Doctor of the Future
The Seven Pillars of Health

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Three Types of Medicine - Allopathy

Entry - Illness

Allopathic Treatment – Symptom based
Diagnosis – Treatment of symptoms
Drugs, Therapy, Surgery – Symptoms arrested/masked
Suffering eased – comfort
No change to lifestyle or expression
No change or evolution or genetic modulation

Entry - Wellness

Negative abnormal findings
No treatment
Three Types of Medicine - Functional

Entry - Illness

Functional Medicine – Cause of symptom

Assessment of deviation from optimal function

Treatment Initiated – Etiology based

System changed usually by environmental factors

Lifestyle and environment cause change in epigenetics and person

Entry - Wellness

Three Types of Medicine - Transformational

Entry - Illness

Transformational Medicine – Change based

Assessment of target upregulation

Treatment Initiated – Lifetime patient

Change measured in consciousness - subjective

Change and evolution in epigenetics and person – longing for more

Entry - Wellness
Coaching:
- There used to be player/coaches in the professional sports leagues – not one left today
- Coach has a view that player cannot see
- Coach is not a player
- Coach is never critical
- Coach loves the player and shares his/her dreams
- Players are on the field, coaches are off the field
- All doctors are players – all people working in the practice are players
- Doctor is a coach to the patient
- Who are your coaches?

Breakthrough:
- Growth categorized in 2 ways:
  - The Drift – 1 to 15% growth per year
  - The Breakthrough – Over 15% growth annually
- Breakthroughs only happen for a reason
- Reasons for breakthroughs:
  - Paradigm shift
  - Mentorship
  - Mission development
  - Newly employed technology
  - Systems development
Advancement -

 truyền If you build it they will come

The Doctor of the Future

will give little medicine, but will interest his patients in the care of the human frame, diet, and in the cause and prevention of disease.

-Thomas A. Edison
Prevention

All prevention is correcting disease processes before they manifest fully

Revisiting the paradigm of disease

- All disease processes are intelligent, directed processes
- Disease processes equal healing processes
- All disease process either kills the organism or makes it stronger, either way it brings change
  “that which doesn’t kill us makes us stronger.” - Nietzsche
- When someone is diseased, we’re meeting someone dominantly in a state of change
Change happens!

How can we support the change?

Old paradigm:

- Suppress symptoms
- Suppress change
- Prolong change
- Delay evolution
New paradigm

- Support and encourage the change
- Address any shock resulting from the change
- Complete the disease process
- Accelerate evolution

(Autoimmune diseases will be with us until this new paradigm emerges – Over 2,000 named autoimmune diseases, new classifications of 300 per year)

Functional Medicine

Functional medicine could be characterized, therefore, as upstream medicine or back-to-basics – back to the patient’s life story, back to the processes wherein disease originates, and definitely back to the desire of healthcare practitioners to make people well, not just manage symptoms.

Edward Leyton, MD, 2005
**Upstream Medicine**

- **Cause**
  - Intelligent Intervention – Interruption of cycle

- **Effect – First Level of Response - Adaptation**

- **Effect – Second Level of Response - Depletion**

- **Effect – Third Level of Response - Imbalance**

- **Effect – Symptoms**

- **Effect – Syndromes / Disease**

**Cascade of Events**

- **Clinical Practice**
  - Opportunity to Transform Lives and Ease Suffering

- The healing process is opportunistic in that it waits for chaos as an entry way for wholesome reparative process that begins with a problem.

- The challenge is to assist the patient to shift from a relatedness to the disease process to a sense of fascination with being fully alive, lit up!

- Initially we help people with their suffering through detoxification and restorative principles while also reducing the burden of stress imposed by the aberrant lifestyle - it is possible to flatten the physiological responses that are called disease.

- Degenerative processes can be reversed, tissues can be renewed and enlivened, and general functionality can be increased – all this looks macroscopically like increased energy, better disposition, increased libido, and a more prolific creativity.

- In the healing process we must “seize the day” and help people learn about the increase in life that they are experiencing while they are healing their disease.
Clinical Practice
Opportunity to Transform Lives and Ease Suffering

- Especially with chronic severe imbalances, like cancer or autoimmune dysregulation, oftentimes the only way to move through the healing process is with the encouragement of the more subjective aspects of the patients presentation like ‘feeling better’
- As practitioners if we are not connecting the dots between physiology and state of mind or attitude we are not helping people awaken to the shift from disease orientation to a focus on vitality
- Indeed as a practitioner often times my confidence in long-term chronic degenerative cases wherein the progress is slow to observe arises from the apparent improvement in quality of life and clarity of mind that is more immediate
- In a similar way even when apparent improvement is observed in a degenerative condition with no outward elevation of attitude I may feel concerned as to whether profound transformative healing is really underway
- Indeed there is a difference between healing and therapy, in that with the latter after discontinuity of therapeutic devices everything just goes back to the way it was – not the goal

The greatest use of your time
Think New Thoughts
Doctor of the Future

Contents
Introduction
Rational Intervention - Autoimmune
Normal Miracles
Seven Pillars of Health
Endocrine
Glycemic
Bioterror
Inflammatory Burden
Immune Burden
Circulatory Status
Digestive Potency
System Strength Analysis
Conclusion & Synthesis

The healer’s journey

Therapeutic rationale – why/what are we doing?

Racial Possibility
Genetic potential

Results achieved are demonstrated to practitioner and patient

Confidence builds in the law and the ability to normalize

Take on greater challenges – expand the scope of practice, raise the bar, set the standard
Therapeutic Rationale -

Understanding, and action proceeding from understanding and guided by it, is the one weapon against the world’s bombardment, the one medicine, the one instrument by which liberty, health, and joy may be shaped or shaped toward, in the individual and in the race.

James Agee

Therapeutic Rationale

☞ If we speak our rationale out loud and listen to ourselves we will always be rational
☞ If the medical profession were to describe the rationale behind its endeavors it would hold off
☞ We must be interested in the meaning of processes and the purpose of people’s lives to find the rationale
☞ Peoples lives are too precious to waste on symptoms that are not speaking of deeper issues and only need suppressing
☞ The rationale dissolves the mystery, which is the only terror on our lives
Rationale as a map: Never lost

- The rationale is a combination of the patient’s story and the doctors understanding
- Often times for myself there was fear while I stood without understanding in the midst of a process – then understanding would emerge – then confirmation of that understanding would show itself – then confidence would build
- Symptoms make sense, processes can be trusted
- At the root of all fear is the idea that God is not in control
- Our patients must come to expect the therapeutic rationale in all their interactions – then they are protected from standard of care and malpractice

Hypothesis -

We are cognizant of the inevitable danger of errors of interpretation that must, by the nature of our method, be inherent in this exposition. We realize that there is scarcely a paragraph in this volume that cannot be interpreted in many different ways other than that in which we have.

Royal Lee, Preface to Protomorphology
Seminar goals:
¬ Expand and deepen the knowledge and technical skills related to the modality of nutrition
¬ Review of seven pillars of health, System Strength Analysis, and rationale for intervention
¬ Evolution of concept of care and scope of practice
¬ Presentation of ideas and systems that develop and sustain million dollar cash nutritional practices
¬ Establish the faith, confidence and belief that create results (promote growth – applied trophology)
¬ Share the day in practice together – employing critical thinking and deductive reasoning to craft nutritional strategies based on rational intervention
¬ Develop synthesis of material for immediate application

Instructor goals:
¬ I am not here to make you like me or to make you happy
¬ I am here to teach from the experience of my practice of 30 years
¬ I am here to assist you in learning what you need in the way you best learn
¬ I intend to teach horizontally – one idea all the way through – a larger concept to increase application
¬ I hope at least to confirm and validate what you already know, and maybe show you something new
¬ I intend to infect you with the need to practice rational intervention, so that you can never again do anything for no good reason
Experience as teacher:

- 33,000 individual patients over 30 years (just shy of 6 billion patients left to see to get finished)
- 275,000 individual patient nutritional consultations
- Many unsure moments, making it up as I went
- Many successes that finally coalesced into confidence and understanding of the laws I was applying in my practice with people
- Law works every time, when it doesn’t there is always a reason why the law is broken

Ingredients of my success

Preventions

Products Products Products Products

Process Process Process Process

Protocols Protocols Protocols Protocols

Preventions
Protocol – Shingles

- Increase serum calcium to reduce herpetic viral activity:
  - Calamo (6) – up to 16 daily for acute intervention
  - Calcium Lactate (6) or Powder (2 tsp)
  - Cataplex F tablets (6) – 16 daily for acute
- Increase immune response:
  - Immuplex (6) – 16 daily for acute
  - Sesame Seed Oil Perles (6) – 16 daily for acute
  - Thymex (10) for background immune bolstering
  - Cyruta Plus (6) – 12 daily for acute
  - Andrographis (6)
- Promote amino acid availability and increase lysine:
  - Protefood (6)
  - Whey Pro Complete (2 Tbsp) includes colostrum & IgG
- Reduce anxiety and adrenal stress:
  - Minchex (6)
  - Drenamin (6)
- Neutralize acidosis:
  - SP Greenfood (6)
  - Organically Bound Minerals (6)

Protocol – MRSA

- Increase minerals to reduce acidosis:
  - Calcium Lactate (6) or Powder (2 tsp)
  - Magnesium Lactate (4)
  - Organic Minerals (6)
- Increase immune response with Sequential Immune Up-regulation:
  - Immuplex (6)
  - Sesame Seed Oil Perles (6)
  - Thymex (10)
  - Cyruta Plus (6)
  - Andrographis (6)
  - Congaplex (12)
  - Allerplex (12)
  - Gut Flora Complex (4)
  - Whey Pro Complete with Colostrum (IgG)
  - Chaparral
- Reduce inflammatory and Immune burden:
  - Remove food allergies
  - Reduce cortisol with low glycemic diet
Protocol – Surgery (begin 2 weeks prior and continue for 3 months)

- Promote collagen and elastin activity:
  - Gota Kola Complex (4)
  - Collagen C (4)
- Promote general immune competence:
  - Echinacea Premium (4)
  - PMG of target tissue
- Promote HPA Axis recovery from trauma and reduce the ‘daze’:
  - Symplex F/M (6)
  - Hypothalmex/us (2)
  - Black Currant Seed Oil (2)
- Promote general nutrition:
  - Catalyn (6)
  - Cataplex B (6)
  - Organic Minerals (6)
  - L-Glutamine (1500 mg)
  - Whey Pro Complete (including colostrum)
  - Chlorophyll Perles (4)
- Reduce inflammatory vectors:
  - Tuna Omega (4)

New Product Alert – Read All About It!

- Gotu Kola Complex released three months ago is slow to catch on due to lack of awareness on the part of doctors of the requirements for physiological wound and tissue repair. As yet physicians are ignorant of the ways to promote recovery after surgical intervention, and so they let patients go through minor and major surgery with no nutritional and herbal support.

- There is so much surgery that it is time to perfect the process with protocols for pre and post surgical events.

- Gotu Kola Complex:
  - Gotu Kola 250 mg (containing 50 mg of Triterpines) supplies triterpines that support the production of collagen in new tissue repair
  - Grape Seed Extract 30 mg (containing 25.5 mg of Procyanidins) supplies antioxidants that support new tissue repair especially the elastin and existing collagen within vein walls
  - Gingko Biloba thins the blood and promotes increased capillary supply and formation leading to more rapid and complete healing with more blood supply
Hepatitis C – Liver Health

A Rational Intervention & Discussion of Method

Cornerstone issue of Functional Practice

Hepatitis C – Liver Health

✝ This is a docile virus that required 20 years to be identified
✝ It attacks the weak undefended hepatocyte, unlike HIV that attacks the heavily armored T cell
✝ Enters the cell with a free radical burst at the membrane damaging the membrane and allowing entry to the cell – protect with Co Q 10
✝ Protect from inflammation with milk thistle and turmeric
✝ Feed liver repair with glandular & nutrients
✝ Do all 7 pillars to maximize physiology
Hepatitis C – Liver Health

 nicknamed Standard protocol:

Nickname A F Betafood (12) & Choline (6) for 2 months
Nickname Livaplex (6)
Nickname Silymarin (2)
Nickname Vitanox (2)
Nickname Coenzyme Q 10 (200 mg/day solubolized)
Nickname Livco with Schizandra Berry (4)

Protocol – HCV

Nickname Promote hepatic repair and trophic activity:
Hepatrophin PMG (6)
A F Betafood (10)
Livaplex (6) - Combination of AF Betafood & Hepa PMG

Nickname Promote hepatocyte resistance to viral entry with membrane strengthening:
Co enzyme Q 10 200 mg (solubolized to increase absorption)
Livco (4) providing Schizandra Berry

Nickname Reduce liver inflammation and secondary fibrotic activity:
Silymarin (4)

Nickname Promote Phase I/II detoxification:
SP Greenfood (6)
Cruciferous Complete (4)
Protocol – Parasites

- Inhibit nematode activity:
  - Zymex II (4)  First month only
  - Multizyme (4)  Begin second month with Zymex II

- Inhibit blood flukes and mycoplasmic functional intracellular parasitic activity:
  - Wormwood (4)  Begin after Zymex II & Multizyme

- Reduce intestinal acidosis and parasitic fertility:
  - Calamo (4)

- Reduce heavy metal burden:
  - Chelaco (1-2 at bedtime)
  - Parotid (2-4)
  - Spanish Black Radish (6)

- Reduce candidiasis (cousin of parasite activity):
  - Gut Flora Complex (4)
  - Zymex (6)
  - S. Boulardi (Sacromyces strain that eats yeast)

- Promote intestinal barrier integrity and reduce gut availability for parasite infestation:
  - Cataplex AC (12)
  - Prebiotic Inulin (1 Tbsp)
  - L-Glutamine (1.5 g recycling)
  - Colostrum as a source of gamma globulin (42%)
  - Food allergy elimination as reduction of intestinal inflammation

- Primary signs of parasites are acne, especially on face, chest, back, buttocks and shortness of breath
- Only first two steps are usually required to clear parasites
- The following steps may be employed in resistive chronic re-infestation, in the order they are listed

Insight

To know is to do
To do is to know
Doctor - Patient Sequence

- **Patient** complaint/ambition
  - **Symptom resolution**
  - **Chronic issues**
  - **Enlivened evolution**

- **Practitioner** vision/goals
  - **Foundational repair – 7 pillars**
  - **DNA repair/ expression**

Success formula

- **Elaborate case history / interview**
- **Nutritional Assessment**
  - **Physiological competence – Calcium Cuff test, Ragland’s, pH, Kinesiology, etc. (The 7 Pillars)**
- **High emotional resonance – Relate and anticipate**
- **Write it down**
  - 6-9 months of monthly visits and nutrient supplementation modulation – achieve unexpected results at least 3 times

- **Therapeutic rationale**
- **Declare, Document, Review, Celebrate**
Experience as confidence:

- Experience makes you confident and an expert
- Most doctors limit their confidence by limiting their experience
- We must try more, work on ourselves more, and finally become more familiar with the transformative process, so that we become versed in healing and the devices of healing
- The expert knows the terrain and is never surprised

KIS – Keep It Simple

- There are many complex approaches
- Practice has taught me simple profound modulation that works universally
- Beware of being drawn into hard to understand, expensive to determine processes
- Introduce the change, grade the impact, leave no stone unturned – no pillar of health untended
- The 7 Pillars of Health are simple universal mammalian principals that will work year after year until they change mammalian physiology
No real changes to genome

- The genome is no more than 1.5% different from 5 million years ago therefore physiology is still adapted to the wild paleolithic foods/diet
- What were they?

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<th>Nutrient</th>
<th>Paleolithic</th>
<th>USRDA</th>
<th>Modern intake</th>
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<tr>
<td>B2</td>
<td>6.49 mg</td>
<td>1.3-1.7 mg</td>
<td>1.34-2.08 mg</td>
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<tr>
<td>Folate</td>
<td>557 mcg</td>
<td>180-200 mcg</td>
<td>140-205 mcg</td>
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<tr>
<td>B1</td>
<td>3.91 mg</td>
<td>1.1-1.5 mg</td>
<td>1.08-1.75 mg</td>
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<td>C</td>
<td>604 mg</td>
<td>60 mg</td>
<td>77-109 mg</td>
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<tr>
<td>E</td>
<td>32.8 mg</td>
<td>8-10 mg</td>
<td>7-10 mg</td>
</tr>
<tr>
<td>A (Retinol)</td>
<td>2870 meq</td>
<td>800-1000 meq</td>
<td>429-1170 meq</td>
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<tr>
<td>Beta Carotene</td>
<td>5.56 mg</td>
<td>0 mg</td>
<td>2.05-2.57 mg</td>
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No real changes to genome

- And the mineral analysis
- What were they?

<table>
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<tr>
<th>Mineral</th>
<th>Paleolithic</th>
<th>USRDA</th>
<th>Modern intake</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium</td>
<td>10,500 mg</td>
<td>3,500 mg</td>
<td>2,500 mg</td>
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<tr>
<td>Sodium</td>
<td>768 mg</td>
<td>500-2,400 mg</td>
<td>4,000 mg</td>
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<tr>
<td>Calcium</td>
<td>1,956 mg</td>
<td>800-1,200 mg</td>
<td>750 mg</td>
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<tr>
<td>Zinc</td>
<td>43.4 mg</td>
<td>12-15 mg</td>
<td>10-50 mg</td>
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<tr>
<td>K/Na Ratio</td>
<td>4.2:1</td>
<td></td>
<td>0.625:1</td>
</tr>
</tbody>
</table>
Eternal truth -

Wisdom arises through the simple act of giving someone or something your full attention. Attention is primordial intelligence, consciousness itself. It joins the perceiver and the perceived in a unifying field of awareness. It is the healer of separation.

Eckhart Tolle

7 Pillars of Healing
7 Unified Mechanisms of Health

- Endocrine/Hormonal
- Glycemic Management
- pH Bioterrain
- Inflammatory status
- Immune burdens
- Circulatory Status
- Digestive Potency
7 Pillars of Healing

The possibility of human greatness (all manner of healing)

Genetic physiological genius

Endocrine/Hormonal – Disruption & Depression
Glycemic Management – Insulin/Cortisol Dysregulation
pH Bioterrain – Net Acid Excess
Inflammatory Status – Cumulative Repair Deficit
Immune Burden - Toxicity, Infection & Infestation
Circulatory Status – Arterial, Venous & Lymphatic Competence
Digestive Potency – Fuel absorption, waste removal, Immune modulation
Foundation

Give me a place to stand on and
I can move the world

Archimedes
Getting started -

Start by doing the necessary, then the possible, and suddenly you are doing the impossible.

Saint Francis of Assisi

1 - The Endocrine Axis

- Most powerful system to activate the rest of body
- 7 glandular levels
- PMG’s first, lifestyle modification second, herbs third, HRT last
DOF: The Seven Pillars of Health

#1 Core Physiologic Principle

- Stressors
- Hormonal/endocrine adaptation
- Glandular fatigue & imbalance

- Depletion of organ reserve and nutrient/mineral substrates
- Reduced homeostatic mechanisms
- Stress hyper/hypo reactivity
- Altered psychoneuroimmunologic mechanisms

- Symptoms – physical/personality modulation
- Disease diagnosis – chronic progression
- Medical Intervention – Drugs & Surgery

- Increased glandular strength/resilience
- Restored adaptive mechanisms
- Increased organ reserve – repletion of substrates

- Nutrient repletion – target fortification
- Enhanced physiology/personality
- Death
HORMONES OF THE HYPOTHALAMIC-PITUITARY AXIS

All Hypothalamus releasing hormones are pulselike in their secretions. For example, GnRH releases in spurts about every 80 minutes. A continuous release of GnRH would suppress gonadal function.

GnRH
Growth hormone-releasing hormone
TRH
Thyrotropin releasing hormone (also stimulates prolactin release)

Cerebral Cortex
Hypothalamus
Limbic System

Growth Hormone appears to have little direct effect in the body. Somatotropins are the active forms of GH.

Liver converts GH to somatomedins AKA insulin-like growth factors (IGF)

Cortical aldosterone
Cortisol

epinephrine, norepinephrine, dopamine

The expanded HPTA Axis-

Neurotransmitters

GHRH
(Glutamatergic)

TRH
(GABAergic)

CRH
(Dopaminergic or GABAergic)

POMC
(Leu-enkephalinergic)

PRL

FSH

LH

GH

Growth of bone, body mass, carbohydrate and protein metabolism

Liver

Thyroid

Adrenal cortex

Skin darkening

Gonads

Development of follicles

Development of ovary

Development of ovary

Emotional effects

Sleep

Anorexia

Lactation

Estradiol

Progesterone

Response to stress

Anti-inflammatory effects

Hypothalamic effects

Figure 32.3 The female neuroendocrine system
Endocrine Axis Support

- **Symplex F/M:**
  - Pituitrophin PMG
  - Thytrophin PMG
  - Drenatrophin PMG
  - Orchic PMG

- **Hypthalmex:**
  - Hypothalamus cytosol extract

- **Hypothalmus:**
  - Hypothalamus PMG

- **Black Currant Seed Oil:**
  - Omega 6 fatty acids (19 times more Gamma Linoleic Acid)

- **Folic Acid/B12:**
  - Folic Acid support and detox support, DNA/RNA transcription
Endocrine Axis Support

- Start with general HPTA support for 2-3 months and then target individual glands for further strengthening
- Symplex F/M typically reduce to maintenance minor sustaining dosage (1-2/day)

Individual gland strengthening:

- Pineal - Folic Acid (6)
- Pituitary Anterior – Pituitrophin PMG(6), E-Manganese(6)
- Posterior – Pituitrophin(6), Trace Minerals/B12(6)
- Thyroid Hypo - Thyrophin PMG(6), Thyroid Complex(4), Prolamine Iodine (1/2/3/4) or other source of iodine, Cataplex E(6) or other source of selenium
- Hyper - Bugelweed (1-2 tsp), Motherwort (1-2 tsp with heart arrythmias)
- Thymus - Thymus PMG(6), Immuplex(6)
- Pancreas - Pancreatrophin (6), Paraplex(6), Cataplex GTF(6)
- Adrenals - Drenamin(6), Drenatrophin PMG, Whole Dessicated Adrenal (4), Eleuthero (4), Withania (4)
- Gonads - Wheat germ Oil Fort. (4), Wild Yam Complex (4), Tribulus (4), Fortil B12 (4)
- Male - Orchic PMG, Super EFF (4), Prost-x (6)
- Female - Ovex (6), Ovatrophin (6), Dong Quai (4), Utrophin (6)

Primary Physiology - Endocrine

- Amino Acid based:
  - Endocrine – Insulin, Glucagon, Somatohormone, Insulin-like growth factor (IGF), Thyroxin
  - Paracrine (pineal) & neurotransmitters – Melatonin, Acetylcholine, Dopamine, Sertonin

- Cholesterol based:
  - Steroid endocrine – Cortisol, DHEA, Estrogen, Progesterone, Testosterone,

- Fat based:
  - Autocrine – Eicosanoids, Prostaglandins

Hormones and neurotransmitters are the first control system for homeostasis response – lifestyle and dietary stress can cause system-wide breakdown in the hormonal balance
Psychoneurohormonalimmunology -

Immune, nerve and endocrine cells all talking with each other through cytokines, hormones, neurotransmitters creating the biochemical background for spiritual, emotional, mental and physical states of being.

This is the body/mind connection!
Hypothalamus - Basis of Mind/Body Connection

- The hard wiring of the Hypothalamus to other brain structures via neuronal projection pathways provides avenues for communicating conscious thought, emotions and memories to the hypothalamic integrator and governor.
- Median Eminence (ME, Organum Vasculosum of the Lamina Terminalis (OVLT), Posterior Pituitary (Neurohypophysis) - Three components of the hypothalamus lie outside of the blood brain barrier and thus can sample blood-borne solutes such as glucose, electrolytes (especially sodium), fatty acids, amino acids, hormones, neurotransmitters, peptides, cytokines, etc.
- Factual information from hippocampus which records new information as long term memory couples with emotional responses from the amygdala and is then projected into the hypothalamus via the fornix, stria terminalis and amygdalo-fugal pathways.

