delaying the sensations of hunger.

Digestion of fats begins in the stomach and is completed in the small intestine where the fats are entirely absorbed. Under the influence of fat-splitting enzymes (lipase) released by the stomach, pancreas, and small intestine, the fat is broken down into triglycerides (fatty acids) and glycerols. Approximately 30 to 50 per cent of the ingested fats are converted to fatty acids while the remaining 50 to 70 per cent are eliminated as waste material. Consuming a diet high in fiber quickens the transit time of the fatty waste. However, those individuals on a high refined carbohydrate intake will have much longer transit times and constipation problems. Since the stagnating fat becomes rancid, the toxic products potentiate the chances for developing cancer of the colon as well as increasing the toxemia level of the entire body.
Aiding the process of fat digestion are the bile salts which are produced by the liver, stored in the gall bladder, and released into the small intestine. The bile salts have an emulsifying action which helps break up the fat into small droplets, and, more importantly, enables the fatty acids, cholesterol, glycerols, and other lipids to be more easily absorbed through the intestinal wall into the venous blood supply and lymphatic circulation. Once in the body, the fatty acids combine with various other chemical components to form hormones such as steroids, corticosteroids (estrogen and progesterone), fatty substances to pad the joints and form the sheathing on nerves, and phospholipids which become an integral part of the cell membranes and form a protective covering for the body’s genetic codes, chromosomes.

Fat can also be manufactured from carbohydrates in the diet. Carbohydrates supply the raw materials, and conversion is dependent upon the quantity of insulin present. Eating a typical American diet which is approximately 20 per cent refined carbohydrates and 40 per cent fat will sensitize and predispose the pancreas to produce increased quantities of insulin. The blood sugar, glucose, is converted to fat in the liver and then transported to fat depots around the body. A consequence of this metabolism is an erratic blood sugar level. The lowering of the blood sugar level creates further cravings for sugar and vicious cycle ensues.

Fats are classified as being saturated or unsaturated. The animal fats are the most frequently occurring saturated fats. They are palmitic and stearic acid. Oleic acid, also an animal fat, is a monounsaturated fat. Common examples of saturated fat are margarine, butter, cheese, shortening, lard, bacon grease and “lean meat.” One of the major drawbacks of commercially processed foods with high saturated fat content is that chemical preservatives must be added to prevent rancidity.
Facts About Fats

In the past thirty years, fats have been linked to heart disease, clogged blood vessels, cancer, obesity and various degenerative diseases like arthritis, diabetes, cataract, multiple sclerosis, hypertension, nephritis, lupus erythematosus and others. As an attempt to combat these dreaded diseases, the medical profession and food industry, in recent years, have been promoting fat free products and avoidance of cholesterol rich foods. Although well meaning, the real emphasis should be on the avoidance of all processed fats (hydrogenated, partially hydrogenated, saturated and heated fats and oils), bleaching of flour and consumption of high quality essential fatty acids. In addition, the public should be appraised of the best oils and their role in maintaining health.

The cholesterol scare has caused lay people and physicians alike to view all cholesterol as dangerous while driving some people almost to the point of being neurotic about eating foods high in cholesterol. Although eggs, butter, milk, cheese and fat meats are high in cholesterol they also carry the best antidote for it: phospholipids and lecithins. These phospholipids and associated factors of vitamin E protect the chromosome units in the cell. Without chromosome integrity, degenerative diseases occur.

The mantra of high cholesterol has also drummed up much business for the pharmaceutical industry who has profited enormously by the physician’s compulsion to lower high cholesterol levels by means of drugs. In the wake of misinformation and lack of proper nutrition, many people continue to suffer without resolution of their health problems.

Compounding the problem of a deficiency of ingesting good quality fats is the ubiquitous use of prescribed drugs in our society. The common use of aspirin to “prevent” heart attacks and non-steroidals to reduce inflammation, presents a major problem in that these drugs themselves block the normal
The fact remains that if patients are helped by the use of aspirin or non-steroidal drugs, then one can infer that the patient has an underlying essential fatty acid (EFA) metabolism problem. Correcting the EFA problem by means of good nutrition will not only improve the patient’s symptoms, decrease pain and decrease their need for the medications, it will also help improve the patient’s overall health.

Fats are essential to bodily function. The EFA’s enable saturated fats to be oxidized and provide heat and energy; they easily combine with protein and oxygen and pump them through the body; fats are also stored for body insulation and future utilization, used in cell membrane repair, secreted in milk and excreted in the feces. Fats are needed to replenish the fatty sheath around nerves, pad joints and organs and provide a vehicle for the fat soluble vitamins (D, E, K, A and F); they are also converted to other lipids which provide the basis for hormones and body fluids and lubricants.

An integral fraction of fats important to the body are the essential fatty acids (EFA). EFA’s are unsaturated fats; they are unsaturated because they have bonds or linkages within their chemical structure which permit attachment of other essential compounds like protein and oxygen. When high quality, electron-rich fats are combined with proteins, the electrons are protected until needed by the body. The more bonds within the EFA structure the more beneficial the EFA is to the body. As an example, olive oil has only one unsaturated bond compared to flaxseed oil which has three. Another beneficial factor comes from the presence of a field of electrons when two or more bonds are present. These electrical charges are easily released within the body to recharge living substances, especially to the brain and nerves. It is this electrical property which is so vitally needed for enzyme reactions to sustain life. These essential fatty acids
have favorable effects upon sex matura-
tion, pregnancy, lactation and protect
against the harmful action of x-ray
irradiation. When deficient, the EFA’s
will increase capillary permeability and
lower capillary resistance. They also
are necessary in cholesterol metabolism
and normal function of every cell and
organ of the body. Strictly speaking the
essential fatty acids (linolenic, arachi-
donic and linoleic) cannot be synthe-
sized by the body and unfortunately
most people’s diets today are deficient
in natural fats.

Natural fats fall into one of three
families of fats. Each of these fats are
converted into special hormones called
prostaglandins (PGs). These prostag-
landins act as chemical messengers
within all cells and are essential to
their normal function. Our bodies need
all three types of EFA’s in balanced
amounts to provide the three types of
prostaglandins (PG-1, PG-2 and PG-3).
The PG-1’s and PG-3’s promote health
and are considered beneficial to body
function. These two groups decrease
the clotting of blood, decrease blood
pressure, decrease swelling, pain and
inflammation, decrease tumor growth
and help burn fat. The PG-2 group does
exactly the opposite and its functions
promote pain, swelling and the degen-
erative process.

The availability of the specific essen-
tial fatty acids from each of the families
of fats is dependent on the fats not
being processed (heated, partially or
fully hydrogenated). The first family of
fats (this group produces PG-1’s) is
comprised of those fats which are
derived from food oils: safflower, corn,
sunflower, peanut, evening primrose
and black currant. The second group of
fats (this group produces PG-2’s) come
from ingestion of red meats, dairy prod-
ucts, mollusks and shellfish. The last
group of fats represent the cold weather
oils: flaxseed (linseed), walnut, canola
and from cold water fishes.

