Every cell is a storage battery with an electrical charge of 40 to 90 millivolts. All body cells are surrounded by extracellular fluids; this matrix is made up of water and crystalline structures which resonate and help regulate all cellular activity via, electrochemical signaling. The cell membrane which surrounds the cell transduces(input energy of one form into output energy of another) these signals and communicates them to the intracellular: inside the cell environment, setting up a resonant synchrony between the inside of the cell and the extracellular: outside the cell matrix. Accordingly, the efficiency of all cellular functions depends upon the regulatory action of the extracellular matrix, and dysregulation is the product of a breakdown in this resonant harmony.

Ineffective electrochemical signaling at this level, and thus in the cell’s electrical environment, disturbs cell behavior and, over time, may lead to mutation in DNA encoding and subsequent malignant change.

In fact, the basis for the therapeutic benefits of homeopathy and acupuncture (via penetration of the acupuncture meridians into the extracellular matrix) may be largely due to the introduction of harmonic frequencies into the extracellular environment. These frequencies act as an organizing fulcrum that helps to reestablish normal electrical oscillation and intracellular/extracellular resonant synchronicity.

Noted Swiss physician Thomas Rau, M.D. feels that when the extracellular matrix is disturbed, its electrical potential is blocked and “[it]... can no longer react to homeopathic medications [because homeopathic information is transduced into cellular responses in this matrix].”

Clearly, electrochemical interaction mediated by the cell membrane is one of the most crucial interfaces not only for the maintenance of health but in its restoration in the event of disease.

Calcium, magnesium, potassium and sodium are key players in this critical electrochemical interplay. This is one of the main reasons why these minerals should form the nucleus of any nutritional supplementation program.
Before beginning an in-depth look at each mineral, it should be understood that these four minerals are fully interdependent and cannot function properly in isolation. The following insights illustrate this:

1) hypomagnesia (low magnesium) is the most common cause of hypocalcemia (low calcium) in hospitalized patients. Chronic magnesium depletion suppresses the secretion of parathyroid hormone necessary for the maintenance of normal calcium blood levels.
2) Deficiencies of magnesium are closely related to abnormal calcium metabolism. In diabetes, magnesium deficiency is associated with both low calcium and low potassium.
3) Low potassium frequently occurs as a result of magnesium deficiency and administration of potassium alone may be insufficient to correct potassium deficiency unless magnesium supplementation occurs simultaneously. Magnesium modulates one of the primary potassium transport systems in and out of the cell. Adequate magnesium stores are necessary to prevent the leaking-out of potassium through potassium channels in the cell membrane. The role of magnesium in maintaining intracellular potassium stores in heart muscle and other cardiac cells is crucial. Potassium loss due to hypomagnesia results in alteration of the electrical potential of heart muscle cell membranes, making them more excitable and prone to arrhythmia.
4) Calcium is a direct antagonist to magnesium, so much so that it is used intravenously to reverse the complications of magnesium overload due to kidney failure.
5) Magnesium depletion may also contribute to sodium deficiency.
6) In heart action, calcium facilitates contraction while magnesium facilitates the relaxation required to allow for subsequent contraction (thus creating the characteristic pumping action).
7) Calcium competes with magnesium for a common transport system for uptake from the intestine into the blood. An excess or deficiency of one of these minerals inversely affects the absorption of the other.
8) When magnesium-deficiency results in inappropriate calcium balance in the tissues, the so-called sodium/potassium pump (i.e. mechanism by which sodium and potassium move in and out of the cell) is disrupted.

**CALCIUM**

**Physical Functions**

Calcium is the most abundant mineral (and 5th most abundant substance) in the body with about 99% occurring in the bones. Calcium constitutes about 1.5% - 2% of total body weight. Calcium’s role in bone and tooth development and maintenance are well known. In addition to lending structural integrity to skeletal tissue, calcium is crucial for proper nerve transmission, primarily through its release of neurotransmitters. If serum calcium levels fall below a certain threshold, the nerves become hypersensitive, giving rise to tetany: a syndrome characterized by sharp flexion of the wrist and ankle joints; muscle twitchings; cramps and convulsions.

Calcium, in conjunction with magnesium, activates certain biochemical mechanisms
required for both skeletal and cardiac muscle-contraction. Calcium ions act between the muscle fibrils during the contraction process. Lacking sufficient calcium ions, the fibers remain motionless and do not glide and mesh together. Thus, the muscle cannot contract, or, once contracted, it will not relax, causing the muscle to cramp.

In regard to cardiac (heart) muscle function: calcium stimulates contraction; magnesium supports relaxation while sodium and potassium help to generate and regulate rhythmic electrical impulses. Also, heartbeat is controlled by an electrical center called the AV node: a mass of specialized tissue located in the upper right chamber of the heart and calcium is involved in the transmission of impulses in this center.

Calcium is required for the activation of ATP: a major energy- carrying substance in the body which serves as an energy source for muscle-contraction. Also, calcium plays a vital role in the regulation of the cellular milieu. Small amounts of calcium occur in both the intracellular (i.e., inside the cell) fluids as well as the extracellular fluids which bathe the cells.

As a component of cell membranes, calcium helps to regulate ion (atom or group of atoms with an electrical charge) and nutrient-transport into and out of the cell. A great deal of cellular function is transacted upon these cell membranes which surround and protect cells. Elevation of extracellular calcium concentration increases the tightness of the cell membrane and decreases the flux of ions and other substances across this membrane. On the other hand, decreased calcium concentration leads to increased membrane permeability.

Calcium has a calming effect upon the nerves due to its regulation of the movement of sodium and potassium across nerve-cell membranes. Sodium and potassium control electrical-charge distribution on both sides of the cell membrane. When calcium ions are increased in the fluids around the nerve cell, they decrease the number of sodium ions present, thus, lowering electrical reactivity.

Brain cells use their cell membranes as mediums for the production of energy and the electrical currents needed in the nerve transmission that facilitates brain cell communication. Clearly, it is crucial that cell membranes operate at full potential.

Calcium is necessary for the cell division required for growth and repair. Also, it is an integral component of the extracellular cement called “ground substance” which holds the cells together, and so, calcium helps to support the structure of soft tissues as well as skeletal tissues.

Calcium, being a component of platelets (the clotting cells in the blood) and a catalyst in the activation of prothrombin and the conversion of fibrinogen to fibrin (both of which are processes essential for blood coagulation), plays an important role in blood-clotting.

Calcium is also a key digestive factor. It activates starch-splitting enzymes found in saliva, pancreatic secretions and fat-digesting enzymes as well.
Calcium is an important blood-buffer, helping in the maintenance of optimal pH. Calcium is also essential for normal action of the sympathetic (fight or flight) nervous system, and so, it is a key player in all stress responses.

