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## Expanding the area of what is possible

In Track & Field Distance Running & Competent Self-Care in medicine and psychology

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# TheETG Immune System

**A major part of TheETG mission** is to expand the area of what is possible in competent self-care in medicine and psychology. TheETG's primary method of achieving that is to proliferate applied science based information by way of \$free packets containing plain language info for anyone seeking to move themselves or others forward in these areas.

As you continue to acquire and apply more information you continue to expand the area of what is possible.

Data-less conclusions founded upon faulty assumptions are the mother of all screw-ups. They lead to human belief systems that quickly get set in stone. Put data ahead of dogma. Follow the data -not- the crowd.

### TheETG packets attempt to address the following;

".....the benefits that US health care currently deliver may not outweigh the aggregate health harm it imparts."  
[Journal Of The American Medical Association...Volume 302 #1..July 1, 2009...page 89 - 91]

"Not enough doctors adapt appropriately to new scientific findings.....An insufficient number of medical faculty members are well prepared, effective educators, and too few medical schools prepare their students for a lifetime of learning and change."  
[J.Hilliard, et al. -- The Lancet -- Volume 385 #9969 -- February 21, 2015 -- page 672]

"....takes an average of 17 years to translate 14% of original research into benefit.....average of 9 years for interventions recommended as evidence-based practices to be fully adopted."  
[M.Tinkle, et al -- Dissemination and Implementation -- Nursing Research and Practice -- Volume 2013]

".....1.5 million U.S. residents are harmed or killed each year because of medication errors, according to an Institute of Medicine report."  
[Nature Medicine -- Volume 12 #9 -- September 2006 -- page 984 - 985....News In Brief]

"It is estimated that more than 700,000 individuals are seen in hospital emergency departments for adverse drug events each year in the United States."  
[Centers For Disease Control -- 2015]

"Most drugs are only effective for a small percentage of people who take them."  
[Michael Leavitt -- U.S. Secretary of Health & Human Services 2005 - 2009]

".....A recent study for example, found that only half of all cardiac guidelines are based on scientific evidence."  
[President Barack Obama -- Speech to the American Medical Association -- June 15, 2009]

"All the good things....they don't teach us in medical school, because the drug companies pay for our education."  
[Dr. John Sessions M.D.]

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# Mind-body Medicine 101.....

"Although the last decades have provided ample evidence for deleterious effects of stress on immunity and on cancer development and suggested mediating mechanisms, **no psycho-neuro-immunology related intervention has become a standard of care** in conventional cancer treatment."

Shamgar Ben-Eliyahu, et al

"Stress, NK cells, and cancer: Still a promissory note"

Brain, Behavior, and Immunity.....volume 21 #7, October 2007....page 881 - 887

"It is important to consider **stress-related DNA repair deficits** in light of the previously discussed stress-related decrements in Natural Killer cell activity. Taken together, these data suggest that stress might have direct effects on carcinogenesis through alterations in DNA repair..."

J.K Kiecolt-Glaser, et al

Psychoneuroimmunology And Cancer: Fact Or Fiction

European Journal Of Cancer.....Volume 35 #2.....October 1999....pages 1603 - 1607

"Stress is associated with increased production of sympathetic and other adrenal hormones."

".....cortisol are produced during psychological stress and may affect many cells directly. These effects....can have more long-lasting consequences, such as permanent DNA damage which may result in increased cell transformation and/or tumorigenicity."

"...cortisol...interfered with repair of DNA damage in cells exposed to UV and resulted in an increase in the transformed phenotype."

"Taken together, these data show that stress hormones can increase DNA damage and transformation and alter transcriptional regulation of the cell cycle."

M.S. Flint, et al

Induction of DNA damage, alteration of DNA repair and transcriptional activation by stress hormones

Psychoneuroendocrinology.....Volume 32 #5.....June 2007....age 470-479

"Significant differences in the distributions of.....survival according to the presence or absence of intra-tumor T cells..."

"...survival rate was 73.9% among patients whose tumors contained T cells and 11.9% among patients whose tumors contained no T cells."

L.Zhang, et al

Intratumoral T Cells, Recurrence, And Survival In Epithelial Ovarian Cancer

New England Journal Of Medicine...Volume 348 #3...January 16, 2003...page 203

"...the **immune system eliminates many cancers at an early stage** and slows down the progress of others."

"...patients with ovarian carcinoma can expect to have much longer....survival if the tumor is infiltrated by T cells than if it lacks infiltrating T cells."

"Similar observations have been reported for several other types of cancer."

"...to succeed...a considerable proportion of human tumors have to resist immune rejection during their development."

T.Boon, et al

Immunoserveillance Against Cancer and Immunotherapy--Synergy Or Antagonism?

New England Journal Of Medicine....Volume 348 #3.....January 16, 2003...page 252 - 253

--- T cells = your immune system cells that kill cancer cells

"Significant differences in the distributions of.....survival according to the presence or absence of intra-tumor T cells..."

"...**survival rate was 73.9% among patients whose tumors contained T cells** and 11.9% among patients whose tumors contained no T cells."

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Intratumoral T Cells, Recurrence, And Survival In Epithelial Ovarian Cancer

New England Journal Of Medicine...Volume 348 #3...January 16, 2003...page 203

# The Awesome POWER Of The Immune System

“.....**the immune system eliminates many cancers at an early stage** and slows down the progress of others.”

“.....patients with ovarian carcinoma can expect to have much longer.....**survival if the tumor is infiltrated by T cells** than if it lacks infiltrating T cells.”

“Similar observations have been reported for several other types of cancer.”

“....to succeed.....a considerable proportion of human tumors have to resist immune rejection during their development.”

T.Boon, N. van Baren  
Immunosurveillance Against Cancer And Immunotherapy -----Synergy Of Antagonism?

New England Journal Of Medicine.....Volume 348 #3.....January 16, 2003.....page 252 - 253  
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“Patients with metastatic breast cancer whose diurnal cortisol rhythms were flattened or abnormal had earlier mortality. **Suppression of Natural Killer cell count and Natural killer cell function** may be a mediator or **a marker of more rapid disease progression.**”

S.Esepton, R.M. Sapolsky, H.C.Kraemer, D.Spiegel  
Diurnal Cortisol Rhythm As A Predictor Of Breast Cancer Survival

Journal of the National Cancer Institute.....Volume 92 #12.....June 21, 2000.....page 994-1000  
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“Significant differences in the distributions of.....survival according to the presence or absence of intratumoral T cells.....”

“.....**survival rate was 73.9 percent** among patients whose tumors contained T cells and 11.9 percent among patients whose tumors contained no T cells....”

L.Zhang, et al.  
Intratumoral T Cells, Recurrence, And Survival In Epithelial Ovarian Cancer

New England Journal Of Medicine.....Volume 348 #3.....January 16, 2003.....page 203  
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**“One of the most critical questions...is whether differences between individuals....natural immunological...defense can predict future development of cancer.”**

**“...immunodeficient individuals...have an increased incidence of cancer,...”**

**“Our results indicate that medium and high...activity of...lymphocytes is associated with reduced cancer risk, whereas low activity is associated with increased cancer risk...”**

K.Imai, S Matsuyama, S.Miyake, K Suga, K.Nakachi

Natural Cytotoxic Activity Of Peripheral-Blood Lymphocytes And Cancer Incidence: An 11-year Follow-u Study Of A General Population

The Lancet....Volume 356....November 25, 2000.....page 1795

## Major Stressors Are Immune System Suppressors

"...chronically stressed human subjects.....showed a delay in healing compared to control patients."

Brain, Behavior, & Immunity  
Volume 12....March 1998.....page 64

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".....stress.....down-regulated the number of intraepithelial T lymphocytes. "

P.C.Arck, et.al.  
Indications For A Brain-Hair Follicle Axis (BHA): Inhibition Of Keratinocyte Proliferation And Up-Regulation Of Keratinocyte Apoptosis:  
In Telogen Hair Follicles By Stress And Substance P.  
FASEB Journal..... Volume 15 #13.....November 2001.....page 2536-2538

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"These observations may reflect the immuno-suppression characteristic of some breast cancer patients, which may contribute to tumor growth."