Hypothalamus - Basis of Mind/Body Connection

- Upon summation of integrated information in hypothalamus and its various intercommunicating nuclei uses releasing factor neurons to release hormonal responses to elicit hormonal, autonomic, metabolic and behavioral changes that are appropriate to the physical/emotional events at hand.
- Mostly we are unaware of the visceral autonomic alterations, but the Mamillo-Thalamic Tract exits from the hypothalamus and relays information to the thalamus and cortex thus we become aware of physiological responses to stress.
- Arousal may manifest changes in respiration rate, muscular tone due to release of sympathetic catecholamines, mentation and alertness, body temperature, perspiration, cold hands, dry mouth, he hard wiring of the
- These neuronal and hormonal pathways are the connectivity between perception and response, between inside and outside.
- This is the stage for the mind-body /self-nonself approaches.
- A person may choose to act upon or modulate these responses.
The Stress Model

The HPTA is at the heart of the body’s ability to respond to the environment.

Cortisol elevation is the result of Corticotrophin Releasing Hormone (CRH) arising from the parvocellular neurons of the paraventricular nucleus (PVN) - this is the ‘master’ stress hormone released in response to the perception of stress.

Stressful stimuli are generalized as:
- Physical – pain, trauma, infection, hypotension, exercise, hypoglycemia
- Psychological – bereavement, fear, personal loss, anger (the perception that God is not in control – something is wrong)

CRH is released into the portal circulation of the Median Eminence and is carried by venous blood to the corticotroph cells of the anterior pituitary where it binds to the cell surface receptors stimulating the release of Adrenocorticotropic Hormone (ACTH).

ACTH reaches the adrenal cortex stimulating the synthesis of Cortisol (glucocorticoid) and also androgenic hormones like androstenedione and DHEA (both may convert to testosterone and DHT in peripheral tissues).
The Stress Model

- Cortisol maintains blood glucose during stressful ‘fight or flight’ challenges so that as more metabolic fuel is consumed a critical amount is maintained for brain function and to support the activated survival organs such as the heart, lungs, and skeletal muscle with renewable supply of fuel.

- Cortisol also participates with Aldosterone (mineralocorticoid) in driving sodium reabsorption from the renal tubules conserving electrolytes and water within the vasculature to provide blood and perfusion pressures to vital organs.

- Cortisol concentrations rise until it effects negative feedback on the CRH neurons and the pituitary corticotrophs to return blood levels to normal preventing prolonged elevations of CRH, ACTH and cortisol.

- Chronic stress and maladapted responses to stress alters this mechanism and causes long term cortisol dysregulation and even ‘cortisol resistance’.

Cortisol Activation

- Hypothalamus
  - Parvocellular neurons of the Paraventricular Nuclei release CRH in response to perceived stress
- Paraventricular Nuclei
  - Corticotrophin Releasing Hormone
- Median Eminence Neurorhophysis
- Anterior Pituitary
  - "Corticotrophs"
  - ACTH Adrenocorticotropic Hormone
  - Cortisol "Glucocorticoid"
- Adrenal Cortex
  - Promotes Aldosterone release "mineralocorticoid"
  - Adrenal Complex
    - Tyrosine
    - Reduces cortisol resistance
    - Androgenic hormones: Androstenedione, testosterone, DHT, progesterone

Blood/Brain Barrier
- Cortisol elevation provides negative feedback to paraventricular nuclei decreasing CRH.
Modulating Cortisol

- Symplex, Hypothalmex/us – HPA general support
- Androgen up-regulation
- Adrenal Complex – 2-4/day licorice & rehmannia
- Allergen removal
- Drenamin – 6/day
- Dessicated Adrenal – 2-4/day for acute activation
- Eleuthero – 2-4/day
- Withania Complex – 2/day
- Vitanox 2-4/day
- Detoxification
- Change of thinking
- Neuro-emotional release

Adrenal Complex (1-2) has exploded on the scene and represents another MediHerb homerun

Introduced in 02/09 it has backordered multiple times as Americans have grasped its value as an idea whose time has come

Licorice (250 mg of 7:1 extract) contains 25 mg of glycyrrhizin the active component that assists cortisone (a less active storage form of cortisol) to convert to cortisol (more active form)

Rehmannia (150 mg of 5:1 extract) provides immune modulation

Expect modulation in WHR, concentration, sleep quality, reduced muscle tension, relaxability, reduced anxiety

Contraindicated when hypertension results
Beginning to understand -

Imagination is everything.
It is the preview of life’s coming attractions.

Albert Einstein

---

Endocrine physiology - Female

- 3 types of natural estrogen: Estrone (strongest), Estradiol, Estriol (weakest)
- Estriol (cannot be patented) is high in women without cancer and pregnancy – it breaks down quickly and hence does not buildup
- Perimenopause (age 35-50) declines ratio of estrogen to testosterone and melatonin until after menopause hormonal makeup is like a man
- Hormone replacement is not necessary, even with surgical menopause the adrenals can take over – liver must be able to break down conjugated(spent) estrogen
- Estrogen dominance is obvious in symptoms and ‘peach fuzz’ or cherry hemangiomas (red spots) – can be reduced with calcium d-glucarate, Cruciferous Complete (DIM) and/or garlic
- Sequential fortification with Symplex F, BCSO, WGO, E, ovatrophin, ovex, drenamin, thytrophin, utrophin, EPO, WYC, Tribulus prevent the decline
Endocrine physiology - Male

- Testosterone is a prohormone creating dihydrotestosterone and estrogen
- Most attributes associated with testosterone are cortisol effects (violence, dominance)
- Midlife crisis is due to a hormonal shift in the type of testosterone – multiple effects like a second puberty
- Libido starts in brain with neurotransmitters igniting neurotestosterone receptors starting a hormonal cascade activating testosterone sites in nerves, blood vessels, muscles
- Symplex M, BCSO, WGO, drenamin, orchic, WYC, Tribulus
- Estimates are that 13% of America is sterile and 20% of men in their 40’s are deficient in testosterone

Andropause -

- Defined as loss of androgen dominance in men
- Caused by functional imbalances in the male hormone pathway wherein free testosterone declines 1-2% yearly while Sex Hormone Binding Globulin gradually elevates compensating for testosterone decline
- Testosterone is made from cholesterol and plays an important role in supporting the thyroid and healthy triglycerides and cholesterol – stain drugs are shown to reduce testosterone
- Symptoms may include: mood swings, depression, pessimism, asthenia, myasthenia, withdrawl, loss of mentation, insulin resistance, hypertension, mid-body fat gain, dysglycemia, loss of libido, erectile dysfunction, osteoporosis, prostate/urinary problems, thin dry skin
Andropause -
- Androgens are anabolic steroids for reproduction and rebuilding
- Androgen receptors can be occupied by androstenidione, testosterone, and dihydrotestosterone (DHT), thus stress and high glycemic diets may elevate androstenidione and induce a functional andropause
- Androgen receptors are made from zinc, insulin is zinc dependant, and androgens are made from zinc – give zinc to men (Zinc Liver Chelate 4/day)
- Aromatase enzyme degrade testosterone to estrogen, revealed by gynecomastia and cherry hemangiomas (red spots)
- Aromatase is increased by insulin resistance because aromatase is found in fat cells – more fat the more aromatase

<table>
<thead>
<tr>
<th>Andro / Menopause</th>
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<td>Testosterone reduced</td>
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<td>Body fat increase</td>
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<td>Biological status decrease</td>
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<tr>
<td>Osteoporosis increase</td>
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<td>Cardiovascular dx increase</td>
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<td>Prostate cancer increase</td>
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</table>

Cruciferous vegetables contain indole-3-carbinol (I3-C) which forms diindolylmethane (DIM) reducing levels of 16-alpha-hydroxy-estrone which promotes cancer and up regulates tumor suppressing genes (Cruciferous Complete, SP Greenfood)

Glandular support dramatically reduces of deficiency and leave the intended healthy life cycle
Endocrine Management – How to steward the pause

- Step One: Endocrine Pillar
- Step Two: Sleep hygiene
- Step Three: Stimulant Elimination, Food Allergy removal
- Step Four: Prevent estrogen dominance, Cruciferous Complete (4), Greenfood (4), SP Purification
- Step Five: Reduce insulin resistance, Phase I/II diet, Gymnemma (6)
- Step Six: Promote androgen dominance (supplementation if WYC, Dong Quai, White Peony, Utrophin, etc), reduce stress, balance cortisol and its intermediates, give Zinc Liver (6) to men, Tribiulus (2), Bezwecken products for women

Effects of Estrogens

- Tissue Proliferative Effects
  - Breast tissue proliferation
  - Vaginal tissue proliferation
  - Skin, nail, and hair proliferation
  - Parietal cells (HCL)
- Other Effects
  - Antagonist effects on proinflammatory transcriptional factors
  - Modulation of nitric oxide
  - Direct antioxidative effects
  - Immune system modulation
Conditions that Increase in Risk with Perimenopause and Menopause

- Cardiovascular Disease and Stroke
- Osteoporosis
- Dementia and Alzheimer’s
- Arthritis
- Autoimmune Disease

If there is a decline in estradiol levels in a female patient in perimenopause the inflammatory cytokine system is upregulated and may stay upregulated even after estrogen levels are restored.
Estrogen Dominance - Widespread

- Defined as deficient, normal, or excessive levels of estrogen with too little progesterone to balance the estrogen – common in both cycling and menopausal women, and andropausal men
- Caused by cortisol(pregnenelone) steal, HRT & BC pill, adrenal fatigue, hypothyroidism, high glycemic diet, trans-fatty acids, xenoestrogens, obesity (estrogen is made in the fat cells)
- Symptoms may include: anxiety, anger, agitation, mood swings, depression, dysmenorrhea, water retention, fibrocystic breasts & tenderness, migraines, food cravings, fibromyalgic discomfort, acne, loss of mentation, mid-body fat gain, cold extremities (estrogen blocks thyroid), dysglycemia, loss of libido, infertility, insomnia, osteoporosis, PCOS, uterine fibroids, autoimmunity, breast or uterine cancer

Estrogen – Ultimate Phase I/II Detoxification

- For hormones to dance with other hormones it must have a flexible response pattern = be able to increase/decrease rapidly
- Estrogen building up imbalances menstruation, pregnancy, lactation (following menopause dance continues to prolong life, supporting structural, cardiac, and neurological functions)
- Cytochrome P450 enzyme system is used to eliminate drugs, toxins, unwanted substances, biological agents, and estrogens – body views estrogen as a toxin because it allows such a small number of estrogen molecules to be active, unlike testosterone, DHEA, progesterone
- Phase I (P450) – oxidation, reduction, hydrolysis, hydration, dehalogenation = increased polarity, less lipid-soluble, reactive oxygen intermediates with potential for secondary tissue damage “sticky reactive molecules” (antioxidant needs)
- Phase II – sulfation, methylation, glucuronidation = polar water-soluble bile and urine (sulfation, homocysteine support, and gut symbiotic bacteria + soluble fiber are essential fuels)
- Phase III (Antiporter) – a recirculation process not yet accepted scientifically, active efflux pump decreasing intracellular concentration of xenobiotics allowing for a “second-pass” with the detox enzymes located at or near the cell membrane (more concentrated presence in cancer cells, liver, kidney, pancreas, intestines, brain, testes)
Phase I & II detoxification occur principally in the liver, while Phase I, II, & III occur in every cell – the liver determines the foundational capacity to cleanse.

Detox – Phase I & II

Brain chemistry – Neurotransmitters (Neurohormonal)

- **Serotonin** – Tryptophan dependent feeds Melatonin formation
  - Well-stocked: Positive, confident, flexible, easy-going
  - Poorly stocked: Negative, obsessive, irritable, low confidence, sleepless
- **Catecholamines** – Tyrosine dependent forms Dopamine, Norepinephrine, Adrenaline
  - Well stocked: Energized, upbeat, alert, focused
  - Poorly stocked: Lethargic, flat, ‘blahs’
- **GABA** – GABA dependent
  - Well stocked: Relaxed, Stress-free
  - Poorly stocked: Uptight, overwhelmed, stressed
- **Endorphins** – Phenylalanine dependent
  - Well stocked: Comfort, pleasure, euphoria
  - Poorly stocked: Overly sensitive, crying easily
- General protein increase will downstream more amino acid fuel for neurotransmitter formation and greater reserve stores for supply through stressful demands (Minchex 2-6, Protefood 2-6)

Effecting Biochemistry From Within

- The internal pharmacy is activated by the thought and emotional intelligence that delivers the same reward and pleasure signals to the brain
- This is why truth and spirituality are so attractive and naturally resonant with people
- Truth and virtue satisfies our brain chemistry and leaves us satisfied
- Blame and shame robs our brain chemistry often requiring avoidance and denial behavior to reduce the stress
- Try an experiment of finding the goodness and blessing in the irritating things of your life – notice the neurohormonal sense of wellbeing that ensues
Five Brain Areas – Five Expressions

There are five brain systems that are most intimately involved with behavior:

1. **Deep Limbic System** at the center of the brain is the bonding and mood control center – imbalanced people struggle with moodiness and negativity.

2. **Basal Ganglia** are large structures deep within the brain controlling the body’s idling speed – imbalance here results in anxiety, panic, fearfulness, and conflict avoidance – or if underactive the struggle will involve concentration and fine motor control.

3. **Prefrontal Cortex** at the front tip of the brain is the supervisor helping to keep focus, make plans, control impulses, make good/bad choices – under activity results in limited supervision, attention span, focus, organization and follow through.

4. **Cingulate** runs longitudinally through the middle of the frontal lobes and is the ‘gear shifter’, allowing to shift attention from thought to thought and behavior – when overactive people get stuck in loops of thoughts or behavior resulting in rigidity, worry and over-focused behavior.

5. **Temporal Lobes** are involved with memory, understanding language, facial recognition and temper control – these problems tend to be temper attacks, rapid mood shifts, memory or learning problems – optimization may result in inner peace.

Brain Function – Expressions

The brain considered in five efforts is best analogized to a group camping out together:

Wandering about the campgrounds reveals that some campsites are immaculate and well groomed, while others are in shambles and disorganized.

Upon closer examination some people have the knack to improvise and create as if they were native to the environment, while others are foreign to their surroundings and show it.

Later in the evening it gets worse – during dinner revisiting various sites friends some eating beef stroganoff with special garnishes that were hiked in in small containers because advance planning had occurred. Other less organized campers are eating cups of yogurt for dinner out of their back packs because they were damaged and leaked out on the hike in.

Some are learning never to do this again, others are further building their cognitive flexibility and planning future challenges.

The more you intensify the circumstances the more limitations are engaged. (winter camping, rain, heavy wind, etc)

Our patients are campers, learning to like or dislike the journey.
Five Brain System – See it, Treat it

Key to Five Brain Systems Checklist

- Deep Limbic System –
- Basal Ganglia System –
- Cingulate Nucleus –
- Prefrontal Cortex –
- Temporal Lobes –
Niacinamide

- For many years Vitamin B3 has been known to change blood supply to the brain and periphery, but specifically a form of B3 called niacinamide (nicotinamide – an alkaline form of niacin) has the ability to alter nerve function.
- Dr. Kim Green at the University of California at Irvine gave a human dose equivalent of 2,000 – 3,000 mg/day of niacinamide to mice with Alzheimer’s Disease (AD) – after 4 months it was discovered that "cognitively they were cured. They performed as if they never had the disease”
- He was also quoted as saying, “The vitamin completely prevented cognitive decline associated with the disease, bringing them back to the level they’d be at if they didn’t have the pathology”
- Additionally the study also showed improvement in memory and behavior in mice without AD – so this means it is not correcting a disease process as much as effecting a unified mechanism of physiology influencing brain physiology.

Alzheimer’s Disease

- Alzheimer’s Disease (AD) was named after the German scientist who discovered it in the late 1800’s – he was a contemporary of Freud, who agreed with him that AD is an organic disease, not psychological.
- In AD waxy clumps of protein fragments called beta-amyloid plaques form around and inside nerve cells, breaking vital connection and leading to nerve destruction.
- Although some individuals live for 20 years with AD, the average lifespan is 8 years.
- Over 5 million Americans now have the disease, and the growth rate estimates that this number will be 14 million by 2050.
- Currently 10% of those over 65 manifest this disease, while 50% of those over 85 have it.
- Worldwide estimates will increase from 26.6 million currently afflicted to over 100 million by 2050.
- The current trend reveals one out of every eight baby boomers will have this disease.
- In less developed countries, like Africa, the occurrence is almost non-existent, suggesting this is exposure to pollution and food aberration.
Aniacinamidosis

- Alzheimer’s Disease organizations, the medical press and the medical community have virtually ignored this discovery of niacinamide, claiming there is danger in using high dose vitamins.
- Dr. William Kaufman through his death in 2000 at 88 years old was meticulous in documenting the effects of niacinamide deprived and repleted physiology.
- Kaufman used doses between 1,500 to 4,000 mg/day in multiple doses (8) because he discovered the effects of niacinamide were elevating in the blood after 15 minutes of ingestion, peaked after 90 minutes, and cleared after 3 hours—best dose 250 mg at a time taken 8 times per day in disease afflicted cases.
- He found the vitamin deficiency involved depression, anxiety, personality changes, impaired balance, over reaction to noise, abnormal skin sensations, yellow or brown skin pigmentation, liver enlargement and tenderness, excessive fatigue, arthritis and impaired mobility, poor muscle strength, and diminished work capacity.
- By the 1940’s he found that some of these conditions improved after industrial enrichment of grain processing—but unchanged were fatigue, decreased muscle strength and work capacity, loss of balance, depression, and impaired joint function.

Protocol – Endocrine Pillar

.consumer
- General HPA endocrine repair:
  - Symplex F/M (6)
  - Hypothalmex (2)
  - Black Currant Seed (2)
- Address Estrogen/Xeno Dominance (Phase I/II detox):
  - Cruciferous Complete (6)
  - Greenfood
  - Livaplex (6)
  - Transulfuration – Folic Acid (6), Fortil (6), B6 (4)
  - SP Complete (2 Tbsp)
- Individual Gland Support: after general up-regulation for 3 months
  - Pituitary – Pituitrophin(4), Trace Minerals(6), E-Manganese(2)
  - Thyroid – Thyrophin PMG (4), Thyroid Complex (2)
  - Adrenal – Drenamin (6), Eleuthero (4), Withania (4)
  - Gonads – Ovex (4), Ovatrophin (4), Orchic (4)
  - Uterus – Utrophin (6)
  - Prostate – Prostate PMG (4), Prost-x (6), Prostaco (4)
Comprehension:

- True or False – PMG first, detox conjugated hormones second, lifestyle modification third, herbs fourth, HRT last
- Multiple choice – Best way to promote general endocrine health (HPA Axis) is with a) Symplex F/M(6), b) Hypothalmex/us (2), c) Black Currant Seed Oil (2), d) all of above
- True or false – Begin individual gland strengthening before general HPA work
- True or false – Cortisol Resistance as in waist thickening requires Adrenal Complex (2)
2 - Glycemic Management

- Phase II diet limiting glycemic index
- Prevent insulin spikes
- Protein three times per daily
- 40/30/30 CHO/protein/fat
- Starches are source of cravings
- Cravings mean insufficient protein and fat

#2 Core Physiologic Principal

Glycemic balance

- Introduce glucose – source in starch, alcohol, sugars
- Increased blood glucose
- Hunger – Sugar cravings
- Insulin up-regulation
- Adaptation – Insulin Resistance
- Cells absorb sugar – store as triglycerides
- Anabolic weight/fat gain
- Hypoglycemia – blood sugar too low

Protein/fat

- Increased satiety
- Stress – Increased Cortisol
- Glycogen reserve depletion
- Increase inflammation & anxiety
- Glycemic dysregulation
- Adrenal/Pancreas stress
- Food dependency / fatigue
- Increased energy/stamina/productivity/independence

Mitochondria proliferate
Carbs & Hormones

Anabolic Adaptation

Catabolic shift


PHASE II FOOD PLAN FOR BALANCING BODY CHEMISTRY

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<th>FISH</th>
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<td>Acorn Squash</td>
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<td>Butternut Squash</td>
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CRUSTACEANS

MISCELLANEOUS

In Limited Quantities

Butter, Rye

Cereal

Cottage Cheese, Rice

Dessert: Old Order Vinegar only, healthy

Kefir, Raw (flavored)

Milk, Raw

Nut, Rye (except Peanut)

Oil: Vegetable, Olive (cold pressed only)

BEVERAGES

Brown Tea

(Decaffeinated Tea Filtered or Spring Water)

Red Wine only (1 glass per meal)

DESSERT

Plain Gelatin only

FOODS EATEN CLOSEST TO THEIR RAW STATE HAVE THE BEST DIGESTIVE ENZYME ABILITY.

TAKE FLUIDS MORE THAN ONE HOUR BEFORE OR MORE THAN TWO HOURS AFTER MEALS.

LIMIT FLUID INTAKE WITH MEALS TO NO MORE THAN 4 OZ

NO PROCESSED GRAINS, WHITE FLOUR, SUGAR, SUGAR SUBSTITUTES.
Phase II diet for balancing blood chemistry (edited from Melvin Page’s work)
Removing Starches will control your blood sugar, which will remove the #1 major stress on your body—Hypoglycemia.

The 1st and most important step is to remove, pasta, bread, white potatoes and rice.
The 2nd step is to eliminate processed foods.

### Phase II diet for balancing blood chemistry

<table>
<thead>
<tr>
<th>Animal Protein (per day)</th>
<th>VEGETABLES</th>
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<td>Unlimited</td>
<td>3/4 or less</td>
<td>6/8 or less</td>
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<td>FISH</td>
<td>Unlimited</td>
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<td>6/8 or less</td>
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<td>VEGETABLES</td>
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<tr>
<td>Fruits</td>
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<td>Vegetables (per day)</td>
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<td>Water</td>
<td>Unlimited</td>
<td>3/4 or less</td>
<td>6/8 or less</td>
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</table>
Sequenced decline – Senescence

- Chronological age – accurate, measured in years
- Biological age – variable, determined by biochemistry and energetic state
- Psychological age – variable, determined by thinking which arises from emotional reality and neuroendocrine status
- Only the first of these is fixed
- One of the most important tissue aging factors is collagen synthesis, which is effected by smoking, exposure to sunlight, nutrient deficiency, dehydration – individual collagen molecules get attached to each other through cross linkage brought on by free radicals (Radical Oxygen Species ROS) attacking vital molecules including DNA
- Vitanox (2/day) is essential to care for senescence

Mitochondrion – Center stage

- Mitochondria have many structural and functional features in common with bacteria (eukaryotes) which led to the idea that the mitochondria originated from an endosymbiotic relationship (one organism living inside another)
- This idea was strengthened with detection of mitochondrial DNA similar to bacterial genomes contributed solely by the mother (approx 100k mitochondria from oocyte, none from sperm)
- Each mitochondria consists of 4 main compartments – outer membrane enclosing entire organelle, inner membrane is a series of complex folds and tubules called cristae, intermembranous space, and the matrix which is the space enclosed by the inner membrane wherein the mitochondrial DNA resides
- Radical Oxygen Species (ROS) degrades the inner membrane including mitochondrial DNA
Concept of Aging

Adult possesses 10 million billion mitochondria which is 10% of body weight, the primary function of which is to produce ATP.

The primary role is to produce ATP for energy via the citric acid cycle (tricarboxylic acid cycle or Kreb’s cycle) along with the electron transport chain.

When ATP levels fall AMP levels increase which activates the enzyme AMPK (5’ Activated Protein Kinase – cyclic AMP).

AMPK switches metabolism from energy consuming to energy conservation and mitochondrial biogenesis (making more mitochondria).

Mitochondria are a prime source of ROS which immediately effects the DNA, proteins, and lipids.

ROS increases as we age, gain weight, and in virtually all disease states.

Can anything be done?

1956 proposed the free radical theory of aging by Professor Denham Harman stating the accumulated cellular damage resulting from ROS was responsible for symptoms associated with aging.

1972 he published a theory that mitochondria by determining ROS functioned as a “biological clock” determining the ultimate lifespan of an organism.

A reasonable question is “Can anything be done about mitochondrial ROS?”