Although calcium channel-blocking drugs are used to reduce high blood pressure and the risk of coronary arterial spasm, normal calcium nutrition is not the culprit; rather, it is abnormal calcium metabolism. In fact, calcium supplementation has been shown to lower blood pressure by positively influencing certain electrolyte and central nervous system mechanisms. Studies have shown that reduced levels of calcium during the teenage years (the time of proliferation of mammary gland cells) can increase the risk of breast cancer. Calcium may also play a role in protecting against colon cancer.

**Calcium-Deficiency Symptoms:** nervousness and other nervous disorders; insomnia; fatigue; impaired growth; tetany, cardiac arrhythmia; heart palpitations; slow pulse rates; tooth decay; bronchial spasms; digestive disorders; spastic colon; irritable bowel syndrome; menstrual difficulties; excessive irritability of nerves and muscles; muscle cramps (especially leg cramps at night); bone defects (including osteoporosis, rickets and osteomalacia); joint pains; arthritis; proneness to sprains and strains.

**Notable Vegetarian Food Sources of Calcium:** sesame seeds; sea vegetables (e.g. kelp, kombu); leafy greens (including collard greens, kale, turnip greens, mustard greens cabbage); almonds, filberts, Brazil nuts, pistachio nuts; sunflower seeds; soybeans; chickpeas; mung beans; red beans; parsley; water cress; beet greens; broccoli; hone radish; dandelion greens; dried figs

**Emotional Themes of Calcium**

The main theme of calcium is the need for protection, stability and security. Calcium is the major mineral component of the protective shells of mollusks, crabs and the exoskeleton (external skeleton) of insects. The calcium-rich rib cage is designed to protect the vital organs of the chest and upper abdomen.

Noted homeopath Dr. Rajan Sankaran in *The Substance Of Homeopathy* writes of the calcium type: “He feels like an oyster without a shell and seeks protection. He strives to get protection from outside or develop it himself. Anything that threatens his stability and security causes immense fear in the calcium person.”

The strongly calcium-type is especially sensitive to potential threats within his vicinity such as new neighbors, the dog next door, the illness that goes around, the dentist, etc. There will also be fear of loss, poverty, the future and the possibility of things going wrong, even without any clear justification for such worries.

Dr. Jan Scholten in *Homeopathy And Minerals* writes: “The way the calciums protect themselves is by fending off. They withdraw and build-up a protective layer around
themselves. Like an oyster who surrounds his soft body with a hard, protective shell.”

Increased need for calcium in a person may be suggested by increased sensitivity to criticism and of what others will think of him. Calciums individuals are very uncertain about themselves and constantly compare themselves with others, fearing that they will be found lacking or less qualified. This is consistent with the theme of insecurity and the need for protection. This behavior may not be overt, but rather, strongly felt inside.

The calcium-type has a strong bond to the home, a bastion of safety comparable to the oyster’s calcium-rich shell. Hence, they are bolder and more assertive at home than in the outside world where they feel vulnerable and uncertain. This can be particularly evident in children with strong calcium affinity who can be aggressive and obstinate in the home while timid outside of it, because, as Sankaran reasons: “... they are testing the reliability of their protective wall, assuring themselves that their parents will not leave them however much troubled.”

Calcium-types may be hesitant to many and leave the safe nest of their birth family, fearing that married life will not provide the same sense of security. However, once they observe their parents aging and evolving infirmities and realize they will someday lose the shield of the family home, marriage becomes a pressing aspiration. The ensuing marital relationship is often negatively impacted by the calcium-type’s need for their mate to be a mother or father substitute. Sankaran describes the main feeling of the calcium-type as: “I need security to be alive.”

When calcium-need is strong an individual’s dreams may reflect anxiety about potential threats including dreams of: observing a murder; wild animals such as snakes; intrusive people or events which disturb their domestic safe haven. There may also be increased sensitivity to news stories about cruelties or tragedies. Calcium children have little tolerance for the gory, terrifying horror movies which have attained such perverse popularity in recent years.

Some non-mental symptoms which homeopaths have observed among calcium-types are: profuse perspiration; bone and joint pathologies; weakness when ascending stairs or walking uphill; intolerance of tight clothing or hats; overexertion of any kind; dryness and chapped skin in winter, especially of the soles of the feet; sensitivity to cold and damp; a desire for sweets; hypothyroidism; swollen glands; profuse menses; feeling of let-down at 3 PM.

MAGNESIUM

Physical Functions

Although considered a major mineral in the human system, the body of a 130 pound individual contains only 1.75 ounces of magnesium. About 27% of this quantity occurs in muscle tissue, and 60% in bone. Magnesium is in highest concentrations in tissue with
high metabolic activity such as the brain, heart, kidneys and liver. Other than potassium, magnesium is the most abundant cation (positively charged ion) in soft tissue, and its deficiency leads to tissue breakdown and destruction.

Magnesium (like potassium) is primarily an intracellular mineral. It activates pathways involved in protein and carbohydrate metabolism and is involved in the function and maintenance of DNA. Magnesium (like calcium) also helps to regulate the electrical reactivity of cell membranes, and thus, the flow of vital nutrients and waste products across the structure.

Magnesium is necessary for normal energy production being (like calcium) required for the production of ATP. Magnesium is also crucial in relieving chronic fatigue, especially if it occurs in conjunction with depression, anxiety, insomnia or muscle cramps. Extensive research has shown that magnesium taken with potassium is often an effective treatment for fatigue.

Magnesium is also involved in the synthesis of lipids and proteins. Too, it plays an important role in muscle relaxation and neuromuscular transmission, prevents tooth decay by binding calcium tooth enamel, and helps in detoxification by assisting in the removal of excess ammonia (by-product of protein digestion) from the body.

Inadequate magnesium severely impacts cardiovascular, neuromuscular and kidney tissues. Regions of the U.S. with lower levels of magnesium in the water supply have a higher incidence of heart attack

Magnesium is a natural tranquilizer that ameliorates erratic nervous system activity. Magnesium-deficiency may result in impaired neurotransmitter functions, a phenomenon which is often part of the disordered physiology which contributes to schizophrenia. It may also be an important factor in treating hyperactivity, autism and Alzheimer’s disease.

It also combats stress through reduction of muscular tension via relaxation of skeletal muscles. Sherry Rogers, M.D. points out in Is Your Cardiologist Killing You?: “Stress and magnesium deficiency are mutually enhancing, in that stress through catecholamines induction [release of a class of organic compounds which produce effects similar to the stress responses of the sympathetic nervous system] enhances magnesium deficiency while magnesium deficiency causes irritability, agitation and panic, which, in turn, pushes more on the catecholamines, etc.”

