Since scientific models and theories are often outside of the frame of reference of business executives, the following summary has been prepared using business-friendly terms to provide a high level overview of the consequences that can occur when imbalances occur in the body; i.e. causes of chronic diseases.

Following the discovery in 2005 by the team at The Center for Modeling Optimal Outcomes that brain chemistry (neurohormones) interact and create behavioral abnormalities when imbalances occur, The Center and a life sciences affiliate pursued the likely consequences of imbalances of activities at the cellular level as causes of chronic diseases.

In terms of chronic diseases, since the entire human body is comprised of cells, it is imperative that proper cellular health be maintained; i.e. sick cells make sick tissues and sick tissues result in sick glands and organs. The following were selected because they represent minerals and elements that are well known to non-scientists. As the following are considered, it should be apparent that one’s diet can be a factor that must be considered as part of precision (personalized) medicine.

**Calcium and magnesium** are examples of antagonistic (opposing elements) that are known to exist within cells; the following is provided as an overview of diseases that can be caused by interactions and imbalances of elements within or between cells.

The following links were selected as valid examples from the hundreds that are available for review by anyone with knowledge of basic biology.

**Calcification Tissues and Vasculature**

- [http://circ.ahajournals.org/content/117/22/2938.full (Arterial)](http://circ.ahajournals.org/content/117/22/2938.full)
- [http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3738006/ (Arterial)](http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3738006/)
- [http://jasn.asnjournals.org/content/20/7/1453.full (Kidney)](http://jasn.asnjournals.org/content/20/7/1453.full)
- [https://www.kidneyresearchuk.org/health-information/calcification (Kidney)](https://www.kidneyresearchuk.org/health-information/calcification)
- [http://cjasn.asnjournals.org/content/6/2/377.full (Kidney and CVD)](http://cjasn.asnjournals.org/content/6/2/377.full)

**Magnesium Deficiency**

Using the principles of physical science, the antagonistic relationship between calcium and magnesium dictates that excessive levels of either element will displace the other within cells. The previous links provided valid research studies that establish excessive calcium as a causal factor for cellular abnormalities in tissues and arteries. **We challenge any member of the biomedical research community to disprove the fact that excessive intracellular calcium (from TBD sources) will not result in the deficiency (displacement) of magnesium!**

The following are provided merely as examples of outcomes that can result from the deficiency of magnesium.
Calcium Controversy

Biomedical research has focused almost exclusively on excessive calcium through the lens of supplementation. As a result, the controversy has continued and outcomes can be considered a “disease epidemic”, refer to:


Note: Calcium is natural in many foods; in water with high levels of calcium carbonate as well as through its addition into many foods products; e.g. milk and commercially produced breads. The Paracelsus maxim of toxicology has been overlooked; i.e. the dose determines the poison.

Examples of the Controversy

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4125316/

Sodium and Potassium Interactions

Another basic example is the relationship between sodium and potassium that can have impact on cellular health and wellbeing.

Despite the fact that the interactions between sodium and potassium were reported in 2009 in a peer-reviewed journal (the Archives of Internal Medicine), proper application of the fact has not occurred.


Then, similar findings with regard to sodium – potassium were reported in 2013 in the peer-reviewed journal BMJ.

http://www.sciencedaily.com/releases/2013/04/130405064437.htm
Our Objective

The objective of this website is to establish a bridge in communications between business leaders, clinical professionals and members of the scientific community. To accomplish this objective, separate segments have been created to provide peer-reviewed examples for clinical professionals to establish credibility for the capabilities of The Center based on a series of discoveries that started in 2005 that allowed us to identify primary causes of numerous chronic diseases in advance of findings by research scientists.

A vivid example of discoveries made through the application of physical science modeling by the life sciences affiliate of The Center is the interactions between gases in the body. The following link explains the reaction by researchers when they learned that three of the gases in the body interact: “It may be time to rewrite the textbooks.”
http://www.sciencedaily.com/releases/2015/04/150410095506.htm

Not only were we aware of these interactions and consequences that can occur when imbalances occur, at the time of publication of their study, we were anxiously awaiting receipt of approval our patent application that addressed testing of the interactions of these gases as part of predictive assessments that can be used as part of precision (personalized) medicine to prevent chronic diseases. On October 20, 2015, patent US 9,164,071 was issued.

To avoid confusion with regard to the scope and magnitude of our findings relative to the ability to identify primary causes of numerous chronic diseases, a feat no one else can accomplish based on valid science; several other examples are provided in the Clinical Professionals tab to solidify our capabilities as part of a verbal dialogue using the website as a tutorial.

To establish credibility of our modeling methods based on physical science and quantum mechanics (issues that are likely to be outside of the frame of reference of most business executives) a separate tab has also been provided for use during discussions with members of the research community. Those documents provide explicit and verifiable examples of our modeling tools but peer-reviewed studies have not been published to confirm the viability of our discoveries that apply to interactions and imbalances at the cellular level that can result in chronic diseases.

Summary

As modelers, our objective is to establish credibility for our discoveries using peer-reviewed research as the first step in bridging communications with business executives. Following that task, we are seeking to establish a dialogue with the appropriate corporate scientists who can apply and commercialize these verifiable discoveries in order to incorporate them into precision (personalized) medicine as part of the healthcare industry’s objective to prevent chronic diseases or to treat them more cost effectively.