



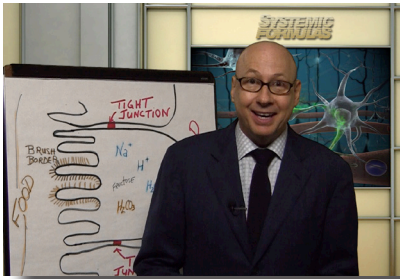
# Intestinal Hyperpermeability – A New View Of A Prime Health Disturbance

**A DISCUSSION ON THE BASIC PHILOSOPHIES OF THE NATURAL HEALTH PERSPECTIVE**

An Interview with Dr. Jack Tips (N.D., Ph.D., C.C.N.)

**SF:** Hello Dr. Tips. Your recent webcast featuring new insights on Leaky Gut Syndrome<sup>1</sup> (posted at [www.systemicformulasmedia.com](http://www.systemicformulasmedia.com), free to Systemic accounts) presented groundbreaking information and an exciting perspective on natural healing. Practitioners report that it was a “light bulb” realization. You look pretty happy there. Why is this subject again so pertinent?

**JT:** As scientific research delves deeper into the body’s mysteries, the more we see that Natural Health Principles,



based on the holistic model, are aligned with the latest discoveries in biochemistry, genetics, and biology. New findings continue to reveal that

nutrition and herbs form the foundational basis of health. Beyond that, the new research is elevating the importance of intestinal inflammation, dysbiosis<sup>2</sup>, and Leaky Gut Syndrome as a primary causative factor that predisposes human health toward disease processes. [Emphasis—Primary Factor!] Also, the facts are clear that if practitioners fail to address Leaky Gut as a prerequisite, then they will subsequently fail to have truly positive clinical outcomes.

Here’s some bullet point facts to stimulate a renewed interest in the Leaky Gut/Dysbiosis subject and inspire readers to

- 1 **Leaky Gut Syndrome** – a condition of altered or damaged intestinal lining. It is hypothesized to be caused by increased permeability of intestinal barrier resulting from antibiotics that destroy the beneficial probiotic bacteria, toxins (pesticides), poor diet (sugar), parasites, infection, or medications. The *leaky gut* then allows substances such as toxins, microbes, undigested food, waste, or larger than normal macromolecules to leak through an abnormally permeable gut wall and thus initiate an immune reaction.
- 2 **Dysbiosis.** The condition that results when the natural flora of the gut are thrown out of balance, such as when antibiotics are taken.

re-address this subject in their perspectives on how they approach each case.

- Intestinal health determines if a person’s genes express health or disease via the enteric nervous system’s communication with the brain and the body’s epigenetic response.
- E. Coli bacteria, a natural inhabitant of the intestines, causes tumor formation in the absence of probiotic cultures that naturally control its activities<sup>3</sup>.
- Intestinal health predetermines obesity. Children with antibiotic-disturbed intestinal flora are 15% fatter than children not treated with antibiotics<sup>4</sup>. The intestinal biome cultures instruct the body on how much fat to store!
- Dysbiosis is linked to diabetes<sup>5</sup>.
- Leaky Gut damages the thyroid via the immune response to an enzyme *transglutaminase*<sup>6</sup>. The body can more easily reverse hypothyroidism if leaky gut is not occurring.
- A determining factor to the level of inflammation throughout the entire body is the level of inflammation in the intestines<sup>7</sup>. [This is critical information for practitioners



- 3 Genes carried by E. coli bacteria linked to colon cancer, University of Liverpool. EurekAlert, 16 Aug. 2012.
- 4 **Intil Journal of Obesity.** Study of 10,000 children by researchers at New York University Medical School and New York University Wagner School of Public Service. PreventDisease.com, 8/24/2012.
- 5 Sapone, DeMagistris, Pietzak, Clemente, Tripathi, Cucca, Lampis, Kryszak, 2006, Zonulin upregulation is associated with increased gut permeability in subjects with Type I diabetes and their relatives. Diabetes 55 (5): 1443-9.
- 6 **Thyroid.** Naiyer AJ, Shah J, Hernandez L, Kim SY, Ciaccio EJ, Cheng J, Manavalan S, Bhagat G, Green Thyroid and Celiac Autoantibodies Akimov SS, Belkin AM. Cell surface tissue transglutaminase is involved in adhesion and migration of monocytic cells on fibronectin. Blood. 2001;98: 1567-1576.
- 7 C Cuvelier, C Barbatis, H Mielants, M DeVos, H Roels, E. Veys, Histopathology of intestinal inflammation related to reactive arthritis Gut, 1987,28,394-401 Departments of Pathology, Rheumatology, and Gastroenterology, State University Ghent, Belgium, and Lewisham Group Laboratory, Lewisham Hospital, London

administering antioxidants to correct high Meta-Oxy<sup>8</sup> scores. Lipid peroxidation, based on cellular inflammation is being driven by inflammation in the intestines!]

