Eternal Truth

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

Proverbs 18:96

Mentor goals:

- To declare what is possible and establish a commitment to that possibility
- Address personal and professional barriers limiting the ability to serve
- Evolution of vision/mission/ethics that drive success
- Create immediate action steps to apply learning and growth
- Construct the round table of applied trophologists
Mentoring the mentor:
- Who are the mentors? – Practitioners
- Who are we mentoring? – Patients and GAP
- What’s the purpose? – Optimized life
  - How does it work? – Whatever you learn you teach someone else (anyone else)
  - Who’s is included? – Self selection, you pick yourself

Mentoring the mentor:
- Each participant attends monthly teleconferences (1 hour in duration, 4th Wednesday of every 2nd month) creating a round table discussion/exploration of the dynamics and details of a nutrition-based holistic practice
  - Each participant chooses how to convey the notes and information to their world and community – no information squandering

Review - Distinguish yourself
• It is more apparent why people are choosing alternative health care professionals who specialize in a functional approach
• No matter you specialty or technique you must distinguish yourself as an expert – people are just seeking to understand and they need you to do so
• Typically in the healthcare industry people are receiving shallow answers that leave them puzzled with the mystery of “Why is this happening to me?” and “What can I do about it?”
• Trends research over 10 years ago identified a number of factors essential to being successful in the nutritional field – one of those was establishing yourself as an expert
According to your DNA, from all recorded learning and adaptation, the number one cause of death is infection.

All effort shall be to survive that.

Hypothesis -

The only reason why anything that ever was working, stops working is because of infection

The greatest use of your time

Think New Thoughts
MicroRNA: An example of the “cellular determinants” predicted by Dr. Royal Lee?

By Joseph Dever, PhD, DABT

I am constantly amazed by the intricate and vast array of biochemical tools employed by cells to manage their growth, development, and function. While many of these tools are protein-based, recent discoveries have shed light on entirely new classes of cellular regulatory molecules. Microribonucleic acid (microRNA) is one example of a recently discovered alternative class of molecules dedicated to cellular regulation. This is a very new area of study, but the action of microRNAs may offer an intriguing link to the past, all the way back to 1929.

MicroRNA

- **Protomorphogen™ extracts and MicroRNA?**
  - Royal Lee, DDS, founder of Standard Process Inc., originally included animal-based ingredients intending to provide a supplement with complete nutrition from best sources, both vegetable and animal. To optimize the benefits of these ingredients, Dr. Lee created two proprietary extracts: Protomorphogen™ (PMG) extracts and Cytosol™ extracts.

- **Protomorphogen Extracts**
  - PMGs are specific material extracted from animal glands and organs through a complex, multi-step Proprietary process to retain what Dr. Lee termed “cell determinants.” In 1947, Lee defined cell determinants as the smallest functional unit of the chromosome, saying that these cell determinants are the components that direct, maintain and regulate cell functions (like protein, genetic material, and compounds like minerals).

- **MicroRNA: Newly Identified Regulatory Molecules**
  - First, a quick review: RNA is synthesized from DNA. **Messenger RNA** is the most well-known type of RNA, is transported from the nucleus of the cell to the cytoplasm, where the messenger RNA is “read” by ribosomes to synthesize specific proteins.
  - MicroRNA consists of very short RNA strands that are not used for protein synthesis. Rather, microRNA binds to messenger RNA to prevent protein synthesis. And individual microRNAs can have many messenger RNA targets. If this sounds like a bad thing to you, don’t be alarmed; such inhibition is essential for normal cellular function.
  - Individual microRNAs are named with the prefix “mir” and a number, like mir-1 or mir-345. In humans, over 2,500 different microRNAs have been identified since the discovery of microRNAs 20 years ago.

- **MicroRNA as Biomarkers**
  - The action of microRNAs in the body can regulate almost every kind of biological process imaginable, for example:
    - **mir-1:** primarily found in muscle and heart and known to regulate the growth and development of these tissues in animal models.
    - **mir-134:** found only in certain parts of the mammalian brain and may play a role in memory function.
    - **mir-222:** may be found at higher levels in the blood of individuals with folate deficiency (rare in the American population).
  - There are even circulating microRNAs (those found in blood) that are being studied as potential biomarkers for fitness and nutrition status.

- **MicroRNAs in Our Food**
  - MicroRNAs are present in all plants and animals and are responsible for profound effects within cells. So what happens when we eat microRNAs?
  - Since their discovery 20 years ago, the notion that microRNAs could function as dietary bioactives was dismissed based on the assumption that microRNAs would be destroyed during digestion.
  - But in 2012, a paper reported that an ingested microRNA from rice (mir-168a) could enter systemic circulation, be taken up by the liver, and decrease levels of the receptor that binds low-density lipoprotein (LDL) cholesterol.
  - This paper set off a flurry of controversy in the scientific and nutritional communities. It has yet to gain widespread acceptance due to several failed efforts to replicate the findings.
  - How Dietary MicroRNAs Could Affect the Body
    - The possibility of dietary effects from microRNAs is intriguing to ponder. Another paper published in 2012 reported high levels of circulating microRNA in human breast milk, which, upon intake, might be important for infant immune system development in the future.