Superoxide dismutase, peroxidase, catalase, Vitamins C & E, CoQ10, Alpha Lipoic Acid, Resveretrol, detoxification to unburden the toxic load and ROS burden.
Benefits of Increased Mitochondrial Biogenesis and ATP

- ↓ ROS / Oxidative Stress
- ↑ Metabolic Function
- ↑ Energy Level
- ↑ Exercise Performance
- ↓ Body Fat / ↑ Lean Muscle Mass
- ↓ Age-Related Deterioration
- ↑ Increase Lifespan (?)

PGC-1α
The Molecular Switch for Mitochondrial Biogenesis
**PGC1α Activators: Exercise Mimics?**


**AMPK**

**(AMP-Activated Protein Kinase)**

- Regarded as the body’s cellular fuel sensor
- Enzyme is activated when AMP:ATP ratio increases
  - i.e. when ATP stores decrease
- Plays a crucial role in lipid metabolism and fatty acid oxidation in liver and skeletal muscle
- Activated AMPK switches metabolism from ATP-using to ATP-generating
  - Molecular switch for FAT-Burning
- Exercise is a potent activator of AMPK
- Activation of AMPK results in increased mitochondrial biogenesis
Role of AMP-Activated Kinase (AMPK) in the Regulation of Whole Body Energy Homeostasis


How do we do it? - Summary

☞ Mitochondrial biogenesis – Pillar 2 glycemic limiting diet increases ketogenesis and leptin/adiponectin influences on the HPA axis and delivery of pyruvate to the mitochondria promoting proliferation

☞ Protection of mitochondrial ROS membrane damage – SP Purification unburdens toxic load
Super Eff (2) phospholipid support
Greenfood (4), Cruciferous (4) methylation support
Vitanox (2) provides antioxidant protection

☞ Promotion of HPA response to cortisol and thus reduced sympathetic neural tone – Drenamin (6)
Adrenal Complex (2)

☞ Cellular Support – Elutagenic support
Catalyn (6)
e-Poise (4)
Connect the dots -

✎ It is time to make a connection between cellular metabolism and whole-body energy metabolism through the hypothalamus.

✎ AMPk makes this connection as research has shown that modulation of AMPk in the Hypothalamus modulates feeding and energy behavior.

✎ The mitochondria is so simple in its structure that it simplifies the focus of the functional practitioner and focuses our activity on the macroscopic level as well.

✎ It has always been the ambition of the functional practitioner to find the upstream primary mechanisms that produce the most widespread general response.

Revisiting the physiologic possibility

✎ 7 pillars of foundational strength and physiological potency (unified mechanisms of disease).

✎ Physiologic possibilities have not been fully explored or metered as this microscopic mitochondrial function reveals and as the macroscopic HPA function reveals – these are foundational events in the modulation of disease/health.

✎ The practice of reducing ROS free radical burden and promoting mitochondrial biogenesis will yield more cyclic AMP and ultimately more energy production and subsequent potentiation of cellular activity and agenda.

✎ Stand back and view the genetic agenda of the cellular nuclear DNA as it is energized to its completion.
America is facing an epidemic

The U.S. is the fattest nation in the world.

The average adult gains 7 lbs. in December during the holidays.

64.5% of Americans are overweight or obese. Source: JAMA. 2002;288:1723

Obesity is the second largest preventable cause of death in the U.S.! (Smoking #1.) Source: JAMA 1996; 276: 1907-1950.

Research – Ketogenic Diet

In 12 men (mean age 36.7 years) who switched from diet of protein/CHO/fat 17-47-32 to 30-8-61 (compared with 8 control subjects)

- 33% reduction in fasting triglycerides
- 29% reduced post-prandial lipemia after fat rich meal
- 34% reduction in fasting insulin levels
- 11.5% increase in HDL cholesterol

Normal CHO Consumption

- Sanity dictates that we consume CHO’s with lower glycemic indices
- Americans eat a high CHO diet, we recommend a normal CHO diet, not low
- There are no essential CHO’s
- Energy increases, body sculpting ensues, weight reduction of fat only, lean muscle mass increases, food cravings recede, insulin resistance reverses – What’s to argue over?

The Cost of More Protein

- Higher protein acidizes – this is offset by utilizing alkalizing supplementation (needed to exist in this acidic world anyway)
- Excess protein increases kidney stress – therefore regular kidney repair, cleansing programs address this metabolic burden
- Constipation for those of digestive inadequacy – enzyme, bile and acid supplementation
Fructose as metabolic load

Beyond starch the only other metabolic burden is a simple sugar called fructose, especially amplified in our diet as high fructose corn syrup.

Just as with starch if the triglycerides exceed 80 and belly fat (abdominal pannus) is elaborate it is obvious that the glycemic index of this simple sugar (135) is so excessive that it amplifies blood glucose levels too quickly and promotes hyperinsulinemia and subsequent anabolic adipose development.

Dr. Richard Johnson (professor University of Colorado, where he runs the kidney division and is in charge of transplantation and research in blood pressure) describes all this in his book “The Sugar Fix”.

Links to major illness

In addition to lipoid degeneration major conditions have been attributed to fructose physiology – only animals fed fructose develop obesity, insulin resistance, fatty liver, high triglycerides, inflammation, vascular disease, hypertension, diabetes, kidney disease.

Fructose has a very unique metabolic pathway that results in the formation of uric acid as it is processed – research shows levels above 5.5 directly contribute to gout, hypertension, obesity, kidney disease.
Assessing fructose overload

- If body composition fat percentage exceeds 20% in men and 24% in women, and if high glycemic dietary starch is confirmed to be eliminated the inference is that fructose is burdening the metabolism.
- As well in addition to triglycerides above 80 finding uric acid above 5.5 is indicative of fructose overload – optimal values should be between 3-5.5.
- Uric acid has both an antioxidant and pro-oxidant nature – so levels too low leave cells exposed to oxidative stress, but levels above 5.5 increase oxidative stress.
- What if uric acid really describes liver efficiency?

What does it mean clinically?

- If a person is plateaued in their evolution toward lean body state we must consider fructose overload.
- This can be done by comparing and contrasting the triglycerides and uric acid to infer the ingestion and metabolic load of too much fructose.
- This also takes into account reactive hypoglycemia trends in some more severe than others.
- We begin by keeping the fructose daily consumption below 25 grams.
- One can of soda will exceed the daily limit.
Fructose burden – 15-25 grams

♫ It is possible that this is the single factor in the SAD that is robbing Americans of their birthright to health and happiness

♫ As clinicians it is time for us to take our patients as far as they wish to find their perfect health – we can assess this and move people beyond that phase II shift all the way to remarkable states of physiology

♫ 2 out of 3 are overweight, 1 out of 3 are obese – it has become clear that fructose is the single most important factor in this epidemic

Assessing Fructose Burden - Fruit Fructose Content

Seek to limit daily consumption of fructose to 25 grams per day to avoid fatty degeneration

<table>
<thead>
<tr>
<th>Fruit</th>
<th>One Serving (Grams)</th>
<th>Fructose (Grams)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limes</td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Lemons</td>
<td></td>
<td>0.6</td>
</tr>
<tr>
<td>Cranberries</td>
<td>1 cup</td>
<td>0.7</td>
</tr>
<tr>
<td>Passion Fruit</td>
<td>One</td>
<td>0.9</td>
</tr>
<tr>
<td>Prune</td>
<td>One</td>
<td>1.2</td>
</tr>
<tr>
<td>Apricot</td>
<td>One</td>
<td>1.3</td>
</tr>
<tr>
<td>Guava</td>
<td>Two</td>
<td>2.2</td>
</tr>
<tr>
<td>Dates (Deglet)</td>
<td>One</td>
<td>2.6</td>
</tr>
<tr>
<td>Cantaloupe</td>
<td>1/8</td>
<td>2.8</td>
</tr>
<tr>
<td>Raspberries</td>
<td>1 cup</td>
<td>3.0</td>
</tr>
<tr>
<td>Kiwi</td>
<td>One</td>
<td>3.4</td>
</tr>
<tr>
<td>Blackberries</td>
<td>1 cup</td>
<td>3.5</td>
</tr>
<tr>
<td>Star fruit</td>
<td>One</td>
<td>3.6</td>
</tr>
<tr>
<td>Cherries</td>
<td>10</td>
<td>3.8</td>
</tr>
<tr>
<td>Strawberries</td>
<td>1 cup</td>
<td>3.8</td>
</tr>
<tr>
<td>Pineapple</td>
<td>1 Slice</td>
<td>4.3</td>
</tr>
<tr>
<td>Boysenberries</td>
<td>One cup</td>
<td>4.6</td>
</tr>
<tr>
<td>Tangerine/Mandarin</td>
<td>One</td>
<td>4.8</td>
</tr>
<tr>
<td>Nectarine</td>
<td>One</td>
<td>5.4</td>
</tr>
<tr>
<td>Peach</td>
<td>One</td>
<td>5.9</td>
</tr>
<tr>
<td>Orange</td>
<td>One</td>
<td>6.1</td>
</tr>
<tr>
<td>Papaya</td>
<td>Half</td>
<td>6.3</td>
</tr>
<tr>
<td>Honeydew</td>
<td>1/8</td>
<td>6.7</td>
</tr>
<tr>
<td>Banana</td>
<td>One</td>
<td>7.1</td>
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<tr>
<td>Blueberries</td>
<td>1 cup</td>
<td>7.4</td>
</tr>
<tr>
<td>Date (Medjool)</td>
<td>One</td>
<td>7.7</td>
</tr>
<tr>
<td>Apple</td>
<td>One</td>
<td>9.5</td>
</tr>
<tr>
<td>Persimmon</td>
<td>One</td>
<td>10.6</td>
</tr>
<tr>
<td>Watermelon</td>
<td>1/16</td>
<td>11.3</td>
</tr>
<tr>
<td>Pear</td>
<td>One</td>
<td>11.8</td>
</tr>
<tr>
<td>Raisins</td>
<td>1/4 cup</td>
<td>12.3</td>
</tr>
<tr>
<td>Grapes (green or red)</td>
<td>1 cup</td>
<td>12.4</td>
</tr>
<tr>
<td>Mango</td>
<td>Half</td>
<td>16.2</td>
</tr>
<tr>
<td>Apricots (dried)</td>
<td>One cup</td>
<td>16.4</td>
</tr>
<tr>
<td>Figs (dried)</td>
<td>One</td>
<td>23.0</td>
</tr>
</tbody>
</table>
Fructose sources

- Honey is high in fructose so beware
- Dried fruits are twice to three times higher than raw fruit – most severe are dried figs or apricots
- Juices can be very concentrated and lack some of the adjacent antioxidant and vitamin quality that assists in handling the fructose – dilution can help

Turbo charged fructose

- Glucose consumed with fructose accelerates the absorption of fructose
- Beware of fructose mixed with other sweeteners as it may accelerate the speed of the fructose arriving in the blood
- With these new studies fructose becomes the number one issue with children’s development involving attention and learning disorders and tendencies toward glycemic dysregulation
- As well geriatric management must take into account this pro-inflammatory dynamic
Uric Acid Trigger - Beer

- The yeast used to make beer increases the levels of uric acid – important news to gout conditions and results in beer belly syndrome
- We have watched people disfigure their bodies with certain lifestyle choices – now we have the biochemistry to explain why it happens

Alas – What to do?

- Severe elimination of fructose for 2 weeks reboots the system and breaks the metabolic lock – weight loss will continue
- Sugar activates its own pathways – the more sugar the more sensitive and the more anabolic – by cutting sugar over a period of time you can reduce the hyperactive metabolic system that has developed
- This is the next step in achieving ‘your’ perfect body
- Replacement of sweeteners with stevia or pure glucose (dextrose)
- Dextrose is only 70% as sweet as sucrose so more will be used to achieve the same level of taste
Calorie restriction – Life Extension

Phase II diet is in fact a form of calorie restriction and appetite reduction resulting in reduced insulin levels and activation of more basic survival mechanisms, including lipolysis to internally maintain blood sugar.

All researcher studying aging agree that reduced calorie intake by 20-40% extends lifespan by up to 50%.

No other known intervention has such a consistent and profound effect.

Compressing morbidity

Not only does calorie restriction extend life but also reduces morbidity by activating stress responses that are hard-wired into the gene code.

Thee stress responses activate biochemistry that is designed to increase functionality and promote survival.

The activation of these survival mechanisms also act to promote wellness, if not only activated or survival.

In other words it is good to live somewhat inside our survival mechanisms as away of life, and this reduce morbidity, disrepair and decline.

Can we promote these mechanisms biochemically?
Hormesis

- A term originally coined by toxicologists to describe a biphasic dose-response curve wherein an agent has a stimulatory effect at low doses and a toxic effect at high dose.
- Now this term has been adopted by medicine to portray the beneficial adaptive responses of cells to moderate stress.
- In other words, moderate stress promotes health, wellbeing, and mental and physical performance.
- So gain Nietzsche as accurate when he said, “What does not kill you makes you strong.”

Hormesis – Some known mechanisms

- In response to stress, the body calls up defense molecules – once present, these molecules not only effect the perceived threat, but also increase resistance to other threats and repair existing damage.
- HSP (Heat Shock Proteins) are produced to protect and chaperone other proteins by binding to them and shielding them from attack.
- SIRT1 (Sirtuin 1) is a bodyguard that activates multiple genes to produce antioxidants and cell membrane stabilizers.
- Growth factors are generated to promote repair.
- Cellular kinases are produced to promote motility.
Adaptogens & Hormesis

- Adaptogens are herbs and nutrients that promote stress responses to help the body better adapt to stress
- Many phytochemicals that are found beneficial are in fact the plant’s responses against diseases, pests and grazing
- Resveretrol has been proven to be a potent sirtuin activator
- Panax Ginseng and Milk Thistle reduce insulin resistance and increase DHEAS (primary marker of adrenals vitality)
- Echinacea increased heat shock proteins and immune potency
- Gingko reduces oxidative damage to DNA in numerous studies and acts antioxidant and anti-inflammatory

Recent Research

- Like high density detail, it is more and more apparent that low glycemic lifestyles are even more vital to long and vibrant lifespan
- The research is even more compelling as it rolls out in every field revealing more plainly the impact of basic wisdom in our living
- The following studies show the profound impact glycemic index and insulin up-regulation may exert of degenerative or regenerative activity in the body
Recent Research

• 15 year study on 1,017 dementia-free subjects over 60 years old compared risk of dementia in normal vs. abnormal GTT and Diabetes Mellitus
  - In all cause dementia impaired GGT showed 45% greater likelihood (DM was 75% greater) than normal GTT group
  - Alzheimer’s was a little worse showing 55% increased risk with abnormal GTT and 85% with DM over normal group
  - Vascular Dementia showed most profound of all impact with 95% increase with abnormal GTT and 100% more with DM compared to control with normal GTT

Recent Research

• The Rotterdam Study published in 1999 followed 6,370 patients over time and revealed that Alzheimer’s Disease was increased incidence by 1.9 times with DM
  - Dementia was increased incidence by 4.3 times if using insulin
  - This showed that in more severe DM with long term insulin use created a longer history of hypoglycemic events and more glycosolated protein effects from blood sugar variances
Recent Research

- Advanced Glycosylation End Products result in post-translational modifications of proteins wherein the amino acid group of protein reacts with the monosaccharide
- 920 elders without dementia, mean age 74 – 495 with DM and 425 with normal glucose compared for cognitive decline using urine pentosidine over 9 years (pentosidine reveals degree of glycation)
- Low glycation events showed half the decline as diabetes, while high glycation brought both groups normal and DM to equal and double severity of cognitive decline

Recent Research

- Another study compared the degree of brain volume reduction in relation to the indicator of glycoylation (HbA1c)
- Review demonstrated that the presence of the APOEe4 allele associated with Alzheimer’s increased the risk of onset of the disease by 20% over the non-presence of this gene
- In contrast same study showed HbA1c between 4.4-5.2 was half as likely and the lower risk group to not show disease, and 60% less likely that the genetic predisposition
- As the HgA1c increased from 5.3-5.5 incidence increased to equal onset associated with non-genetic predisposed individuals
- HgA1c 5.6-5.8 increased to within 10% of genetic variant
- HgA1c 5.9-9.0 increased to the very same incidence of AD as the genetic variant demonstrated
  - Enzinger, C., et al., Neurology 64, May 24, 2005, 1704-11
Recent Research

• The PATH Study reported last year that Higher normal fasting plasma glucose is associated with hippocampal atrophy - Yikes!
• 266 cognitively healthy adults were followed over 4 years and comparative MRI volumetric analysis of hippocampal and amygdala atrophy and decrease revealed an evident relationship between HgA1c and brain size reduction
• HgA1c in excess of 5.0 significantly increased the rate of atrophy, whereas under 5.0 (from 3.0 to 5.0) inversely promoted an increase in brain size loss
• The published report stated “Plasma glucose levels were found to be significantly associated with hippocampal and amygdalar atrophy and accounted for 6-10% in volume change after controlling for age, sex, body mass index, hypertension, alcohol, and smoking.”

* The PATH Study, Neurology 2012; 79:1019-1026

Take Away

• Advanced Glycosylated End Products are more than just markers of aging since they can exert adverse biological effects on tissues and cells including the activation of intracellular signal transduction pathways, leading to the up-regulation of cytokine and free radical production (oxidative stress)
• There is an increase in the half life of beta amyloid as HgA1c increases significantly over 6.0 thus resulting in its accumulation and eventual contribution to decline of the brain status
• What we thought before was good enough to live within (under 5.8 HgA1c) is not good enough to actually promote brain health and longevity
Screening is seeing - Believing

- Screening is obvious and automatic when one knows what to look for
- The primary signs of elevated HgA1c are:
  - Increased body fat concentrations in women over 25% and men over 18%
  - Increased waist to hip ratio over 1.8 in men and 1.9 in women
  - Increased cognitive decline
  - Increased oxidative stress – inflammation, skin aging, stiffness

Practice Aging -

Be glad of life, because it gives you the chance to love and to work and to play and to look up at the stars; to be satisfied with your possessions; to despise nothing in the world except falsehood and meanness, and to fear nothing except cowardice; to be governed by your admirations rather than your disgusts; to covet nothing that is your neighbor’s except his kindness of heart and gentleness of manners; to think seldom of your enemies, often of your friends … and to spend as much time as you can with body and with spirit. These are little guideposts on the footpath to peace.

Henry Van Dyke
Protocol – Glycemic Pillar

- General Glycemic Regulation:
  - Phase I/II Diet
  - Gymnema (6) minimal dose dependant effects receptors
  - Protefood (6)
  - SP Complete (2Tbsp)

- Adrenal / Cortisol Regulation:
  - Drenamin (6)
  - Protefood (6)
  - Nutrimere (4)

- Pancreas Support:
  - Pancreatrophin (6)
  - Paraplex (6)
  - Cataplex GTF (6)
  - Zinc Liver Chelate / Chezyn (6)

- Glycogen Reserve (Liver):
  - AF Betafood (14)
  - Livaplex (6)

Glycemic Management – How to steward transformation

- Step One: Phase II Diet, SP Complete (2 Tbsn), L-Glutamine (1.5 g)
- Step Two: Phase I Diet, fruit elimination, 6 meals per day, Protefood (6), Nutrimere (4)
- Step Three: Stimulant Elimination, Food Allergy removal
- Step Four: Thyroid Support - Barnes Thyroid Temperature Monitoring, Iodine Patch Testing, Prolamine Iodine (1-6)
- Step Five: Insulin Receptor Sensitivity Recovery - Gymnema (6) minimal dose, Zinc Liver Chelate (6), Chezyn (6)
- Step Six: Adrenal Balance - Adrenal Complex (2), Drenamin (6), Withania Complex (4), Eleuthero (6)
- Step Seven: Fructose Burden Assessment (less than 25 g./day)

Absolute starch elimination must be present throughout this process or each increment will be invalidated – only go to whatever step achieves 4 to 10 lbs per month weight loss
Comprehension:

〜 True or False – Cravings mean too much sugar
〜 Multiple choice – Best way to promote glycemic management is with a) Phase I/II diet, b) Protein up-regulation 3 times daily c) SP Complete, d) Protefood (4), e) Nutrimere (2)
〜 True or false – The goal is to reduce insulin/cortisol spikes
〜 True or false – Triglycerides under 80 allow cholesterol to be assessed
〜 True or false – The daily fructose burden should be less than 25 grams

Tests & Analysis:

〜 Blood glucose, lipids, h A1C
〜 Saliva tests – ASI
〜 Symptom Survey
〜 Kinesiological

2 – Glycemic Management Pillar

〜 Prevent insulin spikes
〜 Protein three times per daily
〜 40/30/30 CHO/protein/fat
〜 Starches are source of cravings
〜 Cravings mean insufficient protein and fat

Products of Choice:

〜 Phase I/II carbohydrate limiting diet
〜 Cataplex GTF (6), Paraplex (6), Pancreatrophin (4), Diaplex(4), AF Betafood (12), Livaplex (6), Drenamin (6), Gymnemama (4)
〜 SP Complete protein powder, Protefood (4), Nutrimere (2)
Alignment

We must alter our lives in order to alter our hearts, for it is impossible to live one way and pray another

William Law
3 - pH Bioterrain

Net Acid Excess (NAE)
Controlling H+ ions is complex and expensive to the body when constantly overwhelmed with metabolic and environmental acidosis
Salivary and urinary pH quickly tells the story
Acidosis increases intensity, inflammation, anxiety

#3 Core Physiologic Principal

Acidifying agents → Activation buffering mechanisms
Depletion of mineral substrates especially ionic calcium, magnesium, potassium

Net Acid Excess → Increased inflammation
Adrenal cytokine proliferation
Adrenal fatigue and reactivity
Increased anxiety – sleep disturbance
3 I’s of acidosis – Inflammation Intensity, Anxiety
Increase degenerative disease

Mineral/protein repletion
Increased buffering – acid reduction
Reduction of 3 I’s
Improved sleep, renewal, repair
Restorative processes
The big idea!

- Minerals help the body neutralize acidosis and promote alkalinity.
- Alkaline/Acid balance promotes calmness, sleep, health.
- All minerals and protein promote this balance.
- Inflammation, tension, muscle soreness, stiffness, loss of flexibility, loss of sleep quality, inability to relax, musculoskeletal symptoms, soreness after exercise (lactic acid effects) all indicate mineral insufficiency.
- Primary minerals for repletion are Calcium (especially ionic), Magnesium, Potassium.
- Multi-minerals are best choice as in Organic Minerals (6) and Catalyn (6).

H2O is mainly what we are!