- Leaky Gut/Dysbiosis is directly related to anxiety, depression, and autism<sup>9</sup>.
- Bacteria in the intestines directly influence brain genetics. Neurotransmitter and brain activity, including the desire to take risks, eat chocolate, and emotional imbalances<sup>10</sup> (mood swings) are often based on dysbiosis and enteric signals.
- Intestinal bacterial DNA creates the “set point” for the body’s neuroendocrine axis—hypothalamus/pituitary/adrenals<sup>11</sup>. This is part of the gut/brain connection. Intestinal health predisposes hormonal and neurotransmitter communication throughout the body.



Intestinal Health plays a profound role in human health—far beyond the concept of “needing bulk to have a bowel movement,” or “macro food particles keeping the immune system too busy.” Leaky Gut disturbs the brain, emotions, thoughts, hormones, immune system, endocrine glands as well as cellular

genetics and function. So it’s an area of Natural Health focus with profound implications.

**SF:** Natural health practitioners all understand Leaky Gut Syndrome. It’s a foundational natural health concept. But its importance has waned over time as practitioners focus on sophisticated cellular metabolism issues often forgetting that

8 **Meta-Oxy**<sup>®</sup> – a in office/at home urinary lab test that determines the level of lipid peroxidation (cellular inflammation). Antioxidants and cellular healing nutrients can then be applied and their effectiveness measured.

9 Impaired carbohydrate digestion and transport and mucosal dysbiosis in the intestines of children with autism and gastrointestinal disturbances. PloS one, Vol. 6, No. 9. 16 Sept 2011.

10 Neufeld, K, et. al (2011). Reduced anxiety-like behavior and central neurochemical change in germ-free mice. Neurogastroenterol, Motil.

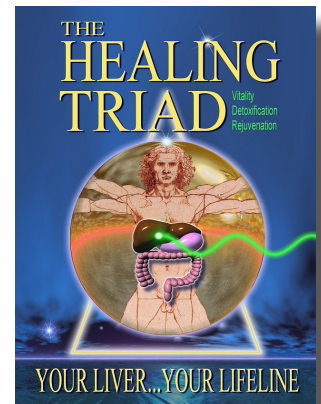
11 Neurogastroenterology & Motility, March, 2011

the cause of aberrant cellular metabolism anywhere in the body is in the intestines.. This new information blows the old Leaky Gut paradigm out of the water. It seems that we can never stop learning new information.

**JT:** So right. Practitioners who are doing what they did 7-10 years ago, in no way can address the plight of human health in the 21st Century. This is why the concept of “cellular healing” is so critically important. Let’s take a quick stroll down memory lane to gather up all the different “old thought” facets of Leaky Gut Syndrome so we have a launching point for the new insights and ultimate message that in order to help the body reverse a dysfunctional process, we must have a new clinical model and implement programs in the right order—first things first! —if we’re to provide the body “an offer it can’t refuse” to heal itself. It’s quite fascinating how the latest research keeps forcing us to go “back to the basics.”

**SF:** So, even with the exciting new information on Cellular Healing and going deeper into the nuts and bolts of the cellular biochemistry and nutritionally supporting what the cells need, we can never leave the basics behind.

**JT:** Yes, cellular healing is taking nutrition to the “battlefield” where the body is expressing disease as its best survival option – the cellular metabolic processes that are responding to the toxic environment, poor diet, and errant thinking occurring today. Supporting intracellular processes deals with the universal core of health issues. Epigenetics is at the forefront of health and disease. Interestingly, it all points back to the fundamentals established by Doc Wheelwright and natural health researchers 50 years ago – The Liver Triad<sup>12</sup> (includes Leaky Gut), Thyroid Metabolism, Detoxification<sup>13</sup>, Tissue Support, Pathogen