This is truly a cutting-edge area of nutritional research. It’s grabbed my interest and that of the R&D discovery science team here at Standard Process. Could microRNAs be one example of the “cellular determinants” predicted to exist by Dr. Royal Lee decades ago?

We do not have any data on the subject. While the potential implications are vast, we are pursuing laboratory studies on this topic in conjunction with our raw materials and products.

Stay tuned!
Complex Food and Herbs

• The Complex nature of food and herbs reveals more and more why whole food and whole herb concentrates out perform isolated nutrients and active ingredients
  • Polyalent Activity:
    • Direct singular action
    • Multiple effects
    • Pharmological modulation (absorption, distribution, metabolism, excretion, etc)
  • A concept proposing this was put forth by Jurg Gertsch called “Intelligent Mixtures” in which he suggests that the complexity acts upon multiple events in the process and so influences multiple and global outcomes – non-linear
  • This has been named “Network Pharmacology” and describes molecular promiscuity

Calcium Shell Phenomenon

Ionized calcium tracks down and identifies the pathogen by the “calcium wave” creating the Calcium Shell Phenomenon.

(this is predicated by the action of vitamin D which loads the blood with the ionized calcium)

Immune Vigilance

“The single greatest predictor of the survival of an infection is the blood level of ionized calcium.”

Mark Anderson, Back to School for Doctors 2004

“Ionized Hypocalcemia has been associated with increased mortality and disease severity.”

American Family Physician
Magnesium

Magnesium is a nutrient that the body needs to stay healthy. Magnesium is important for many processes in the body, including regulating muscle and nerve function, blood sugar levels, and blood pressure and making protein, bone, and DNA.

The following health benefits have been associated with magnesium:

- Bone health: Magnesium is important for bone formation and calcium absorption. Calcium and magnesium are important for maintaining bone health and preventing osteoporosis.
- Diabetes:
- Heart health:
- Migraine headaches:
- Premenstrual syndrome:
- Relieving anxiety:

The 7 symptoms of magnesium deficiency:

- Muscle Twitches and Cramps: Twitches, tremors, and muscle cramps are signs of magnesium deficiency.
- Mental Disorders:
- Osteoporosis:
- Fatigue and Muscle Weakness:
- High Blood Pressure:
- Asthma:
- Irregular Heartbeat:

Read All About It!
New product coming – EZ Mag

The plant-based, multiform magnesium found in E-Z Mg™ is an ideal source to help fill nutritional gaps.

Made from two key ingredients: Swiss chard (beet leaf) and buckwheat. Organic, vegan and gluten-free magnesium.

Why People Are Magnesium Deficient: The Standard American Diet (SAD) is high in processed foods and carbohydrates, low in vitamins and minerals. This inadequate daily intake of plant materials helps contribute to magnesium deficiency.

Data also suggests that produce – especially vegetables – has experienced a decline in mineral content over the last century.

The Benefit of Multiform Magnesium: The best source of magnesium is naturally occurring and obtained from the diet. Various forms of magnesium make use of different uptake sites in the gut with 40% of magnesium absorption taking place throughout the intestines.

Plant-based magnesium, like that found in E-Z Mg™, is considered ideal as it consists of a collection of various magnesium forms (i.e., multiform). Since plant-based magnesium contains multiple forms, it helps take the guesswork out of which kind of magnesium to take.
Read All About It!

The Case for Magnesium (Mg) Supplementation

Over 50% of Americans don’t meet the daily dietary magnesium requirement. Magnesium contributes to more than 300 enzyme reactions in the body on a daily basis. Some of the more critical roles that magnesium plays in the body include nerve conduction, muscle contraction, energy production, nutrient metabolism, and protein, bone and DNA formation.

Adequate levels of magnesium may help:
- Mild headaches
- Brain fog
- Muscle twitches
- Tremors
- Cramps
- Fatigue
- Muscle weakness
- Mood change
- Glucose management

Nutrient Rich Soil Grows Magnesium Rich Plants

E-Z Mg™ is made from two key ingredients: Swiss chard (beet leaf) and buckwheat – both grown on our sustainable and certified organic farm in Wisconsin. We leverage the scientific methods of regenerative farming to cultivate our nutrient-rich soil, thus increasing the quality and quantity of natural phytonutrients found in our plants.