- H2O makes up 73% of lean mass in adult – ranges from 75% of neonate to 50% in elderly – intracellular water is 65% in men & 60% in women.
- H2O serves as primary medium for transport of nutrients and oxygen to the cells and removal of wastes – also plays a role in creating organ form and temperature regulation.
- Dehydration occurs because there is insufficient electrolytes to hold the water in osmotic balance – thus hydration when dehydrated further dilutes and leeches the minerals.
- Minerals concentrate water.
- Recommendation is for 64 oz H2O per day.
Minerals serve diverse functions

- Bone formation through hydroxyapatite from calcium and phosphate
- Messenger molecule from calcium binding to various proteins acts as signal
- Ionic, osmotic balance creating electrical gradients maintained by all macronutrients
- Trace elements associate with enzymes or proteins serving structural, catalytic, or binding roles
- Ultratrace minerals are required solely for the synthesis of specialized organic compounds unique to mammalian life (Thyroxin, seleno-proteins, etc)

Minerals and their deficiency

- From the 90 elements occurring naturally in environment, 22 are essential to life, constitute 4% total body weight
- The organic nutrients (proteins, carbohydrates, lipids, vitamins) are made up of 6 elements – hydrogen, carbon, nitrogen, oxygen, phosphorus, sulfur
- Minerals or inorganic nutrients are grouped by the amount of each element required by the body
- Macronutrients require greater than 100 mg/day – calcium, phosphorus, magnesium, sodium, potassium, chloride, and sulfur (supplied by amino acids)
- Microelements are 2 groups:
  - Trace elements 1-100 mg/day – iron, zinc, manganese, copper, fluorine
  - Ultratrace elements less than 1 mg/day – selenium, molybdenum, iodine, chromium, boron, cobalt
- To understand minerals is to understand the crossover from inorganic to organic – this is where the world becomes alive
- Mineral deficiency leads to a lack of life
Bone formation and management

- 99% of body calcium found in bones and teeth
- 60-66% of bone weight is due to minerals, remaining 34-40% from water, ground substance and protein (80-85% collagen produced by osteoblasts, which come from stem cells in bone marrow that become embedded in bone matrix and hence become osteocytes)
- Hydroxyapatite is crystal lattice-like substance found in bones and teeth
- Substances enhancing calcium absorption are vitamin D, sugar, sugar alcohols, protein
- Substances inhibiting calcium absorption are fiber, phytate, oxalate, excessive cations (Mg, Zn), unabsorbed fatty acids
- Nutrients enhancing urinary calcium excretion are sodium, protein, caffeine - Nutrients whose absorption is inhibited by calcium are iron and fatty acids
- 1% of body calcium not associated with bone is intracellular in organelles and extracellular in blood and lymph
- Of the calcium in plasma 50% is ionized (Ca²⁺) – it is this ionized calcium that is active (<0.5% of total body calcium controlling blood clotting, nerve conduction, muscle contraction, membrane permeability, acid/base buffering
- Primary sign of calcium deficiency is tetany

Calcium Cuff Test

- Use BP cuff around the calf muscle to determine at what pressure cramping onsets
- Less than 160 indicates ionic calcium deficiency or hormonal inability to mobilize calcium
- Chewing supplement can help select what support is needed by an immediate greater than 10% increase in pressure
Calcium to Phosphorus ratio

- 2.5 is a healthy ratio Ca/P – the ‘K’ graph
- When ratio is high, too much calcium compared to phosphorus skews physiology towards plaqueing and circulatory issues
- Ratio too low means not enough calcium, skewing towards immune incompetence and vulnerability to tolerance of dangerous cellular activity
- Calcifood (1Tbsn), Calcium Lactate (3-6), Calsol (3-6), Calamo (4-10 for rapid up-regulation of calcium) are easy ways to increase ionic calcium
- Circuplex (3-6) is the best way to increase phosphorus

Immunity – The Calcium Connection

- Calcium is used a calcium shell phenomenon around immune targets, and thus all factors influencing calcium metabolism can modulate the dynamics of cancer and immune potency
- Calcium to Phosphorous ratio (best at 2.5) can be used to assess risk – below 2.5 means too little calcium and increased risk of immune issues, above 2.5 means too much calcium and increased risk of plaquing and vascular disorder
- Methods to modulate calcium status include:
  - Calcium supplementation
  - Phosphorous supplementation
  - Vitamin D supplementation
  - Detoxification reducing the immune burden
  - Mineral repletion and reduction of net acid excess
  - Reduction of insulin/cortisol dysregulation – hyperglycemia requires significant mineral stores to neutralize acidity
Calcium – Vitamin D therapy
- D is called the sunshine vitamin because although available in a select number of foods it is produced endogenously from UV skin exposure – it is the only vitamin that can be manufactured from exposure to UVB.
- Due to indoor lifestyles our society is D deficient – above 42 degrees north insufficient sunlight for adequate synthesis – sunscreen (SPF only 8) reduces production by 95% creating similar problem to cultural skin covering practices) – dark skin people synthesize less D with high risk for deficiency for those who live far from the border.
- Food sources of D3 (active form) are wild caught fish such as salmon, tuna, mackerel, cod – minor amounts in beef liver, cheese, egg yolks.
- D3 is essential for promoting calcium absorption in the gut and enabling adequate serum concentration of calcium and phosphate to enable normal bone mineralization, growth and remodeling by osteoclasts and osteoblasts (without D bones become brittle, thin, and misshapen)
- Latest research indicates that D3 deficiency is also linked to depression, back pain, impaired immunity, macular degeneration, and both insulin resistance and preclampsia during pregnancy.

Cancer – Vitamin D therapy
- Institutionalized elderly have reduced capacity to synthesize D and must be supplemented.
- Obesity increases deficiency due to fat stores trapping the D.
- Deficiency has been associated with cancer in the colon, pancreas, lymphoma, ovary, breast due to resultant hypocalcemia secondary to D deficiency.
- Bone remodeling in children causes rickets and bowing of weight bearing limbs, delayed closure of fontanels, and rib cage distortion.
- In adults osteomalacia results in ‘soft bones’ and abnormal remodeling.
- Muscle tension increases in hypocalcemic conditions.
- In D deficiency calcium absorption declines which results in parathyroid hormone increase to mobilize calcium from skeleton – a condition called secondary hyperparathyroidism – often presents as elevated or high normal levels of calcium in the blood, which persists after elimination of exogenous calcium supplies.
- Cataplex D (up to 6/day) can replete this deficiency – recent studies show that 10,000 IU/day has no associated toxicity.
Dust to dust

- Why do some people activate and others cannot be turned on? - Mineral competence
- Trace minerals, Organically Bound Minerals, Calcifood, Calcium Lactate, Magnesium, Iodomere/ Prolamine Iodine, Cataplex GTF
- The genius of Catalyn is that it is a mineral based supplement
- Colloidal Minerals – Crops grown on organic soils create colloidal minerals
- Due to soil depletion and food processing and lifestyle (coffee) we are not getting the mineral substrate required for healthy life that we were receiving 50-100 years ago

Breath of life

- Electrical potency, body of light – all organic products are by definition more electrical than synthetics because of this
- Can you enliven the mineral world – breathe the breath of life into the dust
- Hormonal competence controls the minerals
  - Pituitary – Directs mineral controls through kidneys & adrenals
  - Thyroid – Controls mineral balance and especially calcium
  - Thymus – Calcium is dominant 2ndary messenger for immune targeting
  - Adrenals – Controls sodium & potassium
  - Pancreas – Controls chromium & zinc
  - Gonads – Affected by phosphorus
Bio-terrain pH balance

Many experts agree that pH should be kept to 6.8-7.2, but in acidic world even 7.5 is not too high.

Emergency alkalosis appears alkaline when it is only body stores straining to offset the acidity.

The urine represents the effects of your food, the saliva conveys the blood.

To reduce acidity reduce meat, soft drinks, coffee, alcohol, sugar, fast foods, avoid interrupted sleep, avoid pesticide exposure, decrease mental/emotional stress.

Increasing pH - ionic calcium use Calcium Lactate (6) or powder (1 tsp), Organic Minerals (6), Glutamine (1K mg), Chlorophyll (2), SP Greenfood (2).

Buffering pH by three mechanisms:

Bicarbonate Buffer System – weakest intra & extracellular buffering, but because the CO2 can be regulated by the lungs and HCO3 by the kidneys the blood pH can be shifted up and down.

Phosphate Buffer System – stronger buffering system essentially but only 1/12th as concentrated in extracellular fluids therefore less potent.

Protein Buffer System – same mechanism of binding H+ as Bicarbonate buffering, however is intracellular only (studies suggest that 75% of all chemical buffering is intracellular.)

Each system is amplified by ingestion of more protein and reduced carbs, through reduced acid burden from CHO, and increased phosphorus from protein.
Acid/Alkaline Foods

Food & Chemical Effects on Acid / Alkaline Body Chemical Balance

| Protocol – Bioterrain Pillar |

**General Mineral Status:**
- Calcium Lactate (6), Powder (1 tsp)
- Calsol (6)
- Calamo (6)
- Magnesium Lactate (3)
- Organically Bound Minerals (6)
- Trace Minerals/B12 (6)

**Acid/Alkaline Issues:**
- Sp Greenfood (6)
- L-Glutamine (1.5 g.)
- Organically Bound Minerals (6)
- Acid/Alkaline Food Chart

**Iodine Issues:**
- Prolamine Iodine (1-6)
- Iodomere (6)
- Cataplex F Tablets (6)
Comprehension:

❖ True or False – The 3 “I’s” of acidity are intensity, inflammation, and anxiety
❖ Multiple choice – Best way to balance acidity is with a) Calcium Lactate (6), b) Organic Minerals (6), c) Magnesium Lactate (3), d) all
❖ True or false – There are 3 buffering mechanisms – each of which improves with protein
❖ True or false – Mineral status determines acid neutralization

3 – pH Bioterrain Pillar

❖ Net Acid Excess (NAE)
❖ Controlling H+ ions is complex and expensive to the body when constantly overwhelmed with metabolic and environmental acidosis
❖ Salivary and urinary pH quickly tells the story
❖ Acidosis increases intensity, inflammation, anxiety

Tests & Analysis:
❖ pH testing – Saliva & Urine
❖ Hair Analysis
❖ Saliva tests – ASI
❖ Symptom Survey
❖ Kinesiological
❖ Calcium Cuff Test (under 160)
❖ Bio-impedence Testing

Products of Choice:
❖ Calcium Lactate (6), Powder 1 tsp), Calsol (4), Calamo (4), Greenfood (4), Organically Bound Minerals (6), Magnesium Lactate (3), Circuplex (6)
❖ Acid/Alkaline chart on food ash effects
4 - Inflammatory status

- Cumulative Repair Deficit – functional definition
- Cytokine driven inflammatory levels drive the adrenals
- All inflammation is perceived as a wild animal trying to eat you - fight or flight
- Cortisol increases, adrenals fatigue
Determining Food Allergies

- Blood type sensitivities
  - Eat For Your Blood Type, D'Amatto
- Most food allergies are delayed sensitivity reactions – difficult to objectively determine
- Elisa Act lymphocyte response assay
  - Dr. Russell Jaffe, Serammune Labs, Virginia, 800/525-7372
- Elimination is the most accurate and labor intensive - 2 week elimination then reintroduce and watch for 4 days for reactions
- Histaminic Reactions (rash, red eyes, serous secretions) vs. Immune Activity (fever, catarrhal, lymphatic congestion, aching)
- Basic 4 allergies that most complicate healing process – wheat (gluten), corn, soy, milk (casein)
  - Additionally suspect chocolate, peanuts, tomatoes, beef
### Food Allergies – Now & Later

<table>
<thead>
<tr>
<th>Immediate response within hours or next day</th>
<th>Delayed response onset 2-7 days later</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histaminic</td>
<td>Immunological – viral, bacterial, parasitic</td>
</tr>
<tr>
<td>Red, burning eyes, serous secretions (clear)</td>
<td>Colds &amp; Flu – WBC mediated response</td>
</tr>
<tr>
<td>Tiredness, sleepiness</td>
<td>Achiness</td>
</tr>
<tr>
<td>Headaches</td>
<td>Catarrhal, phlegm (colored)</td>
</tr>
<tr>
<td>Mood changes, irritability</td>
<td>Fever</td>
</tr>
<tr>
<td>Rashes, hives</td>
<td>Eczema</td>
</tr>
<tr>
<td>Nausea, cramps, diarrhea</td>
<td>Emesis</td>
</tr>
<tr>
<td>Loss mental acuity</td>
<td>Elevated C-reactive protein, SED rate, AA:EA ratio</td>
</tr>
</tbody>
</table>

### Allergic Events schematic

- **Blood/lymph fluids**
- **Tissue/cell structures**
- **Gut lining**
- **Gut lumen**
- **Allergens**
- **Viron**
- **Infection leading to infestation**
- **Foreignness**
- **Immediate response**
Generalization of allergen

- Milk allergy is primarily casein protein intolerance commonly seen in respiratory and atopic symptoms
- Wheat allergy is primarily a gluten protein intolerance commonly effecting GI symptoms and hyper tension & siderosis
- Corn allergy is primarily a zein protein intolerance commonly effecting neurological symptoms
- Soy allergy is more acquired and therefore can be unlearned commonly effecting acne rosacea and paranasal rashes
- Zypan or Betaine HCL (2-3/meal) will reduce food allergen effects

Neuro chemistry - Endorphins

- Food allergens can create morphine-like endorphins that may modulate vascular supply to regional brain areas – this has been observed on pet scans
  - Caseinomorphins derived from milk protein allergy
  - Glutennomorphins derive from gluten allergy
- This is the emerging biochemistry of how allergens can influence autism, ADHD, and neurological function
5 Stages of Inflammation

1. Cytokine release from damaged cells
2. Erythema increased blood flow
3. Swelling plasma leak from capillaries into damaged area
4. Leukocyte infiltration for clean up
5. Fibrous tissue infusion creating repair

Inflammatory inhibition by cortisol

- Cortisol has five effects on inflammation
  - Stabilization of membranes reducing rupture and cytokine release
  - Decreases capillary permeability thus limiting swelling
  - Decreases migration of WBC’s
  - Suppresses immune system and T lymphocytes
  - Lowers fever, interferon release and thus vasodilatation
- Licorice can increase effects of Cortisol (1 tsp twice daily), thus is used a bridging protocol with prednisone
Catecholamines -

- Production of catecholamines is from:
  - Distress
  - Digestive distress
  - Anxiety and stress

- There is no distinction between stressors - everything is a wild animal trying to kill you

Genes – On or Off

- We are in the midst of the nutrigenomics era, wherein it has been discovered that environmental factors, including diet, can turn on or turn off specific genes
- It has been described as gene codes that may be up-regulated or down-regulated
- It is possible to do specific genomic studies that identify genetic predispositions in individual codes carried in the chromosomes
- This in turn may be predictive of certain cellular activities and metabolic tendencies an individual may have towards certain wellness or illness events
Unified Mechanisms

☞ As always there are some pathways that may be relevant not only to some people but to all, because of the high upstream nature of that genetic event.

☞ The NF kappa beta gene activation has previously been observed as a gene code that may amplify inflammatory activity when engaged, and thus strategies have been developed to reduce and limit activation of this gene function.

☞ It is well known that if the factors that reduce and limit NF kappa beta activation are employed downstream pro-inflammatory events may be effected.

Figure 1. The creation and

Figure 2. Translation of environmental traumas into biochemical inflammation. Note the self-perpetuating “vicious cycle” where inflammatory mediators promote additional inflammation via activation of NF-kappaB. Adapted from Vasquez A. Integrative Orthopedics. (OptimalHealthResearch.com); 2004.
Free Radical Load and Antioxidant Relationship

• There are over 100,000,000,000 (100 Billion) free radicals created in the body per DAY.

• Previous medical logic was that of the stoichiometric model –

\[
2H + 1O \rightarrow H2O
\]

1 Free Radical is offset by 1 Anti-oxidant

• ORAC – measurement – in vitro - of antioxidant capacities

• Lately, many people focused on the use of ORAC to quantify the power of their formula. There is no proof of this being valid in vivo. Also most diseased states are not dramatically altered by the use of antioxidants alone.

Antioxidant Supply vs. Gene Activation

Oxygen Radical Absorbance Capacity (ORAC) is a method of measuring antioxidant capacities in biological samples in vitro.[1][2] A wide variety of foods has been tested using this methodology, with certain spices, berries and legumes rated highly[3]. Correlation between the high antioxidant capacity of fruits and vegetables, and the positive impact of diets high in fruits and vegetables, is believed to play a role in the free-radical theory of aging. However, there exists no physiological proof in vivo that this theory is valid. Consequently, the ORAC method, derived only in test tube experiments, cannot currently be applied to human biology.

• By activating Nrf2 you can multiply the body’s natural antioxidant response to combat inflammation, minimize free radical damage and transport detoxification to new levels.
Nrf2

Transcription activators that bind to antioxidant response elements (ARE) in the promoter regions of target genes. Important for the coordinated up-regulation of genes in response to oxidative stress.

---

Pro-inflammatory vs. Anti-inflammatory

- The goal biochemically is to promote inherent cell regulatory mechanism to complete repair activity without being exaggerated into inflammatory chaos
- So the interest turns to the foods and lifestyle events that assist the body to find its intelligent and innately directed repair activity
- Proper sleep (Phase 1-4) will promote Nrf2 gene activity and thus promote body balancing of free radical damage and toxicity
- Caloric restriction as in the Phase II diet will promote hormetic activity and bring about sirtuin and heat shock protein production and increase Nrf2 activity
Promoting nuclear antioxidant activity

- Curcumin
- Green Tea
- Resveretrol
- DHA
- Quercitin
- Milk Thistle
- Sulforaphane
- Garlic (Alicin)
- Caloric restriction (Phase I/II)
- Sleep (Stage 1-4)
- Reduced toxic load
- Oxidative stress

Cytoplasm
- Catalase
- Glutathione
- SOD
- Phase II detox
- Inhibits NF-kB activity
- Inhibits microglial activation

Nuclear membrane
- DNA - Nrf2 activation
- Oxidative Stress

Oxidative Stress
- ※ Cancer
- ※ Cardiovascular Disease
  - Atherosclerosis
  - Heart failure
  - Myocardial Infarction
- ※ Inflammation
- ※ Renal Disease
- ※ Neurological Disease
  - Parkinsons
  - Alzheimers
- ※ Cellular apoptosis/necrosis
Extensive research within the past two decades has revealed that obesity, a major risk factor for type 2 diabetes, atherosclerosis, cancer, and other chronic diseases, is a pro-inflammatory disease. Several spices have been shown to exhibit activity against obesity through antioxidant and anti-inflammatory mechanisms. Among them, curcumin, a yellow pigment derived from the spice turmeric (an essential component of curry powder), has been investigated most extensively as a treatment for obesity and obesity-related metabolic diseases. Curcumin directly interacts with adipocytes, pancreatic cells, hepatic stellate cells, macrophages, and muscle cells. There, it suppresses the pro-inflammatory transcription factor nuclear factor-kappa B, signal transducer and activators of transcription-3, and Wnt/beta-catenin, and it activates peroxisome proliferator-activated receptor-gamma and Nrf2 cell-signaling pathways, thus leading to the down regulation of adipokines, including tumor necrosis factor, interleukin-6, resistin, leptin, and monocyte chemotactic protein-1, and the up regulation of adiponectin and other gene products. These curcumin-induced alterations reverse insulin resistance, hyperglycemia, hyperlipidemia, and other symptoms linked to obesity. Other structurally homologous nutraceuticals, derived from red chili, cinnamon, cloves, black pepper, and ginger, also exhibit effects against obesity and insulin resistance. Expected final online publication date for the Annual Review of Nutrition Volume 30 is July 17, 2010.
Sulforaphane protects immature hippocampal neurons against death caused by exposure to hemin or to oxygen and glucose deprivation.

Soane L, Li Dai W, Fiskum G, Bambrick LL
Department of Anesthesiology, Center for Shock, Trauma, and Anesthesiology Research (STAR), Uof U Medicine

Oxidative stress is a mediator of cell death following cerebral ischemia/reperfusion and heme toxicity, which can be an important pathogenic factor in acute brain injury. Induced expression of phase II detoxification enzymes through activation of the antioxidant response element (ARE)/Nrf2 pathway has emerged as a promising approach for neuroprotection. Little is known, however, about the neuroprotective potential of this strategy against injury in immature brain cells. In this study, we tested the hypothesis that sulforaphane (SFP), a naturally occurring isothiocyanate that is also a known activator of the ARE/Nrf2 antioxidant pathway, can protect immature neurons from oxidative stress-induced death. The hypothesis was tested with primary mouse hippocampal neurons exposed to either O(2) and glucose deprivation (OGD) or hemin. Treatment of immature neurons with SFP immediately after the OGD during reoxygenation was effective in protecting immature neurons from delayed cell death. Exposure of immature hippocampal neurons to hemin induced significant cell death, and both pre- and cotreatment with SFP were remarkably effective in blocking cytotoxicity. RT-PCR analysis indicated that several Nrf2-dependent cytoprotective genes, including NAD(P)H quinoneoxidoreductase 1 (NQO1), hemeoxygenase 1 (HO1), and glutamate-cysteine-ligase modifier subunit (GCLM), which is involved in glutathione biosynthesis, were up-regulated following SFP treatment both in control neurons and following exposure to OGD and hemin. These results indicate that SFP activates the ARE/Nrf2 pathway of antioxidant defense and protects immature neurons from death caused by stress paradigms relevant to those associated with ischemic and traumatic injury to the immature brain.
Nuclear erythroid-related factor 2 (Nrf2), a redox-sensitive transcription factor, is involved in transcriptional regulation of many antioxidant genes, including glutamate-cysteine ligase (GCL). Cigarette smoke (CS) is known to cause oxidative stress and deplete glutathione (GSH) levels in alveolar epithelial cells. We hypothesized that resveratrol, a polyphenolic phytoalexin, has antioxidant signaling properties by inducing GSH biosynthesis via the activation of Nrf2 and protects lung epithelial cells against CS-mediated oxidative stress. Treatment of human primary small airway epithelial and human alveolar epithelial (A549) cells with CS extract (CSE) dose dependently decreased GSH levels and GCL activity, effects that were associated with enhanced production of reactive oxygen species. Resveratrol restored CSE-depleted GSH levels by upregulation of GCL via activation of Nrf2 and also quenched CSE-induced release of reactive oxygen species. Interestingly, CSE failed to induce nuclear translocation of Nrf2 in A549 and small airway epithelial cells. On the contrary, Nrf2 was localized in the cytosol of alveolar and airway epithelial cells due to CSE-mediated posttranslational modifications such as aldehyde/carbonyl adduct formation and nitration. On the other hand, resveratrol attenuated CSE-mediated Nrf2 modifications, thereby inducing its nuclear translocation associated with GCL gene transcription, as demonstrated by GCL-promoter reporter and Nrf2 small interfering RNA approaches. Thus resveratrol attenuates CSE-mediated GSH depletion by inducing GSH synthesis and protects epithelial cells by reversing CSE-induced posttranslational modifications of Nrf2. These data may have implications in dietary modulation of antioxidants in treatment of chronic obstructive pulmonary disease.


Abstract: Astrocytes may modulate the survival of motor neurons in amyotrophic lateral sclerosis (ALS). We have previously shown that fibroblast growth factor-1 (FGF-1) activates astrocytes to increase secretion of nerve growth factor (NGF). NGF in turn induces apoptosis in co-cultured motor neurons expressing the p75 neurotrophin receptor (p75NTR) by a mechanism involving nitric oxide (NO) and peroxynitrite formation. We show here that FGF-1 increased the expression of inducible nitric oxide synthase and NO production in astrocytes, making adjacent motor neurons vulnerable to NGF-induced apoptosis. Spinal cord astrocytes isolated from transgenic SOD1G93A rats displayed increased NO production and spontaneously induced apoptosis of co-cultured motor neurons. FGF-1 also activates the redox-sensitive transcription factor nuclear factor erythroid 2-related factor 2 (Nrf2) in astrocytes. Because Nrf2 increases glutathione (GSH) biosynthesis, we investigated the role of GSH production by astrocytes on p75NTR-dependent motor neuron apoptosis. The combined treatment of astrocytes with FGF-1 and t-butylhydroquinone (TBHQ) increased GSH production and secretion, preventing motor neuron apoptosis. Moreover, Nrf2 activation in SOD1G93A astrocytes abolished their apoptotic activity. The protection exerted by increased Nrf2 activity was overcome by adding the NO donor DETA-NONOate to the co-cultures or by inhibiting GSH synthesis and release from astrocytes. These results suggest that activation of Nrf2 in astrocytes can reduce NO-dependent toxicity to motor neurons by increasing GSH biosynthesis.
Naturally occurring phytochemicals for the prevention of Alzheimer's disease.

Alzheimer's disease (AD) is an age-related neurodegenerative disease increasingly recognized as one of the most important medical problems affecting the elderly. Although a number of drugs, including several cholinesterase inhibitors and an NMDA receptor antagonist, have been approved for use, they have been shown to produce diverse side effects and yield relatively modest benefits. To overcome these limitations of current therapeutics for AD, extensive research and development are underway to identify drugs that are effective and free environmental factors that may provide protection. In particular, curcuminoids have been found to prevent AD because of their anti-amyloidogenic, anti-oxidative, and anti-inflammatory properties.

Green Tea catechins have been suggested to have the potential to prevent AD because of their anti-amyloidogenic, anti-oxidative, and anti-inflammatory properties.

New Product Alert – Read All About It!

- **HerbaVital** released April, 2010 is a unique combination of factors to reduce the physiologic decline known as aging, but also acts as a hormetic influence to up-regulate stress responsibility and therefore survival status. This is a cocktail of daily herbal constituents that can universally support the declining stress response that is so essential to wellness and vitality. It is a strategy in a formula for daily minimizing of the underlying process of aging. This product takes the assessment out of the picture for the clinician and addresses the common background issues at work universally in the patient.