Magnesium relaxes smooth muscles of the gastrointestinal tract, respiratory tract, reproductive tract and blood vessels, accounting for its role in preventing gastrointestinal and vascular spasm, spasm of the fallopian tubes (causing infertility) and bronchial spasm (as in asthma). Accordingly, one way that magnesium helps to prevent heart attacks is by protecting against spasm of the coronary arteries. Vascular spasm drastically diminishes the delivery of oxygen to affected tissues (i.e., ischemia), causing pain, injury and tissue-death.
Over time, low magnesium levels may produce progressive vasoconstriction, resulting in coronary arterial spasm and sudden-death ischemic heart disease. The magnesium-content of heart, muscle has been shown to be low in those who die of sudden-death. Patients with acute myocardial infarction are magnesium-deficient and develop low blood-levels of magnesium during the acute phase of the infarction. Magnesium-deficiency may result in the failure to inhibit entry of calcium into myocardial cells which, when not curtailed, leads to spasm and the shutting-off of blood supply to affected areas of the heart.

Clinical pathologist Ronald Elm, M.D. in Magnesium Metabolism In Health And Disease writes: “Magnesium is nature’s own calcium channel-blocker. An increase in magnesium concentration in interstitial fluids should diminish calcium influx into damaged tissue and limit [myocardial] necrosis [i.e., death of heart muscle tissue]…magnesium is an effective vasodilator that should improve the blood supply to damaged areas of the myocardium…magnesium has been shown to have an anti-arrhythmic effect on the myocardium… an increase in the magnesium concentration would limit platelet aggregation [i.e., clumping together of cloning cells], and thus the extension of an episode of thromboembolic [obstruction of a blood vessel by a solid mass—formed from blood constituents—that has been carried by the blood from its site of origin, plugging another vessel site].”

Some researchers suggest that too much emphasis has been placed on high cholesterol levels instead of low magnesium levels as a primary factor in heart attacks. In modern clinical practice, magnesium supplementation is becoming prevalent in the treatment and prevention of heart attacks, angina, coronary artery spasms, hypertension, mitral valve prolapse and cardiac arrhythmias. It can also reduce the build-up of unwanted calcium deposits in arteries and heart valves. Unsurprisingly, panic disorder is common among cardiology patients.

Optimal magnesium nutrition may also exert an anticancer effect as magnesium-deficiency has been shown to increase cancer susceptibility. This fact may be partly related to magnesium’s role in accurate DNA replication. Magnesium is an integral component of more than 30 enzyme systems involved in cell-growth and division which are usually disordered in cancer. Also, magnesium helps to maintain cell-membrane integrity, and so, helps to prevent cancer cell metamorphosis by helping encourage cells to adhere in a normal fashion. Noted nutrition expert Mildred Seelig, M.D. in Magnesium Deficiency In the Pathogenesis Of Disease notes: “...magnesium stabilizes cell membranes and functions to protect against free radicals released under stress.”

Magnesium deficiency causes certain abnormal changes in the fluidity and permeability of cell membranes similar to changes observed in cancer cells. One study demonstrated that magnesium-deficient laboratory animals were much more likely than non-deficient controls to develop spontaneous cancers. Ironically, chemotherapy depletes magnesium stores and, in so doing, may actually stimulate the development of malignancies. Magnesium has been used to lower blood pressure in pregnant women with preeclampsia and is an anticonvulsant in eclampsia (i.e., toxemia of pregnancy). For over 60 years,
emergency magnesium injection has been a common treatment response to toxemia of pregnancy.

Magnesium may also be indicated for abnormal menstrual symptoms, including: cramping; fatigue; depression; water retention; irritability.

**Important Notes:**

1) A recent Italian study found a possible link between premature birth and inadequate magnesium nutrition. Women supplemented with magnesium required less hospitalization, experienced reduced prematurity and gave birth to infants of more normal weight and size than a similar unsupplemented group.
2) Dr. Judith Grether of the California Birth Defects Prevention Program has found that there is a significant reduction in the incidence of cerebral palsy when magnesium is given during delivery.

Magnesium-deficiency is common in long-standing or under-controlled diabetics and has been used for decades to treat alcoholics during withdrawal. Deficiency is also more likely when magnesium absorption is decreased by liver disease, diabetes, malabsorption and after severe burns or injuries. Magnesium excretion is increased by the use of alcohol, caffeine, refined sugar, birth control pills and diuretics. Magnesium-deficiency is widespread among those who subsist on processed foods, drink soft water and eat foods grown in magnesium-deficient soil (where magnesium-lacking synthetic fertilizers are used).

The refining of grains may result in the loss of more than 75% of original magnesium-content. U.S. government surveys found that the typical American diet provides less than half of the recommended daily amount of magnesium. Some authorities estimate that 80% of the population is magnesium-deficient.

Standard blood tests cannot detect any but the most severe cases of deficiency, because only 1% of body magnesium occurs outside the cells, and these tests do not measure the intracellular content. Substantial intracellular depletion can exist when plasma magnesium levels are normal or even elevated. Richard Passwater, Ph.D. and Elmer Cranton, M.D. in *Trace Elements, Hair Analysis and Nutrition* write: “Magnesium is blood’s most valuable mineral component. Replenishment from the body’s limited magnesium stores is slow, at best, and there doesn't seem to be any special activator. Therefore, dietary magnesium is an essentially critical factor.”

Importantly, Dr. Rogers maintains that chemical sensitivities, a burgeoning problem among modern humans, cannot be resolved until nutrient deficiencies are rectified; magnesium-deficiency is especially crucial in this regard.

**Magnesium-Deficiency Symptoms:**

apprehensiveness; personality changes; confusion; anxiety; alcoholism; disorientation; psychosomatic illnesses; insomnia; adrenal gland fatigue and weakness; lack of
coordination; obesity; fluid retention; proneness to motion sickness; muscle-twitch; tremors; weakness; bizarre muscle movements of the face and eye muscles; hair loss; swollen gums; tension in the neck and shoulders; weakness of the heart muscle; proneness to blood clots in the arteries; white blood cell disorders; chronic sore throat; hay fever; asthma; gastrointestinal disorders; nausea; constipation; colitis; intestinal parasites; liver weakness; gallbladder disorders including gallstones; PMS; amenorrhea (absence of menstrual period) tetany; muscle cramps; skin lesions; warts

Notable Vegetarian Food Sources of magnesium:
kelp; almonds; cashews; Brazil nuts; walnuts; filberts; pistachio nuts; pecans; sesame seeds; Lima beans; dried peas; red beans; soybeans; millet; wheat; brown rice; rye; lentils; spinach; beet greens; coconut; figs; dried banana

Emotional Themes of Magnesium

One of the most central themes of magnesium is repressed internal anxiety and insecurity. ‘Whereas “suppression” infers conscious submerging of emotions which have surfaced, “repression” denotes preemptive blocking of any surfacing to the extent that the individual is not aware of the existence of certain deeply buried feelings. A second main theme of magnesium is the emotional desire for strong parental nurturing and protection. The world of the nursing fetus whose survival depends upon maternal protection and nourishment is rightly dominated by this feeling. However, this strong need is anachronistic in the adult whose positive self-image and socioeconomic viability depend upon self-confidence and self-sufficiency; thus, this feeling is often repressed. Nevertheless, repression only prevents above-the-ground flowering of a deep-seated feeling; it does not extricate its subterranean roots from the subconscious. This “root” gives rise to tremendous internal anxiety whose source, due to the censorship of repression, the individual cannot identify. The manifested anxiety often takes the form of feelings of abandonment, of being forsaken, vulnerable and alone.