For more than 18 years, our farm experts have worked hard to increase the level of organic matter in our soil which, in turn, provides a higher yield of beneficial nutrients in our plants.

In addition, freshly harvested crops are processed often within a day of harvesting in our state-of-the-art manufacturing facility. We use proprietary technology designed to maintain the vital nutrients in our products, allowing us to strictly control their quality from soil to supplement.

New Product Coming – EZ Mag

Available in convenient and portable stick packs, E-Z Mg™ is certified USDA organic and can be mixed with water, blended in a smoothie or even sprinkled on foods. The recommended daily dosage is 1 stick pack per day, or as directed by your health care professional. Each package holds 30 mixed berry-flavored stick packs.

E-Z Mg™ contains 6g of our proprietary blend of organic dried Swiss chard (beet leaf) juice and organic dried buckwheat (aerial parts) juice, delivering 85mg of elemental magnesium. Each serving contains a PRAL value estimated at -8.9mEq which may promote urine and whole body alkalization.

This product contains naturally occurring Vitamin K1. All forms of vitamin K may interact with blood-thinning medications. If you are taking such medicines, please consult with your health care professional before taking this product. If you have been directed to eat a diet low in oxalates (found in leafy green vegetables), please consult with your health care professional before taking this product. If you are pregnant or lactating, please consult with your health care professional before taking this product.
New Product Coming – EZ Mag

Supplement Facts Serving Size: 1 stick pack Servings per Container: 30

<table>
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<th>Amount per Serving</th>
<th>Calories</th>
<th>Total Carbohydrate</th>
<th>Dietary Fiber</th>
<th>Total Sugars</th>
<th>Vitamin K1</th>
<th>Calcium</th>
<th>Phosphorus</th>
<th>Magnesium</th>
<th>Sodium</th>
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<td>85 mg</td>
<td>50 mg</td>
<td>350 mg</td>
<td>6 g</td>
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*Percent Daily Values are based on a 2,000 calorie diet. †Daily Value not established.

Other Ingredients: Organic rice (hull) concentrate, natural flavor, and monk fruit extract.
Directions: Add one stick pack into 8 ounces of water and mix thoroughly for 10 to 15 seconds. One stick pack per day, or as directed.

RICH IN: Magnesium (multiform) Vitamin K1
Warning: This product contains naturally occurring vitamin K1. All forms of vitamin K may interact with blood thinning medications. If you are taking such medicines, please consult with your health care professional before taking this product. If you are pregnant or lactating, please consult with your health care professional before taking this product.
Caution: This product is processed in a facility that manufactures other products containing soy, milk, egg, wheat, peanut, tree nuts, fish, and shellfish.

Disease as a mosaic pattern

1. Most imbalances and diseases are not a single event distortion
2. There are multiple factors combing to create an outcome, which also helps describe the resistance to getting sick and to getting well
3. Idiopathic Hypertension is a good example of this mosaic pattern
4. Proper clinical management can reveal the underlying events contributing to this physiological modulation, and reinforces why the practitioner is essential in the investigative process of finding these
5. The following is a suggested sequential consideration of factors contributing to hypertension

New Product Coming – EZ Mag

LN0984 04/18
Principles at work

• Sufficient clinical observation allows mechanisms to be revealed that will remove the idiopathic mystery of hypertension and return it to a simple physiological modulation and resultant augmentation in function, balance, tissue fortification and promotes healthy genetic expression
• This allows the symptom resolution to occur as a result of system 'mosaic' change, and then of course the downstream events occur
• The longing in the public is for this sort of detective work to find the cause and make the correction – increasingly food is seen as medicine and people are asking more and more for what foods will change their health patterns

Learning wisdom -

Anything can cause anything!

Anything can effect anything!

Everything relates to everything!

Viscero Somatic Principles
The concept of viscerosomatic reflexes is presented and supporting documentation from the basic and clinical sciences is reviewed.

The somatic manifestations of visceral disease, including their autonomic segmental reference sites, are described.

Also discussed are the findings that are consistent with diagnosis of a viscerosomatic reflex, as well as their predictive value.

According to the Textbook of Functional Medicine viscerosomatic and somatovisceral reflexes engage the HPA axis

These reflexes potentially subject the individual to sympathetic and HPA 'overdrive' ultimately leading to a facilitation of an intraneuronal pool that effects both visceral and somatic structures innervated by the facilitated cord level

The facilitation may be established in response to persistent inflammation, mechanical, emotional or biochemical stress via somatic or visceral efferents or afferents

Allostatic Load – the cumulative long-term effect or toll taken upon the body by frequent and repetitive activation of the autonomic system, HPA Axis, cardiovascular, metabolic, immune systems.

In a study involving 1,189 men and women aged 70-79 years old the allostatic load showed a direct relationship with loss of cognitive and physical functioning over the 8 year period of the study.