The biggest nutritional problem in
our society today is the over consump-
tion of processed fats. Most people are
unaware of the quantity of processed
fats consumed on a daily basis. Interestingly, when animals are fed solidified or saturated fats, they ate six times as much fat and six times as much food as compared to animals fed healthy unsaturated fats. When food labels are read, partially hydrogenated fats are in everything: margarine, all commercial peanut butters, most crackers, chips, cookies, cakes and candies, many breads, some mayonnaise and salad dressings as well as many of the commonly consumed foods. By processing natural fats to partially hydrogenated ones, the shelf life of the product is greatly extended. The problem is that these partially hydrogenated fats interfere with the normal conversion of the group 1 and 3 fats to their appropriate prostaglandins. The end result of this faulty metabolism is the over production of PG-2 type which promotes inflammation, pain and degenerative diseases.

Health benefits of flaxseed oil:

Richest source of Omega-3 fatty acids (50-60% Omega-3s); contains almost twice as much of the Omega-3s as fish oil.

1. **Heart Disease.** Omega-3s lower high blood cholesterol and triglyceride levels by as much as 25% and 65% respectively. Omega-3s decrease the probability of a clot blocking the artery in the brain (stroke), heart (heart attack), lungs (pulmonary embolism) or other organ (peripheral vascular disease... that is gangrene). Omega-3s will help to lower high blood pressure.

2. **Cancers.** Omega-3s help to dissolve tumors. Max Gerson used Flax Oil for this purpose in his clinic. Dr. Johanna Budwig in Germany has over 1000 documented cases of successful cancer treatment using Flax Oil along with additional support. She has been using Flax Oil suc-
cessfully in cancer therapy for over 30 years now. More recent research shows that Omega-3s kill human cancer cells on the same culture. Breast, lung, and prostrate cancer cell lines were studied.

3. **Diabetes.** This disease, according to Dr. Budwig, has its origin in deficiency of Omega-3s (as well as Omega-6) fatty acids and is made worse by current lack of vitamins and minerals.

4. **Arthritis.** Omega-3’s have been found to be effective in the successful treatment and prevention of arthritis. Both fish oils and Flax Oil have been used. More recently, research using combinations of the Omega-3 and -6 fatty acids found that 60% of rheumatoid arthritics were able to completely discontinue their non-steroidal anti-inflammatory drugs (NSAIDS) and another 20% were able to reduce their dosages of NSAID in half.

5. **Asthma.** Flax oil can relieve asthma noticeably, sometimes within a few days of starting to take the oil.

6. **Premenstrual Syndrome.** Many cases of PMS are completely relieved within one month with fresh flax oil. Vitamins and minerals are also very important.

7. **Allergies.** Omega-3s help to decrease allergic response. Since the body must be rebuilt, a longer time is needed before allergies are alleviated. Total nutritional support is required.

8. **Inflammatory Tissue Conditions.** Included here are the diseases which end in -itis, in which are meningitis, bursitis, tendinitis, tonsillitis, gastritis, ileitis, colitis, arthritis, phlebitis, prostatitis, nephritis, splenitis, hepatitis, pancreatitis, otitis, etc. as
well as psoriasis and lupus. All of these inflammatory conditions may be helped by the Omega-3s.

9. **Water Retention.** Flax oil helps the kidneys remove sodium and water. Water retention (edema) is involved in swollen ankles, some forms of overweight, PMS, and late stages of cancer and cardiovascular disease.

10. **Skin Conditions.** Flax Oil is famous for its ability to make the skin smooth, soft and velvety. It will also alleviate those skin conditions whose origin is the lack of the Omega-3s in the diet.

11. **Vitality.** One of the most noticeable signs of improved health from the use of Flax Oil is increased vitality, more energy. Athletes notice that their fatigued muscles recover from exercise more quickly. Omega-3s help increase stamina.

12. **Calmness Under Stress.** Many people find this calming effect of fresh Flax Oil to be most pleasant. Omega-3 fatty acids prevent excess toxic biochemicals which our bodies produce under stress.

13. **Other Conditions.** Flax Oil can also be helpful in multiple sclerosis (in places where essential fatty acid consumption is high, multiple sclerosis is very rare); Omega-3s are necessary for visual function (retina), adrenal function (stress), and sperm formation; cystic fibrosis (Omega-3-containing oils will loosen the viscous mucous secretions and relieve breathing difficulties); some cases of sterility and miscarriage; some glandular malfunctions; some behavioral problems (schizophrenia, depression, manic-depressive disorder, etc.); addictions (to drugs or alcohol); and pathologically deviant behaviors.
Because they are the essential nutrients most commonly lacking in the North American diet, Omega-3s are recommended for everybody. In order for the Omega-3 fatty acids in Flax Oil to unfold their vital functions, the other essential nutrients (proteins, vitamins and minerals) must also be present in adequate amounts and in a vitalized state.

How is Flax Oil Made?
Fresh Flax Oil, even when made with utmost care and kept cool and closed, retains its vital nutrients unspoiled for only 4 months. Light, oxygen (air) and high temperatures destroy the Omega-3s very rapidly. Once opened, Flax Oil should be consumed within 3 to 6 weeks. The container for Flax Oil must allow no light to come in contact with the precious oil. The oil must be pressed at a low temperature (expeller or cold pressed). Flax Oil must be completely protected from light and air between the time it is locked in the seed and the time that it is protected in the opaque container. Only oil made with this required care is worth using to enhance health.

How Much Flax Oil?
Dr. Johanna Budwig uses up to 8 tablespoons of fresh Flax Oil daily in her cancer therapy. The Gerson clinic uses 2 tablespoons daily for the first 4 weeks of therapy, and a maintenance dose of 1 tablespoon per day from then on. Dr. Rudin uses 2 to 5 tablespoons per day, depending on the patient’s individual condition and needs.

How to Use Flax Oil
Flax Oil can be substituted for other, less nutritionally valuable oils in salad dressings, mayonnaise, shakes, etc. It can be mixed with olive oil or butter to enhance their nutritional value. It can be mixed with skim milk protein (baking cheese, cottage cheese, low-fat yogurt, kefir), then sweetened with fruit, maple syrup or honey to provide a delicious, nutritious breakfast or as a dessert. The mixture of oil with skim milk protein can also be used in main
dishes by adding vegetables, greens and spices. The Flax Oil-protein mixture is a versatile base for any kind of meal. Allergic to dairy? Use tofu with onions/garlic instead of milk protein.

**Is Flax Oil for Everyone?**

Almost. Occasionally, someone will experience an allergic skin rash with the oil. That person must detoxify his immune system or obtain his essential Omega-3s from one of the lesser sources: fresh pumpkin seed, soybean, walnut or fish oil. Second, nausea results from exceeding the liver’s capacity for fats and oils. People with impaired liver function need to build up their capacity gradually, starting with small doses. In these special situations these patients should go through a liver detoxification procedure under the care of a health care practitioner.

Excerpts from ‘*Healing Fats... Killing Fats*’ by Udo Erasmus.