Kent describes the homeopathic remedy Magnesium carbonate as a remedy for orphans. Sankaran writes: “I have found that many magnesium patients have a history of being neglected in some way by their parents. The feeling of being unwanted in the very early years of life...or a person who has lost his mother or father at a very early age...Such people tend to become self-sufficient, non-demanding and repress their emotions to a great extent. This state persists even after changes in their life-situation later on.”

Five-Element Theory And Magnesium

The Five-Element Theory of traditional Chinese medicine states that all phenomena are ordered by the five elements of Wood, Fire, Earth, Metal and Water. Each of these elements represents unique fundamental processes that have many associations relative to the human organism, including: smell; taste; tone of voice; a specific sense organ and a part or system of the body.
This theory is an ancient system that describes the human organism within a greater cosmological context. Accordingly, all phenomena of the universe, including that associated with human life, emanate from the interaction of these five archetypal elements. The Five-Element Theory teaches that each of these elements is associated with a specific organ which, in turn, is identified with certain emotions.

The stomach and pancreas are expressions of the Earth element in the human body. Earth is associated with the maternal archetype, thus it supports nourishment and protection. Deficiency of these factors in early life (i.e., a nurturing deficiency) will likely impact the Earth-related organs (i.e., stomach and pancreas).

Notably, magnesium—along with calcium—are referred to as the “Earth minerals” because their compounds or salts are found in the Earth’s crust. Thus, it is no coincidence that patients with chronic digestive weakness and defective nutrient assimilation are likely to be magnesium-deficient, and magnesium supplementation is often crucial in the resolution of these defects.

Debbie Shapiro in The Bodymind Workbook writes: “The stomach is emotionally linked to food, to love and to mother. The empty gnawing in the stomach is often the need for love or emotional nourishment as much as it is food.” This helps to explain why many people turn to food when they are lonely. Perhaps magnesium deficiency encourages overeating. Magnesium supplementation may be a key element in breaking this causal chain.

The infant’s first connection with the mother and life-sustaining nourishment should be breastfeeding. Psychotherapist Aminah Raheem, Ph.D. in Soul Return writes: “The process of breast-feeding gives nourishment and provides physical contact with the mother’s body as a continuing bonding process...In this way, a visceral experience of nourishment and safety is imprinted into the core of the body... when caring nourishment is established in infancy through a full opening of the Earth element, there is automatic trust of the mother and the environment The child learns that there is safe support on Earth.”

Perhaps one need not be abandoned nor forsaken as a child, but only to never have been breast-fed in order to develop the root of the central emotional theme of magnesium. One may very well have had a wonderful mother and a happy, secure childhood, yet not having been breastfed, he or she was deprived of crucial nursing-dependent emotional structuring.

Raheem comments: “Resting into mother’s body directly over the stomach meridian [the stomach acupuncture meridians which begin on the face, course down the body directly through the breasts], the infant can again feel and hear mother’s heartbeat, her vibration, her warmth—oil factors which reinforce a sense of physical security.”

In this era when formula feeding has supplanted breast-feeding as a primary form of infant nourishment, it is probably no coincidence that the need for magnesium
supplementation has become nearly universal. *Ulcerative colitis patients* are frequently magnesium-deficient; said disease is most commonly found among young adults who were not breast-fed.

Individuals whose Earth element is imbalanced may be self-absorbed and self-centered due to emotional undernourishment. Raheem notes: **“This condition almost inevitably develops from a situation of incomplete, absent or abusive mothering... Such a person may withdraw into herself to continuously ‘nurse and enlarge internal feelings and needs.’”**

On the other hand, Earth, imbalance may manifest as obsessive identification with others to the exclusion of self-needs. This is a reactionary mode that emanates from repression of one’s own needs and concomitant identification with those very same needs in others. The interface of this obsessive empathy and the fear of loss may account for the tendency toward pacifism and aversion to aggression associated with the strongly magnesium archetype. Those with a strong constitutional affinity for magnesium cannot stand quarrels and violence. Furthermore, fear of aggression and emotional vulnerability may express itself physically as a great sensitivity to pain, a symptom which is a key indicator of magnesium-need.

In many cases, the Earth-imbalanced individual chaotically oscillates between the two polar extremes of self-centeredness and pathological selflessness. In fact, magnesium patients often alternate between said polar extremes: at times being averse to aggression and other times being very aggressive and ill-tempered. Edward Whitmont, M.D. (*Psyche And Substance*) considers magnesium chloride, given in homeopathic dilutions, to be the primary remedy for *manic depressive states*. Assuredly, the magnesium individual is complex and volatile; nevertheless, essential themes are often clearly delineated.

In some cases, this repression effectively blocks all psychical expression of the “central feeling” of magnesium, and so, it is expressed on the physical plane as a *psychosomatic illness* (i.e., bodily symptoms induced by emotional events) such as *lupus* or *ulcerative colitis*. Ulcerative colitis often develops soon after an intense grieving episode involving the death of a parent or another close and supportive individual. This trauma savages the vulnerable underbelly of the magnesium individual’s psyche.

Scholten writes: **“An additional theme of the magnesium [type] is the fear of loss of friends, family, etc...In my experience, Magnesium carbonate and Magnesium chloride [in homeopathic dilutions] are the most important remedies for children of divorced or quarreling parents. Quarrels can lead to a break-up, hence the very strong reaction.”**

Significantly, patients with ulcerative colitis and other forms of *inflammatory bowel disease* are frequently found to be magnesium-deficient. This is exacerbated by the fact that such patients are susceptible to diarrhea-induced magnesium loss. In a classic demonstration of a vicious cycle, magnesium-depletion then results in increased intestinal spasms and further magnesium loss.
The effectively repressed magnesium individual may appear self-confident, well-adjusted and emotionally supportive of others. However, his or her dreams can be highly revealing, providing glimpses of the deeply buried central feeling. Sankaran writes: “What gives the strongest confirmation of magnesium is usually the dreams. The repressed thoughts of magnesium patients often manifest in a variety of dreams. These dreams are often symbolic. Some of the dreams which occur are of falling; water; children; dead relatives; death of relatives…in most of the dreams there is a feeling of aloneness, of having to face a problem alone...Another theme is the one of being left behind.”

Some magnesium patients claim that they do not dream at all. This in itself is an indication for magnesium, because dreaming is a form of psychical expression necessary to reduce psychical tension. Absence of dreaming activity is clear evidence of strong repression blocking intercourse between the subconscious and conscious aspects of the mind. Sankaran writes: “In our waking state, most of our feelings and actions are compensated. In a dream, most of our feelings and actions are uncompensated. Compensation involves an act of will. In the waking state, our feelings are also centered by the barrier between the conscious and subconscious. We don’t allow our feelings any expressions many times, even to ourselves, but in the state of sleep when our will is not so active, the barrier is lowered and our feelings and actions find expression in an uncompensated way.”