T.A.Simao, et. al.  
Detection And Analysis Of Apoptosis In Peripheral Blood Cells From Breast Cancer Patients  
Brazilian Journal of Medical & Biological Research.....Volume 32 #4.....April 1999.....page 403-406

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".....the interactive relation between psycho-social stressors.....and tumor progression in patients with breast cancer appears to be important for clinicians."

"Several components of the immune system are related to the course of disease in breast cancer patients."  
"Psycho-social stressors influence.....cortisol.....and immunological functions."

M.A. Boormeester, R.M.Butzelaar  
Interaction Between Breast Cancer, Psychosocial Stress And The Immune Response  
Nederlands Tijdschrift voor Geneeskunde..... Volume143 #16.....April 17, 1999.....page 838-842

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"Acute caffeine administration increases cortisol....."

M.A. Lee, et al.....April 1988  
Chronic Caffeine Consumption And The Dexamethasone Suppression Test In Depression  
Psychiatry Research.....Volume 24 #1.....April 1988.....page 61 - 65

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".....caffeine use during periods of increased occupational stress may enhance the cumulative stress response."

G.A.Pincomb, et al.....1987  
Caffeine Enhances The Physiological Response To Occupational Stress In Medical Students.  
Health Psychology.....Volume 6 #2.....1987.....page 101 - 112

---

"Caffeine is consumed daily by an estimated 85% of adults in the United States....."  
".....caffeine can raise plasma levels of the major stress hormones, including.....cortisol."

The stimulatory effects of caffeine are similar to the physiological responses that are associated with the experience of stress, and the experimental evidence suggests that caffeine itself might act like a stressor when coffee and caffeinated beverages are consumed in everyday life."

"These results suggest that caffeine consumption may exaggerate the deleterious effects of stress in daily life and aggravate the damage to health that stress can cause."

J.D.Lane, et. al.  
Caffeine Affects Cardiovascular And Neuroendocrine Activation At Work And Home  
Psychosomatic Medicine..... Volume 64.....2002.....page 595 - 603

# Mind-body medicine

Stress and skin wound healing.....

"Higher psychological stress is associated with slower dermal wound healing...."

"....immunological mechanisms behind this effect....."

"...investigate whether immune cells present in the skin prior to wounding can affect subsequent healing in high-stress and low-stress participants."

".....healthy older adults and showed that higher stress was associated with significantly fewer macrophages in the skin."

".....younger adults and showed that higher stress was associated with significantly lower activation of immune cells in the skin."

"lower activation of immune cells (as measured by human leukocyte antigen (HLA expression)) and fewer Langerhans cells were associated with slower healing. Together these studies show the first preliminary evidence that the number and activation of immune cells in the skin prior to wounding are affected by stress and can impact healing. Larger studies are needed to confirm these effects."

H.Koschwanez, et al

Stress-related changes to immune cells in the skin prior to wounding may impair subsequent healing  
Brain, Behavior, and Immunity....Volume 50....November 2015....page 47

## **The prevalence of;**

Arthritis ----- about 40 million Americans  
[expected to increase to 59 million by the year 2020]

Asthma ----- about 22 million adults Americans diagnosed

Allergies -----18 million adults Americans diagnosed w/hay fever

ALS [Lou Gehrig's disease----- 30,000 Americans

Multiple Sclerosis ----- 400,000 Americans

Lupus ----- 1.4 million Americans suffering from Lupus. ...

Crohn's disease ----- 200,000 Americans

Type-1 Diabetes ----- close to 1 million Americans

# Problems With Suppressor Cells

## **Arthritis --- Asthma --- Allergy --- Multiple Sclerosis** **[And Other Suppressor Cell Problems]**

Cells of the immune system are responsible for patrolling our bodies to destroy viruses, bacteria, etc. There are a certain set of immune system cells that produce these “effects” the immune system is responsible for.... generally referred to as “effector cells”. The number and function of these “effector cells” are regulated by another set of immune system cells called “suppressor cells”.

The main problem in the immune systems of people with Arthritis, Asthma, airborne allergies, Multiple Sclerosis, Diabetes [type-1], and other “Auto-immune” diseases.....is that they have a reduced number and/or function of their “suppressor cells”, and are thus, unable to regulate their “effector cells” sufficiently to keep them from being overly active inside joints [arthritis], lungs [asthma], the brain and nervous system [multiple-sclerosis, and ALS =Amyotrophic Lateral Sclerosis...called “Lou Gehrig’s Disease”]) the pancreas [Type-1 Diabetes], the intestines [crohn’s disease, irritable bowel syndrome, colitis] or the skin [chronic acne, psoriasis].

### **It’s the Brain//Nervous System -----**

The founding principle of mind-body medicine, is that the brain controls and/or impacts the level of functioning of the immune system. Good things going on in the brain//nervous system, generally results in good things going on in the immune system. Altered-impaired function of the brain//nervous system leads to altered-impaired function of the immune system....suppressor T-cells in particular.

In the brain, your thoughts are directly linked to chemical aspects of brain cell function. Attention related cognitions [thoughts] affect the release of the neurotransmitter called glutamate. For people under chronic, long term, excessive levels of drive/pressure/stress [resulting in excessive levels of glutamate] can lead to physiological deficits in brain cells, and brain cell function. In a number of people, this altered-impaired function of the brain//nervous system leads to altered-impaired function of the immune system....suppressor T-cells in particular. The long term overworking—overwhelming of brain cells results in chronic overproduction of brain cell glutamate, adrenalin, and/or cortisol [stress hormone]....all of which can result in altered-impaired function of the brain//nervous system leads to altered-impaired function of the immune system....suppressor T-cells in particular [if you grew up in the United States, you may want to consider the possibility that the amount of drive/pressure/stress you consider to be “normal”, is not “normal”].

### **What Determines Which Disease You Get -----**

The different immune cells or substances used by immune system cells [suppressive factors] that are affected may be the determinant of which disease takes place [Arthritis, Asthma, airborne allergies, Multiple Sclerosis, Diabetes [type-1]] since the different immune cells or suppressive factors determine which receptors appear on the effector cell surfaces, thus determining what stimulus those cells will and will-not respond to, and what organs they will preferentially go to [lungs-asthma....joints-arthritis...etc]. One major mystery involved is imbedded in the question of why do some people with excessive levels of drive/pressure/stress inducing overproduction of glutamate.....end-up almost exclusively with brain cell malfunction//destruction oriented maladies such as Schizophrenia, Chronic Fatigue Syndrome, Fibromyalgia, Parkinson’s, Alzheimer’s, Panic Disorder, etc.....while other people instead, end-up with almost exclusively with suppressor cell oriented maladies such as Rheumatoid Arthritis, Asthma, airborne allergies, Multiple Sclerosis, Type-1 Diabetes, etc.

One can see how the medical community’s zeal to give different names to what are arguably, for all practical purposes, the same disease process, has clouded the ability to get the bottom of these maladies as to facilitate a reversal.

### **The Plain Language Of Glutamate -----**

Chronic, long term, excessive levels of...drive...pressure...stress.....results in excessive levels of glutamate.  
-- Glutamate can activate effector cells  
-- Glutamate can decrease immune system cell production of the major suppressor factor [called TGF-beta]  
-- Glutamate can cause destruction of Suppressor Cells [via a receptor on those cells called CD3mAb]  
-- Glutamate can cause brain cell destruction

### **Explaining An Allergy In People With Fully Functioning Immune Systems -----**

Allergies.....A relatively heavy cloud of air pollution hovering over a city may prevent escape and movement in the air of tree pollens and grass pollens. This may cause a elevated concentration of tree and grass pollens over and above what would otherwise occur. The inability of these pollens to move into upper-air levels, increases concentration levels close to the ground.



**Vitamin D & Immune System Problems----**

Having a vitamin D deficiency, may result in immune system problems [ie. inability to suppress the function of the effector cells, resulting in "auto-immune disease"]. The hormone [called calcitriol] that is made from vitamin D, can bind to receptors on immune system suppressor cells, stimulating their function. The stress hormone called cortisol, can reduce the number of calcitriol receptors on immune system suppressor cells, possibly contributing to a reduced ability to keep the immune system under proper control and regulation.