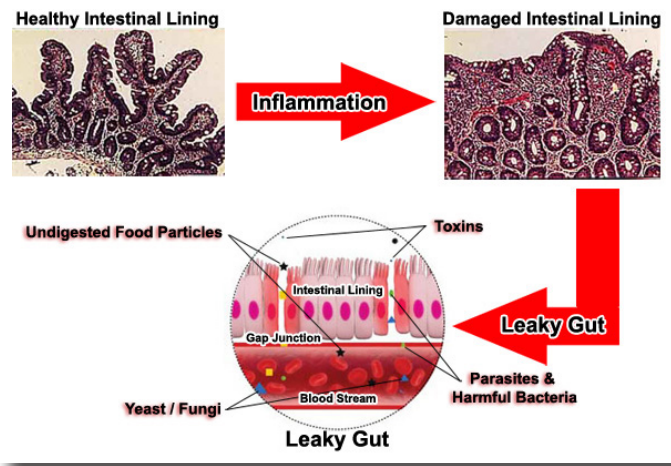
12 *The Healing Triad - Your Liver, Your Lifeline* – available at [www.openbookhealth.com](http://www.openbookhealth.com)

13 See Research Report #4, *A New Model For Detoxification* at [www.systemicformulasmedia.com](http://www.systemicformulasmedia.com)

Removal, and Pro-Vita! Diet<sup>14</sup>, so what's really occurring is that we are gaining greater credence for all the age-old natural health practices. Cellular healing goes hand in hand with the tried-and-true natural health principles. In fact, they are inseparable.

## A Brief History Of An Escalating Threat

Natural Health practitioners are quite familiar with the concept of Leaky Gut Syndrome. Formally called *Intestinal Hyperpermeability*, it occurs when the small intestines allow large, incompletely digested particles (foods and pathogens) to pass through its barriers and get into the bloodstream or lymphatic causeways.



In health, the digestive processes (chewing, enzymes, probiotic bacteria, bioenergetic molecular rearrangement of nutrient molecules, and pH cleaving of molecules) reduce food to very tiny particles which are able to pass through the intestinal barrier (comprised of the enterocytes<sup>15</sup> semi-selective *brush border*<sup>16</sup> membranes, the enterocytes themselves, and the *tight junction*<sup>17</sup>

<sup>14</sup> Pro-Vita Plan For Optimal Nutrition – available at [www.openbookhealth.com](http://www.openbookhealth.com)

<sup>15</sup> **Enterocyte** – intestinal lining absorptive cells with microvilli responsible for ion uptake, water uptake, sugar uptake, amino acid/peptide uptake, lipid uptake, vitamin B-12 uptake, resorption of unconjugated bile salts, and the base of IgA secretory antibodies.

<sup>16</sup> **Brush Border** – Intestinal lining, the site of terminal carbohydrate digestions. The microvilli (apx. 100 nanometers in diameter and apx. 100 to 2,000 nanometers long) that constitute the brush border have enzymes for this final part of digestion anchored into their apical plasma membrane as integral membrane proteins. These enzymes are found near to the transporters that will then allow absorption of the digested nutrients.

<sup>17</sup> **Tight junctions**, or **zonula occludens**, are the closely associated areas of two cells whose membranes join together forming a virtually impermeable barrier to fluid.

connectors between the enterocytes), into the blood or lymph. If the barrier is compromised or the *tight junctions* that link the enterocytes together are opened, then large molecules pass through into the inner sanctum of the internal body. When this occurs, the immune system and liver must engage the “dangerous, non-self” foreign particles, attack, and digest them. This is how Leaky Gut overstresses the immune system and liver, depleting energy and allowing more illnesses to occur.

Originally, Leaky Gut was blamed on medical overuse of antibiotics because antibiotics collaterally kill the intestine's beneficial flora—the innate probiotic colonies upon which human life, human nutrition, human neurological and hormonal processes, and human immune system function is dependent. Thus damage to the intestinal barrier due to the proliferation of post-antibiotic candida-fungus, and pathogenic bacteria, gluten sensitivity, high fructose corn sweetener, etc. is a terrible insult to the core of human health. So originally, Leaky Gut was a Digestive and Candida issue addressed naturally with digestive enzymes, probiotics, anti-fungal nutriment (caprylic acid), and antifungal herbs such as pau d'arco.

Pointing the finger at Medicine's damaging practice of antibiotic overuse e.g. giving antibiotics for flu (antibiotics are impotent against virus), and every little earache, did not cause Medicine to give credence to the Leaky Gut insult, despite the popular books by Drs. Crook, Trowbridge, Tips (yep, me) about Candida and the damage of antibiotics. Natural health wisdom took an oppositional position to Medical practice, and



Medicine took the position that Leaky Gut was an invalid concept. Time went on and continued to demonstrate how diet, lifestyle, and drugs (steroids, antibiotics, non-

steroidal anti-inflammatories) contribute to *dysbiosis*—a condition where there are too many pathogenic bacteria and not enough beneficial bacteria in the intestines, and one



cause of Leaky Gut is the presence of too many pathological bacteria. Dysbiosis damages the intestinal barrier, disrupts the genetic expression of health, and causes disease.