One tablespoon of Nature’s Best Direct, Inc. Extra Virgin High Lignan Flax Oil contains:

**Flax Oil contains:**

**Average Analysis**

- 4400-4800 mg Omega-3 Alpha Linolenic Acid 48%
- 1280-1600 mg Omega-6 Linoleic Acid 16%
- 3440 l. U. of Beta carotene Oleic Acid 16%
- 1.2 I. U. of Vitamin E

Flax particulates containing Lignan precursors 19%
Toxic Waste Removal

The lymphatic system represents the sewage system of the body. It functions primarily to remove the waste products produced by the cells then transfers these waste products to the bloodstream where they are carried to the appropriate organs of detoxification. The lymphatic vessels also dump their waste through the walls of the colon. This waste removal process functions effectively only when the colon is unobstructed by old fecal matter or excess amounts of mucoid matter. Diets high in saturated fats (such as in hamburgers, French fries, pizzas, processed lunch meats, ice cream, etc.) serve to slow the action of the intestinal and lymphatic systems. As the waste backs up in the lymphatic vessels, a toxic environment is formed in the spaces that surround cells. Frequent consumption of the high saturated fat foods establishes a chronic toxic state. Since the spaces between the cells are congested with toxic wastes, nutrients cannot be properly supplied to the functioning cells. This whole scenario speeds up the degenerative process within the body.

Dangerous Effects of Homogenized Milk

Studies have linked homogenized cow’s milk to this country’s abnormally high rate of atherosclerosis. This degenerative disease is caused by a build-up of a yellowish, fatty plaque which coats the inner lining of the arterial walls, especially of the blood vessels that supply the heart muscle. The problem stems from the fact that cow’s milk (but not human milk) has a high concentration of an enzyme called xanthine oxidase. This connection was brought to light by Dr. Kurt A. Oster, M.D., chief of cardiology at Park City Hospital, Bridgeport, Connecticut. Xanthine oxidase is normally present in the fat glob-
Because the American diet is so high in fats (approximately 40 per cent) arterial plaque build-up starts at a very young age. The unsaturated fats are commonly referred to as the polyunsaturated fats. They are primarily found in vegetables, nuts, seeds, corn, sesame, sunflower, safflower and fish oils. The polyunsaturates lack hydrogen atoms within their structure which enables other chemical components to become attached and form new substances. Polyunsaturates such as linoleic, linolenic, and arachidonic acid are essential fatty acids which the body cannot synthesize and must obtain from the diet to insure proper growth, reproduction, lactation, tissue repair, and hormone production. They also provide the building blocks for many biochemical essentials and help to regulate the presence of others.

Linoleic acid, for example, is the most important polyunsaturated fat in the diet because it helps to regulate the levels of cholesterol. In addition, both linoleic and linolenic acid are converted by the liver to arachidonic acid which also acts as a cholesterol-metabolizing substance. Arachidonic acid plays another vital role in that it provides the principal component in the synthesis of prostaglandins. These prostaglandins are hormone-like chemical messengers found in most cells of our body. The current physiologic concept views these substances as modulators of hormone activity, that is, the prostaglandins activate or inhibit the reactions of hormones. Although the body has an adequate supply of the polyunsaturates, a deficiency may still exist because of the presence of diabetes, liver dysfunction, old age, and impairment by the presence of other fats.
In order for these unsaturated fatty acids to be utilizable by the body, they must be in a specific biological geometric form. In basic language that means the atoms are oriented around the axis of the chemical structure in a specific manner. In the natural form it is called a cis configuration. However, when man begins to tamper with nature, subtle changes occur which nullify the biological activity of the original natural structure. Use of modern technology to process food (heating, hydrogenating oils to form margarine, etc.) converts the chemical structure into a trans configuration. From a technical standpoint both forms have the identical components but differently arranged. It is this subtle alteration that inhibits the formation of the chemical messengers and steroid hormones (sex and adrenal hormones) from the parent structure, linoleic acid.

A past professor of medicine at the University of Montreal, Dr. David Horrobin, and other reliable researchers have established the benefits of using the unsaturated fatty acid, gamma linolenic, in the treatment of many physical ailments (asthma, arthritis, premenstrual syndrome, multiple sclerosis, atopic eczema, hyperactivity, cholesterol overload, painful menses, functional cystic mastitis, obesity). Their studies have found, however, that when the cis form of the fatty acid is transformed into the trans configuration it cannot be used by the body and it also interferes with the cells’ ability to absorb and incorporate the essential cis form. In order for the essential fatty acids to be truly effective, one should eliminate saturated fats, refined, processed, and hydrogenated oils from the diet.

The ingestion of excess amounts of all forms of fat, cholesterol, refined carbohydrates, and protein is potentially dangerous to the entire system. The many studies in the scientific literature bring to light the fact that the so called Western diet, which is comprised of over 40 per cent fat is strongly associated with all forms degenerative dis-
ease. Without exception, those societies which consume a low fat diet (less than 20 per cent), have a low prevalence of degenerative diseases. Fats, whether they be saturated or unsaturated, animal or vegetable, are implicated in the disease process. The biologic damage focuses on disturbing body metabolism which contributes to the source of degeneration. The mechanisms follow three basic avenues: (1) decreased oxygenation of tissues and organs; (2) disruption of carbohydrate metabolism; and (3) increased cholesterol and uric acid levels.

**Natural Vitamins versus Synthetic Vitamins**

In 1897, a Dutch physician, Eijkman, working in Java, came to the realization that the oriental disease, beriberi, was caused by an incomplete diet which consisted primarily of polished rice. Eijkman’s theory was that a toxin within the polished rice was responsible. It was not until 1901 that another Dutch researcher, Grijns, discovered that there was a protective and curative substance in the rice polishings. In looking back, Grijns was probably one of the first to develop the concept that disease was caused by a deficiency and that an active, protective nutrient within food could effect a cure.

Grijns’ work motivated another researcher, Pekelharing, to perform experiments utilizing purified foodstuffs. When these purified foodstuffs were fed to mice, initially, the mice ate well and appeared healthy, but after about 4 weeks on the diet they all died. In subsequent experiments, he was able to maintain the health of these mice by substituting raw milk or even whey for the water. Pekelharing concluded that “an unrecognized substance occurs in milk which is of paramount importance for nutrition, even in minute quantities.”

In 1911, similar experiments were independently conducted by Osborne
Natural vitamins versus synthetic vitamins

and Mendel in the United States and the same conclusions were established. Their study focused on the nutritive values of highly purified proteins isolated from various cereals. Their rats exhibited no growth or weight maintenance until protein-free milk was added to their diet. During approximately the same period, Hopkins in England and McCollum in the United States substantiated the findings of Osborne and Mendel. Casimir Funk, in 1911, isolated a crystalline substance from rice polishings that effected a cure for and prevented beriberi in pigeons. Since this substance appeared to be essential to life, he named it “vitamine.”