- **HerbaVital**:  
  - Japanese Knot Weed root extract 100:1 80 mg providing 36 mg of natural resveretrol  
  - Milk Thistle seed 5:1 50 mg providing 48 mg of silybin  
  - Korean Ginseng root 5:1 50 mg  
  - Masson Pine bark 100:1 50 mg providing 37.5 mg proanthocyanidins  
  - Ginkgo Leaf 50:1 30 mg
Product Alert – Read All About It!

- **Vitanox** is a unique combination of herbs to provide strong antioxidant protection, and now we discover also acts to up-regulate Nrf2 gene activity and subsequent survival compound status increase, including glutathione synthesis. This is a cocktail of daily herbal constituents that can universally support the overloaded detoxification and inflammatory mechanisms. It is a strategy in a formula for daily minimizing of the underlying process of aging and degeneration. This product was introduced by Kerry Bone based on widespread agreement about the merits of these herbs, before and correctly predicting the emerging research around Nrf2 gene activation.

  - **Vitanox tablet:**
    - Rosemary leaf extract 5:1 200 mg providing carnosol and rosmarinic acid
    - Green Tea leaf extract 25:1 166.7 mg providing 83.35 mg of catechins
    - Turmeric rhizome extract 25:1 80 mg providing 70.4 mg curcumonoids
    - Grape Seed extract 120:1 50 mg providing 42.5 mg procyanidins

Product Alert – Read All About It!

- **Cruciferous Complete** is a combination of kale and brussel sprouts to protect against free radicals and now also is shown to up-regulate Nrf2 gene activity and subsequent survival compound status increase, including glutathione synthesis. This nutrient supports Phase I & II detoxification pathways promoting reduction of toxic load in the body and well as supports repair mechanisms involving the eye. It contains a myriad of nutrients including vitamins B6, C, K, calcium, copper, potassium, and dietary fiber. It also contains carotenoids, which include beta carotene and lutein which help quench free radical ROS effects and retinal repair activity.

  - **Cruciferous Complete capsule:**
    - Vitamin K 4 mcg
    - Potassium 10 mg
    - Kale 300 mg
    - Brussel Sprouts 300 mg
### Who would benefit from Nrf2 Activator?

- Patients with Alzheimers
- Patients with Parkinsons
- Exposure to physical stress
- Overexposure to oxidation
- Traumatic Brain Injury
- Fisher Syndrome
- Huntington’s Disease
- Inflammatory Myopathy
- ALS

### Protocol – Inflammatory Pillar

- **General inflammatory down-regulation:**
  - Food Allergy determination
  - Antronex (6-12)
  - Cataplex ACP (6)
  - Boswelia Complex (6)
- **Adrenal Imbalance:**
  - Drenamin (6)
  - Sleep restoration (Phase 1-4)
  - Withania (4)
- **Autoimmune inflammatory cascades:**
  - Rehmannia Complex (4)
  - EFA support (Tuna, Linum) (4)
Comprehension:

True or False – Allergy engines can cause other secondary allergic responses

Multiple choice – Best way to reduce inflammatory cascades is by a) Limiting food allergy exposure, b) Repair gut lining, c) Reduce cortisol/stress elevations

True or false – Best way to demonstrate food allergies is with elimination/re-introduction phenomenon

4 – Inflammatory Status Pillar

Cumulative Repair Deficit – functional definition
Cytokine driven inflammatory levels drive the adrenals
All inflammation is perceived as a wild animal trying to eat you - fight or flight
Cortisol increases, adrenals fatigue

Tests & Analysis:
- Hair Analysis
- Saliva tests – ASI
- Symptom Survey
- Kinesiological
- Food Allergy Testing
- Elimination/Reintroduction Phenomenon

Products of Choice:

Food allergy elimination
- Antronex (8), Allerplex (12), Cataplex ACP (6), Calcium Lactate (6), Drenamin (6), Rehmannia Complex (4), Boswelilia Complex (4), Zypan (6)
5 - Immune Burdens

- Hidden cavitated infection/infestation constantly up-regulates the immune system fatiguing bone marrow and adrenals
- Infections - Congaplex (15), Thymex(15), Immuplex(9), SSO(9), Allerpex(15), Echinacea(6), Golden Seal(6), Astragulus(4) for bone marrow depression, Cat’s Claw(6)
- Infestations - Zymex II(6), Multizyme(6), Lact Enz(6), Wormwood(6)
- Heavy metal toxicity – Homocysteine pathway & variable protocols
Immune Defense – 5 levels

- A healthy Immune Defense/Repair System (IDRS) equals ample capacity to neutralize foreign items (translate foreignness to friendliness) resulting in no delayed allergies or hypersensitivities
- Five lines of defense:
  - 1. Mucins – effective polysaccharide traps of toxins, pathogens, immunogens (mucins say if you are foreign, you are excluded)
  - 2. Secretory IgA (sIgA) - synthesize complex protective proteins
  - 3. Probiotic Microflora – 8-24 billion mixed flora (9 strains) to degrade toxins and produce nutritives
  - 4. Mucosal permeability barrier – excludes large molecular weight foreign substances (immunogens, antigens)
  - 5. Dendritic cells including macrophages, fibroblasts, monocytes, endothelial cells … - to recycle foreign invaders and cell debris responding the same to infectious and non-infectious invaders (50 billion consumer cells x 50 organisms / immune reactor = 2.5 trillion items consumed daily – brushing teeth introduces 2-4 million of foreign invaders) – able to handle easily any known pathogen (tuberculosis, Lyme’s, Syphillis, etc.)
Immune Defense – 5 levels

Healthy Immune function protects

Five lines of defense:
1. Mucins – Trappers
2. Secretory IgA (sIgA) - Binders
3. Probiotic Microflora – Metabolizers
4. Mucosal permeability barrier – Excluders
5. Dendritic Macrophages – Engulfers

Gut lining promotion with Cataplex AC (10), Gastrofiber (6) – soluble fiber, Lact Enz (4) – probiotic, Zymex (6) Zymex II (6) Garlic MediHerb (4) – infestations, Chlorophyll (2) – thickening gut lining

Innate & Acquired Immunity

Primary roles of the healthy immune system are:
- Identify potentially injurious and infectious substances
- Distinguish self antigens (non-threatening) from non-self (threatening)
- Assess the potential level of threat posed by infectious, toxic, or non-self antigens
- Mount a response that is appropriate to the level of threat
- Repair any damage that ensues from adversarial encounters

Too much response = inflammatory cascades
Too little response = tolerance of danger
WBC is optimal 6-8, outside optimal range may suggest acute or chronic immune burden, under 4 indicates bone marrow fatigue
Immune Tolerance
"Don’t be so Reactive"

- If it weren’t for tolerance we would constantly fighting a war with the foreignness everywhere.
- Complex feedback system developed through reactor and moderator substances activating and suppressing immune/inflammatory response creating an immune capacity of tolerance.
- Net reactor chemistry x net moderator chemistry = immune tolerance.
- Especially strategic to the autoimmune circumstance – goal is to reduce immune burdens and promote immune tolerance and thus reduce immune reactivity.
- Infections, infestations, toxicities, allergens, injuries, inoculations, etc. create a burden teasing out intolerance and excessive reactions.

Immune System – 2 Parts

- Generally recognized that there are 2 parts of the immune system.
  - Innate Immune System – Inborn initial response to eliminate microbes and infections, immediately or within hours – it is not in any locale or organ, it is in the WBC.
    - Each cell is equipped with different mechanisms that allow it to attack and eliminate pathogens from the body demonstrating immune versatility.
    - Non-specific defense against pathogens, activates the complement system of inflammatory response.
    - Identifies self vs. non-self, complement system triggers inflammation and identifies foreign substances, and activates the adaptive immune system.
  - Innate Immune Cells include:
    - Mast Cells
    - Natural Killer Cells
    - Phagocytes – Monocytes, Macrophages, Dendritic cells
    - Ranulocytes – Neutrophils, Eosinophils, Basophils
  - Adaptive Acquired Immune System – Learned response precisely addressing threat requiring 5-7 days for adaptive immune modulation to reach full activity and specific lymphocyte presence.
    - Results in TH1 cellular phagocytosis or TH2 humoral antibodies.
    - TH1 responds to living things bacteria, fungus, virus.
    - TH2 responds to non-living things (and parasites) including food, pollens, bad fats, heavy metals.
Common TH1 & Th2 Cytokines

- **TH1**
  - IL-12
  - IFN – gamma
  - TNF – alpha
  - IL-2
  - GM – CSF

- **TH2**
  - IL-4
  - IL-5
  - IL-10
  - IL-13

- IL-1 and IL-6 (and others) can show both TH1 and Th2 influences

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Immune Defense – 5 levels

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- Five lines of defense:
  - 1. Mucins – effective polysaccharide traps of toxins, pathogens, immunogens (mucins say if you are foreign, you are excluded)
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Immune Defense – 5 levels

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Cytokines – Immune Messages

- Immune response results in the release of cytokines meant to direct local and distant immune function
- These cytokine messenger molecules also drive HPA status and thus determine global brain status
- Cytokines subsequently cause the release of WBC inflammatory mediators to direct the inflammatory process of repair
- Therefore immune status and activity determine HPA/brain settings
- Hypervigilant or depressed immune states reflect in brain states
Immune mechanisms – schematic

Cell Membrane

Foreignness

Nuclear Membrane

Cytoplasm

Nuclear genetic code

Gene

Activation

Tolerance mechanisms moderating acquired immune activation

Reactors mediators

Sequential Immune Up-Regulation

- Especially under the teeth, diverticulosis, severe infections near or in bone, body cavities like sinus, ears, pelvic, intestinal
- Sequential immune bolstering protocols for one month each at therapeutic dosage – “deep cleaning”
- Up regulate immune system gradually beginning with Sesame Oil Perles (6/day), followed by Thymex (10/day), then Immuplex (6/day), Congaplex (15/day), Allerplex (15/day), Echinacea (4/day), Astragalus (4/day)
- Clear infestations with Zymex II (6/day), Multizyme (4/day), Wormwood Complex (4/day) – also treats mycoplasmic infections
- Finally use Chaparral with high concentration of NDGO (strongest known antioxidant) – will clear systemic infection including bowel dysbiosis and infections
New Product Alert – Read All About It!

- **Epimune Complex** released November, 2009 is useful to modulate immune responses, similar to echinacea, changing cytokine cascades impinging on the HPA Axis regulatory mechanisms. This results in a lift in attitude and positive outlook. As well immune responses are amplified resulting in immediate improvement to illness pathogen responses. Is this an immune product or an endocrine product or both?

- Epicor is dried fermented Brewer’s Yeast fed a proprietary blend of nutrients and then stressed under anaerobic conditions which provides vitamins, polyphenols and betaglucan that acts as immune modulation
- Maitake mushroom (Grifola Frondosa) provides immune modulating compounds called proteoglucans that is shown to modulate receptors on WBC and macrophages
- Turkey Tail (Coriolus Versicolor) also called cloud mushroom promotes vigor and vitality provides polysaccharides and proteoglucans to encourage gene expression of cytokine receptors of WBC’s, increased percent of T helper cells, and increase of interferon gamma

**Epimune Complex:**
- Epicor 500 mg providing dried yeast fermentate
- Maitake Gold 404 8 mg
- Maitake mushroom powder 48 mg
- Turkey Tail Mushroom Powder (Coriolus) 150 mg
- Calcium Lactate 30 mg
- Vitamin C from Acerola berries 20 mg
- Zinc rice chelate 10 mg

Heavy Metal Toxicity

- Endocrine disrupters are the most pervasive and severe impact of heavy metals
- Most common metals are Pb, Cd, Hg followed by benzenes, chlorine, fluoride
- Best common chelating agents: milk thistle, cilantro, bladder wrack (Pb, Cd, Hg), garlic,
- Essential to strengthen parotid function, liver & kidney support, promote methyl group formation and detoxification with folic acid, folate, B6 and B12
## Heavy Metal Toxicity

- 1 in 6 children diagnosed with developmental disorder
- 1 in 45 homes have an autistic child, 10 years ago 1 in 10,000 now 1 in 149
- Causes of death: #1 heart, #2 cancer, #3 hospital, #4 neurogenic (mercury)
- Inability to methylate creates dopamine buildup (hyperactive), autism, Alzheimer’s – requires genes MTR, MTRR, MTHFR (Methylenetetrahydrofolate Reductase) – if missing from one parent or two determines inability to excrete and predicts problems
- Thimerosal is ethyl-mercury used as topical antiseptic and preservative in vaccines and contact lens solution
- Mercury/heavy metal toxicity associated by numerous studies with heart disease and cancer as well as neuro-degeneration
- Mercury known to bind at beta receptor of GTP (Guanisine triphosphate) and dismantle tubulin molecules resulting in collapse of cellular structure – this is why it preserves so well

### Toxic metals are damaging free radical oxidizing agents when:
- Calcium high, Magnesium low
- Antioxidant deficiency
- Net Acid Excess (NAE)
- EFA deficiency
- Hormone imbalance

### Toxic metals are determinants in:
- Autoimmune Disease
- Immune dysfunction syndromes (CFIDS, FM, ALS, endometriosis)
- Treatment resistant conditions – ‘non-responders’

### Biologic effects of mercury:
- Inhibition of enzymes – binds at enzyme active sites where Mg, Mn, Mo, Zn, Cu are needed for enzyme catalyst activity
- Disrupts mitochondrial energy generation
- Provokes autoimmunity by binding to receptors, enzymes, and proteins making the body’s own elements foreign to itself

### Half life of methylmercury is 50-70 days in most tissues, 200-240 days in brain – turnover rate depends on trans-sulfuration pathway (Sulfur Amino Acids), Mineral status for intracellular buffering, and Redox/ Ascorbate levels
### Toxic Metals

- Sources of biologically active mercury:
  - Amalgam dental applications
  - Thimerisol (ethylmercury) in vaccines, injectables, contact lens solution
  - Mercurial aerosol from coal power plants (35%), Medical waste incineration disposal (30%)
  - Contaminated fish/shellfish
  - Dust
  - Pesticides

- Experts generally agree that if you can get the mercury out, the rest of the metals will follow

### Liver Phase I/II (III) Detoxification

- Cytochrome P450 enzyme system is used to eliminate drugs, toxins, unwanted substances, biological agents, and estrogens
  - **Phase I (P450)** – oxidation, reduction, hydrolysis, hydration, dehalogenation = increased polarity, less lipid-soluble, reactive oxygen intermediates with potential for secondary tissue damage “sticky reactive molecules” (Folic Acid, B12, B6, C, AA, and then antioxidants to protect from intermediates only)
  - **Phase II** – sulfation, methylation, glucuronidation = polar water-soluble bile and urine (sulfation, homocysteine support, and gut symbiotic bacteria + soluble fiber are essential fuels)
  - Phase III (Antiporter) – a recirculation process not yet accepted scientifically, active efflux pump decreasing intracellular concentration of xenobiotics allowing for a “second-pass” with the detox enzymes located at or near the cell membrane controlled by MDR1, MDR2, MDR3 genes “Multidrug Resistance genes (more concentrated presence in cancer cells, liver, kidney, pancreas, intestines, brain, testes)

- Support Phase I & II with Folic Acid (2), Fortil/B12 (2), Cataplex G (4) (including Riboflavin, Niacin, B6, C), Cruciferous Complete (2), SP Complete (2Tbsp), H2O (minimum 48 oz)
Homocysteine Metabolism

The Transulfuration Pathway

Homocysteine

- Methyl acceptor
- Methylated acceptor

Methionine

- S-adenosyl-methionine
- Methyl acceptor

S-adenosyl-homocysteine

- Vitamin B12

Folate Cycle

Vitamin B6

Cysteine

Sulfate + H2O

Urine

Do-it-yourself Candida Test

- Spit first sputum in the morning before putting anything in the mouth into a glass of water
- Check the water every 15 minutes for up to one hour
- If you see strings (like legs) traveling down into the water from the saliva floating on the top, or “cloudy” saliva that sinks to the bottom of the glass, or cloudy specks suspended in the water then the saliva is carrying a fungal overgrowth
- If no strings and the saliva is floating after 1 hour it appears you are Candida free
- Support with Zymex, Zymex II, Lact Enz, Lactic Acid Yeast, Immuplex, and alkalize the gut
Protocol – Immune Pillar

❖ General Immune Up-regulation:
  - Sesame Oil Perles (6)
  - Immuplex (6)
  - Cyruta Plus (6)
  - Echinacea Premium (4)

❖ Infection (Acute or Chronic):
  - Thymex (10)
  - Cataplex AC (12)
  - Congalex (14)
  - Allerplex (14)
  - Broncafect (6)
  - Albaplex (6) Kidney
  - Arginex (6) Kidney
  - Cat’s Claw Complex (4)
  - Golden Seal (4)
  - Burdock Complex (4)
  - Inf Fighter (100 Drops)

❖ Infestation parasites:
  - Zymex II (6)
  - Multizyme (4)
  - Last Enz (4)
  - Wormwood (4)

❖ Bone Marrow Depletion:
  - Arginex (6)
  - Astragulus (4)

Comprehension:

❖ True or False – Less than optimal WBC (6-8) may indicate cavitated immune burden

❖ Multiple choice – Best way to reduce immune burden is a) Sequential immune bolstering, b) Infestation clearing, c) Toxic heavy metal elimination, d) Support Phase I/II detoxification pathways, e) all above

❖ True or false – Sequential immune up-regulation reduces the immune burden

❖ True or false – Chelaco chelates mercury
5 – Immune Burdens Pillar

- Hidden cavitated infection/infestation constantly up-regulates the immune system fatiguing bone marrow, congesting lymphatics and fatiguing adrenals – creates ‘left shift’ blood adaptation
- Infections
- Infestations
- Heavy metal toxicity
- Use Sequential Immune Unburdening protocols
- Support homocysteine, Phase I & II detoxification

Tests & Analysis:
- Symptom Survey
- Kinesiological
- Blood & Urine Testing
- Stool Analysis
- Hair Analysis

- Infections - Congaplex (15), Thymex (15), Immuplex (9), Sesame Seed Oil (9), Allerplex (15), Cyruta Plus (6), Echinacea (6), Golden Seal (6), Astragalus (4) for bone marrow depression, Cat’s Claw (6)
- Infestations - Zymex II (6), Multizyme (6), Lact Enz (6), Wormwood (6)
- Toxin/heavy metal toxicity – Chelaco (2), Livaplex (4), Cruciferous Complete (2), variable protocols
6 – Circulatory Status

- Circulatory status determines tissue nutrition and detoxification
- One of the primary etiology for all degenerative disease
- Parasympathetic vs. sympathetic
- Circulatory health includes blood quality and vascular integrity
- Loss of circulation induces hypoxia, toxicity, apoptosis, adaptive functions

#6 Core Physiologic Principal

Decreased circulatory status

Intimal inflammatory fertile for atherous activity
- Nutrient & mineral insufficiency for repair
- Arterial, Venous, Lymphatic congestion
- Multifactorial fertility for vascular degenerative processes
- Hypoxia in distal tissues/congestion proximal
- Chronic degenerative progression
- Disease diagnosis – Drugs & Surgery
- Reversal of degenerative processes
- Restored circulatory status (oxygen & nutrients)
- Increased tissue repair & resilience
- Confidence in healing
- Profound physiologic modulation

Nutrient repletion promoting vascular health
The Circulatory Mission -

- Heart, arteries, veins, capillaries, portal and general circulatory systems provide to each cell in the body the available ‘oceanic milieu’ required for life – it is an internal portable environment to live around allowing eukaryotes the ability to control the environment
- Heart is brain of the circulatory system pumping 70 beats/minute, 100,000 times/day, making the heart the busiest organ of the body under the most mechanical and chemical stress
- Cells comprising the heart require nutrition for proper function – deficiency causes disease to develop
- Every cell in the body depends on the circulatory system to deliver oxygen and nutrition and remove CO2 and wastes

Cardiovascular Deficiency -

- Nutritional deficiency in the coronary vasculature leads to blockage and hypoxia/ischemia and cell failure (heart attack)
- Deficiency in the electrical nervous system of the heart leads to irregular heart beats (arrhythmias)
- Deficiency in the cardiac musculature leads to impaired pumping/strength and shortness of breath and edema
Heart Disease Epidemic -

- WHO estimates 12 million deaths per year worldwide – every second death is cardiovascular in men and women
- 10 million Americans diagnosed with CAD
- 1.5 million suffer heart attack annually – 300K sudden death before medical attention
- 30 million suffer hiBP
- 9 million suffer arrhythmias
- 3 million suffer CVA
- $100 billion spent annually in US = $200K/minute
- $10 billion annually for bypass surgery
- Survivors of heart attacks & CVA are disabled costing $60 billion/year for nursing homes
- Exploding health care costs have become the greatest threat to economic recovery

The Heart’s Food -

<table>
<thead>
<tr>
<th>Vitamin C</th>
<th>Vessel stability, deposit removal, cell fuel, antioxidant</th>
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<tbody>
<tr>
<td>Vitamin E</td>
<td>Deposit removal, Antioxidant</td>
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<tr>
<td>Beta Carotene</td>
<td>Antioxidant</td>
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<tr>
<td>L-Proline</td>
<td>Vessel teflon, atherosclerotic removal</td>
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<tr>
<td>L-Lysine</td>
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<tr>
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<tr>
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<td>Cholesterol lowering, cell fuel</td>
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<tr>
<td>Vitamin B-3 (Niacinamide)</td>
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<tr>
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<tr>
<td>Vitamin B-6</td>
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<tr>
<td>Vitamin B-12</td>
<td>Hemopoiesis, cell fuel</td>
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<tr>
<td>Folic Acid</td>
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<tr>
<td>Vitamin D</td>
<td>Calcium supply</td>
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<tr>
<td>Biotin</td>
<td>Cell fuel</td>
</tr>
<tr>
<td>Minerals &amp; trace elements (Calcium, Magnesium, Zinc, Manganese, Copper, Selenium, Chromium, Molybdenum)</td>
<td>Multiple cell functions</td>
</tr>
</tbody>
</table>
The Cholesterol Game -

- Traditional risk factors of CAD are total cholesterol, HDL, LDL, Triglycerides, ratios (only 50-60% accurate)
- Individualized risk factors fill in the blank:
  - Genetics – Lipoprotein a
  - Nutrition – Homocysteine
  - Inflammation – C-Reactive protein
  - Viscosity – Fibrinogen
- Lipoprotein a - hereditary marker for CAD, carotid atherosclerosis, cerebral infarction risk – niacin (3-4 g/day reduces up to 38%)

Approach to wisdom

Throughout history the really fundamental changes in societies have come about not from the dictates of governments and the results of battles, but through vast numbers of people changing their minds, sometimes only a little bit.

