



TheElite Training Group track club

Expanding the area of what is possible

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

www.theetgtrackclub.com

Mind-Body Medicine

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]

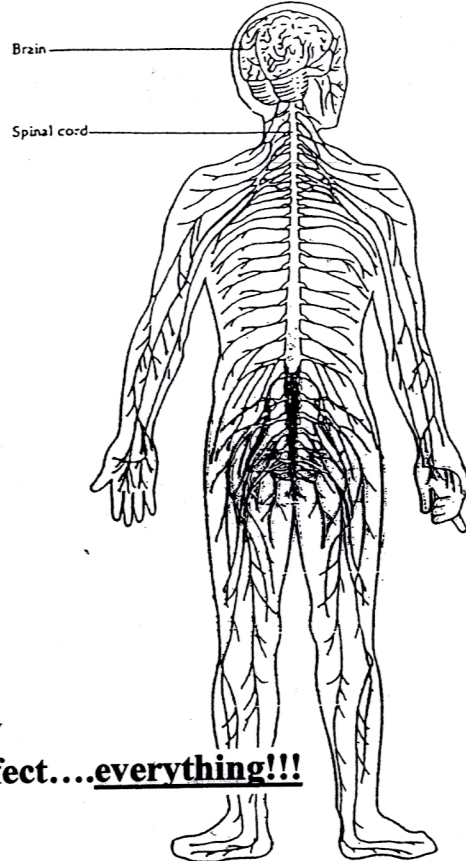
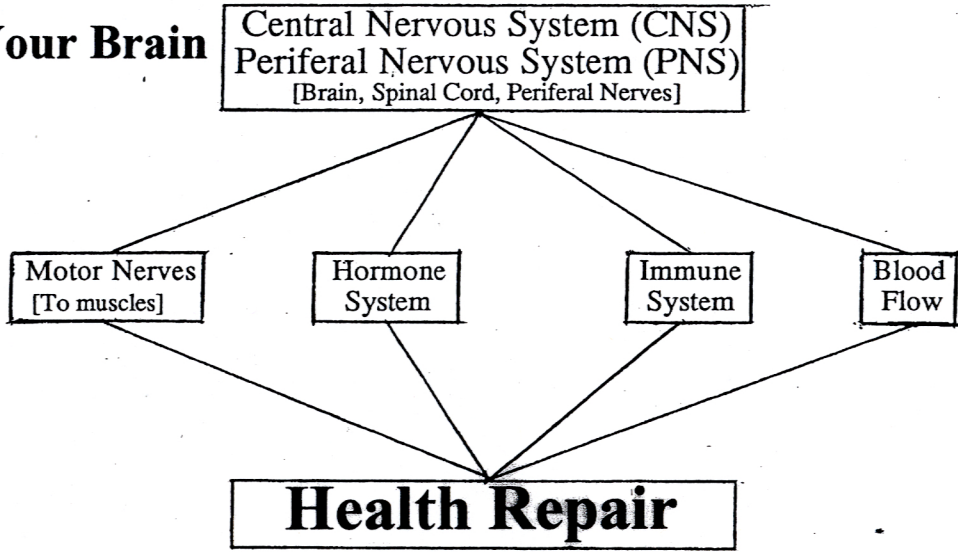
".....A recent study for example, found that only half of all cardiac guidelines are based on scientific evidence."
[President Barack Obama -- Speech to the American Medical Association -- June 15, 2009]

"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.]

You may copy any and all contents of this packet, with exception and exclusion of using such copies for purposes of producing revenue, profit, or any direct or indirect compensation.

[21st century Health Repair]

Use Your Brain



Train The Brain

The Brain;

--- Branches out to the body

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

Studies like this one.

Demonstrates that measurable impact on aging, immune function, etc all the way down to the level of our genes, happen immediately.....

"....evaluated the impact of a day of intensive meditation practice (8 hours) on the methylome of peripheral blood mononuclear cells in experienced meditators (n = 17). In parallel, we assessed the influence of a day of leisure activities in the same environment on the methylome of matched control subjects with no meditation experience (n = 17)."

"In the meditation group, we identified 61 differentially methylated sites after the intervention. These differentially methylated sites were enriched in genes mostly associated with immune cell metabolism and ageing and in binding sites for several transcription factors involved in immune response and inflammation, among other functions. In the control group, no significant change in methylation level was observed after the day of leisure activities."

"These results suggest that a short meditation intervention in trained subjects may rapidly influence the epigenome at sites of potential relevance for immune function and provide a better understanding of the dynamics of the human methylome over short time windows. "

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..."

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

"...daily music listening can improve auditory and verbal memory, focused attention, and mood as well as induce structural gray matter changes in the early post-stroke stage."

"Those in the music group were provided with portable CD players and recordings of their own favorite music in any musical genre."

"...those who regularly listened to music for the first 60 days after their stroke scored the highest of the three groups on tests of verbal memory and focused attention, and the lowest on depression and confusion."

"...the positive effects of music on stroke victims, ranging from decreased levels of depression and stress to increased neural plasticity evoked by environmental enrichment."

"...for those recovering from a stroke, listening to music isn't just a pleasant distraction; it's an activity with real therapeutic value."