**Depleted Soils**

A major misconception that has been accepted by many health professionals and a high percentage of the public is that our food supplies us with all the necessary vitamins and minerals. In a 1984 government publication, *The Red Book On Nutrition*, the United States Department of Agriculture sent out a shock wave. Independent laboratories around the United States took soil samples and analyzed their contents. Their reported findings revealed an across-the-board reduction, ranging from 25 per cent to 75 per cent, of the quantity of proteins, carbohydrates, fats, and 9 basic minerals. In addition, their study showed that the use of synthetic fertilizers caused the chromium in the soils to be bound up and unavailable to the plants. Because chromium is an essential mineral for the production of insulin, one can imagine its impact on the onset and amplification of diabetes. This government report coupled with the fact that about 70 per cent of our food is processed leaves very little doubt as to the need for taking quality nutritional food supplements.

**Advantages of Natural Vitamins over Synthetic Vitamins**

A vitamin represents any of a number of complex organic substances (active soluble proteins, carbohydrates, essential fatty acids, and enzymes) which are metabolically and function-
Although the synthetic form of the vitamin has the basic chemical pieces, its structure is different (rotated in a different direction) from its natural counterpart. Natural vitamins, i.e., vitamins as they appear in foods, are bound to protein complexes. This enables them to be absorbed through the intestinal wall into the bloodstream. In foods, natural vitamins are always soluble to permit transport through the living system. Active, soluble bioflavonoids are always associated with natural vitamins when they appear in food. In the natural state, vitamins never appear singly but are always closely associated with other vitamins and trace minerals and act to enhance them. As present in foods, natural vitamins almost always occur in more than one form. For example, in natural yeast, vitamin B-6 is found as pyridoxine, pyridoxal and pyridoxamine.

Unfortunately man’s arrogance has teamed up with “Madison Avenue” to deceive a gullible public into believing that the body does not know the difference between synthetic vitamins or synthetic fractions of vitamin complexes and naturally occurring vitamins. Dr. Casimir Funk coined the word “vitamin” and was the first scientist to concentrate vitamin B said, “The synthetic product is less effective and more toxic.” Structurally, synthetic vitamins are mirror images of natural vitamins. Although the synthetic form of the vitamin has the basic chemical pieces, its structure is different (rotated in a different direction) from its natural counterpart. Accepting the statement that there is no difference between natural and synthetic vitamins is like believing that your left hand will fit perfectly into a right-handed glove. The crystalline pure, synthetic forms of vitamins do not appear that way in nature. As examples, man-made vitamin B-6 (pyridoxine hydrochloride) does not exist in nature and pantothenic acid never appears in food as calcium pantothenate. They are less efficiently absorbed because the soluble protein bond is missing. Also lacking is the essential activating mineral which is closely linked to the vitamin’s struc-
Often much of the synthetic substance washes out of the body through the kidneys before any major amounts of natural, biologically active vitamins can be formed. When the synthetic vitamin is taken into the body, it must be rearranged and combined with the natural factors before it can actually function. Often much of the synthetic substance washes out of the body through the kidneys before any major amounts of natural, biologically active vitamins can be formed.

A food researcher, Agenes Fay Morgan Ph.D., at the University of California, reported (Science, vol. 93, pp. 261-262) as far back as 1941, that animals on a diet enriched with synthetic vitamins dropped dead long before other animals on an unenriched diet became ill. Dr. Morgan’s warning at the time was that “… such phony enrichment might cause conditions worse than the original deficiency.”

Synthetic vitamins at best, function in our body as drugs. As a prime example, high doses of ascorbic acid (synthetic vitamin C - which is made by a fermentation process in which sulfuric acid is bubbled through corn syrup) will produce an antihistamine effect. When “treating” the common cold with high doses of synthetic vitamin C, the user gets a false sense of relief because the symptoms are being masked.

In the August 1939 issue of the Journal of Nutrition, Dr. Barnett Sure reported on a study in which he fed one group of pigs twice the daily requirement of synthetic vitamin B-1. A second group of pigs was fed an equal amount of natural B-1. The results had frightening implications. The first generation offspring from those pigs fed synthetic B-1 were all sterile. However, all of the first generation offspring from the parents fed natural vitamin B-1 were healthy and fertile. It seems obvious from these results that synthetic vitamin B-1 is a genetic poison to pigs and potentially harmful to humans. These artificial vitamins are capable of damaging the chromosomes that are responsible for transmitting the sexual characteristics.

Genetic destruction is also appearing in humans. A 1981 report released by the University of Florida revealed
some shocking observations. When average young American males were tested in 1929, their sperm counts were 100 million sperm cells per millimeter of semen. When sperm counts were taken 44 years later, in 1973, the average adult male’s count had dropped to 60 million. Just seven years later, in 1980, the average sperm count dropped to an all-time low of only 20 million per millimeter.

Since the beginning of World War II (1939), “enrichment” of refined, devitalized foodstuffs such as white bread, cereals, pastas, and other flour products, became mandatory. It is interesting to note that 3 years before this, scientists discovered how to make synthetic vitamin B-1 (thiamine) from coal tar. From 1939 to present, people worldwide have received daily doses of synthetic fractions of false vitamins which are potential genetic poisons. Is the historical use of synthetic B-1 another example of “man’s better living through the use of chemistry?”

Scientists, physicians, and nutritionists are becoming more alarmed by the use of synthetic vitamin and mineral supplements. Dr. David Heber, chief of clinical nutrition at the University of California at Los Angeles School of Medicine recently stated, “Americans should get their nutrients from food. Large supplement doses of single nutrients won’t prevent disease, but instead will upset absorption of other nutrients.” Dr. Victor Herbert of Mount Sinai School of Medicine in New York stated, “… scientists are now beginning to see toxic effects from large doses of some USP [denotes a synthetically pure substance] vitamins long considered harmless such as vitamin C (ascorbic acid) and some of the B vitamins.”

In his book *A New Breed of Doctor*, Alan Nittler, M.D. describes the difference between USP vitamins and natural vitamins found in food. Dr. Nittler says “… like drugs, USP vitamins force reactions to take place in the body. Neither drug nor synthetic vitamin can be taken without paying a price, however.
There is a vast difference between synthetic and natural vitamins and minerals, if the latter are truly natural. The synthetic vitamin contains one factor only, or perhaps a man-made combination of a few synthetics, which mixtures are merely a combination of the separate factors.” Nittler went on to say, “USP vitamins can and sometimes do cause undesirable reactions” and “synthetics are non-natural elements which are really drugs by vitamin names.”

Abram Hoffer, M.D., Ph.D. in his book **Medical Applications of Clinical Nutrition** describes the differences between vitamins and minerals in food (bonded to protein complexes) and USP (a synthetically pure, free-state chemical) vitamins and minerals. Hoffer also emphasizes the fact that isolated protein and other food fractions do not exist in food. Dr. Hoffer further commented that, “The components of food are not food. The combination of parts is not equivalent to the whole. In fact, these components do not exist free (unbonded) in nature; nature does not lay down pure protein, pure fat, or pure carbohydrate. Their molecules are interlaced in a very complex three dimensional structure (protein complex) which even now has not been fully described. Intermingled are the essential nutrients such as vitamins and minerals, again not free, but usually combined in complex molecules. Since food components are not complete foods, they should not be called food for this perpetuates the myth that these components comprise good food. They are food artifacts. It follows that when foods and artifacts are combined (USP vitamins mixed with natural base) the whole mixture becomes food artifact.”