It must be remembered when the normal pathways of the organism’s expression of disharmony are disturbed or blocked, it will attempt to reach the same goal via a different, less efficient, abnormal pathway. In many instances, the magnesium patients who do not remember dreaming are precisely those who present with the most severe physical pathologies.

Whether a magnesium individual does not recall dreaming or is deluged by nonstop dreams, they often wake up feeling unrefreshed. In the case of the former, the individual’s vital force is sapped by the efforts of the psyche to resist exposure of the buried central feeling. In the latter, the person is depleted by the “media blitz” emanating from the repressed psyche which urgently seeks vicarious expression.

**POTASSIUM**

**Physical Functions**

Potassium is the primary positively charged mineral ion in the internal fluids of the cell. Over 90% of total body potassium occurs in these intracellular fluids (30 times the concentration found outside the cells in the extracellular spaces). The potassium to sodium ratio inside the cell is 10-to-1 while outside, it is 1-to-28.
The concentration of potassium within the cells is maintained by an energy-consuming process called the sodium/potassium pump. Potassium enters the cell more readily than does sodium, and, when it does, it instigates a brief sodium/potassium exchange across the cell membrane. The ratio of sodium to potassium determines the degree of water retention. Potassium-deficiency allows more sodium to enter the cells, attracting water into the cells and producing cell edema and damage.

In nerve cells, this sodium/potassium pump mechanism generates an electrical charge that allows nerve impulses to progress. The sodium/potassium pump also helps generate muscle-contractions and regulates heartbeat. Potassium-deficiency may cause loss of coordination, irregular heartbeat and even heart-paralysis. Potassium plays a major role in maintaining cellular integrity, water balance, carbohydrate metabolism and cellular protein production. It is also essential for nerve transmission, activates enzymes in the body’s utilization of amino acids and is a factor in bone-calcification and normal growth.

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Potassium is active in the conversion of glucose to glycogen that is stored in the liver as a reserve to meet future energy needs. If blood sugar is not efficiently converted into glycogen, not only are there less available energy reserves and subsequent fatigue, but also high blood-sugar levels and increased insulin-need, and so, maybe a contributing factor to diabetes.

Potassium, along with sodium, helps regulate acid/base balance in the blood and tissues. Potassium is essential for the immune system’s normal function and is a primary factor in the prevention and treatment of cancer. Potassium transports oxygen into the cells, maintains the alkalinity of cellular fluids, assists in keeping the skin healthy and stimulates the kidneys to eliminate toxic waste, all of which are processes required for normal performance by the immune system.

Earlier, the use of potassium supplementation in cancer therapy by Max Gerson, M.D. was discussed. Depletion of cellular potassium content allows the sodium level to rise, setting the stage for amore primitive form of cellular metabolism: anerobic glycolosis (i.e., metabolism of carbohydrates in the absence of oxygen).

Many years ago famed researcher Otto Warburg discovered that in tumor cells, anerobic glycolosis is the type of metabolism that predominates. A link between decreased potassium-to-sodium ratio and cancer has been confirmed by a variety of studies.

Two of the major transporters of oxygen into the cell are calcium and potassium. Unfortunately, calcium cannot enter cancer cells; its level within a cancer cell is only 1% of normal. On the other hand, potassium can enter a cancer cell. It should also be noted that cancer cells thrive in an acidic environment and potassium is a great alkalizer of tissue fluids.

Potassium aspartate has been shown to stimulate the proliferation and differentiation of thymus, bone marrow and spleen tissue in mice. Mice exposed to whole body radiation
after pretreatment with potassium aspartate exhibited gratifying post-radiation regeneration of red blood cell-producing organs.

As with magnesium, standard blood tests do not give an accurate assessment of organ-potassium status. The blood-serum which is analyzed contains only about 4 to 5 mg./100 ml. potassium while the red blood cells, which are not assessed, contain 420 mg./100 ml.

Potassium is one of the most commonly prescribed minerals, because it is crucial to cardiovascular nerve function and is lost when an individual is given (equally commonly) prescribed diuretics to help control edema or hypertension. Potassium supplementation may be useful when dealing with hypertension induced by high-sodium intake. Increased potassium intake can also lower blood pressure in hypertensives who are consuming normal amounts of sodium. There is increasing evidence that potassium has a blood vessel protecting effect even when hypertension is not a factor as potassium-depletion can lead to vasoconstriction: narrowing of blood vessels.

During and after diarrhea, potassium replacement may be needed to compensate for losses in the stool, especially when abnormal mucus is present Infants with chronic diarrhea should be closely monitored for potentially life-threatening potassium-loss.

Potassium may also be required in dehydration states. Prolonged vomiting and profuse sweating can also induce potassium-deficit. Too, excess salt- or sugar-intake reduces potassium levels. In addition to diuretics, various drugs including laxatives, aspirin, digitalis and cortisone have a potassium-depleting effect. On the other hand, some drugs, including potassium-sparing diuretics, beta-blockers, heparin and non-steroidal anti-inflammatory drugs may impair potassium excretion and cause abnormal retention of potassium.

Patients with serious kidney disease (kidneys filter-out excess potassium), or who are otherwise at risk of kidney failure, should not be given potassium supplementation, because of the potential of dangerously high levels of potassium in the blood.

Although fruits and vegetables contain plentiful amounts of potassium, the mineral is almost entirely lost when these foods are canned or frozen, because it is one of the most water-soluble of all elements.

**Potassium Deficiency Symptoms:**

depression; mood swings; nervous disorders; fatigue due to mental strain; alcoholism; insomnia; overactive adrenal glands; neuralgia; obesity related to hypothyroidism and/or water-retention; cardiac arrhythmias; electrolyte imbalance (sometimes related to diarrhea); congestive heart failure; slow or irregular heartbeat; arteriosclerosis; diminished gastrointestinal tone; liver weakness; gallbladder disorders including gallstones; PMS; muscle weakness; rheumatism; lumbago; sciatica; arthritis; joint pain; dry skin; acne; slower reflexes; Among deficiency symptoms, fatigue is the most common. In severe potassium-deficiency, there may be: profound muscle debility; bone fragility; dangerously (potentially fatal) decreased heart rate.
Notable Vegetarian Food Sources of Potassium: kelp; soybeans; lima beans; mung beans; dried peas; chickpeas; lentils; brown rice; rice bran; dried apricots; dried peaches; raisins; sunflower seeds; sesame seeds; chestnuts; almonds; parsley; Brazil nuts; pistachio nuts; filberts; pecans; dates; figs; yams; beets; spinach; potatoes; avocados; pears; apples; bananas; prunes

Emotional Themes of Potassium

The emotional themes of potassium, like its physiological functions, have greater practical application when viewed in relation to sodium with which it has an intimate Yin/Yang relationship. The Periodic Table is the central model used to help chemists classify the properties of various elements. The position of a given element in the Groups (vertical rows) and Periods (horizontal rows) provides crucial information concerning the way that the element behaves in chemical reactions.