Vitamin D is produced by skin cells in response to exposure to sunlight. Vitamin D can also be ingested in food as a part of the diet. In the liver, Vitamin D is converted to calcidiol. In the kidneys, the calcidiol is converted to the hormone calcitriol. Reduction in sunlight exposure and low vitamin D intake, can produce a deficiency.

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"These results are consistent with the findings of several controlled studies, which have suggested a close relationship between life events and the development and progression of Multiple Sclerosis."

".....this study contributes to a growing body of evidence that stressful life events are potent triggers of disease activity in women with relapsing-remitting Multiple Sclerosis."

"Multiple Sclerosis exacerbations may be delayed or avoided by limiting the individual or cumulative effects of stressful life events."

"These results are consistent with the hypothesis that stress is a potential trigger of disease activity in patients with relapsing-remitting Multiple Sclerosis."

K.D.Ackerman, et al.  
Stressful Life Events Precede Exacerbations Of Multiple Sclerosis  
Psychosomatic Medicine.....Volume 64.....2002....page 916 - 920

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"Previous research has demonstrated.....links between stress and asthma."

"The objective of this study was to test whether adolescents with asthma from different Socio-economic Status backgrounds differed in biological profiles relevant to asthma, including immune and cortisol measures".

"In the present study, we focused on two social environment factors that have been commonly linked to asthma: Socio-economic Status and stress."

"Lower Socio-economic Status children have more severe cases of asthma."

"In healthy children, low Socio-economic Status has been associated with more frequent exposure to stressful life events."

"Our findings also suggest that stress and control beliefs may provide one explanation for links between Socio-economic Status and immune responses in childhood asthma."

E. Chen...et. al  
Lower Socio-economic Status, Stress, And Immune Markers In Adolescents With Asthma  
Psychosomatic Medicine.....Volume 65.....2003....page 984 - 992

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"...psychosocial characteristics of subjects with allergies who use or do not use alternative medicine."

"Nonusers scored significantly higher for fatalistic externality than users."

"Quality of Life was significantly higher for users..."

"Users and nonusers of alternative medicine can be distinguished by psychosocial characteristics such as health locus of control and Quality of Life."

T. Schafer  
Life Satisfaction, Health Locus Of Control, And Quality Of Life  
Journal Of Psychosomatic Research.....volume 55 #6.....December 2003...page 543 - 546

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# Vitamin D --vs-- IL-10.....

Interleukins are substances produced in the immune system and nervous system that modulate the function of immune system cells. There are several Interleukin substances.

One of the Interleukins called Interleukin-10 [also called IL-10] specifically causes immune system cells to dial back on producing substances that cause inflammation, such as in allergies, asthma, Crohns/irritable bowl syndrome, heart disease, congestive heart failure. Interleukin-10 also causes immune system cells to reduce their overall activity, such as attacking tissues in the body, something that happens in autoimmune diseases like arthritis, celiac, multiple sclerosis, etc.

An important aspect of Nutrition Medicine is that Vitamin D3 supplements have been shown to increase production of Interleukin-10.

"In the present clinical study, we showed for the first time that a daily supplement of 50 µg vitamin D for 9 months is able to increase serum concentrations of the anti-inflammatory cytokine IL-10....."

"Our results agree with experimental data showing that vitamin D is able.....to enhance IL-10 synthesis. Moreover, earlier epidemiologic data indicated that high blood concentrations of 25(OH)D were associated with high IL-10 concentrations.

**S.S. Schleithoff**

**Vitamin D supplementation improves cytokine profiles in patients with congestive heart failure: a double-blind, randomized, placebo-controlled trial  
American Journal of Clinical Nutrition.....Volume 83 #4.....April 2006.....page 754-759**

**Vitamin D** is a major player in the function of the immune system. Generally speaking, having low levels tends to lead to out of control immune cells attacking some part of the body that you'd prefer to be left alone. Called a "vitamin", it is a hormone that regulates lots of stuff in the body, the immune system being one of them.

As Americans, our excessive use of sun screens is creating problems, since sun light causes the skin to produce vitamin D.

The study shown below focuses on its role in Multiple Sclerosis, which is a situation where out of control immune system cells attack the nervous system, gradually killing off your cells along your nerve fibers, reducing and/or destroying nerve function.

The study was published in 2006, so a lot has been learned since then. The question is no longer "can low vitamin D levels lead to something bad". The answer is yes. The question now is, how come some people get MS, while others get rheumatoid arthritis, while yet others get some other immune system related malady.

Like all issues related to problems involving immune system function, there is a chronic stress component to these issues that go along with and/or lead to the nutrient deficiency issues that may exacerbate a problem.

Vitamin D supplements should be in the form of D3 [ie. vitamin D3].

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**Journal Of The American Medical Association.....Volume 296 #23....December 20, 2006**

K.L.Munger, et al

Serum 25-Hydroxyvitamin D Levels and Risk Of Multiple Sclerosis

"Epidemiological and experimental evidence suggests that high levels of vitamin D, a potent immunomodulator, may decrease the risk of multiple sclerosis."

".....the risk of multiple sclerosis significantly decreased with increasing levels of 25-hydroxyvitamin D...."

"The results of our study suggest that high circulating levels of vitamin D are associated with a lower risk of multiple sclerosis."

"Prevailing thought is that MS is an autoimmune disorder whereby an unknown agent or agents triggers a T cell-mediated inflammatory attack, causing demyelination of central nervous system tissue. A striking feature of the global distribution of MS is a multifold increase in incidence with increasing latitude, both north and south of the equator."

".....the change in MS risk with migration among people of common ancestry strongly supports a role for environmental factors. One potential factor may be vitamin D, a potent immunomodulator that in its hormonal form can prevent experimental autoimmune encephalomyelitis (EAE), an animal model of MS."

"Because food provides little vitamin D, the major source for most people is through skin exposure to sunlight. At latitudes of 42° or more (eg, Boston, Mass), in winter most UV-B radiation is absorbed by the atmosphere, and even prolonged sun exposure is insufficient to generate vitamin D. As a result, seasonal vitamin D deficiency is common."

"A protective effect of vitamin D on MS is supported by the reduced MS risk associated with sun exposure and use of vitamin D supplements...."

"In this large prospective study, we found that the risk of MS decreased with increasing serum levels of 25-hydroxyvitamin D."

"Although this association was not seen among blacks, their smaller sample size and substantially lower 25-hydroxyvitamin D levels may have reduced the power to detect an association in this group."

"Our results converge with a growing body of evidence supporting a protective role for vitamin D in MS development."

"Of interest, regulatory T cells have been shown to be suppressed in individuals with MS."

"If sufficient 1,25-dihydroxyvitamin D is produced, it may exert paracrine effects on surrounding T lymphocytes, thereby regulating the tissue-specific immune responses. Some support for this hypothesis comes from recent experiments showing that mice fed diets high in vitamin D had significantly fewer clinical and pathological signs of EAE than mice fed a vitamin D-deficient diet. Central nervous system levels of 1,25-dihydroxyvitamin D, but not blood levels, were higher in supplemented mice than in vitamin D-deficient mice and correlated inversely with disease severity."

".....our previous finding of a lower MS risk among women taking vitamin D supplements supports a specific role for vitamin D."

"These results suggest that vitamin D levels earlier in life may be critical in conferring protection for MS and our finding of a strong protective effect of 25-hydroxyvitamin D levels of 100 nmol/L or higher before age 20 years supports this view. Vitamin D supplementation in infancy seems to exert a strong protective effect against the autoimmune disease type 1 diabetes, and vitamin D levels in early childhood could also have an impact on the risk of MS. Although there are no data on vitamin D levels earlier in life and risk of MS, the strong inverse association between MS risk and 25-hydroxyvitamin D levels at ages 16 to 19 years suggests that levels in late adolescence are likely to be important."