*Antibiotics trade acute, life-threatening pathogenic activity for chronic, degenerative inflammation. Understanding this, the only ethical way to employ antibiotics is to accompany them with probiotics with a specific focus to re-establish the integrity of the intestines. This would mean that every human being would have their innate intestinal cultures (mother's colostrum + birth flora) in a vault (like a blood bank) and medicine would re-inoculate their intestines after the antibiotic does its work (destroys the pathogens, ruins the microbiome in the intestines.) Such a system would cause much, much fewer antibiotics to be used, and more natural and effective alternatives (herbs penetrate the biofilms and actually work better than antibiotics) employed, with antibiotics being a last resort. Today, people are taking antibiotics in every bite of commercially produced meat, in the tap water, and in many unnecessary procedures such as teeth cleaning. Irresponsible use of antibiotics for every little infection brings a lifetime of misery to the person's health and sets the foundation for chronic-degenerative diseases.*

— Lectures on Leaky Gut, 1998, Jack Tjips, N.D., Ph.D., C.C.N.

At this point, both medical and natural health therapies focused on killing pathogens (Nystatin®, pau d'arco, Flagyl®) and giving probiotics (*acidophilus*, *bifidus*) to alter the intestinal ecology back toward the generally accepted gut flora ratio of 85% good guys, hoping that would resolve the damage that antibiotics inflicted upon the very foundation of the human immune system.

**Note:** 80% of the human immune system is in the intestines where the external world collides with the internal environment. The primary regulator of human immunity is the 80-trillion bacteria in the gastro intestinal tract! Not the thymus, not the brain, not even the intestines—but the bacteria!

As research continued and more facts discovered, addition credence was paid to the Leaky Gut theory via discussions about the “Gut/Brain Connection” which re-enlivened the Leaky Gut topic with information that when the intestinal barrier becomes leaky, so does the blood/brain barrier because both barriers

respond to the same “portal opener” called *zonulin*<sup>18</sup> which is associated with Celiac Disease and bacterial pathogens such as *Vibrio cholerae*. Further, research found that the enteric nervous system communicates directly with the brain, central nervous system, and entire body. Research alerted people about how intestinal inflammation is directly connected to anxiety and depression and that a majority of anxiety/depression did not require toxic psycho-pharmaceuticals! One answer of primary importance is found in the intestines.



Over the next 10 years, the gut-brain connection would be corroborated many times over and most recently linked to the burgeoning Autism-spectrum disorders.

New evidence demonstrates that when children are given antibiotics and have subsequent damage to their intestinal ecology, they become many times more susceptible to adverse reactions from the highly toxic mercury used in vaccinations<sup>19</sup>. So the much-touted and debated “mercury toxicity” link to autism is really based on intestinal dysbiosis, the weakening of the blood/brain barrier, and the use of antibiotics.

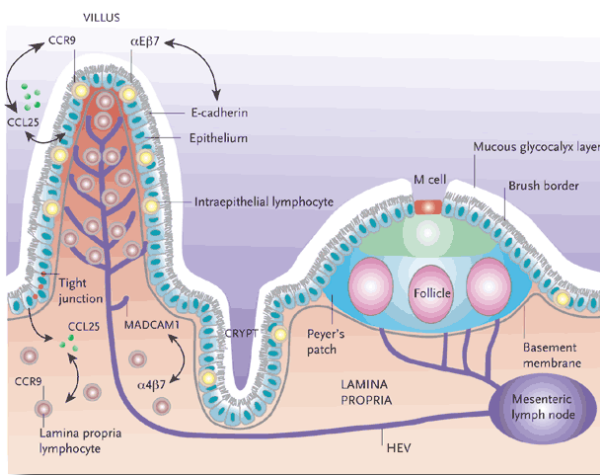
Throughout all this, Medicine scoffed at their own research, ignored it, and continued unabated prescribing antibiotics and neurotransmitter altering drugs. Hence the natural health practitioners enjoyed halcyon days of having “The Solution,” and this helped the Natural Health industry grow to a multi-billion dollar industry based on clinical results or what’s called “evidence based medicine.”

Today, the research studies and evidence is so compelling that Leaky Gut is begrudgingly becoming an accepted phenomenon.

<sup>18</sup> **Zonulin** – A protein that modulates the permeability of tight junctions between barrier cells digestive tract, blood brain barrier. Discovered in 2000 as the target of *zonula occludens* toxin, secreted by cholera pathogen. It is implicated in the pathogenesis of celiac disease and diabetes mellitus type I.