The mechanism of action was attributed to the hippocampal degeneration which is rich in cortisol receptors and elevated levels of cortisol persistently lead to hippocampal neuronal atrophy or death and loss of memory.
Viscero Somatic Principles

Viscerosomatic reflexes are diagnostic tools. They are somatic dysfunction that develops in response to visceral pathology. A modification of Van Buskirk’s nociceptively initiated model for spinal somatic dysfunction offers a description of the physiology of the viscerosomatic reflex.

1. A peripheral focus of irritation, in this case from the inflammation associated with visceral pathology, results in activation of nociceptive, general visceral afferent, neurons.

2. These primary afferent neurons return to the spinal cord and synapse in the dorsal horn with internuncial neurons.

3. The ongoing afferent stimulation results in the establishment of a state of irritability (facilitation) of the internuncial neurons of that spinal segment.

4. Additional afferent activity, from any source, results in a segmental response to significantly fewer stimuli than would normally be required. This results in tenderness when the area is palpated. When the amount of afferent activity from the offending organ is sufficient enough to cause internuncial firing referred pain results.

5. Such activity from internuncial neurons, which synapse with ventral horn motor neurons, results in segmentally related myospasticity and palpable tissue texture change.
Viscero Somatic Principles

6 - The degree of segmental irritability that is directly proportionate to the severity of the visceral pathology, and the anatomic relationship between the involved organ and the paravertebral soft tissues that makes the location of the reflex changes consistent from individual to individual allows viscerosomatic reflexes to be of diagnostic value.
An abnormal stimulus of the visceral efferent neurons may result in hyperesthesia of the skin and associated vasomotor, pilomotor, and sudomotor changes.

A similar stimulus of the ventral horn cells may result in reflex rigidity of the somatic musculature. A direct motor connection between the visceral afferent system and the skeletal muscles has not been identified.

Animal studies have shown evidence of a viscerosomatic reflex that results in localized muscle contraction.

Skeletal muscle spasm resulting from nociceptive visceral stimuli has been observed clinically in patients.

These spasms may be manifest as generalized muscle contractions or as localized paravertebral muscle splinting.
**Viscero Somatic Principles**

Higher centers of the central nervous system acting through the extrapyramidal system on the muscle spindle through the gamma system could account for the muscle splinting reaction observed with visceral disease.

Muscle spindles have a sympathetic fiber innervation.

Repetitive stimulation of these nerves increases the afferent discharge of receptors and could lead to an increase in gamma activity setting the spindle at a more active level, increasing the tone of the extrafusal fibers and resulting in an increased tonic muscle activity.
Body Circuits

• Relationships between body systems and parts is mysterious and challenging to determine

• This is a brief overview to consider the complexity and initial decoding that may help free the somatic system from some of its stubborn chronicity

• Many approaches describe the inter-relatedness between the musculoskeletal system and the visceral (eg. Applied Kinesiology)

The Circuit Board

• Often the complexity of our devices these days frustrate people when things don't work, like the cell phone or computer, and yet if one has the code and understanding of the background circuits it is almost magic and such relief to see how easily things can be corrected and remedied

• The following describe basic relationships between joints and muscles and organs or glands
Dr. Stuart White
Mentoring the Mentors

General coding

- The following describe well understood relationships between viscera and the somatic system, as well as less well known but clinically obvious connections
  - Sub-occipital upper cervical discomfort – upper digestive stomach
  - TMJ - hepatobiliary
  - Upper thoracic "rhomboids" – hepatobiliary
  - Lowback lumbosacral – lower intestine
  - Sacro-iliac – adrenals
  - Sacral and tailbone – urinary tract and bladder
  - Elbows and knees – hepatobiliary
  - Shoulders – pancreas, prostate, lungs

General coding

- Wrists – Heart
- Thenar/thumbs – hepatobiliary
- Hips – lower intestine
- Quadriceps – small intestine
- Hamstrings – large intestine
- Adductors – adrenals
- Knees – hepatobiliary
- Calves (Gastroc & Soleus) – Adrenals
- Achilles – Adrenals
- Ankles – Urinary tract and Bladder

Building the story

- Through multiple convergent findings by global interviewing it becomes obvious that there is an underlying event expressing itself through multiple faces and describing one circuit
- So for example someone with basal headaches, right knee pain and left rhomboid aching is clearly describing one circuit with multiple presentations – hepatobiliary
- Once a target is sighted sequential upregulation and accurate interviewing will reveal the potency of strengthening the deeper circuit instead of just treating the symptoms that are somatically ‘barking’
- As well it may be necessary to strengthen a circuit multiple times over months with multiple approaches to instill strength and tonal change in the tissue
Research + Experience

You Will

Change the world
It wants to