"Almost half of white and two thirds of black adults in the United States have 25-hydroxyvitamin D levels below 70 nmol/L.<sup>28</sup> Although levels above 25 nmol/L have traditionally been considered normal and almost everyone in this study had measurements above this level, much higher levels may be required for bone mineralization and prevention of fractures. According to a recent review, the best serum 25-hydroxyvitamin D concentrations are between 90 and 100 nmol/L. Adolescents have somewhat higher levels than adults, but few have levels higher than that associated with a reduced risk of MS in our study. If the association reported here reflects a true protective effect of vitamin D, increasing the vitamin D levels of adolescents and young adults could result in an important reduction in MS incidence."

"Such an increase could be achieved by using vitamin D supplements. Although the current Institute of Medicine adequate intake of vitamin D is 200 U/d for adults younger than 50 years, and the highest dose that is considered safe is 2000 U/d, adverse effects have been reported only at intakes several-fold higher."

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“The relationship between psychological factors and symptoms of asthma and other allergic disorders has long been a topic of interest. Initial studies addressed the question of whether asthma was associated with distinctive personality type, with psychopathology, or should be considered to be a psychosomatic disorder.”

“.....role of stressful life events and acute asthma episodes in adults and in children. These studies have suggested that both chronic difficulties and acute life events stresses contribute to the likelihood of an asthma episode.”

“Behavior problems may precede asthma onset in young....children. In this age group, behavior problems are not secondary psychological reactions to asthma onset. They may act as a marker for stress in the child’s life.”

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"IL-4 plays a pivotal role in the development of allergic inflammation via induction of IgE.....increase of IgE receptor expression, promoting Th-2 cell differentiation...."

"Previous studies in human and mouse models have shown that high vitamin E intake correlates with low IgE concentration and reduced prevalence of allergic reactions. "

"We show here that the natural free radical scavenger vitamin E suppresses IL-4 protein levels in human peripheral blood T cells in a dose-dependent manner. The effect of vitamin E on IL-4 expression occurs at the mRNA level.

M. Li-Weber, et. al  
Vitamin E Inhibits IL-4 Gene Expression In Peripheral Blood T Cells

European Journal Of Immunology.....volume 32 #9.....Sept. 2002....page 2401 - 2408

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"Aim: To compare the effects of placebo and Vitamin E intake [400IU/day] on symptoms and serum IgE levels in 96 subjects with atopic dermatitis."

"46 took placebo....."

"23 of the 50 subjects treated with vitamin E showed great improvement compared to only one in the placebo group..."

"...there was almost complete remission of atopic dermatitis in 7 of the 50 subjects in the vitamin E group, but none in the placebo group."

"Subjects with great improvement and near remission of atopic dermatitis in the vitamin E group demonstrated a decrease of 62% in serum IgE levels..."

E. Tsourelis-Nikita, et. al  
Evaluation Of Dietary Intake Of Vitamin E In the Treatment Of Atopic Dermatitis

International Journal Of Dermatology.....Volume 41 #3.....March 2002...page 146 - 150

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"Individuals with multiple sclerosis [MS] are often advised not to participate in vigorous exercise. Leading a relatively sedentary life style, however, may exacerbate the debilitating effects of MS."

".....after the intervention, the exercise group had more energy and vigor [extremely large effect sizes]. Other very large effects were found in the exercise group, which had better social and sexual functioning and less bodily pain and fatigue than control group."

"Recent clinical investigations indicate that regular participation in aerobic exercise may benefit the MS population."

G. Sutherland, M.B. Andersen, M.A. Stoope  
Can Aerobic Exercise Training Affect Health-Related Quality Of Life For People With Multiple Sclerosis

Journal Of Sport & Exercise Psychology.....Volume 23...2001....page 122 - 135  
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**Arthritis does not  
present in the joints  
of a paralyzed limb**

**no nerve....**

**no arthritis**

# Gluten Intolerance, Celiac Disease.....Mechanisms & Reversal

## The gluten intolerance problem in a nutshell:

- need to be able to get the nutrients that are in the food you eat through the walls of the intestines.
- alterations of a portion of the walls of the intestines called the intestinal mucosa, messes with that process
- Gluten ingestion [gliadin is the toxic component of gluten] is associated with alterations in the intestinal mucosa
- impaired distribution of a set of immune system command and control cells called natural killer cells, induces loss of tolerance to gliadin
- a deficiency of natural killer cells, permits the development of celiac disease via gliadin induced loss of normal down-regulation of immune cell activity

Something nearly all autoimmune diseases have in common is a strong nervous system component. The brain and nervous system communicate with and influence the immune system, and vice versa. As goes the brain and nervous system, so goes the immune system. Autoimmune attack on a tissue is often stopped immediately when the nerve to the tissue is disabled, indicating that autoimmune disease is a mind-body medicine issue. Traditional medicine is thus less equipped to deal with this productively, as it is with other mind-body issues such as chronic fatigue--fibromyalgia.

Confirming the status of Celiac/gluten intolerance as an auto-immune situation moves things forward in being able to reverse it, since as a species we know a lot about auto-immunity. This tends to place it in the same category with other auto-immune maladies;

----- type 1 diabetes

[immune cells attack insulin producing cells in the pancreas]

----- rheumatoid arthritis

[immune cells attack joint tissue cells]

----- Multiple Sclerosis

[immune cells attack certain cells on nerve fibers]

Something auto-immune maladies tend to have in common is a problem with the command and control cells of the immune system. A lack of proper functioning on their part leads to mischief by the other cells. Genetics is unlikely to be the -cause- of an auto-immune issue, however genetics likely decides which one you might get if things start going wrong with the command and control cells of the immune system. The production of the substance IL-10 is often problematic. IL-10 [inter-leukin 10] produced by command and control cells of the immune system is use to communicate and turn-off the potentially mischievous activities of the other cells. Vitamin D aids in that process. Nearly all people with auto-immune issues are low in vitamin D.

Auto-immune problems, though they may manifest in different ways in different people [ie. celiac disease, asthma, arthritis, allergy, Multiple Sclerosis, etc, etc] tend to have a significant number of things in common related to out of control immune system cells.

Major player = Vitamin D

Major player = Interleukin-10

Major player = chronic psychological stress

Major player = selenium

Unfortunately, like many things having to do with the function of the human body, people have been quick to go down the "its genetic" route. At present, it would appear that genetics may only determine how it can be that many people share common mechanisms of causation but one person gets Celiac disease while another gets Multiple Sclerosis, while another gets rheumatoid arthritis. This is similar to the situation in the brain, where many people share common mechanisms of brain cell destruction, but one person gets Parkinson's, another gets Alzheimer's, another gets schizophrenia, and another gets lou Gehrig's disease [ALS]

The nervous system, immune system, and nutrient supply, and reduction of daily exposure to chemical toxins are the 4 main areas to focus on in dealing with intestinal auto-immune issues, until as a species we get to the bottom of understanding the underlying mechanisms of causation and reversal of the problem.

## Nervous System & Immune system

Evidence based behavioral medicine.....

Something nearly all autoimmune diseases have in common is a strong nervous system component. The brain and nervous system communicate with and influence the immune system, and vice versa. As goes the brain and nervous system, so goes the immune system. Autoimmune attack on a tissue is often stopped immediately when the nerve to the tissue is disabled, indicating that autoimmune disease is a mind-body medicine issue. Traditional medicine is thus less equipped to deal with this productively, as it is with other mind-body issues such as chronic fatigue--fibromyalgia.

--- meditation

--- Tai Chi

--- Jacuzzi-whirlpool-hot bath

--- standup comedy [live or on TV (tape Comedy Central shows = Premium Blend, Comic Remix)]

These highly stimulate production of substances in the brain called neurotrophins, very helpful in people dealing with autoimmune disease.

## Immune System & Nutrition Medicine

The big ticket items.....

1 -- nutrient dense beverage[preferably containing nucleotides]

2 -- colostrum [liquid]

3 -- ribose supplementation

4 -- Probiotics

5 -- Vitamin D3

6 -- fish oil

7 -- Iodine

8 -- Aloe Juice

9 -- Alkalizing foods

10 -- Anti-oxidants [Vitamin A, Vitamin E, Vitamin C, Selenium]

11 -- Zinc

12 -- Magnesium

## Reduction of chronic, repetitive exposure to chemical toxins

[chemicals get absorbed through the skin and scalp.