<sup>19</sup> Hewitson, Lopresti, Stott, Mason, Tomoko. Influence of pediatric vaccines on amygdala growth and opioid ligand binding in rhesus macaque infants: A pilot study. *Acta Neurobiol Exp.* 2010. 70: 147-164 New Study Shows Vaccines Cause Brain Changes Found in Autism, Univ. Pittsburgh.

Medicine can no longer doubt its own research that supports the Leaky Gut diathesis from a multitude of angles. Of course it's still not talked about too much because it specifically points to yet another iatrogenic disease and gross negligence in not including probiotics during and after antibiotic therapy to help mitigate the damage. More recently, Big Pharma has begun to make a play to control probiotics and make them a prescription item to create a new profit-center in the wake of the fact that the public has become educated (by natural health practitioners) about the damage of antibiotics and the need for probiotic replacement.



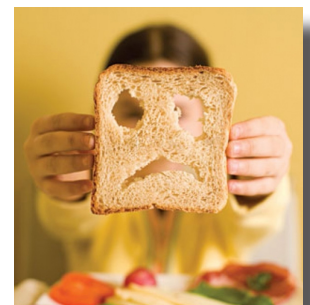
Further, research is clearly linking intestinal inflammation to the overall performance of the immune system throughout the body. With 80% of the human immune system in the intestines, “as the intestines go, so goes the body.” That speaks a powerful truth, recognized in the Natural Health model as fundamental postulate about the importance of intestinal health. When the intestines are inflamed by dysbiosis (the result of Rx drugs, poor diet, food additives, sugar, pesticides in the food supply), the whole body is inflamed, and inflammation is a direct cause of chronic-degenerative and autoimmune diseases. Natural Health proponents continue to cite the practice of Medicine at the single most health-damaging practice bankrupting the United States through the health care industry cartels.

The overactive immune system requires huge amounts of ATP and can lead to both immune disturbances (overactive

inflammation<sup>20</sup> = autoimmune diseases) coupled with reactive oxygen and reactive nitrogen<sup>21</sup> species that can cause free radical damage to the mitochondria (the basis for abnormal cellular processes), and liver stress (part of the immune system), when there is not enough glutathione, catalase and superoxide dismutase to protect the cells. Natural Health Practitioners also understand that Leaky Gut is most often linked to irritable bowel, Crohn’s, allergies, chronic fatigue syndrome, hypothyroidism, and fibromyalgia, so they know the effects that the new cellular metabolic research is proving.

Correcting the cellular metabolism involves a two-pronged focus: 1) nutritional support of cellular metabolic processes including antioxidants, ATP and mitochondrial biogenesis, cell membrane rejuvenation, key receptor nutrients such as Vitamins D3 and K2, and methylation pathways; and 2) ending the cause-disturbance such as Leaky Gut, Hypothyroidism, poor glucose metabolism. Thus the healing model is founded on diet, nutritional factors, and herbs that stimulate epigenetic transcription of healthy functions.

The Leaky Gut topic continues to dominate health discussions because of Celiac Disease and gluten sensitivity. Ever since wheat was genetically modified to be smut resistant in the 20th Century there is a correlation of greater intolerance by the body. Wheat can cause the tight junctions to open via the zonulin pathway<sup>22</sup>. Further genetic modifications (X-rays, gene-splicing) have been done in the 21st Century, and more and more people are allergic to wheat, not just to gluten (wheat, rye, barley, spelt) but also to other proteins in grains such as gliadin, glutenin, and wheat germ agglutinin. (It’s not just about gluten!) The allergic reaction causes Leaky



20 See Research Report #1, *Inflammation, Free Radicals, & Mitochondrial Dysfunction*  
 21 See Research Report #2, *Mitochondrial Dysfunction & The NO/ONOO Cycle*  
 22 Tripathi, Lammers, Godblum, Donohue, Arnett, Buzzza, Antalis, Vogel, Zaho, Yang, Arrietta, Meddings, Fasano, Identification of human zonulin, a physiological modulator of tight junctions, as perhaptoglobin-2 New Mount Sinai School of Medicine, New York, June 25, 2009

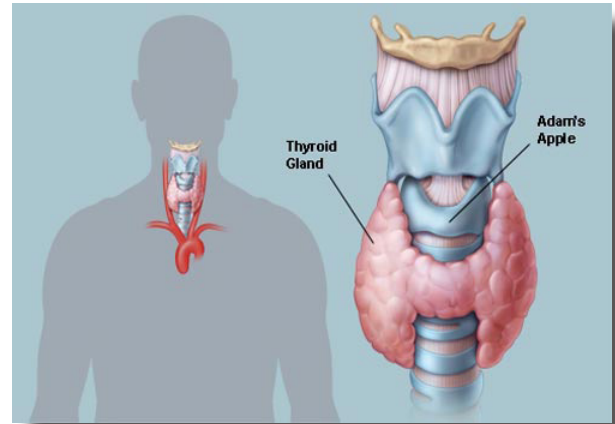
Gut and thus we find that the Big Agriculture practices of tampering with Nature's food, and the Big Corporate attempts to dominate the human food supply via Genetic Modification (GM) is causing dire impacts on human health.