T. Sarkamo, D Soto

Music listening after stroke: beneficial effects and potential neural mechanisms

Annals Of New York Academy Of Sciences.....April 2012

"Childhood adversity can have powerful effects on health over the life course."

"Persistent changes in cell-mediated immune function may be one pathway linking adverse childhood experiences with later disease risk."

"The present study investigated the association of two types of childhood adversity, socioeconomic disadvantage during adolescence and abuse prior to age 18..."

"...Epstein-Barr Virus antibody titers in a large nationally representative sample of young adults aged 24-32 years. Data were drawn from....[number of subjects =13,162]."

"We examined the associations of three indicators of adolescent socioeconomic disadvantage (parental education, household income, and occupational status) and frequency and timing of physical and sexual abuse with Epstein-Barr Virus antibodies,"

"Lower parental occupational status and some categories of lower education were associated with elevated Epstein-Barr Virus antibodies, and individuals who reported sexual abuse that occurred more than 10 times had elevated Epstein-Barr Virus antibodies relative to individuals who were not sexually abused."

"Among individuals exposed to physical abuse, those who were first abused at age 3-5 years had heightened Epstein-Barr Virus antibodies relative to those first abused during adolescence"

"This study extends prior research linking early adversity and immune function, and provides initial evidence that childhood adversity has a persistent influence on immune responses to latent infection in adulthood."

N.Slopena, et al

Childhood adversity and cell-mediated immunity in young adulthood: Does type and timing matter?

Brain, Behavior, and Immunity.....Volume 28.....February 2013.....pages 63 - 71

"There is considerable evidence that stressful early life events influence a variety of physical health problems later in life."

"Childhood adversity has been linked to elevated rates of morbidity and mortality from a number of chronic diseases."

"Immune dysregulation may be one potential pathway that explains this link. In this mini-review, we summarize human studies demonstrating that severe early life stressors have lasting immune consequences."

C.P. Fagundes, R.Glaserb, J.K. Kiecolt-Glaser

Stressful early life experiences and immune dysregulation across the lifespan

Brain, Behavior, and Immunity.....Volume 27, January 2013.....pages 8 - 12

"Whilst recovering in hospital, stroke survivors spend the majority of their waking hours inactive and alone."

"Environmental enrichment....is an intervention which by design facilitates motor, sensory, social and cognitive activity. It has been shown to improve post stroke motor and cognitive function...."

"The overall aim of this pilot study was to test the feasibility of using environmental enrichment with stroke patients in a rehabilitation setting. The aim was to enrich the environment of stroke survivors in a rehabilitation ward and measure changes in their activity (physical, cognitive and social activity)."

"Individuals admitted to the general rehabilitation ward for rehabilitation following recent stroke between April and August 2009 and 2010 were screened for eligibility. All consenting stroke survivors who....were able to follow at least one step commands and were able to stand with the assistance of two people or better, were included in the study."

H.Janssen . et al

Translating the use of an enriched environment poststroke from bench to bedside: Study design and protocol used to test the feasibility of environmental enrichment on stroke patients in rehabilitation.

International Journal Of Stroke.....2012.

[Fred H. Gage, professor, Laboratory of Genetics, Salk Institute]

"...adult central nervous system...plasticity and adaptability to environmental stimulation that remains throughout the life of all mammals."

"Gage's lab showed that, contrary to accepted dogma, human beings are capable of growing new nerve cells throughout life. Small populations of immature nerve cells are found in the adult mammalian brain, a process called Neurogenesis."

"They showed that environmental enrichment and physical exercise can enhance the growth of new brain cells...that may be harnessed to repair the aged and damaged brain and spinal cord."

depression and intestine bacteria.....

"...we analyzed fecal samples from 46 patients with depression and 30 healthy controls."

".....changes in the fecal microbiota composition in such patients, showing either a predominance of some potentially harmful bacterial groups or a reduction in beneficial bacterial genera."

"Further studies are warranted to elucidate the temporal and causal relationships between gut microbiota and depression and to evaluate the suitability of the microbiome as a biomarker."

H.Jiang, et al
Altered fecal microbiota composition in patients with major depressive disorder
Brain, Behavior, and Immunity.....Volume 48.....August 2015.....page 186

".....role of the human microbiota in cognitive and affective functioning...."

".....a multispecies probiotic containing Bifidobacterium bifidum W23, Bifidobacterium lactis W52, Lactobacillus acidophilus W37, Lactobacillus brevis W63, Lactobacillus casei W56, Lactobacillus salivarius W24, and Lactococcus lactis (W19 and W58).....may reduce cognitive reactivity....."

".....triple-blind, placebo-controlled, randomized, pre- and post-intervention assessment design, 20 healthy participants...."

"Compared to participants who received the placebo intervention, participants who received the 4-week multispecies probiotics intervention showed a significantly reduced overall cognitive reactivity to sad mood, which was largely accounted for by reduced rumination and aggressive thoughts."

"These results provide the first evidence that the intake of probiotics may help reduce negative thoughts associated with sad mood. Probiotics supplementation warrants further research as a potential preventive strategy for depression."

L.Steenbergen, et al
A randomized controlled trial to test the effect of multispecies probiotics on cognitive reactivity to sad mood
Brain, Behavior, and Immunity.....Volume 48.....August 2015.....page 258

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

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**