Willis Harman
Managing Lipoprotein Dyslipidemia

♫ For decades the primary blood marker associated with cardiovascular disease has been cholesterol – total cholesterol at first then LDL and HDL, deemed ‘bad and good’ cholesterol
♫ Additional risk factors have emerged including c-reactive protein as an indication of inflammation and homocysteine as measuring the attachment potential to the wall of the artery
♫ Although lifetime coronary heart disease mortality can be correlated to cholesterol, it does not predict CHD events in individuals as well as could be hoped

The Lipid Players

♫ LDL – total amount of cholesterol found in low-density lipoprotein particles – currently specialists seek to limit under 70 with high risk individuals – large clinical trials have confirmed that LDL reduction decreases the risk for future events
♫ HDL – total cholesterol found in high density lipoprotein particles – these particles are thought to assist in transporting cholesterol from the tissue to the liver for removal – In general a 1 mg/dl increase in HDL results in a 2-4% decrease in risk (most seen in women)
♫ Non-HDL cholesterol – total amount minus HDL – easily derived form simple lab test make this useful in cost prohibitive cases – high risk <130 mg/dl, moderate risk <160, low risk <190
The Lipid Players

- Triglycerides – a form of fat in the blood is elevated in insulin resistant dyslipidemia – fasting TG above 150 is a criteria of metabolic syndrome, below 150 is normal, 150-199 borderline high, 200-499 high, over 500 very high
- Apolipoprotein B – a protein found in the outer shell of all lipoproteins – each VLDL, IDL and LDL particle contain 1 molecule of apo B so it is an estimate of the atherogenic character of the lipid particles – guidelines say high risk <90, moderate risk <110, low risk <130
- Apolipoprotein A – found within HDL only – A ratio > 1 of Apo B to Apo A is considered atherogenic
- VLDL – becoming a key constituent of atherogenic profile related to insulin resistance and diabetes
- Lipoprotein a – essentially same structure as LDL except it has apo (a) covalently attached to the surface of LDL particles which make it promote coagulation and increase oxidative inflammatory activity – Niacin is only reliable way to lower Lp(a)

Anatomy of Lipoproteins -

- Cholesterol and triglycerides are transported through the blood in particles called lipoproteins, that are classified by their relative densities
- Lipoproteins have a shell derived from phospholipids, free cholesterol and apolipoproteins – and a central core of triglycerides and cholesterol esters
- The number and size of the various particles and corresponding lipoprotein levels and the more accurate markers of atherogenic potential
Scurvy has always been a feared disease – vascular disease is subclinical scurvy
Vitamin C is required to build collagen (tissue cement and reinforcement), without which vascular integrity declines
Vascular integrity must be maintained to maintain positive pressure system - weakened vessels (leaking) require repair by lipoprotein (a) (wrapped with apolipoprotein b – it plugs and seals the vessel
Less plugging material and less adhesive tape (apo b = less risk for heart disease
Lipoprotein (a) most effective repair molecule to survive subclinical scurvy – chronic C deficiency results in excessive repair and buildup of atherosclerotic tumors/plaque
Lipoprotein (a) is heart risk factor 10 times greater than LDL

- 0-20 mg/dl - low risk for heart disease
- 20-40 mg/dl - medium risk
- >40 mg/dl - high risk
Vitamin C - Lipoprotein(a) Connection

- High Vitamin C levels = little or no need for lipoprotein(a) molecules – level falls over time
- Low Vitamin C levels = great need for repair lipoprotein(a) molecules – level builds over time
- Prehistoric inherited genetic advantage developed during the ice ages – excessively activated in modern times
- Animals capable of synthesizing Vitamin C have little to no lipoprotein(a), and no incidence of vascular events
- Coronary arteries under tremendous stress – compresses and flattened 70 times/minute – when collagen levels fall these arteries will leak and become increasingly inflamed – sticky to plaque
- Cataplex C (3), Cardioplus (6), Vasculin (6), Cataplex ACP (3), Collagen C (3), Cataplex B (6), Cataplex G (6), Organic Minerals (6), Magnesium (3), L-Carnitine (150 mg), L-Proline (500 mg), L-Lysine (500 mg), CoQ10 (25 mg), Folic Acid (2)
- Gingko Biloba reduces Lpa significantly

Homocysteine & Vascular Risk

Relative risk of CAD with major risk factors

Castelli et al., JANA 256:2235, 1996
Nail bed Analysis

Lunalae are the half-moons at the base of the fingernail, representing the new growth blood-rich supply indicating cellular oxygenation – absent with poor circulation – exaggerated with too much heart activity.

8 Lunalae normally ¼ of nail (absent on baby fingers) –

- Absence or reduction indicates vascular or lymph blockage
- Also smaller luna indicate decreased hormonal status and reduced lung activity
- Oversized luna show BP/CVA tendencies
- Baby finger luna suggest overworked heart/hiBP
- Shoot-like spurt growing form the border of the luna suggest a thyroid imbalance
Nail bed Analysis

Brain, Excretory, Reproductive

Liver, Gallbladder, Nervous

Circulatory and Heart

Hormonal and Reproductive

Digestive, gastrointestinal

Nail bed Analysis

Blackish or yellow — Liver, Thyroid, fluid

Red circular spots — Heart

Bluish, pulls away from skin — autoimmune lupus, RA

Blush — Lungs, respiratory

Short wide nail — Infertile

Spoon, concave — Mineral, anemia

Beaded string bumps — RA, arthritis

Vertical ridges — Kidney, aging, nerve, respiratory

Darker banding at tip of nail — Liver function

Narrow nails — heart

Brittle, broken — Thyroid

Shoot-like growths — Thyroid

Ridges, easily torn, split — Adrenal

Horizontal ridges — Kidney, proteinuria, lead, arsenic, measles, mumps, cuticle inflammation

Dark lines that move with growth — Ulcers, internal bleeding

Triangular — R. Arthritis

Pin-pointed indented nails — Fungal, immune suppression

Clubbed, convex — Lungs, respiratory
Tongue Analysis

- Teeth marks – tongue swollen in mouth indicates spleen (immune), pancreas (digestion), kidney – teeth marks on inner cheek indicate severity
- Cracks (Vitamin B deficiency) – digestive, stomach, kidney, spleen
- Red spots – estrogen imbalance
- Dark, engorged veins – liver congestion, heavy metal toxic (should be pink or blue and not protruding)
- Frenular cysts – Small intestine & colon health indicating polyp formation
- Color –
  - White – Anemia, parasites, hormones
  - Yellow – Stomach, spleen
  - Gray – Fungal, advanced disease
  - Red – Stomach, heart – tip only
  - Green – O2 lack, circulation
  - Purple – Heart, lung, O2 exchange
  - Black – Severe stage of disease
- Allergy patches – food allergies

Protocol – Circulatory Pillar

- General support:
  - Circuplex (6)
  - Horse Chestnut (4)
  - Vasculin (6)
- Heart Support and Renewal:
  - Circulatory - Cardioplus (6)
  - Vasculin (6)
  - Garlic 5000 (2)
  - Cayenne (4)
  - Hawthorne (4)
  - Horse Chestnut (2)
  - Electrical - Cataplex B (6)
    - Cataplex G (6)
    - Organically Bound Minerals (6)
  - Cardiomyopathy (viral) – Cataplex AC (12)
    - Sesame Oil (6)
- Claudication:
  - Collinsonia Root (6)
**Comprehension:**

- True or False – One of the two primary etiologies for all degenerative disease
- Multiple choice – Best way to promote circulatory oral chelation is with a) Garlic 2000 (4), b) Cayenne (2), c) Hawthorne (4), d) Horse Chestnut (2)
- True or false – Heart conductivity is promoted with B vitamins and minerals (Cataplex B, G, Calcium, Magnesium, Organic Minerals)
- True or false – Cardiac myasthenia or cardiomyopathy is usually a virus, best corrected with Cataplex AC (12) & Sesame Oil (6)

**6 – Circulatory Status Pillar**

- Circulatory status determines tissue nutrition and detoxification
- One of the primary etiology for all degenerative disease
- Parasympathetic vs. sympathetic
- Circulatory health includes blood quality and vascular integrity
- Loss of circulation induces hypoxia, toxicity, apoptosis, adaptive functions

**Tests & Analysis:**

- Symptom Survey
- Ear Creases
- Nail bed Analysis
- Tongue Analysis
- ACG (Acoustic Cardiograph)
- Heart Rate Variability Monitor
- Kinesiological

**Products of Choice:**

- Muscle - Cardioplus (6), Vasculin (6), Cardiotrophin (4), Tribulus (2), Cataplex C (6), Calcium Lactate (6), Calsol (6)
- Circulation - Garlic 2000 (4), Cayenne (2), Hawthorne (4), Horse Chestnut (2), Circuplex (6), Cyruta (6), Cataplex E2 (6)
- Conductivity - Cataplex G (6), Cataplex B (6), Organically Bound Minerals (6), Linum B6 (4), Tuna Omega (4)
- Viral Component – Cataplex AC (12), Cyruta Plus (6), SSO (6)
7 – Digestive Potency

- Digestion must bring in substances that provide energy and sustenance, and remove wastes
- 80% of immune system resides in the GI mucosal barrier - GALT
- Loss of ecology creates cascades of cytokines, immune modulation, inflammation, resorption of toxins, tissue degradation, leaky gut degeneration
- Famine in the midst of plenty
- Fasting as repair
#7 Core Physiologic Principal

**Ingestion**
- Normal reduction of food to nutrient components
- Abundance of CHO's, additives, toxicity
- Adaptive response
- Chronic weakened systems unable to break down food
- Loss of digestive ecology
- Increased immune burdens – inflammation
- Chronic tissue degeneration – leaky gut
- Palliative medication and decline

**Supported physiology**
- Initial detox / repair / fortification
- Restoration of gut integrity and health
- Balanced physiology creates balanced diet
- Healed, renewed, vital, repairing

**Digestion: Stage for Nutrition**
- Every living system (from cell to organ, to body, to community) must have 2 fundamental capabilities – to bring in substances that provide energy and sustenance, and to remove wastes.
- Absorption – the digestive system must be able to identify the substances necessary to maintain health and selectively take those into circulation through health transport and circulatory functions, while keeping out the damaging materials (toxins).
- Elimination – The same digestive system must be able to identify the wastes and detrimental substances and subsequently process and eliminate those detriments through intact protection and defense systems.
- The healthy digestion must differentiate good from bad in the environment, so the digestive system can begin to be respected as a sensient system, wherein we intake the external world into our gut and evaluate and relate appropriately to that external world.
- Over a lifetime a person will ingest 25 tons of food accompanied by pathogens and external toxins.
- In 1999 1 billion pounds of pesticides were applied in the US, with 5.6 billion pounds applied worldwide – pesticides are now a common component of our environment – even pharmaceuticals have been found in the water primarily from the elimination of un-metabolized drugs through the urine.
- Toxic exposure and environmentally related conditions account for 57-397 Billion dollars annually in the US and Canada.
- The ability to protect from these xenotoxins must be part of the health digestive system.
Digestion: Stage for Autonomy

- Pathogens can also be present and food allergens can create immediate and delayed responses from the immune/inflammatory systems
- The following diseases have been associated with food intolerances/allergies: cardiovascular, gastrointestinal, genitourinary, immune, mental/emotional, musculoskeletal, respiratory, skin, migraines
- First select friend from foe – then after recognition, the system must selectively absorb and transport substances, while eliminating detrimental materials at the same time
- To do this elaborate systems for digestion, absorption, protection, defense, transport, circulation and waste removal must be simultaneously present and operational

Digestion: Absorption

- The proper diet is only the beginning of the process – in developed world there is more food diversity available year round than in any other period in human recorded history – foods can be raw, minimally processed, shelf stable, prepackaged, prepared, nutrient dense, nutrient depleted
- Minimally processed foods are in general digested more slowly and the release of nutrients occurs at a rate influencing absorption – this rate determines the responses that the body has to food such as insulin, cortisol, insulin-like growth factor, enzyme activity and more
- Digestion involves the breakdown of larger molecules into smaller units:
  - Proteins → Amino Acids
  - Carbohydrates → Monosaccharides
  - Fats → Fatty Acids
- Water soluble nutrients (CHO, AA, Vitamins) are absorbed in the small intestine across the border brush cells through passive and active transport mechanism
- Fat soluble nutrients (Fatty acids, Vitamins) must first undergo emulsification with bile and then be absorbed into the lymphatic system for association with plasma proteins
- Defects with either water or fat soluble pathways will result in correlating specific nutrient deficiency and associated symptoms
Digestion: Protection & Defense

肠胃粘膜是连接我们内部和外部世界的最大界面，面积超过400平方米（是皮肤的200倍）。
肠胃上皮保护胃和肠免受酸、毒素、药物、酒精、病原体的伤害。

两个途径贯穿上皮：细胞内—通过细胞膜，细胞间—在细胞之间，由紧密连接的渗透性控制。
在不健康的情况下，这些连接会泄漏，允许分子进入循环，未被检测到，从而绕过身体的第一道防线并将致病原排除。

GALT（胃肠相关淋巴组织）含有60%的免疫系统，以及80%的免疫球蛋白生产的细胞——这个系统的首要目的是对抗外物。

盔甲：肠胃内衬

- 你的肠胃内衬有多厚？
- 儿童通常不敏感，因为其肠胃内衬的完整性和厚度。
- 世界通过肠胃内衬进入，而不会通过皮肤。
- 增厚肠胃内衬可能有助于增加自信、耐心和和平。
- 通过Cataplex AC (10)，GastroFiber (3)，Chlorophyll (4)，LactEnz (4)，减少食物过敏，增加蛋白质摄入SP Complete 2 Tbsp，补充10种菌群，包括著名的Casii物种，Colostrum/Gamma Globulin补充。
- 肠内衬厚度可以通过测量90%在肠道内衬中形成的唾液免疫球蛋白A来推断，故越薄，sIgA（唾液）水平越低。
Secretory IGA

- GALT produces two lines of defense: the localized secretory IgA is described as ‘antisepctic paint’ covering the intestinal tract as the predominant immunoglobulin on the surface of the GI mucosa
- SIgA prevents infections, neutralizes viruses, and removes antigens before they cross the mucosal barrier and reach circulation thus preventing activation of the inflammatory and complement immune responses
- Adults produce 3-4 grams per day, which can also be found in the saliva and colostrum as well
- Low level SIgA is associated with altered intestinal permeability and increased uptake of food antigens resulting in increased inflammatory and subsequent immune activation
- Antigens that escape the SIgA surveillance enter the second layer of GALT wherein the IgE & IgG mechanisms generate the antibodies and cytokines that represent full immune response
Th1 & Th2 pathways

- The systemic immune system consists of circulating lymphocytes as B cells and T cells in search of their target antigens.
- Antigens entering through a mucosal surface activate lymphocytes waiting in the mucosa-associated lymphoid tissues (MALT) that transport the antigens to the Peyer’s patches which are the doorway to the lymphatic system (immune responses to blood borne antigens are initiated in the spleen, while response to tissue antigens starts in the local lymph nodes).
- Current immune concept states that cellular immunity involves the Th1 pathway wherein T cells produce interferon and interleukin 2 activating macrophages and cytotoxic T cells that kill invading organisms.
- Th2 pathway is induced by antigenic stimuli leading to secretion of interleukins 4, 5, 6 by T helper cells which activate the antibody-producing B cells.
- Th1 and Th2 balance each other – increased Th1 responses are associated with autoimmunity and infective tendencies, whereas Th2 shift a person toward allergic responses.
- The hygiene theory dictates that reduction of childhood infections reduces Th1 response and skews towards the Th2 allergic tendencies.
- Recent data suggest an emerging Th3 pathways which down-regulates the Th2 responses.
- Gut flora variations can selectively suppress Th1 and Th2 pathways and thus induce tolerance.

Probiotics -

- The term probiotics is defined as live microbial supplementation that affects the host by improving the microbial balance.
- The two most important groups of probiotic bacteria are Lactobacilli and Bifidobacteria of which there are ten beneficial strains.
- Ten Beneficial strains:
  - B. Bifidum UABB-10 (formerly R0071) – most common found in infants and adolescents, resistant to gastric acidity and boosts immune system by up-regulating proliferation of immune cells.
  - B. Breve UABB-11 (formerly R0070) – most common in infants, resident throughout life, produces lactic acid, metabolizes over 20 carbohydrates, readily adheres to epithelial cells and blocks adherence of pathogens like E. Coli.
  - B. Longum UABL-14 (formerly R0715) – of human origin, promotes regularity, antagonizes pathogens.
Probiotics -

Ten Beneficial strains:
- **L. Acidophilus DDS-1** (formerly R0052) – Unique endogenous human strain, harder thermostable with only 7% loss of potency per year, combats pathogens such as H.Pylori, E. Coli, and salmonella, also produces B vitamins and reduces cholesterol.
- **L. Casei UALC-03** (formerly R0215) – Strengthens digestion and detoxifies environmental chemicals, also boosts GI immune activity and inhibits pathogens.
- **L. Paracasei UALPC-04** – Beneficial to the immune system increasing the number of IgA producing cells in the gut, antimicrobial specifically to onset of urogenital infections caused by Staph. Aureus, metabolizes efficiently prebiotic sugar FOS.
- **L. Plantarum UALP-05** (formerly R1012) – Remarkable species able to survive aerobic & anaerobic conditions, metabolizes 25 crabs, survives high salt solutions, stomach pH and bile acids, has some antioxidant capability, digests grains, grasses, vegetables, synthesizes L-Lysine and is antiviral therefore, eradicates pathogens such as staph. From fermented foods.
- **L. Rhamnosus UALP-06** (formerly R0011) – Primarily found in the small intestine, vagina, prevents urogenital and vaginal infections, tolerant to bile salts, reduces intestinal inflammation, inhibits early intestinal infection in infants, implants quickly, inhibits growth of streptococci & clostridia.
- **L. Lactis ssp. Lactis UALL-08** (formerly R1058) – Isolated from kefir culture, antimicrobial in vitro against several intestinal pathogens.
- **S. Thermophilus UAST-09** (formerly R0083) – One of two bacteria required to make yogurt, only reaches the upper intestine and produces some lactase which can aid lactose-deficient people, creates favorable conditions for lactic acid bacteria.

Elimination Diets – Forgotten Technology

- Elimination diets are the most powerful and under-utilized tools available to the clinician for addressing chronicity.
- A variety of ways: SP Purification is in fact an elimination diet 21 days long, food allergy elimination.
- Using IgG food antibody testing and elimination/provocation diets triggers can be identified not obvious in IgE testing.
- Systemic inflammation can be eliminated when Th1 (autoimmune) and Th2 (allergic) responses are balanced with probiotics.
- Conditions responsive to elimination diets include headaches, IBS, fatigue, AIDS, sinusitis, arthritis, skin disorders, fibromyalgia, CFIDS.
Fasting as Repair -

- There are multiple fasting methods that can result in detoxification, purification, and repair
- One day fasts – one day a week eat no solid food until breaking the fast at supper with a salad only (since the salad has little blood sugar modulation it represents a 36 hour fast)
- Three day fasts – three days eat no solid food for the first day, second and third days drink only 1 gallon water with 6 Tbsp. lemon juice, 3 Tbsp. Maple Syrup, and 2 tsp. Cayenne Pepper, breaking the fast with salad only on the evening of the third day and non-solids and salads the following day
- Five to Twelve day fasts – Same as three day fast but requiring one day for every five days fasting to break (a ten day fast requires two full days on non-solid food)
- All fasts should deliver the individual into a sound Phase II carbohydrate limiting diet

Bowel Transit Time -

- Defined as the time required for ingested food to travel from the mouth to the anus
- Diet affects transit time – foods high in fiber result in more rapid transit time and heavier, bulkier stools
- Daily roughage should include 25 grams of fiber per day (twice what average diet includes)
- Two types of fiber:
  - Soluble – dissolves in water, commonly found in fruits, legumes, barley, oats, generally slowing transit time, increasing satiety, increasing absorption, binding with bile acids and this reducing cholesterol, promote epithelial repair
  - Insoluble – does not dissolve in water, found in vegetables, whole grains, increase the bulk of the stool, reduce transit time
- Charcoal or carmine red dye capsules may be employed, or use a more natural method with ingesting 2 whole beets
- Normal transit time will appear as color in stool 12 – 14 hours after ingestions, with the last of the color within 36-48 hours
- Increasing water intake reduces rectal cancer by 92% by reducing transit time according to Taiwanese study (International Journal Of Cancer 1999; 82: 484-489)
- Fresh grinding 2 Tbsp of flax seeds daily is most effective way to ensure fiber abundance in diet
The Gut-Brain Connection

- A good book on our subject by Michael Gershon, MD is called “The Second Brain: Your Gut Has A Mind Of It's Own” is a groundbreaking new understanding of nervous disorders of the stomach and intestine.
- He writes, “Consider the lowly gut and its nervous system. The bowel is just not the kind of organ that makes the pulse race. No poet would ever write an ode to the intestine. To be frank, the popular consensus is the colon is a repulsive piece of anatomy. Its shape is nauseating, its contents disgusting and it smells bad. The bowel is a primitive, slimy snakelike thing. Its body lies coiled within the belly and it slithers when it moves. In brief the gut is despicable and reptilian, not unlike the brain, from which wise thoughts emerge. Clearly the gut is an organ only a scientist would love!”

The Intelligent Intestine

- The Danome Symposium held in Paris on July 14, 2002 stated the following,

  “The intestine is an extremely complex living system that participates in the protection of the host through a strong defense from aggressions from the external environment. This defense task is based on three constituents that are in permanent contact and dialog with each other: the microflora, mucosal barrier, and local immune system.”
What is Gut Flora?

- A large, diverse and dynamic population of micro-organisms
- Native bacteria are acquired during birth and during the first and second years of life
- Transient bacteria are continuously being ingested from the environment via:
  - Food
  - Water
  - Probiotics

Guarner F. Digestion 2006; 73(Suppl 1): 5-12

Distribution of Gut Flora

- The stomach and duodenum have very low numbers around $10^3$ cfu per g of contents
- There is a progressive increase along the jejunum and ileum from $10^4 \rightarrow 10^7$ cfu/g
- The large intestine contains around $10^{12}$ cfu/g

$10^{12} = 1,000,000,000,000$

Guarner F. Digestion 2006; 73(Suppl 1): 5-12
Diversity

- Nature, Volume 453, Issue 7195, may 29, 2008 – Article “Who Are We”

“The we refers to the wild profusion of bacteria, fungi and viruses that colonize the human body. These unseen passengers number in the trillions. According to one common estimate, the human gut contains at least a kilogram of bacteria alone. They contribute so much to the human biology that it is difficult to say where the body ends and the microbes begin…

The NIH’s five year human microbiome project will spend much of its money identifying which bacteria are lodged where in the body and compiling a reference set of their genetic sequences. Metagenomics of the human intestinal tract (MetaHIT) will focus on the microbial inhabitants of the gut, the main repository if the microbiota, and how they contribute to obesity and inflammatory bowel disease.”

Gut Stats

- Gut flora comprises between 4-8 lbs of total body weight – microflora varies from person to person and can represent a signature
- 99% of the bacteria come from 30-40 species
- Intense metabolic activity, especially in the colon
- Equilibrium (qualitative and quantitative) is critically important
- There is quorum sensing – communication between the bacteria and other cells of the gut through cytokine messengers
- Gut balance is vital and subtle
Gut Flora Diversity

- Up to 40,000 different species of bacteria\(^1\)
- Every person has a pattern of predominant and subdominant species that is unique to them\(^2\)
- Some bacterial strains are unique to each person\(^2\)

1. Frank DN, Pace NR. Gastrointestinal microbiology enters the metagenomics era. Curr Opin Gastroenterol. 2008;24:4-10
2. Guarner F. Digestion 2006; 73(Suppl 1): 5-12

3 Functions of Gut Flora

Metabolic functions:
- Fermentation of non digestible carbohydrates which promotes the growth of the microflora and the production of short chain fatty acids (SCFA)
- Salvage of dietary energy
- Enhanced absorption of mineral ions eg calcium, magnesium and iron

Guarner F. Digestion 2006; 73(Suppl 1): 5-12
3 Functions of Gut Flora

Metabolic functions:
- Production of some vitamins, e.g., K, B₅, B₇, B₉, B₁₂
- Synthesis of amino acids from ammonia or urea
- Control of colonic pH
- Metabolism and enterohepatic circulation of xenobiotics
- Pro/anticarcinogenesis

Guarner F. Digestion 2006; 73(Suppl 1): 5-12

3 Functions of Gut Flora

- Protective functions:
  - Provide a barrier effect that prevents the invasion of pathogens, by the excretion of antimicrobial substances
- Trophic functions:
  - Control of epithelial cell proliferation and differentiation
  - Immune system development and regulation

Guarner F. Digestion 2006; 73(Suppl 1): 5-12
Unified Mechanisms of Influence

- Physiologic possibilities have not been fully explored – intestinal enhanced function through pre and probiotic promotion reveals that this is a foundational event in the modulation of disease/health
- Immune modulation promotes general widespread resilience and potency
- For this reason digestive tract potency is a primary unified mechanism of health maintenance

The Gut as a Sentient System

- Every living system must have 2 fundamental capabilities – to bring in substances that provide energy and sustenance, and to remove wastes
  - Absorption
  - Elimination
- The healthy digestion must differentiate good from bad in the environment, so the digestive system can begin to be respected as a sentient system, wherein we intake the external world into our gut and evaluate and relate appropriately to that external world
Immuno-Sparing

- Since 90% of the immune systems cells dwell in the lining of the digestive tract it follows that to reduce the burden of dysbiosis, toxicity and infection/infestation there is a sparing of the immune system and its ongoing burden

- A depressed immune system is reflected by white blood cell counts under 4 (optimally it is 6-8)

What is Dysbiosis?