The reason that the genetic reactivity to gluten (Celiac Disease) and hypersensitivity to grain proteins (wheat allergy, gluten sensitivity) are involved with Leaky Gut is that they launch an autoimmune attack in susceptible individuals on the small intestines that elevates inflammation throughout the body. The tight junctions open causing Leaky Gut and the enterocytes increase secretory IgA antibodies. This inflammation processes was labeled by *Time Magazine*, 2/2004, as "The Silent Killer" because the inflammatory process is directly linked to Alzheimer's, Cancer, Multiple Sclerosis, Diabetes, and virtually all chronic-degenerative and autoimmune diseases. The profound aphorism taught by the old-timer health advocates, "All diseases start in the intestines," was true then, and today it's both true and newly proven at the cellular/genetic level.

**SF:** So to summarize, Leaky Gut is not just an intestinal issue, but also a whole body issue. Research has proven that from a variety of studies, irrefutable evidence that Leaky Gut is a causative factor in hundreds of disease. Further you've said that if practitioners fail to correct Leaky Gut as a prerequisite to healing, that they just don't help the body properly to get the job done.

**JT:** Yes, that's the understanding of the most savvy natural health practitioners today. But that's ancient history and it's only the tip of the iceberg. Now, let's take an overview look at Leaky Gut Syndrome from the viewpoints of causation and epigenetics, and when we do, there are several critically important discoveries that directly impact our clinical success.

**Leaky Gut/Thyroid Connection.** As we've established, Leaky Gut Syndrome can be a causative factor in practically every health concern<sup>23</sup> through the inflammatory process. Beyond that, there are specific conditions such as diabetes,



autism, and thyroid dysfunction that have additional and specifically aggravating pathways. People without leaky gut can also get diseases. If a person has leaky gut, it must be corrected for the body to truly heal itself. Example: Leaky Gut is a major cause of hypothyroidism<sup>24</sup>.

Dysbiosis can trigger a chain of events that leads directly to thyroid damage. Savvy practitioners often observe that patients with celiac disease (genetic, autoimmune gluten intolerance) also have poorly performing thyroid hormone processes (both with the thyroid gland and with cell membrane uptake of thyroid hormone). The common element is cell and mitochondrial membrane inflammation.

Scientists have recently discovered that autoimmune antibodies against *transglutaminase* (part of the celiac autoimmune process) bind with thyroid cells and generate thyroid antithyroperoxidase (anti-TPO) antibodies, leading to thyroid tissue damage<sup>25</sup> from free radicals that damage the thyroid cells' mitochondrial DNA as well as cell membranes. Now we have a clearly identified causal chain! Intestinal inflammation causing thyroid dysfunction is specifically proven.

However, a person who does not have leaky gut can still get hypothyroid by having an iodine deficiency, or getting a chest X-ray where irresponsible technicians do not provide a

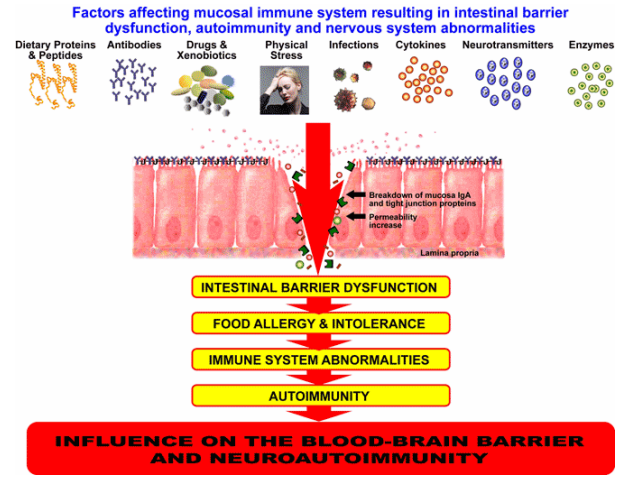
<sup>23</sup> See Research Report #9 *Autoimmune Disease – A Reversible Process* at [www.systemicformulasmedia.com](http://www.systemicformulasmedia.com)

<sup>24</sup> See Research Report #10 *Prevent & Reverse Thyroid Dysfunction Now* at [www.systemicformulasmedia.com](http://www.systemicformulasmedia.com)

<sup>25</sup> Thyroid. Naiyer AJ, Shah J, Hernandez L, Kim SY, Ciccio EJ, Cheng J, Manavalan S, Bhagat G, Green. *Thyroid and Celiac Autoantibodies*, Nov. 18, 2008

thyroid shield which results in genetic damage to the thyroid's mitochondrial (energy producers) DNA, or from exposure to back-scatter airport scanning devices, banned in Europe but inflicted upon people in United States airports.