As informed consumers, we must break from the traditional pharmaceutical mentality that has led us to believe that there is no difference between synthetic and truly natural vitamins, that synthetic chemicals will function biologically the same as food and are harmless.

The structure of a natural vitamin is similar to that of an onion. Each layer
represents a different part, such as enzymes, co-enzymes, anti-oxidants, and trace minerals that are essential for the whole vitamin to work properly. For example, in nature vitamin C is made up of ascorbic acid which is bound to a protein, and vitamin P (bioflavonoid) of which rutin is a biochemical relative. The activating trace mineral is copper. Supplying large doses of one or two synthetic or natural parts of a complex can be hazardous to one’s health. At best, the fraction of the vitamin can only have a drug effect on the body. Ingesting megadoses of synthetic vitamin C (ascorbic acid—it’s really a sugar) will lead to various serious consequences as reported in the following research:

1. Megadoses of vitamin C (ascorbic acid) can weaken red blood cells leading to their breakdown and release of hemoglobin and other contents into the surrounding fluid. (Annual of Internal Medicine, 82:810, 1975; Annual of Internal Medicine, 84:490, 1976; Blood, 49:471, 1977)

2. Megadoses of C (ascorbic acid) will irritate the gastrointestinal lining. (New England Journal of Medicine, 285:635, 1971)

3. C (ascorbic acid) megadoses can lead to calcification in the kidney. (Lancet, 2:201, 1973)

4. Megadoses of vitamin C (ascorbic acid) can cause rebound scurvy which is a vitamin C deficiency. (Canada Medical Assoc. Journal, 93:893, 1965)

5. Megadoses of ascorbic acid (vitamin C) interfere with the normal metabolism of minerals. (British Journal of Nutrition, 24:607, 1970; Journal of Laboratory Clinical Medicine, 51:37, 1958)

6. Ascorbic acid megadoses may destroy vitamin B-12 in the blood. (Journal of the American Medical Association, 230:241, 1974; Amer-
Since synthetic ascorbic acid is a hexose (a six-carbon simple sugar), consuming large doses has the great potential to adversely affect the insulin-producing cells of the pancreas. Diabetic conditions may actually worsen from large amounts of synthetic vitamin C, and those people who have a family history of diabetes may, in fact, quicken the onset of this degenerative disease.

One of the principal advocates in the use of megadoses of ascorbic acid for the treatment of acute infectious diseases and malignant degenerative states is the Nobel prize winner, Dr. Linus Pauling. In 1974, Dr. Pauling published *New Dynamics of Preventive Medicine*. Contrary to what most people believe, Dr. Pauling stated the truth about ascorbic acid. In his book he recommends taking “… pure crystalline ascorbic acid. It is made from glucose (corn syrup). What is called rose hips vitamin C is the same pure crystalline ascorbic acid with a pinch of rose hips powder added. It is almost impossible to buy ascorbic acid from a natural source. The rose hip and aserolebarus ascorbic acid is out of the same barrel from Hoffman-LaRoche, as the others, but with a pinch of rose hip powder.”

It cannot be overemphasized enough that **ascorbic acid is not vitamin C.** Ascorbic acid is a synthetic fraction of the biologically utilizable vitamin C complex!

Another major misconception which appears to be immortalized in cement, is that alpha- or mixed tocopherols is vitamin E. In reality what is being sold as vitamin E is only part of the anti-oxidant fraction of the whole complex. When fractions are chemically separated from their natural components they lose up to 99 per cent of their potency (*Annual Review of Biochemistry*, 1943, page 381). Compounding the problem even more is the fact that consuming chemically pure vitamin E (alpha and mixed tocopherols) in high
unit doses (800 I.U. or more) reverses its effectiveness and produces the same symptoms as a deficiency which includes a loss of calcium from bones (The Vitamins in Medicine, p. 623 by Bicknell and Prescott, 3rd edition).

True vitamin E (concentrated from green peas, as produced by Standard Process Laboratory) is made up of five main layers plus its mineral activator, selenium. The tocopherol layer acts purely to protect the other layers of the E complex. The inner core contains a substance (xanthine) which enhances the potency of the tocopherols by as much as 50 per cent. Another internal ingredient (lipositols) is essential to convert cholesterol into vital hormones. Also present is vitamin F (unsaturated fatty acids) which helps to restore the calcium levels in the tissues and is thought by many to have anticancer properties. Another fraction of vitamin F promotes the repair of tissues and enhances the benefits of the anti-arthritic factor. The E-2 fraction works to increase the oxygen-conserving factor of the blood. By dilating the blood vessels supplying the heart (similar to nitroglycerine), E-2 allows more oxygen to reach the spastic heart muscle relieving the pain of angina. The last part of this natural vitamin package is the E-3 fraction. According to researchers, E-3 is needed to form sex hormones and helps heal stomach ulcers.

Other synthetic counterfeit vitamins often seen as “enrichments” on the package labels of convenience foods and multiple vitamin supplements are:

1. Thiamine hydrochloride-synthetic form of B-1
2. Thiamine mononitrate-synthetic form of B-1
3. Pyrodoxine hydrochloride-synthetic form of B-6
4. Irradiated ergosterol-synthetic form of vitamin D
5. Vitamin A acetate or palmitate-synthetic vitamin A
6. Calcium pantothenate—synthetic form of pantothenic acid

7. Niacin—synthetic form of niacinamide

Whenever any food product contains these substances, the buyer had better beware!

ROCKS AND PLASTER IN OUR FOODS AND VITAMINS

The consumer must also be aware of the inorganic minerals that are present in vitamin supplements and processed foods. These inorganic salts are being supplied by United States Gypsum Company and other similar industries. In the November 1985 issue of the trade journal, Food Processing U.S. Gypsum advertised calcium sulfate as “natural calcium.” Their “hype” lures prospective food processors with their offer to achieve more cost-effective baking and food processing management by switching to calcium sulfate (plaster). They recommend its use for a variety of products as an enricher, whitener, stabilizer, taste improver, and coagulant, and they boast that the list goes on! Other vitamin products (such as Oscal, and Tums) utilize calcium carbonate (limestone) as the calcium source. Americans now have a choice. They can either eat plaster (calcium sulfate) or rocks (calcium carbonate) in the form of vitamins or food.

To be biologically effective, minerals must be bound to active, soluble protein complexes. Chemically pure minerals are inefficiently absorbed and utilized. They will be absorbed and enter the bloodstream only if protein complexes are available in the digestive tract. The protein complexes act as biological transporters and only in this bound form can they be distributed throughout the body.

Many supplement companies assure their consumers that their mineral products are derived from “natural sources.” They proclaim vitamins derived from dolomite and oyster shell as natural. Although natural, rocks and shells do not contain minerals bound with protein complexes as they appear
in food. Our bodies were not designed to handle these minerals in the uncombined forms, and in reality they are mostly rejected.