- non-toxic chemical oriented body soap
- non-toxic chemical oriented shampoo
- non-toxic chemical oriented lotion
- top of the line water filter [at least for the kitchen sink, preferably for the shower, etc also]

## Suppression of the inflammatory aspect of celiac.....

----- gliadin = protein in wheat that causes the autoimmune reaction

----- the strain of probiotic bacteria called Bifidobacteria....inhibits the inflammatory reaction of gliadin

Obviously, the suppression of inflammation is likely dependent upon dosage. What that dosage is likely varies from person to person. So there is still some research info necessary. Things have progressed this far though. More to come!!!

A probiotic product called Dr. Ohhira's Probiotics 12 Plus, has several strains of the Bifidobacteria.....

[www.probiotics12plus.com/](http://www.probiotics12plus.com/)

Bifidobacterium breve ssp. breve,

Bifidobacterium infantis ssp. infantis,

Bifidobacterium longum

"Celiac disease (CD) is a chronic enteropathy triggered by intake of gliadin, the toxic component of gluten. This study aims at evaluating the capacity of different Bifidobacterium strains to counteract the inflammatory effects of gliadin-derived peptides in intestinal epithelial (Caco-2) cells."

"The peptides from gliadin digestions inoculated with bifidobacteria did not exhibit the toxic amino acid sequences identified in those noninoculated..."

"...analysis evidenced a down-regulation in mRNA expression of pro-inflammatory biomarkers."

"Therefore, bifidobacteria change the gliadin-derived peptide pattern and, thereby, attenuate their pro-inflammatory effects on Caco-2 cells."

**J.M.Laparra, Y.Sanz**

**Bifidobacteria inhibit the inflammatory response induced by gliadins in intestinal epithelial cells via modifications of toxic peptide generation during digestion**

**Journal Of Cell Biochemistry...January 5, 2010**

"Because probiotic bacteria have been shown to digest gluten proteins to harmless peptides, supplementation with probiotics may be beneficial for people with celiac disease."

**[Celiac.com 04/28/2008]**

"Gluten intolerance is less common in the middle east and more common in northern Europe. I've seen this explained as the result of evolution, since wheat has been used for longer in the Middle East. But I wonder if people in the north are also more likely to be gluten intolerant (an autoimmune disease) because they don't get as much vitamin D."

**[Celiac.com 04/26/2007]**

"Emerging evidence supports a pathological link between vitamin D deficiency and the risk of inflammatory bowel disease (IBD)."

"To explore the mechanism we used the dextran sulfate sodium (DSS)-induced colitis model to investigate the role of the vitamin D receptor (VDR) in mucosal barrier homeostasis."

"These observations suggest that VDR plays a critical role in mucosal barrier homeostasis by preserving the integrity of junction complexes and the healing capacity of the colonic epithelium. Therefore, vitamin D-deficiency may compromise the mucosal barrier, leading to increased susceptibility to mucosal damage and increased risk of IBD."

**American Journal Of Physiology Gastrointestinal, Liver Physiology..... (October 25, 2007)**

**J.Kong1, et al**

**Novel Role of the Vitamin D Receptor in Maintaining the Integrity of the Intestinal Mucosal Barrier**

[background info = Natural killer cells are cells of the immune system. In the walls of the intestines they can control other immune cells. Loss of control cells can result in loss of control of immune system cells [a.k.a. auto-immune disease]

"all attempts to understand the pathophysiological process of this disease are incomplete without considering the important role of natural killer cells."

**F. Hadziselimovic, M.D., A. Bürgin-Wolff, Ph.D.**

**New England Journal of Medicine....Volume 258 #7....February 14, 2008...page 747**



# “The” Ways To Train The Immune System

Do things that improve/maintain high level immune function  
such as.....

--- Live a principle oriented life style [see Stephen Covey’s book...7 Habits Of Highly Effective People] focused on developing self-mastery. Develop the major life skills of being solution, logic, and mastery oriented. Establish rational thought and proactivity as major values in life. These skills remove and prevent destructive aspects of stress rather than simply managing it. They produce high levels of self-competence and self-efficacy, which lead to self-mastery. This reduces chronic exposure body tissues to elevated levels of glutamate, cortisol, and adrenaline, which induce immune system suppression, and tumor growth.

--- "Enriched" physical and social environments improve immune function.

Colorful furniture - mobiles - plants - walls - posters, as well as music, lamps w/dimmer switches, extracts from aroma therapy shops, post affirmations/goals on a wall.

--- Deal with all major "inner-child" wounds (see John Bradshaw's book "Homecoming") and issues thus creating changes in basal stress levels which directly affect immune cell function.

--- Establish down time during the day for engaging in autogenic relaxation, meditation, napping, massage, prayer, or hot bath/Jacuzzi

--- Periodically, a few days each week, take in Anti-oxidants;  
[Vitamin C = 500mg, Vitamin E = 400IU, Beta Carotene = 25,000IU, Selenium = 250mcg].

--- Watch standup comedy live or on TV, often.

--- Engage in high intensity, low volume, aerobic exercise.

--- Establish a strong support group of.....“functional”.....friends to spend time with in all major areas of your life.

--- Get a well mannered, lovable, huggable pet. [get dog training video made by [the best dog trainer](#).....see store section of [www.unclematty.com](http://www.unclematty.com)]

# Training The Immune System

## Affirmation Tapes --- Visualizations

### The format of the affirmation tape—

Make an affirmation tape with the wording focused on creating relaxed behavior patterns in your life, and on creating a strong immune system.

--- Express everything in present rather than future tense.

--- Make process statements identifying behaviors that you value, or character traits being developed, etc..

--- Use I, , my, I am, or I have in statements in present tense throughout.... I am, I have, etc.

example of Affirmations.....

I have a strong and powerful immune system.

My immune system cells are killing any and all cancer cells in my body.

I live a relaxed and laid-back life style.

I am centered and patient. I create a peaceful presence.

I am always calm and relaxed in all situations, and around all people and things.

I always say and do what is good for building up myself and others

### Visualizations ---

Apply the concept of "The me I see, is the me I'll be". Develop a detailed script to follow in visualizations.....consisting of statements that provide clear and controllable, moving images which make the visualization "real", thus optimizing their effectiveness.

--- Develop several scenes to create in your visualization sessions.

-- Visualize scenes such as white cells attaching to darker cells, and releasing substances that cause the darker cells to shrivel, shrink, and breakup.

".....we evaluated the impact of a program of psychosocial intervention (PSI) on the immunological status and the clinical management of a group of children....."

".....psychosocial intervention program which included relaxation, guided imagery, and self-esteem workshops."

"During the PSI period, the number of asthmatic episodes and the use of bronchodilator medication were significantly reduced, and pulmonary function significantly improved...."

"PSI resulted in a significant increase of NK cells....."

M.Castes, et.al.

Immunological Changes Associated With Clinical Improvement Of Asthmatic Children Subjected To Psychological Intervention  
Brain, Behavior, & Immunity.....Volume 13 #1.....March 1999.....page 1 – 13

"To determine the effect of hypnotic-guided imagery on immune function and psychological parameters in patients being treated for Stage I or II breast cancer

"Many studies during the last 15 years have demonstrated interactions between the central nervous and the immune systems. While a negative effect of immune responses has been demonstrated, there have also been published reports that psychological treatments can positively alter the immune system. Given the complexities of immune system kinetics, the transient nature of any psychological effect and the insensitivity of immune assays, our study indicates there is a role for hypnotic-guided imagery as an adjuvant therapy."

A.Bakke, M. Z. Purtzera, P. Newton

The Effect Of Hypnotic-Guided Imagery On Psychological Well-Being And Immune Function In Patients With Prior Breast Cancer

Journal of Psychosomatic Research...Volume 53 #6.....December 2002.....page 1131-1137

# Autogenic Relaxation

## **Mind-body Connections**

Things you can use to your advantage in life, business, sport, etc, etc.