Leaky Gut must be considered when any remedial program fails to bring results. Better yet, this interview should help practitioners focus on Leaky Gut BEFORE engaging other programs. Doing so solicits the body's innate processes full cooperation to effect genuine healing, and not just the temporary palliation that so many practitioners are settling for today.



**Practice Tip:** Anytime a well-chosen therapy helps but the body doesn't cure itself permanently, the practitioner should re-think if Leaky Gut, Hypothyroid, Glucose Metabolism Dysregulation, Foci of Infections (cavitations, NO/ONOO cycle, intestinal inflammation, etc.), and Toxins are overlooked prerequisites. Start with Leaky Gut!

*inflammation. This makes leaky gut a prime disturbance to human health and a top priority for dedicated practitioners."*

**The startling fact about Leaky Gut is that most people have it and don't know it!** Leaky Gut can be constant, and it can be periodic or selective. It can lurk under the threshold of awareness and undermine health and health programs.

Here's a quote from the 1990 health class, The Healing Triad, Intestinal Health Module, prophetic because of the hypothyroid mention.

*"Until Leaky Gut is repaired and the intestines function normally, there is no genuine self-cure of conditions labeled by diagnosticians as: Allergies, Autism, Chronic Fatigue Syndrome, Crohn's, Depression, Diabetes, Eczema, Endometriosis, Fibromyalgia, Guillain-Barré Syndrome, Hypothyroidism, Interstitial Cystitis, Lupus, Multiple Sclerosis, Myasthenia Gravis, Psoriasis, Rheumatoid Arthritis, and Scleroderma, just to cite a few examples. And that is only a sampling of a few of the myriad diseases because every chronic degenerative and autoimmune disease is based on chronic inflammation, and leaky gut is virtually synonymous with whole body hyper-immunity and*



Leaky Gut Syndrome is not officially classified as a disease by medicine (such a process would create culpability) so it's not in medicine's realm of expertise because there is no drug that corrects it. Blessedly, natural health practitioners have the wherewithal—the tests, the strategies, the tools – to help people correct this dysfunction, and in so doing, hold the key to unlocking a fundamental cause of the body's symptom expressions as is expected in the true healing arts.

**SF:** So there's new research and new approaches to restoring intestinal health?

**JT:** Yes indeed. So let's start with the model of what's supposed to be. There is a tremendous amount of wisdom in the body's innate functions. It serves as a model for health and, in fact, for the whole of life.

Let's think of the body as a donut. Not from the perspective of sugar and trans-fat that dominates the SAD (Standard American Diet), but from the physiological perspective. The skin surrounds the body with a hole through the middle (like a donut) from the mouth to the anus. Thus the skin and the gastro intestinal (GI) tract are primary areas where the external environment meets the body's internal workings. The G.I. tract is the primary portal for externally



derived food nutrients to penetrate the barrier and gain access to the inner metabolism.

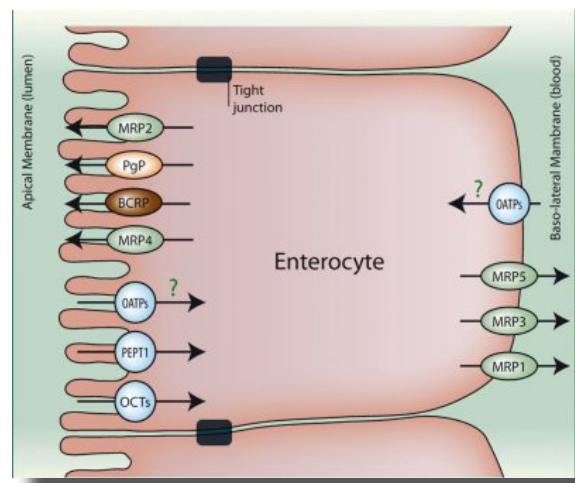
The areas of the body where the outside environment meets the sacrosanct inner environment are critically important frontiers because the outside environment is life threatening. Outside the body is where pathogens, parasites, toxins, and poisons lurk, ever wanting to sneak across the border and take up residence in the land of milk and honey, e.g. the warm, moist, rich inner environment. Yet there are molecules that the human body needs from the outside environment. Air, water, food, sunshine, and essential nutrients are universally required; and for reproduction, sperm is required to move from one body to another.