The close relationship of sodium (Na) and potassium (K) is reflected by their adjacency on the Periodic Table. These elements are in Group IA with potassium in Period 4 just below sodium in Period 3. Note the intimate relationship among sodium, potassium, magnesium (Mg) and calcium (Ca) on this Table, suggesting a similar inseparable relationship within the body.

Elements in Group IA all have a single electron in their outer orbit and achieve stability only after they interact with the atom of a different element to which they can donate this electron. Elements which donate electrons when they react (such as sodium, potassium, calcium and magnesium) are known as cations. Those that accept these electrons are known as anions and are found on the right side of the Periodic Table.

Cations and anions donate and accept electrons, respectively, and form stable compounds. An example of this is the compound sodium chloride (table salt), constructed of the sodium cation and the chloride anion.

Sodium and potassium atoms are unstable so long as they cannot establish a bonding relationship with another atom. This chemical property is mirrored in the central theme of sodium and potassium that is a feeling of incompleteness when not involved in a supportive relationship. Those who have a strong potassium affinity become anxious and fearful when alone, and crave stabilizing relationships. Potassium and sodium, having only one electron, each in their respective outer orbits—8 electrons in the outer orbit of an atom lends peak stability—are highly reactive and subject to feelings of dependency.

Potassium’s position in the 4th Period (below sodium in the 3rd) is based upon the fact that the potassium atom has four electron orbits around its nucleus while sodium has only three. Hence, the lone electron in potassium’s outer orbit is farther away from the stabilizing attractive power of its nucleus. This means that potassium is less stable and more reactive than sodium.
Sankaran uses this property of potassium to differentiate it from sodium relative to emotional types. He reasons that while the theme of forming relationships is common to both these elements, the greater stability of sodium relative to potassium makes the former more focused on a one-to-one relationship while the latter, drawn to multiple interactions, is more concerned with the issue of group relationships. Accordingly while the dominantly Sodium type needs only a special someone to feel complete, the Potassium type needs a family.

Sankaran writes: “The Potassium type feels tremendous anxiety without a group or family with which to relate. Thus, the harmony and integrity of the family or group becomes the chief concern of the Potassium type.”

Anything that threatens the integrity of their group makes an individual with a strong fundamental need for potassium anxious and fearful, and they can become quite aggressive in their efforts to preserve it. This aggressiveness may lead to intragroup tensions and quarrels. However, outside this group structure in situations that do not involve this fundamental insecurity, those with a potassium affinity will not tend to be aggressive or quarrelsome.

Those with a sodium affinity may be quite happy to have a close yet childless marriage and live faraway from relatives. On the other hand, those with a dominant potassium note in their constitution usually wish to raise a family, need and seek the support of other family members and may remain dependent upon relationships within their birth-family even after marriage takes them away from the area. When potassium need is strong, this desire for family or group interaction is heightened and the individual feels isolated and prone to melancholy. These individuals may require said group interactions as a means of validation of self-worth without which they are unable to sustain emotional stability and the momentum of their personal growth.

As the harmony and integrity of the group is a chief concern of the Potassium type, anything which threatens the fabric of the family may create anxiety and despair. The degradation of this era’s traditional family life has particular impact upon this type’s psyche.

Internecine strife, such as sometimes occurs after the death of a relative when long-submerged conflicts arise, greatly exacerbates the grieving experience for those who require potassium. Also, so-called “empty nest syndrome” (which refers to the feelings of depression and disconnectedness experienced by a parent whose children have grown and left the home) may clearly be a symptom of potassium need.

As a reaction to this deep-seated instability, the Potassium type compensates with an extraordinary level of conscientiousness, reliability and dedication to completion of tasks. They prefer established routine to extemporaneousness. This remarks of a conscious requirement for control to counterbalance an inner predisposition toward volatility and reactivity.
In order to live according to their principles, those with a strong potassium need have to exert a great deal of control over crucial aspects of their lives, including their emotions. This can lead to unhealthy stoicism, reserve, rigidity, moralizing and close-mindedness. On the other hand, even a small degree of loss of control ignites primordial fear which makes this type jumpy and oversensitive. The need for family and controlled circumstances makes the Potassium type work very hard to sustain the integration of this unit.

This tendency to hold-in-things and rigidly resist transition may express itself on the physical level as constipation, difficult labor, edema (especially of the ankles and eyelids) and psychosomatically induced stomach pains, ulcers and heart troubles.

**SODIUM**

**Physical Functions**

Sodium is found in every cell of the body, but its most concentrated presence is in the extracellular fluids which surround the cells. Sodium often evokes negative associations because of the well-described pitfalls of the intake of excess salt (i.e., sodium chloride). Noboru Muramoto, a noted teacher of Oriental medicine and an advocate of the use of high-quality sea salt, writes in *Natural Immunity*: “In the United States, the majority of scientists and physicians are nearly agreed on the negative side of salt, and now it is something like the new villain or poison of our times. In recent years, I have seen no writings on the necessity of mineral [i.e., sea] salt in our diet.” Actually, sodium is just as essential for human life as calcium, magnesium or potassium.

**Adequate sodium is crucial for:**

- regulation of the body’s fluid volume;
- maintenance of acid-base balance;
- carbon dioxide transport;
- muscle contraction;
- nerve transmission and uptake of amino acids from the gut and their subsequent infiltration into body cells.
- Sodium also keeps the other blood-minerals soluble so they do not settle-out and form abnormal deposits. Also, salt improves digestion by stimulating the taste buds and salivary glands.

Sodium chloride is one of the cell salts used in Dr. Schuessler’s method of homeopathic treatment. A cell salt is a mineral compound formed by electrical attraction of a negatively charged ion (anion) and a positively charged one (cation). In this case, sodium ions are positively charged while chloride ions are negatively charged; when chemically combined, the compound: sodium chloride or what is commonly known as table salt, is formed.

Upon analysis of human ash, Schuessler discovered that 12 mineral salt combinations are predominant in tissues. These salts do not occur haphazardly, but have specific affinities for various tissues of the human anatomy. Some are more closely associated with bone, others with nerves, blood, muscles, etc. Since tissues are aggregations of similar cells which unite to perform a function, these 12 mineral salts were coined ~’cell salts.”
At the time of Schuessler’s experiments in the early 19th century, two important postulates were being avidly discussed in European medical journals.

1) All the essential components of the human body are great remedies and 2) the mineral constituents of the human body act chiefly on such organs where they occur and have a function.