From slowing cellular aging and reducing likelihood of heart attack...to improving workout recovery and adaptations to training in athletes and weekend warriors.

Can improve everything from worker productivity on the job, to student learning in the classroom, to child and toddler behavior and brain development, to stay-at-home mom stress reduction in the household.

If you have a brain and nervous system, mind-body connections are your friends.

I first began using Autogenic relaxation sometime in the early 1980's. As a coach of distance runners I began teaching it to my athletes in the mid-1980's to help both in sport and in their academics, test preparation, etc. Many of them still use it today in daily lives as do I.

## **Autogenic Relaxation**

Auto-genics works directly through the brain, the principal regulator of all body systems. The brain can put into practice, verbal instructions and imagined feelings oriented toward operation of internal organ systems such as blood flow, heart rate, nervous system relaxation, etc.

## **Purpose**

-- reduce brain and peripheral nervous system activity, reduce stress hormone [cortisol] levels and/or effects, increase blood flow and oxygenation, increase or normalize levels of substances and growth factors [nerve growth factors, neuro-trophic factors, anabolic hormones, etc] that promote regeneration and recovery functions in brain, nerve, immune system, and muscle.

## **Duration**

-- 20 seconds to 20 minutes

### **Autogenic Relaxation: Stage 1**

-- Oxygenation [diaphragmatic breathing]....lay on floor or sit, place one hand on stomach. During inhale, make your stomach rise prior to your chest rising.

### **Autogenic Relaxation: Stage 2**

-- Brain and nervous system activity reduction.....close your eyes, let go of thoughts related to daily activities. Repeat affirmations several times...."This is my down-time, I am calming and quieting all cells of my body. I am resting."

### **Autogenic Relaxation: Stage 3**

-- Blood flow.....create relaxation, warmth and heaviness in limbs and torso. Repeat the affirmations...."my hands and arms are becoming warmer and heavier. My feet and legs are becoming warmer and heavier. My chest and torso is becoming warmer and heavier. I am feeling more and more quiet, calm, and relaxed."

# Eyes closed bed-rest [and/or Napping]

Laying down on a bed, floor, ground and close your eyes.

## **Purpose**

Split-up the amount of "up-time" and/or awake-time on a given day by inserting some down-time. Reduce the cumulative total amount of daily activity and stress loads on brain, nervous system, and immune system.

## **Duration**

-- 10 minutes to 2 hours

# Hot Jacuzzi or hot bath

Sit in a hot Jacuzzi or bath tub.

## **Purpose**

-- Provide temperature and relaxation related stimuli for production of growth and regeneration oriented substances in the brain and body [nerve growth factor, growth hormone, etc]. Increase blood flow and oxygenation in order to promote regeneration and recovery functions in brain, nerve, immune system, and muscle.

## **Temperature**

F = 98 - 105 degrees

C = 37 - 40

## **Duration**

-- 5 to 10 minutes

**Access to information and the ability to apply it** is the major mechanism of success in human performance in track & field, in medicine, in health and wellness. As you continue to acquire and apply more information you continue **to expand the area of what is possible.**

To be a good track coach one must -first- be a good physiologist.

To be a good medical doctor one must -first- be a good physiologist.

To be a good physiologist one must -first- be willing to.....

-- put data ahead of dogma

-- put science ahead of indoctrinated tradition

-- put logic and reason ahead of faulty assumptions

-- put mechanisms ahead of correlations and "risk factors"

-- put critical thinking and clinical reasoning ahead of memorized "if-then" statements

-- aggressively keep up with, read, and apply large amounts of published research

-- accept outcomes as the judge and jury of your work

Jaccuzzi hot-baths & the immune system....

**“External hydrotherapy treatments produce profound effects on immune function, particularly through applications of hot water, which increases the number and activity of natural killer cells...”**

S. Blazickova, et. al

Effect of Hyperthermic Water Bath on Parameters of Cellular Immunity,”

*International Journal of Clinical Pharmacology Residents*.....Volume 20 #1-2.....2000.....page 41 - 46

[results of a 1/2 teaspoon of baking soda in bottle of water for 2 weeks].....

“In the spleen, as well as the blood and kidneys, they found after drinking water with baking soda for two weeks, the population of immune cells called macrophages, shifted from primarily those that promote inflammation, called M1, to those that reduce it, called M2. Macrophages, perhaps best known for their ability to consume garbage in the body like debris from injured or dead cells, are early arrivers to a call for an immune response.”

“Clinical trials have shown that a daily dose of baking soda can not only reduce acidity but actually slow progression of the kidney disease, and it’s now a therapy offered to patients.”

“The scientists also saw a shift in other immune cell types, like more regulatory T cells, which generally drive down the immune response and help keep the immune system from attacking our own tissues. That anti-inflammatory shift was sustained for at least four hours in humans and three days in rats.”

“O’Connor hopes drinking baking soda can one day produce similar results for people with autoimmune disease.”

<http://jagwire.augusta.edu/archives/52953>

**Vitamin D** is a major player in the function of the immune system. Generally speaking, having low levels tends to lead to out of control immune cells attacking some part of the body that you'd prefer to be left alone. Called a "vitamin", it is a hormone that regulates lots of stuff in the body, the immune system being one of them.

As Americans, our excessive use of sun screens is creating problems, since sun light causes the skin to produce vitamin D.

The study shown below focuses on its role in Multiple Sclerosis, which is a situation where out of control immune system cells attack the nervous system, gradually killing off your cells along your nerve fibers, reducing and/or destroying nerve function.

The study was published in 2006, so a lot has been learned since then. The question is no longer "can low vitamin D levels lead to something bad". The answer is yes. The question now is, how come some people get MS, while others get rheumatoid arthritis, while yet others get some other immune system related malady.

Like all issues related to problems involving immune system function, there is a chronic stress component to these issues that go along with and/or lead to the nutrient deficiency issues that may exacerbate a problem.

Vitamin D supplements should be in the form of D3 [ie. vitamin D3].

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**Journal Of The American Medical Association.....Volume 296 #23....December 20, 2006**

K.L.Munger, et al

Serum 25-Hydroxyvitamin D Levels and Risk Of Multiple Sclerosis

"Epidemiological and experimental evidence suggests that high levels of vitamin D, a potent immunomodulator, may decrease the risk of multiple sclerosis."

".....the risk of multiple sclerosis significantly decreased with increasing levels of 25-hydroxyvitamin D...."

"The results of our study suggest that high circulating levels of vitamin D are associated with a lower risk of multiple sclerosis."

"Prevailing thought is that MS is an autoimmune disorder whereby an unknown agent or agents triggers a T cell-mediated inflammatory attack, causing demyelination of central nervous system tissue. A striking feature of the global distribution of MS is a multifold increase in incidence with increasing latitude, both north and south of the equator."

".....the change in MS risk with migration among people of common ancestry strongly supports a role for environmental factors. One potential factor may be vitamin D, a potent immunomodulator that in its hormonal form can prevent experimental autoimmune encephalomyelitis (EAE), an animal model of MS."

"Because food provides little vitamin D, the major source for most people is through skin exposure to sunlight. At latitudes of 42° or more (eg, Boston, Mass), in winter most UV-B radiation is absorbed by the atmosphere, and even prolonged sun exposure is insufficient to generate vitamin D. As a result, seasonal vitamin D deficiency is common."

"A protective effect of vitamin D on MS is supported by the reduced MS risk associated with sun exposure and use of vitamin D supplements...."

"In this large prospective study, we found that the risk of MS decreased with increasing serum levels of 25-hydroxyvitamin D."

"Although this association was not seen among blacks, their smaller sample size and substantially lower 25-hydroxyvitamin D levels may have reduced the power to detect an association in this group."

"Our results converge with a growing body of evidence supporting a protective role for vitamin D in MS development."

"Of interest, regulatory T cells have been shown to be suppressed in individuals with MS."