- Metchnikoff (1907) was the first proponent of probiotics. Described dysbiosis as altered pathogenic bacteria in the gut

- The state of disordered microbial ecology that causes disease

- A breakdown in the balance between protective versus harmful intestinal bacteria

1 Hawrelak JA, Myers SP. *Alt Med Review* 2004; 9(2): 180-197
Types of Dysbiosis

According to Location

- *Helicobacter pylori* presence in the stomach
- Small intestinal bacterial overgrowth
- Colonic flora imbalance – including abnormal presence of parasites (protozoa) or yeasts (candida)

Types of Dysbiosis

According to Pattern

1. Putrefaction
2. Fermentation excess
3. Deficiency
4. Sensitisation

(More than one pattern can co-exist in an individual)
Common Causes of Dysbiosis

- Antibiotics
- Stress
- Diet including excessive protein, excess refined carbohydrates, lack of fibre, excess fat, sulphur
- Decreased immune status
  (especially low secretory IgA)
- Decreased gut motility and poor digestive function
- Low hydrochloric acid production
- Intestinal infection and infestation
- Altered intestinal pH


The Gut as Brain of the Immune Response

- The body’s primary exposure to immune challenge is in the digestive tract
- There are many immunological surface antigens that are devoted to screening ingested material
  - IgA  IgE  IgG  IgM
- 17 of the known 21 strains of interferon are produced in the gut – the immune system arises from the gut – and so the ecology of the gut determines immune status
Diseases Linked to Dysbiosis

Autoimmune Diseases
- Crohn’s disease
- Ulcerative colitis
- Rheumatoid arthritis
- Ankylosing spondylitis
- Graves disease
- Chronic active hepatitis

Gut Disorders
- Irritable bowel syndrome (IBS)
- Flatulent dyspepsia
- Certain types of food sensitivities
- Chronic diarrhoea and constipation
- Diverticular disease
- Gastrointestinal infections and intestinal overgrowth eg candida

GI Flora Balance Program

The Products
- Gut Flora Complex
- PreBiotic Inulin
- ProsynBiotic
- Vitanox
The Essence of GI Flora Balance Program

- Cleanse
- Feed
- Restore
- Balance

GI Flora Balance Program

1. Cleanse the gastrointestinal tract
   - Gut Flora Complex
   - Vitanox
2. Support growth of native intestinal flora
   - Prebiotic Inulin
3. Promote and maintain a healthy gastrointestinal environment
   - ProSynbiotic
GI Flora Balance Protocol

Every day for 6 weeks
- Gut Flora Complex, 1 capsule twice per day
- Prebiotic Inulin, 1 teaspoon twice per day
- Both taken at the same time

As required include,
- Vitanox, 2 to 3 tablets per day
- ProSynbiotic, 3 capsules per day (At a different time to the Gut Flora Complex. Separate by at least 2 hours)

Gut Flora Complex

Anise (*Pimpinella anisum*) fruit essential oil 125 mg
Andrographis herb 10:1 extract 100 mg
from *Andrographis paniculata* herb 1.0 g
Containing andrographolide 10 mg
Phellodendron stem bark 20:1 extract 80 mg
from *Phellodendron amurense* stem bark 1.6 g
Containing berberine 36 mg
Oregano (*Origanum vulgare*) leaf essential oil 75 mg

Suggested Dosage: 3-6 enteric capsules per day
GI Flora Balance Protocol

- On completion of the 6 week protocol assess patients health
- If patient requires further support it is safe and effective to continue the GI Flora Balance protocol with reassessment every 6 weeks

GI Flora Balance Program

- It is in fact a sort of elimination diet
- The combined cleansing and feeding effect this program produces a similar effect
- This obviously reduces immune challenges – which can be the trick to turning off a range of long term issues and allow balance to return
- As well the gastrointestinal cleansing activity of this product it also supports the sinuses and respiratory tract
New Product Alert – Read All About It!

- **Gut Flora Complex** released April, 2008 is brilliant for reducing candidal overgrowth (one of the main contributing factors to dysbiosis and gut flora anomalies) and as a systemic fungal and immune modulator. Most physicians are not sensitive to the subtleties of nutrient devices and so have not opened the door in the long term reduction of candidiasis that this product makes possible. Cravings disappear, immune function liberated!

- This product immediately began to work and has ever since. It is enteric coated and delivers its agents to the small intestine and large intestine where the fungal overgrowth obliterates the real estate for normal flora ecology and immune proliferation.

- **Gut Flora Complex:**
  - Anise 125 mg
  - Andrographis herb 100 mg
  - Pau D’Arco stem 100 mg
  - Oregano Leaf Essential Oil 75 mg

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New Product Alert – Read All About It!

- **Prebiotic Inulin** released September, 2009

- This product is a non-digestible soluble fiber found in many plants and in this formulation is derived from Chicory root. It is a complex CHO that can be digested by many microflora providing them with energy thus enlivening the gut flora. It also increases the absorption of calcium and magnesium from the gut. It has also been determined to increase intestinal gene expression and cell differentiation allowing for more specialized intestinal function and activity.

- **Gut Flora Complex:**
  - Inulin from Chicory Root 4.5 gm
  - Calcium Lactate 200 mg
  - Magnesium Lactate 400 mg
Clinical Center Stage

- Although gut flora is influenced by many factors the clinician will eventually need to profoundly reduce the dysbiotic burden and candida overgrowth
- Oregano Oil and its active constituent of Carvacrol come center stage in the modulation of gut evolution
- Candida overgrowth and dysbiosis are effected by the following dominant factors:
  - Bile production and delivery
  - Gastric acid formation
  - Upper digestive enzyme production
  - Probiotic support
  - Prebiotic support

Oregano Oil research shows promise

- Carvacrol Induces Heat Shock Protein 60 and Inhibits Synthesis of Flagellin in Escherichia Coli: Sara A. Burt et al; Applied and Environmental Microbiology, July 2007, p. 4484-4490
- Antimicrobial Action of Carvacrol at Different Stages of Dual-Species Biofilm Development by Staphylococcus Aureus and Salmonella Enterica Serovar Typhimurium; J. R. Knowles et al; Applied and Environmental Microbiology, February, 2005, p> 797-803
Clinical Application

- 4-6 weeks of Gut Flora Complex (2 gel caps bid) following correction of upper digestive function
- This allows the gut to be renewed to a relatively balanced state and then mood and diet modulation can be successful
- Often bowel movements will change and become clean (no slime)
- Food cravings will disappear
- Diets can be improved without the background noise of candidal overgrowth
- Many allergic symptoms will abate due to gut irritation and permeability improvement
- This is a homerun product

The Rationale

- The GI Flora Balance program is a holistic approach which cleanses at the same time as promoting balance between native bacterial colonies
- Microbial ecology moves toward a healthy balance
- Prebiotics are essential to this process
- Consider Prebiotic Inulin as a “Colonic Nutrient”
- GI flora need specific colonic nutrients (soluble fibre) which may be deficient in the diet
- Appropriate and individualized dietary advice is important for successful outcomes
Protocol – Digestive Pillar

- General support:
  - Cataplex AC (10) – epithelial repair

- Dysbiosis:
  - Lact Enz (4) - probiotic
  - Zymex (6) – antifungal
  - Zymex II (6) – anti parasitic
  - Multizyme (4) – anti parasitic
  - Wormwood (4) – anti parasitic
  - Lactic Acid Yeast (4) – anti candida
  - Cyroyeast (4) – anti candida

- Leaky Gut (thinning gut lining):
  - Chlorophyll (4)
  - Gastro Fiber (6)
  - Okra Pepsin (6)
  - Prebiotic Inulin (1 scoop)
  - Food sourced Immuno Gamma Globulins (IgG)

Comprehension:

- True or False – The final pillar that you will work on for the rest of life with yourself and every patient.

- Multiple choice – Best way to promote epithelial repair is with a) Cataplex AC(10), b) Chorophyll(4), c) Gastro Fiber(3), d) Okra Pepsin(6), e) All

- True or false – Bowel transit time is slowed with soluble fiber and quickened with insoluble fiber or which 25 Grams should be consumed daily.

- True or false – Gut Associated Lymphoid Tissue (GALT) contains 80% of the immune system.
7 – Digestive Potency Pillar

- Digestion must bring in substances that provide energy and sustenance, and remove wastes
- 80% of immune system resides in the GI mucosal barrier - GALT
- Loss of ecology creates cascades of cytokines, immune modulation, inflammation, resorption of toxins, tissue degradation, leaky gut degeneration
- Famine in the midst of plenty
- Fasting as repair
- Bowel transit time (12 hrs)
- Gut lining equals armor for the world

Tests & Analysis

- Secretory IgA as an indication of gut lining thickness and therefore integrity of function
- Stool analysis for dysbiosis, infection, and infestation
- Fasting as repair
- Test for transit time

- Epithelial Support – Cataplex AC (10), Gastro Fiber (3), Chlorophyll (4), Okra Pepsin (6), Food sourced IgG
- Dysbiosis – Infestation – Zymex II (6), Multizyme (4), Wormwood (4)
  - Candida – Zymex (6), Spanish Black Radish (6)
  - Probiotics – Lact Enz (4), Lactic Acid Yeast (4), Cyroyeast (4)
- Fasting – one or more days
- Food allergen removal

Ecology -

Human life, particularly in health and disease, is the result of countless independent forces impinging simultaneously on the total organism and setting in motion a multitude of inter-related responses.

Rene’ Dubos
7 Pillars Protocols

_remove

Endocrine/Hormonal – Symplex F/M, Hypothalmex, Black Currant Seed Oil

Glycemic Management – Phase I/II Diet, AF Betafood

pH Bioterrain – Calcifood, Calcium Lactate, Magnesium Lactate, Green Food, Organic Minerals

Inflammatory status – Eliminate food allergies, Cataplex AC

Immune burden – Thymex, Sesame Seed Oil, Congaplex, Allerplex, Immuplex, Zymex, Zymex II, Multizyme, Wormwood

Circulatory Status – Cardioplus, Vasculin, Cayenne, Garlic, Hawthorne, Horse Chestnut

Digestive Potency – Cataplex AC, Lact Enz, Gastro Fiber, Chlorophyll, Okra Pepsin, Gastrex, Zypan, Betaine Hydrochloride, Fasting, Diet Modulation
Robert – Application of pillars

Presented 09/08 for CAD (50% occlusion), reflux, headaches, groin fungus, joint pains, consuming 4 medications (prilosec, benedryll, lipitor, toprol) – these are his primary complaints and identified needs

Observe how much more there is to attend

Miracle

Endocrine
Hormonal

Cellular Vitality

Glycemic Management

Digestive Potency

pH Bioterrain Minerals

Circulatory Status

Immune Inflammatory

Normal Miracle

Vitality

Potency

Status
7 – Cellular Vitality

- Ultimate foundational level of health and healing potency
- Never stop improving and assessing this aspect as it predicts disease cascades and defines resilience
- Primary concerns are: membrane electronics, heat shock protein optimization, mitochondrial efficiency, membrane integrity and composition, genetic activation

7 – Cellular Vitality Pillar

- Protection of the cell
- Supporting membrane activity
- Promoting membrane electronic function
- Mitochondrial support and protection
- Promoting hydration
- Receptor site potency
- Promote heat shock resiliency

Tests & Analysis

- Bio-impedence testing for cell hydration and cellular electronics
#7 Core Physiologic Principal

**Cellular Health**
- Burden of metabolic and environmental toxins
- Incomplete states of repair and synthesis
- Reduced responses
- Supported cellular functions
- Chronic weakened organelles unable to meet demand
- Loss of cellular resilience
- Enhanced the mechanisms we may
- Increased cellular dysregulation
- Restoration of cellular electronics
- Aberrant genetic Activation
- Improved organelle performance
- Take the ride – 27,500 named diseases
- Enhanced genetic and cellular agenda

**Cellular Anatomy**
- The cell is the microscopic component of the macroscopic organism – he building block
- Just as communities are comprised of people, so are humans comprised by cells
- The strength of the human depends on the health of the cell
- Working on people is always working on cells
<table>
<thead>
<tr>
<th><strong>Cell Membrane</strong></th>
<th><strong>Outer layer</strong> Made of cholesterol, phospholipid bilayer</th>
<th><strong>Support, protection, respiration, interface of autonomy</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nuclear Membrane</td>
<td>Inner layer Made of cholesterol, phospholipid bilayer structure</td>
<td>Contains DNA cellular control elements via nuclear respiration – has numerous openings for cellular traffic</td>
</tr>
<tr>
<td>Nucleus</td>
<td>DNA, chromosomes</td>
<td>Controls cell activity and differentiation</td>
</tr>
<tr>
<td>Cytoplasm</td>
<td>Clear, jellylike material inside cell membrane</td>
<td>Supports and protects organelles while providing matrix and structure</td>
</tr>
<tr>
<td>Endoplasmic Reticulum</td>
<td>Network of tubes and membranes acting as template for cell activity, Organized pattern of Golgi Apparati</td>
<td>Location of cellular activity to construct building blocks and materials</td>
</tr>
<tr>
<td>Ribosome</td>
<td>Small bodies free or attached to the ER</td>
<td>Produces specific proteins for cell activity</td>
</tr>
<tr>
<td>Mitochondrion</td>
<td>Bean shaped membranous structure with DNA</td>
<td>Produces energy for cell activity</td>
</tr>
<tr>
<td>Vacuole</td>
<td>Membranous fluid-filled sac</td>
<td>Storage of food, water, waste, unique substances</td>
</tr>
<tr>
<td>Lysosome</td>
<td>Membranous fluid-filled spaces</td>
<td>Breaks down food into smaller components and digests old cell parts</td>
</tr>
<tr>
<td>Golgi Apparatus</td>
<td>Membranous structure near nucleus, comprised of numerous layers forming a sac</td>
<td>Protein packaging facility to sequentially follow nuclear directions</td>
</tr>
<tr>
<td>Nucleolus</td>
<td>Found inside nucleus in multiples, and disappear during mitosis</td>
<td>Makes ribosomes, contains RNA for protein synthesis</td>
</tr>
</tbody>
</table>

### Cellular Activity

- Inside the Golgi Apparatus is a sequence of biochemical events resulting in accurate production of nuclear DNA /RNA driven instructions.
- Ultimately all nutrition impacts this level of organized action, creating facilitated action of biochemical bottlenecks.
Cell Membrane Electronics

- Cells lack hands and arms, so the way they negotiate the environment and fending and accomplishing their needs is with electronic action
- The cell membrane has electronic charge to it allowing attraction and repulsion of other charged substances
- This is the very nature of life at the most reduced level
- To promote cellular electronics is to promote cellular agenda and health
- The ways this is done is through hydration principles and electronic support
- A&C Carbimide was selected by Royal Lee for its ability to repolarize the cell membrane, which in turn returns the cell to a right-relationship with the environment – Dose 2 bid – will help reduce extracellular hydrosis and promote membrane health

1 - Cell Membrane Promotion

- Bilipid membrane support includes:
  - Elimination of all trans fatty acids in diet
  - Supplementation with full spectrum EFA oil blends like Tuna Omega (2) or Calamarine, Black Currant Seed Oil (2), Sesame Oil Perles (3) to promote proper membrane synthesis
  - Phospholipid repletion with Super EFF (2)
  - A&C Carbimide (4) or Calsol (4) to restore balanced membrane polarity and therefore interaction with the environment
2 - Mitochondrial Renewal

- Mitochondrial nourishment includes:
  - Lipoic Acid, Resveretrol, L-Arginine
  - Supplementation with Coenzyme Q10 in Cellular Vitality (2)
  - Reduced caloric diet promoting hormesis and cyclic AMP increase
  - Reduces cell apoptosis by reducing mitochondrial stress production of death hormone proteases

3 – Heat Shock Proteins

- Increasing heat shock proteins includes:
  - Adrenal Complex (2) to balance cortisol
  - Supplementation with Cataplex C (3) to assist in stress hormone balance
  - Use Rhodiola/Ginseng (1-2) to increase cellular resilience and heat shock protein density
  - Femco (2) or any adaptogen can be used in this way as well
Hormesis

What Doesn’t Kill You Makes You Stronger!

- Stimulatory or beneficial effects at low doses and inhibitory or toxic effects at high doses
- Hormesis is now the standard terminology used to describe the beneficial adaptive response of cells and organisms to moderate stress
Major components of the hormetic response include various stress resistance proteins such as heat shock proteins (HSP), sirtuin1, growth factors and cell kinases.

Classical examples of hormetic stress are exercise and calorie restriction.

Many phytochemicals consumed in our diet are hormetic:
- Ferulic acid from tomatoes, sweet corn, rice
- EGCG from Green tea
- Curcumin from Turmeric
- Sulforafane and isothiocyanate from cruciferous vegetables
Hormesis and HSP

- HSP are produced when cells are exposed to stress
- Their job is to protect (chaperone) other proteins from damage by binding to them and shielding them from attack
- HSP play an important role in the conservation & maintenance:
  - Protein homeostasis
  - The cellular stress response
  - Aging

Mattson M, Calabrese E. Best in small doses. The New Scientist 2008; 199(2668): 327

Adaptogens and Hormesis

- Adaptogens are herbs that help the body better adapt to stressors by fine-tuning the stress response
- The stress–protective effect of adaptogens is the result of the adaptation of the organism to the mild stressful effects of the adaptogen
- Adaptogens are Hormetic
Adaptogens and Hormesis

The regular consumption of adaptogens gives rise to an adaptogenic or stress–protective effect in a manner analogous to repeated physical exercise, leading to prolonged state of non-specific resistance to stress and increased endurance and stamina under extreme conditions.

Hormesis References


Le Bourg E. Hormesis, aging and longevity. *Biochim Biophys Acta* 2009; 1790(10): 1030-1039

Mattson M, Calabrese E. Best in small doses. The *New Scientist* 2008; 199(2668): 36-39
Rhodiola and HSP

- Serum HSP ↑ 2.8 times in mice forced to swim
- Serum HSP ↑ 6 times in mice given a combination of Rhodiola, Eleuthero and Schisandra extracts at human equivalent doses (1g/150lb body weight/day) for 7 days
- Serum HSP ↑ 13 times in mice given herb combo and forced to swim
- The time to exhaustion when swimming ↑ 7 times, from 3 mins to 21 mins, in mice taking the herb combo

Rhodiola and Mood

Nordic Journal of Psychiatry

Clinical trial of Rhodiola rosea L. extract SHR-5 in the treatment of mild to moderate depression
V. Darbinyan a, G. Aslanyan b, E. Amroyan c, E. Gabrielyan c, C. Malmström d, A. Panossian a

- Department of Neurology, Armenian State Medical University, Yerevan, Armenia
- Scientific Centre of Drug and Medical Technology Expertise, Yerevan, Armenia
- The PBM Clinic, Institute of Health Competence, Stockholm, Sweden
- Swedish Herbal Institute Research &Development, Askloster, Sweden

Online Publication Date: 01 January 2007

To link to this article: DOI: 10.1080/08039480701643290
URL: http://dx.doi.org/10.1080/08039480701643290
Rhodiola and Mood

- A standardized extract of Rhodiola trialled in patients at dosages of either 340 or 680 mg/day over a 6-week period
- At 340 mg/day mood, sleep, emotional stability improved significantly
- At 680 mg/day self-esteem improved significantly
- Energy levels ↑
- Up-regulation of Hsp70


4 – Antioxidant Burden

- Antioxidant support includes:
  - Vitanox (2) makes various contributions but especially reduces free radical burden and thereby spares cellular aging
  - Cellular Vitality (2) also provides a formula to participate in this
5 – Nrf2 Pathway Promotion

- Nrf2 pathway is an cytoplasmic factor that promotes nuclear genetic response to increasing survival mechanisms including glutathione synthesis – nutritionally supported:
  - Include turmeric in Vitanox (2)
  - Include resveretrol in HerbaVital (2)
  - Include green tea catechins in Vitanox (2)
  - Include sulfurathanes in Cruciferous Complete(2) or Garlic 5000 (2), also including cysteine to aid in glutathione synthesis

6 – Lengthen chromosomal telomeres

- Research suggests that to increase the telomeres length on the chromosomal ends promotes cellular health and reduces apoptosis – nutritional support includes:
  - Supplementation with Astragulus Complex (2)
New Product Alert – Read All About It!

- Cellular Vitality released March, 2010 is a formula designed to enhance and invigorate cellular health and repair mechanisms, so it also acts on a macroscopic level to promote repair and cleansing and vitality. Reading the ingredients help us to expect clinical outcomes, and although this formula is new to the scene a functional practitioner may understand what vectors of physiology will be influenced. In general this as another anti aging product that can reduce the decline of multiple systems over time. So clinicians using this product have observed response in skin quality, energy levels, and stress adaptation.

- Cellular Vitality:
  - Ribonucleic Acid providing triphosphates and DNA synthesis
  - B Vitamins (1,2,3,6,8,12, etc) assisting in stress response and homocysteine management
  - Berry Seeds providing antioxidants
  - Bromelain to reducing platelet clumping and promote vacular permeability
  - Coenzyme Q10 for mitochondrial function
  - Cordyceps a mushroom powder for kidney, heart and lung support
  - American Ginseng an adaptogen to provide adrenal and immune modulation

7 – Cellular Vitality Pillar

- Protection of the cell
- Supporting membrane activity
- Promoting membrane electronic function
- Mitochondrial support and protection
- Promoting hydration
- Receptor site potency
- Promote heat shock resiliency

General Cell Support – Cellular Vitality (4), Trace Minerals (6)
Membrane Potential - AC Carbimide (4), Calsol (6)
Antioxidant support – Vitanox (4)
Enzyme Support – Multizyme (4)
Heat shock proteins – Rhodiola (2)
Mitochondrial support – Lipoic Acid, Resveretrol, L-Arginine
Promote Nrf2 cytoplasmic pathway – Vitanox (2), HerbaVital (2), Cruciferous Complete (2)
Extend telomere length – Astragulus (2)

Tests & Analysis
- Bio-impedence testing for cell hydration and cellular electronics
Foundations

I learned this, at least, by my experiment: that if one advances confidently in the direction of his dreams, and endeavors to live the which he has imagined, he will meet with success unexpected in common hours. He will put some things behind, will pass an invisible boundary: new, universal and more liberal laws will begin to establish themselves around and within him; or the old laws be expanded, and interpreted in his favor in a more liberal sense, and he will live with the license of a higher order of beings. In proportion as he simplifies his life, the laws of the universe will appear less complex, and the solitude will not be solitude, nor poverty poverty, nor weakness weakness. If you have built castles in the air, your work need not be lost: that is where they should be.

Now put the foundations under them.

Henry David Thoreau

11 Points of Pregnancy -

- **Torpedo babies** - Low carb diets less weight gain in mother and baby has reduced shoulder girth – the medical reason for glucose tolerance tests is partially to determine the potential for a vaginal delivery and to prevent gestational diabetes – easily corrected with protein inclusion and limiting insulin spikes by excluding starch.

- **Low Carb Lifestyle** – Prevents morning sickness by limiting hypoglycemic trends and limits excessive mother weight gain and resultant stretch marks. Typically protein/food powders will support balanced glycemia. Phase II Diet, SP Complete (2 Tbsp), Protefood (6)

- **EFA's and Membranes** - Promote healthy membrane physiology with essential fatty acid support, thus ensuring gestational integrity – pregnancy is a membrane miracle. Tuna Omega (2), Linum/B6 (2), Multi EFA oil blend (3, 6, 9, 12)

- **HPA/Glandular Health** - Throughout gestation the baby imprints upon a healthy hormone chemistry. The baby’s first impression of life. Symplex F(4), Hypothalmex/us (2)
11 Points of Pregnancy -

Supporting the Suppressed Immune System – Promote facilitated immune responses so there is compensation for the pregnant suppressed immune system, characterized by persistent immune challenges. Sesame Oil (6), Echinacea Premium (2).

Stewarding Phase II Detox – While not promoting any phase I initiatives, by supporting phase II cleansing all phase I intermediates may be cared for. Greenfood (2), Spanish Black Radish (4), itching sign of bile stasis and gallbladder stress use Cholacol (6), Betafood (6), Gastrofiber (6).