Many vitamin companies take advantage of the consumer by stating that their products are chelated, that is, organically bound. Chelated forms involve mineral gluconates which are formed by combining the mineral with gluconic acid. Gluconic acid, however, has never been found in nature to assist absorption and utilization of any nutrient. In reality, the gluconate form is a 100 per cent organic chemical and provides advertising hype but the nutrient actually hinders body usage.

For maximum “transport to” and “absorption by” body cells, biologically active minerals must be bound to an active, soluble protein complex. Unfortunately, most amino acid chelated minerals available today are produced with soy protein. The major drawback of using soy protein is that it is an inactive protein source. Other inactive proteins used to produce “organic minerals” are casein and egg albumin. These proteins are rendered insoluble during the destructive precipitation process by which they are combined with the inorganic minerals.

When searching for a high quality vitamin and mineral supplement, one should seek out a product in which the vitamins and minerals are bound to naturally active proteins in the same form as found in foods. A major source that provides all the active protein complexes bound to the vitamins and minerals is yeast. One commercially available vitamin and mineral supplement that meets all these requirements is “Foodform” (IntraCell Nutrition Inc. P.O. Box 3070; Fort Lee, N.J. 07024 Tel.# 1-800-572-FOOD; in N.J. (201) 461-4660). Their products are in the same form as in natural foods. They are absorbed up to 5 times more readily and retained up to 16 times more than ordinary vitamins. Foodform vitamins are 97 per cent bonded to natural-form protein complexes so that they are metabolized like food.
Since the publication of *The Yeast Connection* in 1983 by William G. Crook, M.D., many people have become fearful of yeast in all forms. The layperson must realize that there are hundreds of species of yeast in our environment. Some of these yeast are harmful while others are beneficial. The irrational fear that eating strains of nonliving beneficial forms can aggravate problems caused by accidental exposure to one of the harmful varieties is so completely unfounded. It is just as ridiculous to warn consumers to avoid all yeast products. It is virtually impossible to avoid yeast because it is everywhere in our environment—in the air we breathe, in all our food, on our skin and on the clothes we wear.
Biochemical Deficiencies in the Chronic Pain Patient

The chronic pain patient who has traversed the gamut of conventional therapies and failed to respond is often rejected by the medical establishment. In most cases these patients present structural distortions (misaligned vertebra, disc compression, nerve entrapment, neuritis, inflammation and swelling), chronic soft tissue injuries (sprain/strain) and especially myofascial restrictions and pain. The many overlaying complexities of these patients presents a tremendous twofold challenge: first they do not fit the typical medical model and second they cannot be directed into the usual and customary treatment plan.

The chronic pain patient’s dilemma is further worsened by the severe emotional overlay laid on by the physician who reassures the patient that all extensive testing revealed negative findings and the problem “is really in your head” and “you will have to learn to live with the pain.” At this point frustrations are high on both sides of the fence.

Beyond Conventional Wisdom

Solving the complexities of the chronic pain patient involves Dr. Edward Debono’s concept of lateral thinking. By integrating information in various fields such as osteopathy, chiropractic, dentistry and nutrition, answers will be forthcoming. Unfortunately knowledge is gained at a pathetically slow and tedious pace and is applied at still a slower and more pathetic rate. Nevertheless, the medical model is changing because the public is demanding more alternative, non-invasive therapies and more emphasis is being focused by the media on this resurgence of natural healing.
“Thy Food Shall Be Thy Medicine, Thy Medicine Shall Be Thy Food.” This concept was espoused by Hippocrates over 2500 years ago. It represents one of the principle issues that is starting to be addressed. Nutritional deficiencies present a major underlying factor that must be addressed in the rehabilitation of chronic pain patients.

The chronic pain patient usually has a history of various types of trauma:

1. **Physical trauma**
   a. Motor vehicle accident
   b. Dental imbalances due to
      1. poor bite
      2. orthodontic distortions
      3. traumatic tooth extraction
      4. improper restoration of poor bite
   c. Surgery
   d. Excessive manual labor
   e. Physical traumas to the body

2. **Severe infections**
3. **Digestion problems and bowel toxicity**
4. **Poor dietary habits**
5. **Chronic degenerative disease**
6. **Severe and prolonged emotional distress**
7. **Genetic abnormality**
8. **Endocrine dysfunction**

According to Jeppsson\(^1\) anyone of these traumatic situations alone or in combination will cause reduced body levels or produce deficiencies of the B-complex vitamins and vitamin C.

The following list of specific B vitamins and their signs of insufficiency and symptoms are presented\(^2\). Based on many years of clinical success, the author recommends the use of natural B-complex vitamins to combat chronic pain.
Thiamine (B1) (present in Cataplex B)

Signs and symptoms: -

1. Increased susceptibility to myofascial trigger-point tension.
2. Muscles become tender and irritable.
3. Localized or general swelling problems.
4. Multiple areas of nerve irritation.
5. Generalized weakness.
6. Burning sensations in various locations.
7. Constipation.

Riboflavin (B2) (present in Cataplex G)

Signs and symptoms: -

1. Muscle weakness and pain.
2. Dry skin.
3. Depression.
5. Burning feet.
6. Burning of the eyes.
7. Walking like a drunkard.
8. Irritation of muscles and nerves.

Niacin (B3) (present in Cataplex G)

Signs and symptoms: -

1. Fatigue and tiredness.
2. Irritability of nerves.
4. Emotional instability.
5. Insomnia.
6. Memory deficits.
7. Depression.

**Pantothenic Acid (B5) (present in Cataplex B)**

**Signs and symptoms:**
1. Fatigue and irritability.
2. Nausea and vomiting.
3. Leg cramping.
4. Burning or electric shock sensations in the foot.

**Pyridoxine (B6) (Present in Cataplex B)**

**Signs and symptoms:**
1. Nonspecific weakness, irritability and nervousness.
2. Abnormal EEG patterns.
3. Mental depression.
4. Strong tendency to develop infections.
5. Insomnia and difficulty in walking.
6. Personality changes.
7. Decreased ability to withstand stress.
8. Tingling and unusual sensations in the hands and feet.
Folic Acid

Signs and symptoms: -
1. Muscles are irritable and susceptible to trigger point spasms.
2. Dizziness when arising from a sitting or lying position.
3. Anemia.
5. Decreased WBCs.
6. Diarrhea (explosive episodes of loose stools).

Cobalamin (B12)

Signs and symptoms: -
1. Increased susceptibility to trigger point spasms.
2. Fatigue.
3. Depression.
4. Mental slowness, poor memory and confusion.
5. Constipation.
6. Headaches.
7. Dizziness when arising from a sitting or lying position.
8. Burning, numbness and tingling sensations in the hands and feet.

Vitamin C

Signs and symptoms: -
1. Vague aching pain in joints and muscles.
2. Joints may swell from fluid accumulation.
4. Bruise easily.
5. Impaired or slow wound healing.
6. Depression, Hypochondriasis and hysteria.
7. Deficient immune system.
8. Loss of hair.