"If sufficient 1,25-dihydroxyvitamin D is produced, it may exert paracrine effects on surrounding T lymphocytes, thereby regulating the tissue-specific immune responses. Some support for this hypothesis comes from recent experiments showing that mice fed diets high in vitamin D had significantly fewer clinical and pathological signs of EAE than mice fed a vitamin D-deficient diet. Central nervous system levels of 1,25-dihydroxyvitamin D, but not blood levels, were higher in supplemented mice than in vitamin D-deficient mice and correlated inversely with disease severity."

".....our previous finding of a lower MS risk among women taking vitamin D supplements supports a specific role for vitamin D."

"These results suggest that vitamin D levels earlier in life may be critical in conferring protection for MS and our finding of a strong protective effect of 25-hydroxyvitamin D levels of 100 nmol/L or higher before age 20 years supports this view. Vitamin D supplementation in infancy seems to exert a strong protective effect against the autoimmune disease type 1 diabetes, and vitamin D levels in early childhood could also have an impact on the risk of MS. Although there are no data on vitamin D levels earlier in life and risk of MS, the strong inverse association between MS risk and 25-hydroxyvitamin D levels at ages 16 to 19 years suggests that levels in late adolescence are likely to be important."

"Almost half of white and two thirds of black adults in the United States have 25-hydroxyvitamin D levels below 70 nmol/L.<sup>28</sup> Although levels above 25 nmol/L have traditionally been considered normal and almost everyone in this study had measurements above this level, much higher levels may be required for bone mineralization and prevention of fractures. According to a recent review, the best serum 25-hydroxyvitamin D concentrations are between 90 and 100 nmol/L. Adolescents have somewhat higher levels than adults, but few have levels higher than that associated with a reduced risk of MS in our study. If the association reported here reflects a true protective effect of vitamin D, increasing the vitamin D levels of adolescents and young adults could result in an important reduction in MS incidence."

"Such an increase could be achieved by using vitamin D supplements. Although the current Institute of Medicine adequate intake of vitamin D is 200 U/d for adults younger than 50 years, and the highest dose that is considered safe is 2000 U/d, adverse effects have been reported only at intakes several-fold higher."

# Colostrum

Colostrum is a substance similar to milk that is produced in the breast by humans [women] and animals for use by newborns to aid their physiological development and growth. It contains a number of digestive tract, brain/nervous system, and immune system substances that are basic nutrients and proteins for these areas of function. It also contains a number of basic cell function substances as well as □ growth factors □ that are used in normal cellular adaptations and recovery from major stressors and traumas.

When taken by adults as an extremely popular aspect of Preventive Medicine, Nutritional Medicine, and Naturo-pathic Medicine particularly for those who have nutrient deficits [ie. hospital patients, elderly nursing home residents, high level athletes], or by those who suffer from immune system related maladies or challenges [allergies, common cold, infection, high level athletes in heavy training] colostrum can be a major restorer of normal functioning. From heart disease and cancer, to fibromyalgia and infections, colostrum addresses many of the nutritional components of these maladies.

The major health triad....digestive tract, brain/nervous system, and immune system, have become the 3 main targets in the modern day practice of Preventive Medicine, Nutritional Medicine, and Naturo-pathic Medicine. Colostrum is one substance that has the ability to address all 3.

**Product suggestion.....PerCoBa** <http://www.percoba.com/quality.html>

## Colostrum & Nutrition Medicine

In the interest of the broad effects of Preventive Medicine and Nutritional Medicine at a time in history when there is a rapid transition underway, headed away from Traditional Medicine and it's pharmaceuticals and toward Preventive Medicine and Nutritional Medicine and their foundational nutrients approach to human cellular function, the ETG would like to express its opposition to the World Anti-doping Agency [WADA] position [taken earlier this year] on Colostrum. Whether for athletes or the general public, a recommendation to avoid use of a product that benefits long term health is a WADA position that cannot be defended. The original purpose of a "banned list" was to protect the health of athletes, not to "catch the drug cheats", or level a playing field. Coming out against a non-drug product that protects health is nonsensical.

The ETG currently has no plans to avoid use of Colostrum, and to the contrary, recently added it to it's "Supplements List", shown on the [ETG Training Packet page](#) of this website, in "The Food & Supplements" section of the packet.

Colostrum is a substance similar to milk that is produced in the breast by humans [women] and animals for use by newborns to aid their physiological development and growth. It contains a number of digestive tract, brain/nervous system, and immune system substances that are basic nutrients and proteins for these areas of function. It also contains a number of basic cell function substances as well as □ growth factors □ that are used in normal cellular adaptations and recovery from major stressors and traumas.

When taken by adults as an extremely popular aspect of Preventive Medicine, Nutritional Medicine, and Naturo-pathic Medicine particularly for those who have nutrient deficits [ie. hospital patients, elderly nursing home residents, high level athletes], or by those who suffer from immune system related maladies or challenges [allergies, common cold, infection, high level athletes in heavy training] colostrum can be a major restorer of normal functioning. From heart disease and cancer, to fibromyalgia and infections, colostrum addresses many of the nutritional components of these maladies.

The major health triad....digestive tract, brain/nervous system, and immune system, have become the 3 main targets in the modern day practice of Preventive Medicine, Nutritional Medicine, and Naturo-pathic Medicine. Colostrum is one substance that has the ability to address all 3.

Of concern to some [ie. World Anti-Doping Agency (WADA)] is that similar to human Colostrum, colostrum from cows contains Growth Hormone along with its best friend and side-kick, IGF-1. These substances are comprised of proteins. When consumed by mouth, these proteins enter the digestive tract, where they get broken down in the stomach [ie. Digested]. Thus they are no longer Growth Hormone or IGF-1.

When you correct nutritional and other deficits in humans, you see cell function return to normal, and thus if you measure things such as growth hormone levels and/or IGF-1 levels, you'll likely see an increase. The increase was due to restoring normal cell function, not Growth Hormone ingestion or IGF-1 ingestion. Obviously, this point added to the situation where we know that growth hormone is not a performance enhancing drug [see the ETG Training Packet section titled [The Problem With Drug Use & The Problem With Drug Testing](#) ], should remove any cause for concern in using Colostrum to aid one's health and/or cellular functioning. The original purpose of a banned drug list in sport was to protect the health of athletes. Colostrum is a super-star in ever expanding field of Nutrition Medicine.

Product suggestion..... [PerCoBa Colostrum](#)



[below are a few quotes].....

"We investigated whether supplementation with 60 grams per day of bovine colostrum affects blood levels of insulin-like growth factor-I (IGF-I) and IGF binding protein-3 in relation to doping testing."

" Nine endurance-trained men ingested 60 g/d of bovine colostrum for 4 wk."

"After 4 wk urine and blood samples were taken...."

" Drug testing in a laboratory accredited by the International Olympic Committee did not show any forbidden substance before or after 4 wk of supplementation."

" Daily supplementation with 60 g of bovine colostrum for 4 wk does not change blood IGF-I or IGF binding protein-3 levels and does not elicit positive results on drug tests. "

Nutrition.....Volume 18 # 7-8...July-August, 2002....page 566 - 567

H. Kuipers, et al....[Department of Movement Sciences, Maastricht University, The Netherlands] --- Effects of oral bovine colostrum supplementation on serum insulin-like growth factor-I levels

-----  
"This study examined the effect of supplementation with concentrated bovine colostrum protein powder (intact) on plasma insulin-like growth factor I (IGF-I) concentrations..."

"We conclude that supplementation with intact powder did not increase plasma IGF-I concentrations....after 8 weeks of supplementation"

J.D. Buckley, et al [University of South Australia, Adelaide] ----Bovine colostrum supplementation during endurance running training improves recovery, but not performance

"IGF-1 is present in breast milk."

Gut..... Volume 51.....2002.....page 748-754

A .G. Cummins, F. M. Thompson [Bazil Hetzel Research Institute and the Department of Gastroenterology and Hepatology, The Queen Elizabeth Hospital, Adelaide, South Australia] ----Effect of breast milk and weaning on epithelial growth of the small intestine in humans

-----  
"Natural colostrum contains several substances, including IGF-1 which is listed as a prohibited substance (section S2 of the Prohibited List)."