Prevent Toxic Exposure - Toxic burdens during gestation and lactation may be imparted to the baby, so do not support detoxification as intermediate metabolites could challenge the baby. Promote Phase II detox throughout gestation to protect from unknown exposures. Greenfood (2).

Promote Fetal Brain Development - Provide Choline 3/day through pregnancy as it is proven (Harvard study) to promote baby’s brain development.

Physical Conditioning – Walking and other activities can help maintain muscular tone and strength leading to better delivery outcomes – Perineal massage.

Energy Enhancement – Vital force practices can assist mother to be “100% on” for the later gestation and delivery marathon. Accupuncture, meridian/chakra balancing, attunement, etc.

Prevent Miscarriage - If spotting occurs and threatens miscarriage use Chlorophyll 6-12/day and Utrophin 6/day immediately. After threat passes reduce dosage to one each per day.

Conception Promotion - Use HPA/Glandular support, Ovatrophin PMG (2), Tribulus (2 – day 5 to 14), and White Peony 1 tsp/day.
Conception / Fertility Issues -

- ART (Artificial Reproductive Techniques) risen 77% in last 12 years, averaging cost per IVF cycle $15k (usually 3 to 4 cycles required for success)
- 6 million US couples (10% of all married people) grapple with infertility annually (only 20% seek medical assistance) – approx. 250,000 test tube babies born in US since first baby born in England 1978
- Number of US women aged 20-25 tripled in last 30 years – worldwide sperm count has reduced by 50% in last 50 years
- 1 in 5 women miscarry, 1 in 10 has toxemia, 1 in 3 has post partum depression
- 1 in 5 births by C section (400% increase in 30 years), 1 in 10 prematurity, 1 in 3 congenital defects

Conception / Fertility Issues -

- Ovatrophin PMG (6) used day 5-14 can increase ovulation, along with Tribulus (4)
- Chaste Tree (2) and Ovex (6) promote LH surge and thus ovulation signaling
- HPA axis strength essential starting place
Supplement babies

☞ Eden and Luke

Eternal Truth

He who does not use his endeavors to heal himself is brother to him who commits suicide.

Proverbs 18:96
Deductive & Intuitive Hybrid

- Therapeutic rationale is deductive and left brain
- It must also combine with some intuitive approach in which the practitioner is guided and led – muscle testing techniques can be used in this way (also Biomeridian)
- The deductive must be balanced with the intuitive for the practitioner to excel
- Are you in development of both sides of the healer’s brain
- The intuitive adds a vertical component to the practitioner wherein s/he is listening to another level of direction with the potential for biochemical individuality and customization

System Strength Analysis

A Language for Vital Force Assessment
System Strength Analysis

♫ Evolution of a technique for challenging and interpreting physiological needs
♫ Has been derived from input from Goodheart to Versendaal and many more teachers
♫ Series of widely agreed upon surface contact references indicating the energetic integrity of glands, organs, systems
♫ Based on the concept that the body is electrical and has an electromagnetic field through and around it
♫ This field can be influenced by other fields whether from a practitioner or nutritional device

System Strength Analysis

♫ Electromagnetic fields are charged positively or negatively
♫ In general the front (ventral) side of the body emits a positive outgoing field, while the back (dorsal) side emits a negative receptive field
♫ The hand has a positive side and a negative side, and is more neutral at the end of the finger tips
♫ By testing precise reference points or strength or weakness (classic challenge test) specific nutritional devices may be introduced into the field to determine various degrees of enhancement (strengthening)
System Strength Analysis

- The following slides depict positions of the basic surface references engaging the diversity of the body’s energetic signature.
- Each surface reference has a list of suggested products (SP & MediHerb) but comparison contrast testing can distinguish the most strengthening device even between different companies.
- Practitioner must balance his energy with the patient before beginning otherwise it would result in overly defeating the patient or being unable to defeat the patient – always begin this way.

System Strength Analysis

- Begin with master system surface references and then search for specific tissue involvement based on those findings.
- Master system surface references:
  - Glandular
  - Lymphatic/Immune
- Temporarily strengthen reference weakness by stroking down on the front and stroking up on the back (strengthening will last for 1-5 minutes).
- Do not strengthen/stimulate a reference field until it has been thoroughly tested for needs.
**Balance Access** –

Begin by testing positive & negative

This equalizes practitioner/patient - Patient should test strong positive & negative

If asthenia persists have patient breathe deeply three times, drink water, or place chest to back and breath three times together

Do not proceed with testing if energy is not equalized, otherwise findings are suspicious

**Bio-Compatibility Surface Reference** –

This is used to generally determine resonant consonance or dissonance with various substances

**HPA Axis Surface Reference** –

Begin by testing neutral

Weakness indicates general energy management partiality

Symplex F/M (6)
Hypothalmex (2)
Hypothalmus (PMG) (2)
Black Currant Seed Oil (2)
Tuna Omega (2)
Folic Acid (6)
e-Poise (4)
**Hormonal Master Reference –**

Begin by testing positive & negative

If weak strengthen by stroking down on ventral side, up on dorsal

Then localize the gland references to determine which glands need support

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**Gland Surface References –**

- Pineal – Folic Acid(6)
- Hypothalamus – Hypothalmex(2), Hypothalmus PMG(2)
- Anterior Pituitary(R) – Pituitrophin(4)
- Posterior Pituitary(L) – Trace Minerals(4), E Manganese(4)
- Thyroid – Thytrophin(4), Mintran(4), Iodine(1-6), Cataplex E(4)
- Thymus – Thymus PMG(4)
- Adrenals R&L – Drenamin(6), Drenatrophin(4) Whole Adrenal(3), Eleuthero(4), Withania(4)
Gland Surface Reference

Pancreas – Paraplex(4), Pancreatrophin(4), Cataplex GTF(6), Gymnemma(6)

Uterus – Utrophin PMG(6), Tribulus(4), Chaste Tree(1), Wild Yam Complex(4)

Prostate – Prostx(6), Vitanox(4)

Gonads – Ovary R & L – Ovex(4), Ovatrophin(4), Dong Quai(4)

Testes – Orchic PMG(4), Tribulus(4), Zinc Liver(4), Super EFF(4)

Lymph / Immune Master Reference

Begin by testing positive & negative

If weak strengthen by stroking down on ventral side

Then localize the gland references to determine which glands need support

Then recheck Master Lymph/Immune reference to determine a second or third involvement
Lymph/Immune Surface References—

Sinus – Allerplex(15), Thymex(10)
Eye – Iplex(6)
Head Lymph – Thymex(10)
Tonsillar – Congaplex(15), Cyruta Plus(6)
Thymus – Immuplex(6)
Lung – Allerplex(15), Broncafect(4), Pulmaco(4)
Bone Marrow – Sesame Seed Oil(6), Arginex(6), Biost(6), Astragulus(2)
Spleen – Spleen PMG(4), Dess. Spleen(6), Immuplex(6), Livaplex(6)
Liver – Livaplex(6), Livco(4), Livton(4), Silymarin(4)
Gallbladder – AF Betafood(12), Choline(6), Collinsonia(6), Livton(4)
Kidneys & Bladder – Albaplex(6), Arginex(6), Cranberry Complex(4)
Colon – Cataplex AC(10), Zymex(4), ZymexII(4), Multizyme(4), LactEnz(4), Wormwood(4), Arginex(6), Congaplex(12), Immuplex(6), Betacol(4), Chlorophyll(4), Gastrofiber(4), Fencho(6), Spanish(6)
Uterus – Cataplex AC(10)
Prostate – Prostx(6), Immuplex(6), LactEnz(4), Palmettoplex(4), Prostaco(4)
Master Function Surface References—

Brain Integration – OPC Synergy(1), RNA(3), Bacopa(2), Inositol(6)
Neurotransmitters – Minchex(6), Mintran(6), St.Johns Wort(4), Protefood(6), Nevaton(4)
Hydration – Trace Minerals(6)
Energy – Cataplex B(6)
Sleep (deep) R&L – Cataplex G(3), Calcium, Magnesium(3), Minchex(2), Antronex(5), AF Betafood(5), Valerian Complex(2)
Hair – Cataplex G(6), Fortil B12(6), ZymexII(4)
Hiatus – Ligaplex II(6)
Stomach – Okra Pepsin(6), Gastrex(6), Enzycom(4), Zypan(2/meal), Betaine HCl(2/meal)
Fungal – Zymex(6), Spanish Black(6), LactEnz(4), Garlic 5000(4), Prosynbiotic(4)
Flora R&L – Gut Flora Com.(4), Garlic 5000(2), Prosynbiotic (4), Flora replacement
Endomorphic R&L – Eleuthero(4), Adrenal Comp(2)

CardioVascular Surface References—

Heart Circulation – Garlic 5000(4), Cayenne(4), Hawthorne(2), Horse Chestnut(2)
Heart Valves – Cardioplus(6), Vasculin(6), Cardiotrophin(4), Tribulus(4)
Brain Insufficiency – Vasculin(6)
Cataplex E2(6) Orchex(4) Garlic 5000(4) Cayenne(4) Hawthorne(2) Horse Chestnut(2) Gingko(2)
Lower Insufficiency – Collinsonia(6)
Vasulin(6) Orchex(4) Garlic 5000(4) Cayenne(4) Hawthorne(2) Horse Chestnut(4) Gingko(2)
Five Brain Surface References–

- **Master Five Brain System** – Use all five fingers on this reflex at hairline – if weak then strengthen to begin to localize which system is in need
  - Limbic System HPA – Symplex F/M (6), Hypothalmus (2), Hypothalmus PMG (2), Black Currant Seed Oil (2), Folic Acid/B12 (4), Tuna Omega (4), Epimune (4), Cataplex G (6), Whey Pro Complete, Tryptophan, LS-HTP, Nevaton(4), St. John’s Wort (2), Tyrosine, Minchex (6), Femco (2)

- **Basal Ganglia R & L** – Posterior scalp over the base of occipital cranium - Dopamine and serotonin promotion Cataplex G(6), LS-HTP, Tyrosine to support catecholamine/dopamine, Gingko (4), Reduce acidity and allergens, minerals, Tyrosine, Minchex (6), Adrenal Complex(2), Withania(4), Astragulus(4)

- **Prefrontal Cortex PFC** – Use single finger on same reflex at hairline – Protefood (6), Whey Pro Complete, Huperzine, N-Acetyl Cysteine, Tyrosine, Gingko (2), OPC Synergy (2), Cataplex B(6)

- **Cingulate Gyrus** – Cataplex G(3), Inositol (4) Magnesium(3), Minchex(2), Nevaton (2), Tryptophan, LS-HTP, Valerian Complex(2)

- **Temporal Lobes R & L** – (Above ear) – Minerals to reduce acidosis, eliminate stimulants and allergens, Cataplex G(3), Magnesium(3), Minchex(2), Nevaton (2), Inositol (6), Phosphatid Choline & Serine to reduce cortisol, Adrenal Complex (2), GABA, Gingko (2), Protefood (6), Withania (4), Adrenal Complex (2), Trace Mineral (6), Tuna Omega (4)

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**System Strength Analysis**

- Test each surface reference for strength, then find a nutrient device(s) to induce strengthening
- If more than one device creates strength compare each to the other for the one(s) that are strongest – as well test with combinations that create the greatest strength
- At the next visit always test the former weaknesses individually first before proceeding with whole body analysis
- If surface reference continues to test weak test the former nutritional protocol to determine that it is still supportive, or perhaps other devices are now needed
- If surface reference is strong test the protocol to determine that it is still needed
- If surface reference tests weak with any or all nutrition test bio-compatibility reference to determine discontinuity of nutrient device or reduced maintenance dose
VisceroSomatic Relationship
Find a chronic somatic problem.
Test for polarity – positive or negative.
Test for level of body relatedness, then test within level
for specific weakness that correlates with somatic
issue.
Find nutrient device(s) to strengthen that weakness.
With nutrient device in place recheck original somatic
issue for additional visceral relations and strengthen
accordingly. Continue until somatic issue stays strong.
All chronic weaknesses have a persistent inherent
ircuitry that reinforces the musculoskeletal issue.

SomatoLimbic Relationship
The body is a circuit board for the flow of spirit wherein each organ and
system represent specific devices to translate vibrational reality into
physical function.
When we say chemical imbalances impair psychologically and spiritually
it is because we recognize that biochemistry and physiology are the
means we have to translate eternal reality (spirit) into temporal
expression and experience (body & ego).
Each disease relates to a pattern of thinking and difficulty that is as much
part of the healing as the physiology. Likewise health creates a pattern of
thinking and wisdom. We are the ‘feng shui’ experts of the physical body.
Although strictly physical in our approach we are impacting the thinking
and emotional development and even the spiritual realization, just as
Jesus did in the wilderness fasting for 40 days before he began his
outward ministry and many eastern traditions direct as a path to
enlightenment.
SomatoLimbic Relationship

- Passionate - Liver – Anger & Frustration
- Forgiving - Gallbladder – Resentment
- Connection - Lungs – Grief & Separation
  - Peace - Heart – Troubled
- Self loving - Spleen – Low Self Esteem
  - Abundance - Pancreas – Complaining
  - Unmoved - Stomach – Triggered & Reactive
- Confidence – Kidneys – Fear & Regret
  - Flexible - Colon – Dogmatic Positioning
- Containment - Uterus – Histrionic
- Assertive - Prostate – Aggressive
  - Creativity - Gonads – Barren & Unimaginative

Evoking the innate healing force -

Natural forces within us
Are the true healers.

Hippocrates, father of medicine 400 BC
The real work …

All healing is self healing.

Robert Groves

The Summary Effect

- Physiological enhancement through biochemical modulation is a summary effect – with each summation you gain a more profound effect – this is why program after program of detox and fortification is our way.

- Physiology is a summary effect – almost every physiological mechanism is a series of events wherein moderating and reactive events create a net summary called a macroscopic event (eg.- allergic response, immune response, CAD plaquing, gut lining repair, hormonal status, etc).

- To know this summary effect nature to the body is to be wise and able to explain outcomes and limitation of outcome.

- It also explains the wholistic nature of the person who is a summary of physical, mental, emotional, spiritual, social influences.

- "All the factors add together to tell us plainly whether life or death shall come"
Getting results - quickly

- Initial changes are seen within days if we know what to watch
- Patient compliance is high when progress is demonstrable
- People love to be measured

Formula for Success – The ‘I’ s have it

1. Introduction – be transparent and rational
2. Interview – be mutual and intimate
3. Investigate – measure and record
4. Initiate – report of findings and correlate
5. Inquiry – check for conception
6. Itinerary – scheduling and treatment plan

Every visit includes every ingredient
Introduction -

- Show your philosophy
- Share the mission
- State what you are going to do
- Enroll patient in why you are doing exam

Interview -

- Make notes, remind people you care by remembering
- Build intimacy – this is the foundation of the partnership
- Mutualism – match the level of disclosure
- Demonstrate comfort in the topic
What matters -

More important than knowing what kind of disease the patient has, is knowing what kind of patient has the disease.

Dr. William Osler

Interview: Symptom Association

Post it note System -

- Post it – Jot the ideas down as they arise while interviewing/surveying
- Verify it – Find the ideas within the physical findings – use the examination to select the best path
- Prioritize it – Leave the other ideas for next time – also to review which ideas worked and which didn’t
Investigate -

- Utilize analytical tools to measure wellness and anomalies
- Educate as you proceed – why, what is learned
- Practice vocal anesthesia to offset test anxiety (white coat syndrome)
- Correlate major complaints/symptoms with findings

Initiate -

- Report all the findings and correlate with symptoms
- Simply read all positive findings and explain all changes since last visit
- The therapeutic use of rationale – describe how each supplement works and its objective
Inquiry -

- Confirm understanding and comprehension
- Detect present or future problems
- Employ preventions to avoid foreseen issues ($, vegetarian)
- Complete one’s issues - close patient up so they are not leaving with everything hanging out

Itinerary -

- Treatment plan says how long, how often, and how much
- Identify re-evaluation along the way and introduce scope of the program/project
- Headline the immediate goals – succinct and frank
Deemed Physiological Priorities

Endocrine balance

Glycemic regulation

Reduce immune burdens

Supplementation & lifestyle

Low carb diet

Supplementation, detox, allergy removal

Nutritional Procedure/Protocol from Start to Finish:

Whole Health Associates

Vision Statement: To encourage the expression of the deep longings and aspiration that catalyze and open into the service of higher purpose

New Patient

1st Visit
- welcome to the office and time check with practitioner’s schedule
- completion of clinic intake forms and disclaimer
- completion of symptom survey forms
- interview of purpose of visit and objectives for visit, past/current nutritional examination
- contact reflex analysis
- report of findings and recommendations, including long term goal plan (management)
- explanation of overwhelming costs and payment options, and return policy
- supporting literature

Established Patient

2nd Visit
- review of symptoms and interview, note changes and explain what caused the change
- contact reflex analysis
- report of findings and recommendations, review again long term goal plan
- supporting literature

3rd through 8th Visit
- review of symptoms and interview
- contact reflex analysis
- report of findings and recommendations
- supporting literature

9th Visit
- review of symptoms and determine shift towards maintenance
- introduce Acoustic Cardiography
- final fine tooth comb to determine subtle patterns of need

Maintenance Care
- introduced to intermittent care visits over 8 weeks
- ongoing nutrition and lifestyle updates
- ongoing chronic degenerative projects, such as osteoporosis or CAD
- antibiotic resistant infection
- recovery from illness
- intervene when needed
- chronic long term and lifestyle concepts
- create lifetime goals
- introduce other therapies and approaches to continue the evolution of self and others acknowledging the completion of care on a case
Nutrition strategy patient flow

Patient enters 1st visit:
- Introductory information
- Identification of goals and objectives
- Case history
- Examination & report of findings
- Explanation of scheduling and payment options
- Supporting literature given

Patient is established 2nd visit:
- Review first month, changes and experiences
- Explain causes of changes
- Examination & report of findings
- Repeat positive findings from 1st visit
- Supporting literature

3rd-8th visits:
- Review the past month
- Examination & report of findings
- Review positive findings from prior visit
- Supporting literature

9th visit:
- Review and determine readiness for maintenance
- Introduce concepts of maintenance care
- Encourage final analysis (testing: blood, saliva, urine, hair) and complete ACG
- Determine subtle patterns needing support

Maintenance care:
- Interval between visits lengthens (4-6 months)
- Ongoing review and support of chronic conditions
- Discuss vitality, longevity concepts and goals
- Discuss other therapies such as vital force, scars and personal work
- Send letter congratulating graduation to maintenance care

Primary Concern:
- Consistent:
  - Month:
    - Headaches
      - Basal/Temples/Cluster/Crown/TMJ/Frontal/Migraine (prodromal-halluc./photophobia/olfaction/nausea)
    - Ears
      - Noise (Ring/Hiss/Pound)/Plug/Pop/Ache/Drain/Itch/Loss/Dizzy/Wax
    - Tongue: Thick/Coated
    - Eyes
      - Burn/Tear/Ache/Red/Dry/Film/Itch/Blur/Floaters/Spots/Tired/Puffy/Stye/Twitch/Circles
    - Sinus
      - Dry/Drain/Plug/Post: (white/yellow/green/brown/blood/clear)/Sneezing/Smell loss/Taste loss
    - Sore Throat/Hoarseness/Cough (dry/productive)/Allergies/URI/Fever
    - Neck:
      - Stiffness/Sore/Anxiety/Tension/Chokes/Dry cough/Cold/sweaty hands/vermilion tip of frenulum/neck pain
- Sharp Pain:
  - Teeth
    - Bandage/Bleeding/Chips/Decay/Misaligned/Other
  - Muscles:
    - Ache/Sore/Tired/Pain/Burn/Cramp
- Head:
  - Headaches
    - Basal/Temples/Cluster/Crown/TMJ/Frontal/Migraine (prodromal-halluc./photophobia/olfaction/nausea)
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Nutrition strategy patient flow

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  - Ears:
    - Noise (Ring/Hiss/Pound)/Plug/Pop/Ache/Drain/Itch/Loss/Dizzy/Wax
The Story -

In the absence of the patient’s story – you’re practicing veterinary medicine!

Dr. Arthur Kleinman, Harvard Medical School
Observed thought changes
From Start to Finish

Each patient must move through their own evolution.

Each visit is a step in that evolution and therefore must strategically contribute to the whole person concept (7 pillars)

The following are ideas of what each visit should contain in order to contribute to evolution and prevent stalling or devolution

1 – Each significant symptomatic report gives the practitioner opportunity to explain how that is part of a functional issue that can be cared for – this builds a strategy for the case

2 – When results can be attributed to the strategy patients will go further with you into very complex long-term journeys

3 – Each visit must refresh the strategy and rededicate the effort to functional aims, avoid getting too focused on symptomatic challenges

4 – Accurate notes is all you have from the tangle of chronic complications – you will get lost if your notes are not elaborate – for some the journey will take years, maybe decades
Visit after Visit – The Gold Standard

- Patient primary concern – must be revisited and respected – if not clear and honored patient will not be open to anything additional the doctor envisions – it is ‘true north’ that the compass always points to (e.g,. constipation, loss libido, fertility, headaches, prevent cancer)
- The gold standard is the comprehensive nature of a functional medicine oriented practitioner which assures accountability and therefore safety in the exploration – acts as an anchor to the lofty expansiveness of biochemical modulation, and the possibility to continually chose or unchoose this approach
- Every item of the sheet from the former interview must be reviewed – simply record answers – Accurate note-taking creates doctor confidence in the future when notes may be essential to determine direction
- Remember each visit includes a report of findings – report the changes in the symptomatic profile and changes in examination findings – you never have to convince them – this does it for you
- Often patient will say, “I’m not sure it worked?” – turn sheet over and review the symptoms that have changed – do not be drawn into an opinion until after you have reviewed the interview – results are not about opinions – truth, and our experience of it working in our lives is incontrovertible

Visit after visit – From start to finish

- There is no finish line! (Nike) – Continue to declare the project by reviewing the former data and noting changes – we are experts in change – change is process – the process is balancing/healing
- Pin the tail on the supplement – every change noted relates to the program of change/transformation that you have initiated with them – reveal your expertise in how the body works to explain to them what is happening
- Each visit further astounds the patient – they return expecting to be let down, expecting to find that the first visit was great but too good to be true and cannot happen again – what they don’t know is that what worked was the formula for caring that biochemical consultation employs – it will be here time after time for years – it will become a standard in their lives, most likely found no other place that with you
- After nine months has gone by, the seven pillars of health have been achieved and the “Parthenon of health” is a reality the leftover interview is the icing on the cake which distinguishes you as a master – because you are committed to go all the way
- All the really great miracles in healing are accomplished from the “Parthenon of health” – you must be strong to do great things – the deep work only begins after basic detox, repair and balancing has been realized
- The interview keeps us focused on the whole journey instead of just the highlights of big change in the beginning.
Seminar goals:
¬ Expand and deepen the knowledge and technical skills related to the modality of nutrition
¬ Introduction of seven pillars of health, System Strength Analysis, and rationale for intervention
¬ Evolution of concept of care and scope of practice
¬ Presentation of ideas and systems that develop and sustain million dollar cash nutritional practices
¬ Establish the faith, confidence and belief that create results (promote growth – applied trophology)
¬ Share the day in practice together – employing critical thinking and deductive reasoning to craft nutritional strategies
¬ Develop synthesis of material for immediate application

Stuart’s Top Ten Keys of Success
¬ 1 - reveal yourself - be transparent
¬ 2 – practice rational intervention – never do anything for no good reason
¬ 3 - serve only mission
¬ 4 - face your fear
¬ 5 - practice wholism - not symptom suppression
¬ 6 - give more than you receive –
¬ 7 - listen with the heart
¬ 8 - be an expert - take a position
¬ 9 - solicit feedback
¬ 10 - show up, be present, and don’t pass wind
Eternal Truth

I want to warn you not to copy me, but work out your own method. Our people tell us to be original. If you can watch the method, though, and the way I go about it, maybe that would give you some thoughts about what to follow, what it’s all about. Then you work out your own substance, your own songs, your own prayers and things to go with it…

Rolling Thunder

How we long to become that which we hardly believe we are

Pir Viliyat Kahn
Change the world
It wants to