With the onslaught of modern technology, synthetic fertilizers, highly processed foods, microwave cooking and irradiation of food stuffs to increase shelf life, the ranks of chronic pain patients will swell. Their wanderings will be far and wide in search of the holistic oasis where alternative health care will be offered and based on innovative techniques such as nutritional therapy (homeopathy, vitamins, minerals, enzymes, phytonutrients, amino acids, antioxidants, and herbs), myofascial release techniques, laser acupuncture, micro-current therapy and structural integrated procedures.

To those scientifically oriented practitioners who constantly need the support of double blind studies, I offer you wisdom from one of the world’s greatest researchers, the late Dr. Hans Selye. Selye poignantly stated that, “If I throw a rock out of the window and it goes up instead of down, do I really need a double blind study to show me the statistical significance.” Alternative therapies offer a non-invasive approach that should be tried first.

Unfortunately, many people turn to alternatives only as a last resort and after their immune systems have been irreversibly damaged and when treatment fails the establishment is quick to condemn the efficacy of alternative medicine.
References


Headache-Causing Substances

Since 1940, the intake of chemical additives and preservatives has risen by 995 per cent. This does not include the air and water pollutants and the many drugs that people consume for chronic conditions. Exposure to chronic low levels of pollutants or sensitivity to synthetic compounds may in fact be the cause of many head pains and other symptoms. The following list of potential headache-causing substances is provided as a starting point for your relief:

1. **Caffeine:** Occurs naturally in tea, coffee, chocolate, and cola nuts. Caffeine is added to many nonalcoholic carbonated beverages. As an example, a 12-ounce can of Coke has 64.7 mg. of caffeine. Other examples including Pepsi, coffee, tea, Dr. Pepper, Mountain Dew and Root Beer all have a high caffeine content.

   **Side effects:** Caffeine produces nervousness, insomnia, and a rapid heart beat. It also constricts blood vessels and has the potential to relieve vascular headaches. However, victims of tension headaches who continually consume caffeine in the form of ACP (aspirin, caffeine and phenacetin) tablets may develop headaches as the drug effects begin to wear off. Similarly, going “cold turkey” after drinking large quantities of coffee or tea will cause withdrawal headaches. This is often the cause of the so-called “weekend headache.” Consuming large quantities of coffee during the work week with weekend abstinence will often be the cause.

2. **Sodium nitrite or nitrate:** These inorganic chemical compounds are used extensively as preservatives and color fixatives in cured meats, meat products, and in certain cured fish. Some
common examples are hot dogs, bacon, ham, and salami.

**Side effects:** Even the small amounts of nitrates and nitrites found in cured foods have the ability to dilate blood vessels and cause headaches in some people. This type of headache is usually characterized as a dull, aching pain accompanied by a flushed face and possible a rapid pulse and light-headedness.

3. **MSG (Monosodium glutamate):** MSG is a flavor enhancer and is manufactured from corn or wheat gluten or from sugar beet by-products. MSG is used extensively by restaurants to restore the fresh-cooked flavor when using canned and reheated foods. The following examples are given because they are usually seasoned with MSG; chicken, fish, shellfish, Chinese and Japanese foods, kosher chicken soup, matzoball and green pea soups.

**Side effects:** MSG symptoms usually develop 15 to 20 minutes after eating MSG-laced foods. Victims usually complain of numbness to both arms and the back, general weakness, and heart palpitations. Other symptoms include profuse cold sweats, tightness on both sides of the head, and a vise-like pounding, throbbing sensation in the head. The ensuing headache is a pressure or throbbing type over the temples with a sensation of a tight hatband across the forehead. People who are sensitive to MSG are usually susceptible to migraines and other vascular headaches.

4. **Alcohol and histamine:** Ingestion of both substances will severely dilate blood vessels. Red wines, in particular, may have a high histamine content and can trigger migraine and cluster headaches in susceptible individuals. The hangover headache on
the morning after is the result of acetaldehyde, acetate, tannins, fusel oil and other breakdown products of alcohol that circulate in the blood and affect the arteries in the skull. The biggest offenders are brandy, bourbon whiskey, and red wines. Those individuals who have a high serum histamine level should also avoid synthetic multiple vitamins which have histidine which is converted to histamine in the body.

5. Calcium propionate or sodium propionate: These chemical substances are used as mold- and rope inhibitors in bread, rolls and other baked goods, poultry stuffing, chocolate products, processed cheeses, artificially sweetened fruit, jelly and preserves, pizza crust, and in food packaging materials.

**Side effects:** Moderate allergic reactions have been reported 4 to 18 hours after ingestion. Disturbances begin in the upper intestinal tract and end with partial or total migraine headaches. The stomach-intestinal distress symptoms are similar to gall bladder attacks and can be especially severe in individuals in whom there is a combined allergy and gall bladder ailment. When calcium propionate is used, it destroys the enzyme that normally makes it possible for the body to assimilate any available natural calcium or calcium added through “enrichment” in bread.

6. Tyramine: This is a natural compound found in many foods. Tyramine will dilate blood vessels and thus is considered a potential allergenic headache-triggering substance. This natural compound is primarily found in red wines and aged cheeses. Those individuals sensitive to this substance should avoid the following tyramine-high foods: Dairy prod-
ucts—sour cream, yogurt, ripened or aged cheeses, such as Cheddar, Gruyere, Stilton, Emmentabo, Brie, Camembert, Gouda, Mozzarella, Parmesan, Provolone, Romano, Roquefort, Swiss, and Edam; fermented or pickled meats and fish-pickled herring, summer sausage, fermented sausage and other varieties, salami, bologna, pepperoni, salted fried fish, beef and chicken liver; vegetables—avocados, Italian broad beans with pods (fave beans), sauerkraut, Chinese food, onions, and lima beans; alcoholic beverages—beer, ale, red wines (Chianti is the worst!), Riesling, sauterne, champagne and sherry; miscellaneous—yeast and yeast extracts, chocolate, vanilla, soy sauce, and anything pickled or marinated.

7. Foods high in salt content: Ingestion of large amounts of salty foods will result in salt overload on the vascular system. Salt (sodium chloride) has the ability to expand the blood volume and cause the cells to retain fluids. Besides increasing blood pressure, the arteries must dilate to accommodate the additional fluid. Chronic headache sufferers, especially individuals prone to migraine and vascular headaches should avoid foods high in salt. Examples of high salt content foods are pork, lard, salted potato chips, crackers, salted nuts, and bacon. Also be sure to check food labels for salt content.

8. Drugs: Ninety per cent of the drugs listed in the Physician’s Desk Reference (PDR) have headaches listed as one of the side effects. One must consider any medication presently being taken as a possible triggering substance. Caution must be exercised in this area since headaches must be listed as a side effect even if a very small percentage of test patients experience the symptoms.
Victims of chronic headaches or those with frequent tension headaches may be creating their own head pain by abusing the analgesic drugs being consumed. Withdrawal headaches very often can be attributed to the rebound effect of the caffeine present in the compounds. Caffeine, like nicotine, constricts the blood vessels. Going “cold turkey,” either from stopping smoking or discontinuing the headache relief pills will result in dilation of blood vessels and triggering of a headache. Heavy consumption of coffee, tea and/or cigarettes on a daily basis will maintain the blood vessels in a constricted state. Failure to meet your daily quota of these substances may trigger a rebound headache.