Schuessler correlated these two concepts with his discovery of the 12 cell salts and formulated a new system of therapeutics known as the Biochemic Method. Schuessler strongly believed that the material of which the body is built must also be the material required to maintain its structural integrity and functional efficiency. Thus, he became architect of a system wherein the 12 dominant constituent mineral salts contained within the human body are used as remedies in treatment of disorder and disease. Schuessler’s method has been used successfully for close to 200 years, and its popularity continues today.

Sodium chloride (referred to in homeopathy by its Latin name: Natrum muriaticum) is a constituent of every liquid and solid part of the body. According to Schuessler, sodium chloride, through its osmotic powers, regulates moisture-level in the tissues. Accordingly, abnormal increase or decrease of sodium chloride causes moisture imbalance, manifesting as a decrease of secretions in one part of the body and an increase in another.

For example: Increased mucus-secretion in the stomach (gastric catarrh) with nausea and excess salivation sometimes occurs concomitantly with decreased secretions in the lower bowel and dry, stubborn constipation. Schuessler maintained that sodium chloride deficiency negatively impacts the blood, spleen, liver and mucosal linings of the digestive tract.

Perhaps sodium’s interaction with potassium is its most crucial mineral-relationship. (About 60% of body-sodium is extracellular with only 10% occurring inside the cells. The remaining 30% is found in the bones.) On the other hand, ever 90% of all body-potassium is found inside the cells. Along with potassium, sodium helps regulate the fluid balance between the intracellular and extracellular environments. These two minerals also help to regulate acid/alkaline balance, one of the most crucial aspects of health maintenance.

The maintenance of an alkaline pH is critical to cellular health and longevity. Alkaline cellular pH is required for adequate toxin-excretion, nutrient-assimilation and normal regulation of cellular processes. The activity of cellular enzymes that sustain normal metabolic activity is profoundly influenced by even small changes in pH. All disease states invariably feature abnormal pH shifts.

Sodium and potassium are two-of-the-three body’s main electrolytes (chlorine is the third), meaning that they carry a tiny electrical charge, and so, have electrical potential. The exchange of sodium and potassium across cell membranes helps to create an
electrical charge that facilitates the conduction of nerve impulses and muscle-contraction (both elemental to continued heart function).

Sodium is also required for the stomach’s production of hydrochloric acid necessary for protein digestion and the assimilation of many vital nutrients. Hypochlorhydria: low stomach acid (detailed discussion in my Nature’s Therapies Journal Volume 4, No. 3) is an almost universal factor in many kinds of chronic disease, especially among older individuals.

Most natural foods contain small quantities of sodium. In Western diet, only 5% of sodium is naturally occurring while 45% derives from industrial processing and 50% from food, preparation and seasoning. Because sodium does not occur in large quantities in natural foods, the body’s physiological mechanisms are more concerned with sodium conservation than sodium excretion.

Some investigators feel that the lack of evolutionary adaptation to the present day high-sodium diet is an etiological factor in many of the disease scourges of modern times, including cancer and cardiovascular disease. Since Paleolithic times, the potassium: sodium ratio in Western diet has been reduced by a factor of 20.

Certain primitive cultures still in existence have potassium: sodium ratios 100 to 200 times greater than ours. Hence, sodium in and of itself is not a negative influence, but rather, an abnormally high sodium: potassium ratio generated by a reckless diet of highly salted, processed foods while being low in fresh fruits and vegetables and other unseasoned natural foods.

Researchers have found that neither sodium nor potassium levels alone correlate with blood-pressure, but rather, the sodium: potassium ratio. So long as the natural balance of these two minerals is maintained, sodium is not a negative influence in this regard. Over the years, a plethora of salt in Western diet weakens the kidneys and reduces their sodium clearance capacity, leading to destructive accumulation of salt in tissues. In addition to table salt, sodium occurs in baking soda, MSG, soy sauce, sodium nitrate and propionate preservatives and softened water (sodium is used to replace naturally occurring calcium and magnesium in hard water).

Undeniably, in this era, more problems are caused, by excess than low-sodium intake. Excessive sodium intake, over time, contributes to many disorders, including hypertension; PMS; edema; congestive heart failure; kidney failure; tremors; weight gain; irritability.

A recent study (Heaney, R.P., Role of Dietary Sodium In Osteoporosis, Journal of the American College of Nutrition, Vol. 25, No. 90003. 2006) found a link between excess sodium intake and increased calcium spillage in the urine which leads to osteoporotic bone loss.
The kidneys’ clearance of superfluous sodium from the blood increases calcium-clearance as well. Unarguably, excessive salt intake is an egregious disease-factor. Nevertheless, for various reasons, including highly restrictive low-salt regimes and adrenal weakness, sodium deficiencies are not uncommon, in today’s world of intense, unrelenting stress, the adrenal glands commonly become fatigued. Sodium-metabolism is mediated, by aldosterone, an adrenal cortex hormone that regulates sodium-resorption from the kidneys, preventing over-excretion and sodium-deficiency.

As mentioned above, natural foods are generally low-sodium foods. Conceivably, those with adrenal insufficiency who also avoid adding salt to their food because they consider it to be a “bad” food, maybe subject to sodium-deficiency, especially if chronic symptoms such as loose and frequent stools and night sweats are a factor (sodium is lost via vomiting, diarrhea and sweating).

Any nutritional substance used to excess is “bad” and salt is no exception. However, this does not infer that salt in physiological quantities is inherently harmful. On the contrary, extreme salt-restriction may have a negative impact upon health. Physiologist Gustav Bunge (Textbook Of Physiological and Pathological Chemistry) carefully studied salt-consumption and found that the human requirement for sodium chloride is higher when the diet consists primarily of plant foods. He hypothesized that as plant foods contain 3 to 4 times more potassium than flesh foods, there is an increased need for sodium counterbalancing for vegetarians.

A study by the Albert Einstein College of Medicine (Evidence Relating Dietary Sodium To Cardiovascular Disease) found that high blood pressure patients on a sodium restricted diet had more than 4-times the incidence of heart attack as did those consuming twice as much salt.

Director of the study Michael Alderman, M.D. remarks: “One thing we found was that many patients with high blood pressure had a high level of renin [a kidney hormone involved in blood-pressure control]. These patients had more heart attacks than those with lower levels of renin.” Alderman found a correlation between low-sodium intake and increased renin-secretion by the kidneys.

Melvyn Werhach, M.D. in Foundations Of Nutritional Medicine writes: “Mainstream practitioners often emphasize a low-salt diet in the treatment of hypertension. However, a few studies have found the opposite; mainly, the less table salt consumed, the higher the blood pressure.”

It has been found that only 40% to 50% of the hypertensive population and 30% of the general public is salt-sensitive, and thus, may benefit from salt-restriction. Therefore, more than 1/2 of hypertensives and 2/3 of the general population are not adversely affected by judicious salt-intake, and may, in fact, he harmed by unwarranted salt-restriction.
A simple procedure referred to as the *Salt Step Test* can assess whether a hypertensive individual is salt-sensitive and is performed as follows: 1) Begin with a period with no salt-restriction while tracking blood-pressure; 2) follow with a strict no-salt diet. If after a week or two on this follow-up regime, the diastolic blood pressure (the lower of the two blood pressure figures) falls below 90, salt-sensitivity is indicated. 3) To further ascertain the degree of salt-sensitivity, salt intake can then be increased by 1 gram daily until the diastolic pressure supercedes the 90 threshold.