" Taking into account the above elements and the fact that there is still scientific uncertainty on the ability for IGF-1 contained in colostrum to influence plasma levels of IGF-1, the WADA List Committee adopted a safe approach and recommends athletes not to take colostrum".

[World Anti-Doping Agency 2008]

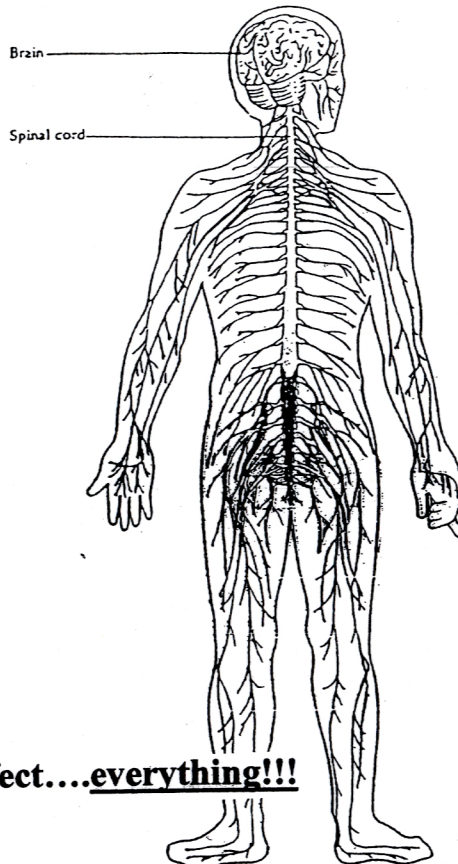
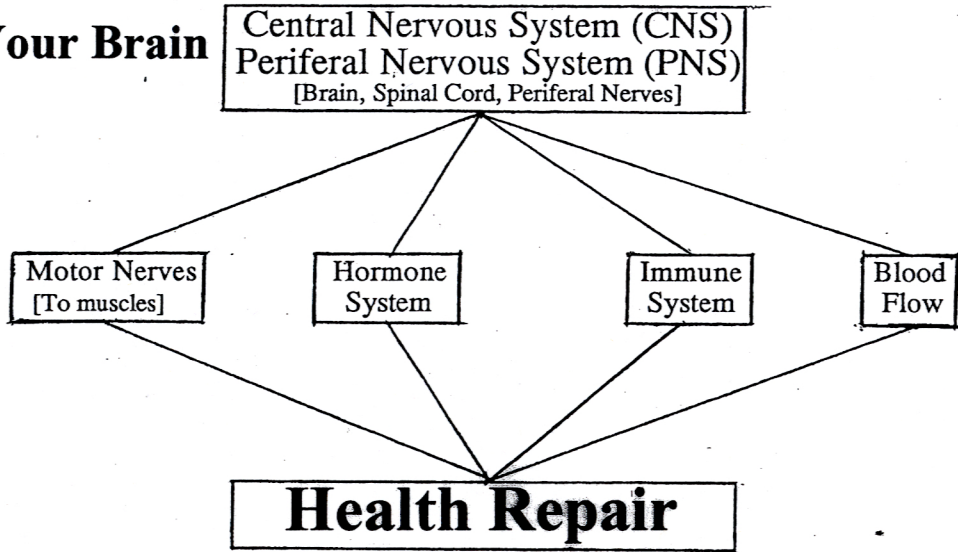
-----  
"WADA would like to take this opportunity to emphasize that colostrum contains Insulin Growth Factor-1 (IGF-1) a substance prohibited under section S.2 of the 2008 WADA Prohibited List. Even if influence of oral intake of colostrum on plasma concentration of IGF-1 is still a matter of debate within the scientific community, WADA would like to alert that abnormal increase or level of blood circulating IGF-1 would be considered as potentially revealing doping practices (e.g hGH or IGF-1 intake) by athletes."

"WADA wishes to draw your utmost care in the use of colostrum by athletes."

[March 19, 2008.....Dr Olivier Rabin, Director, Science of the World Anti Doping Agency(WADA)]

# [21st century Health Repair]

**Use Your Brain**



**Train The Brain**

## **The Brain;**

**-- Branches out to the body**

**-- Thus it can control or effect....everything!!!**

<http://theetgtrackclub.com/selfcare>

**On the self-care page of TheETG website,  
please see the free pdf packet titled....**

**TheETG nutrition medicine —**

<http://theetgtrackclub.com/documents/TheETGnutrimedicine.pdf>



**On the self-care page of TheETG website,  
please see the free pdf packet titled....**

**TheETG exercise program —**

<http://theetgtrackclub.com/documents/TheETGexerciseprogram.pdf>

## So called "performance enhancing drugs" are prescription drugs.

### Some examples of the effectiveness of prescription drugs in sport.....

"The drug erythropoietin, often called EPO.....a new systemic review of existing research reveals that **there is no scientific evidence that it does enhance performance**, but there is evidence that using it in sport could place a user's health and life at risk."  
EPO [erythropoietin] doping in elite cycling: No evidence of benefit, but risk of harm  
Science Daily.....December 5, 2012.

"...**there is no scientific basis from which to conclude that rHuEPO has performance-enhancing properties** in elite cyclists." "The use of rHuEPO in cycling is rife but scientifically unsupported by evidence, and its use in sports is medical malpractice."  
J.A.Heuberger, et al  
Erythropoietin doping in cycling: lack of evidence for efficacy and a negative risk-benefit.  
British Journal Of Clinical Pharmacology.....Volume 75 #6.....June 2013...page 1406

"The **over-exaggeration of the effects of growth hormone** in muscle building is effectively promoting its abuse...."  
"....there is the question of disinformation on rhGH....Part of this problem may, paradoxically, derive from the anti-doping authorities themselves. By ignoring the evidence the **rhGH does not work** in normal healthy subjects, the athletic establishment could be accused of effectively promoting its use."  
"**We must tell athletes the truth: growth hormone does not 'work'** or at least not as they think it does and that its is associated with all kinds of immediate and long term hazards-----everything from decreased performance to cancer."  
"....none of us scientists, doctors, coaches, or sports bodies should continue to suggest that this dangerous doping practice works."  
M.J. Rennie  
British Journal Of Sports Medicine.....Volume 37 #2....April 2003....pages 100-103

"**Testosterone prohormones** such as androstenedione, androstenediol, and dehydroepiandrosterone (DHEA) have been heavily marketed as testosterone-enhancing and muscle-building nutritional supplements for the past decade."  
"Contrary to marketing claims, research to date indicates that the use of prohormone nutritional supplements (DHEA, androstenedione, androstenediol, and other steroid hormone supplements) **does not produce either anabolic or ergogenic** effects in men. Moreover, the use of prohormone nutritional supplements may raise the risk for negative health consequences."  
G.A.Brown, et al  
Testosterone Prohormone Supplements.  
Medicine & Science in Sports & Exercise.....Volume 38 #8....August 2006.....pg 1367-1537

## So called "performance enhancing drugs" are prescription drugs.

### Some examples of the effectiveness of prescription drugs in American medicine & health care.....

"Most drugs are only effective **for a small percentage** of people who take them."  
Michael Leavitt [U.S. Secretary of Health & Human Services 2005 - 2009]

".....the benefits that US health care currently deliver **may not outweigh the aggregate health harm** it imparts."  
Journal Of The American Medical Association...Volume 302 #1..July 1, 2009...page 89 - 91

"It is estimated that more than 700,000 individuals are seen in hospital emergency departments for adverse drug events each year in the United States."  
[Centers For Disease Control.....2015]

"106,000 deaths/year **from non-error**, adverse effects of medications"  
B. Starfield  
Is US Health Really the Best in the World  
Journal of The American Medical Association.....Volume 284 #4....July 26, 2000....page 483 - 485

".....1.5 million U.S. residents are harmed or killed each year because of medication errors, according to an Institute of Medicine report."  
Nature Medicine....Volume 12 #9.....September 2006.....pg 984 - 985.....News In Brief

**Pursue becoming a**

**Master Of  
Sport**