9. **Birth control pills:** The “Pill” changes the female hormone balance. As a result, migraine-prone women usually suffer more severe headaches, while migraine-free women become more susceptible to headache pain than the non-pill user. In addition, birth control pills will reduce the vitamin B-12, folic acid, and vitamin C levels in the body.

10. **Carbon dioxide build up:** Some people habitually sleep with their heads under the sheets. Sleeping in this manner causes a build up of carbon dioxide which can cause a nasty headache upon awakening.

11. **Fluoride:** The 1983 Physicians’ Desk Reference cautions: “… in hypersensitive individuals, fluorides occasionally cause skin eruptions such as atopic dermatitis, eczema, or urticaria. Gastric distress, headache, and weakness have also been reported. These hypersensitive reactions usually disappear promptly after discontinuation of the fluoride.”
In his book, *Fluoride The Aging Factor*, Dr. John Yiamouyiannis’s research has shown fluoride to cause deposition of calcium into soft tissues where it does not belong and prevent deposition into hard tissues like bone where it is supposed to be placed. Other researchers such as Jenny Dean, Ph.D. have shown in rat studies that fluorides cause calcification of the pineal gland. This gland is the source for production of melatonin the hormone that aids sleep and helps promote youth. Still another international researcher in the field of fluoride is Phyllis Mullenix, Ph.D. whose rat studies revealed calcification of the hippocampus of the brain which causes behavioral problems.

The American Dental Association’s reported anti-cavity benefits of fluoride are in very serious question and that is according to one major study in 1988 that was conducted by the National instituted of Dental Health. Their study involved 39,206 students living in both fluoridated and non-fluoridated communities. The final tabulation showed that there was no difference in the decay rate for either group. The same results were forthcoming in another study in Auckland New Zealand in which 60,000 students’ dental records were reviewed. Again there was no difference in the decay rates for either group. What is even more disturbing is the fact that the Food and Drug Administration does not have one study on file that shows the safety and effectiveness of fluoride.
Manipulation and Healing

Structural Correction

“The Doctor of the future will give no medicine but will interest his patients in the care of the human frame, in diet, and in the cause of prevention of disease.”

This profound statement was made by one of the most creative and ingenious minds of the world. Thomas A. Edison.

Structural correction as a means of healing had its beginning in September of 1895. It was Daniel David Palmer, a self-educated man from Davenport, Iowa, who discovered a principle which was used as far back as the Egyptian, Incan and other advanced civilizations. D.D. Palmer ingeniously applied a method previously unknown to correcting ills that had plagued man. This historic event occurred when Dr. Palmer restored the hearing of a Negro porter who had been deaf for 17 years. This miraculous result was accomplished by Dr. Palmer’s locating and correcting an anatomical malrelationship of the fourth thoracic vertebra in his spine.

“In recent years, allopathic (traditional) medicine has been ‘discovering’ chiropractic and its literature, and professional journals have been replete with references to vertebral dislocations, or subluxations, and credit given to the interference of the segmental nerves by such distortion as the cause of many and diverse symptoms…” (from The Neurodynamics of the Vertebral Subluxation by A.E. Homewood, D.C., 1977). As a dentist, this author has also “discovered” chiropractic as it interrelates one’s body to one’s teeth and bite and vice versa. Although physiologic dentists throughout the world represent a minority, they have achieved greater degrees of treatment success working with chiropractic physicians. These elite dental-chiropractic teams have repeatedly demonstrated the influences of tooth position and bite on the cranium, spine, pelvis and their
relationship to many physiologic disturbances such as high blood pressure, blood sugar irregularities, menstrual problems, allergies, chronic fatigue, hearing loss, delayed healing, balance problems, constipation, swollen glands (lymph nodes), eye pains, migraine headaches, etc.

As a branch of the healing arts and sciences, chiropractic focuses on the concept of the triad of health: structural, mental, and chemical. It is believed that all health problems, whether functional or pathological, are involved with one part or all of the triad. The chiropractic physician who employs this concept increases his ability to uncover the patient’s underlying problem.

The well-trained chiropractic physician knows that treatment of the patient’s problem may involve nutritional support, when indicated, to assist his structural manipulations and enhance the correction. He also understands the tremendous overlaying influences mental problems can have on structural imbalances as well as being a major contributing factor in causing muscle spasms, indigestion, generalized toxicity, under- or overactive glands, etc. The coordinated efforts of the professional team will focus on uncovering the underlying causes of the patient’s problem. Once the main areas that are not working properly are discovered, an intelligent approach to healing can be made.

Dr. George Goodheart appropriately summed up healing when he stated, “Man possesses a potential for recovery through the innate intelligence of the human structure. This recovery potential with which he is endowed merely waits for the chiropractic hand, heart and mind to bring it to potential being and allow the recovery to take place which is man’s natural heritage.”

The well-educated chiropractic physician will have training in many different techniques. As with any profession, there is no one approach that will provide a cure-all. A good chiropractor will spend the necessary time to question
the patient about the main complaints and then perform a thorough examination. Such an evaluation may include the cranium, spine, pelvis, and extremities. The purpose of such an evaluation is to determine the integrity of the structures and their function. To assist in diagnosing the problem, the patient may be requested to have spinal or pelvic x-rays, blood studies, urinalysis, nutritional analysis, and when necessary, a medical evaluation from a competent physician.
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Caffeine, Alloxan, and Diabetes

When caffeine enters the liver and pancreas, it is converted by an enzyme into a chemical called alloxan. This toxic chemical attacks and poisons the beta cells (these cells produce insulin) in the pancreas causing diabetes. This reaction is scientifically known however most physicians are not aware of the fact that caffeine becomes alloxan in the body.

This poisoning process is reversible by eliminating caffeine from the diet. In addition a low carbohydrate diet must be followed to reduce the production of insulin.

Eliminate the following foods:

- Coffee including decaffeinated coffee as well.
- Tea including herbals with caffeine.
- Chocolate including foods and drinks that contain even small amounts.
- Soft drinks that contain caffeine.
- Prescription medications that contain caffeine.
- Over-the-counter medications that contain caffeine.

This detoxification process takes approximately 6 to 9 months to remove 90% of the poison from the body. As the level of alloxan diminishes, your fasting blood sugar levels will become more stable.
When the vertical height of the teeth is lost due to missing back teeth (molars and bicuspids), lack of eruption or improper restoration with crowns, partials or full dentures, the condyle is forced posterior and superior within the fossae. Compression and impingement of soft tissue (retrodiscal tissue [nerves and blood vessels]) results in the disc being forced forward and medially off the head of the condyle. This displacement of the disc is the reason for clicking and locking of the jaw in the more severe cases. The chain reaction also causes a forward head posture, compression of the spine (discs between the vertebrae), potential for scoliosis (lateral curvature), muscle and ligament imbalances, excess tension on spinal nerves, nervous system imbalances, and reduced drainage of the sewage system of the body (lymphatics).
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