In recent years, the incidence of chronic fatigue has become epidemic. A report in the Journal of the American Medical Association describes the relationship between hypotension (low blood pressure) and Chronic Fatigue Syndrome (CFS). Of 23 chronically fatigued patients studied, 9 had complete or nearly complete resolution of chronic fatigue symptoms after therapy to increase their blood pressure was instituted, the treatment included the increase of dietary salt-intake. Increased salt-ingestion increases blood volume, and so, raises blood pressure. It was found that 61% of the patients in this study had usually or always avoided salty foods. Also, it was pointed out that a reduced sodium-intake is likely to worsen symptoms of hypotension.

*Tinnitus* (ringing in the ears) may also be exacerbated by a low sodium : potassium balance as electrolyte imbalances affect the inner ear. One study of tinnitus patients found that they had an abnormally low sodium : potassium balance.

Muramoto makes an interesting observation regarding salt-intake: “If you have chronic fatigue, your head will droop forward.” He suggests that if the head is drooping, place a pinch of sea salt upon the tongue. He writes: “The salivary glands react by secreting juices and the salt will dissolve. Now look in the mirror again. Within one minute your head will go into a straighter position by itself Salt works before passing through the stomach and intestines; its beneficial effects are immediate.” Muramoto hypothesizes that sodium stimulates the parasympathetic branch of the autonomic nervous system, making breathing and heartbeat less rapid, stronger and deeper.

**Note:** The point of the preceding discussion is not to grant license for the eating of overly salted foods, a clearly detrimental practice. Rather, the purpose is to highlight the risk of going to the extreme opposite of the salt-intake spectrum. Salt is not devoid of nutritional value as many assume, but rather, a source of vital sodium. Sea salt, when used conservatively in accordance with need, is a distinctly positive dietary influence. However, the issue of salt-intake involves quality as well as quantity. The purified table salt solid in supermarkets and used in processed foods is almost 100% sodium chloride.

Muramoto writes: “Good quality salt must include all the various minerals found in sea water...For millions of years our ancestors never ate purified salt; only modern man has broken the millions of years old biological tradition of having true unrefined sea salt in the blood...Purified salt is useless to the body; instead of being a vital food, it has been reduced to a [harmful] flavoring agent.”
Only unrefined sea salt or traditional natural foods such as tamari, miso paste or umeboshi plums (made with organic ingredients and unrefined sea salt) should be used as seasonings. Common purified table salt has no place in the human diet. In addition, foods rich in natural sodium—see food sources list below—should be emphasized in the dietary agenda of vegetarians, especially those manifesting hypotension, chronic fatigue or other symptoms possibly linked, in part, to low sodium-intake.

**Sodium-Deficiency Symptoms:**

*Hyponatremia* (low blood-levels of sodium) is associated with diverse mental symptoms, including: apathy; impaired concentration; emotional instability; depression; lethargy; memory impairment; social withdrawal; anorexia.

Common physical symptoms associated with sodium-deficiency include: *abdominal cramps; dizziness; fatigue; flatulence; headaches; low blood-pressure; infections; lethargy; muscular weakness; weight-loss*

**Notable Vegetarian Food Sources of Sodium:** sesame seeds; kelp and other sea vegetables; olives; spinach; Swiss chard; beets and beet greens; celery; kale; water cress; turnip; carrot; parsley; artichoke; collard greens

**Emotional Themes of Sodium**

One of the emotional themes of sodium chloride revolves around the need to form or sustain a satisfying one-to-one relationship. Thus, any form of rejection causes hurt and disappointment. There is an underlying fear of: *being hurt; fear of being alone; feelings of low self-esteem; feelings of insecurity.* Without a strong, satisfying relationship, those with strong affinity for sodium chloride feel isolated and become withdrawn.

Scholten writes: *“The standard situation of sodium chloride is that of bereavement. It is the theme of being alone in the world. They don't feel secure and nurtured anymore on this earth.”* Individuals with a constitutional sodium affinity are often sensitive, closed people who fortify themselves against potential rejection. They often feel alienated, from the external world and hold that they must shoulder their burden, walled-off in solitude.

When loss or rejection occurs, they tend toward melancholy and pessimistic feelings, believing that all will never be well again. They sometimes will feel as if their losses will continue until all has been taken away from them. As a reaction, they may become attached to certain possessions or memories linked to happier times in the past. After having experienced a loss or rejection, they become averse to company and consolation, and shut themselves off from others.

When there is an increased need for sodium, some of these mental traits may rise to the top layer and become apparent. It may be expected that these characteristics are most...
likely to surface after actual loss of a loved one via death or dissolution of a romantic relationship.

Those for whom sodium is a dominant constitutional factor are more likely to be thin and prefer warmth; they are fatigued and develop headaches from strong sun exposure. They like salty foods and grains, although they may have strong food sensitivities to many grains and may be decidedly allergic to milk and other dairy products. Sometimes they are drawn to sad music and tend to have a physical and/or mental letdown at 11 a.m. Their tongues may be mapped, clean and shiny with frothy saliva along its sides, or broad, pallid and puffy with a pasty coating (my Nature’s Therapies Journal, Volume 3, No.3 features lengthy tongue diagnosis article). Sleep is generally unrefreshing, so the individual feels tired in the morning upon awakening. Hence, there may be a constant and excessive desire for sleep.

If a need for sodium seems indicated, one should include more foods high in natural sodium in the diet and season meals with a little more unrefined sea salt, unpasteurized miso, wheat-free tamari or umeboshi plum paste. Also, a 1-teaspoon serving of 8-to-1 gomasio (i.e., made from toasted sesame seeds and sea salt) can be added to meals twice daily.

Gomasio is prepared as follows: 1) toast 8-parts hulled sesame seeds in oven (250° F. for 20 minutes-ovens vary) by spreading on cookie sheet. Then, grind (can use small electric coffee grinder) toasted seeds with 1-part unrefined sea salt. Store in dry glass jar and refrigerate.

In some clear-cut cases of sodium need, one may consider the use of the cell salt: *Natrum Muriaticum (Nat. Mur.)* 6X taken twice daily for as long as it seems appropriate, especially if the person presents with any clinical signs consistent with those described in relation to Nat. Mur. in cell salt materia medicas. *The Biochemic Handbook* by J.D. Chapman, M.D. and Edward L. Perry, M.D. may prove of good service in this regard.

One may also consider cutting back on potassium supplementation if no signs of potassium shortfall are extant. Once the symptoms of sodium-need abate, salt-intake can be cut back as required and potassium supplementation increased if such a measure is indicated.