Thus the body must be selectively permeable and maintain intestinal integrity. Desired molecules include essential vitamins, minerals, enzymes, and nutrients from plant and animal sources, amino acids, fats, and saccharides. Undesirable items include heavy metals (mercury in dental fillings and vaccinations; aluminum in antiperspirants, etc.), poisons (fluoride, chlorine, chemicals in tap water, pesticides in non-organic food), plastics (hormone disruptors in can liners, water bottles, etc.), chemicals (under the kitchen sink, in the garage, cosmetics), bacteria, virus, fungi, etc. Thus there exists the concept of “good” and “bad.” The intestinal barrier is set to allow food nutrients to pass through, but in the 21st Century it’s frequently tricked by food additives (monosodium glutamate, aspartame), and chemicals (xenobiotics) because the body doesn’t have genetic and epigenetic experience with chemicals like it has with the natural diet that the body has experienced for thousands of years.

To handle the incorporation of the external environment into life-sustaining substances inside the body, there are several faculties that unceasingly work to let the good guys in and keep the bad guys out. Here’s where the body’s overlooked *Innate Intelligence* is so important. Over the millennia, the body has learned and implemented the systems for survival. The nose sends olfactory signals to the brain, the tongue forwards taste information, the intestines have specialized

cells the *enterocytes* that serve as gatekeepers – they analyze the external environment to facilitate the border crossing and survival. Most importantly, the Innate Intelligence resides in the cell membranes – those very fluid, reactive gatekeepers of the innermost sanctum of life processes.

The intestinal bacteria sample the foods and pass information along to the body about the suitability or hostility of the materials passing through. Thus the intestinal biome provides the brain with information about the hostility and ambient conditions of the externally derived nutrient base and pathogens. Today, with the thousands of toxins in the food supply, the message goes forth that the world is violently hostile, and thus the immune system is put on DEFCON 2 in acute alertness. This is the inflammatory state that today seldom gets turned off.



So in the intestines, where the foreign world vies for passage into the body, resides 80% of the immune system. This is where most of the life-determining battles are fought. The intestinal culture is receptive and responsive to the diet and tells the immune system either, “It’s okay,” “Beware!” or “Help!” Thus, sugar and high fructose corn sweetener, chemicals such as aspartame (NutraSweet®), pesticides in commercial foods, MSG (monosodium glutamate), encourage the “bad bacteria” to proliferate and send a “we bad” message to the body. Wholesome foods (and even better, naturally fermented, organic vegetables), as well as herbs tell the body via the bacterial response messages such as, “there’s no famine, all is



well, be at peace, store nature's bounty for the future, etc.” The point here is that the 85:15 intestinal ratio of probiotics to pathogens in the intestines all serve to sample the external environment and instruct the body via chemical messengers (their metabolic wastes) about the safety and ambiance of the external world, so the body can be prepared to adapt and survive.

**Note:** Looking at the established 85:15 ratio of probiotics to pathogens, it's valid to consider that to be even better at 90:10. The intestines need some “bad guys” hanging around for their input (when they proliferate, something is wrong), and as information that keeps the immune system armed with antibodies. A really great recipe for ensuring a strongly supportive ratio is:

- Use FBR (Fibers) daily to provide the prebiotics that feed probiotics, the molecular signals to stop inflammation in the intestines, bulk, and *bacillus coagulans*—a robust probiotic that kicks bad bacteria out of the intestines.
- ABC (Probiotics) – supplies the bifido and 5 other valuable probiotic cultures to help re-seed the intestines.
- Eat raw, organic, fermented vegetables daily (learn to make your own.)

Over the millennia, the body's innate intelligence learned survival and created specialized systems for encountering the external world. Set the Way Back machine for 35,000 years ago and imagine that you are living in the distant past, hunting, gathering, and following the herds. Your muscles are strong and well defined. Your vision and hearing are acute. Your feet are fleet and you have great stamina (you're a fat-burner like the Pro-Vita! Plan diet, not a sugar burner like the SAD (Standard American Diet). Your senses are honed to an impeccable sensitivity and your brain is outthinking other life forms.

Your taste faculties are part of your survival skills. Salty, umami (savory), bitter, sweet, and sour all speak to your instincts about what is food, what is medicine, and what is poison.

As an omnivore, your body can survive on preponderance of any food group—carbohydrates, proteins, and fats—by metabolizing them into life-energy called ATP (Adenosine Triphosphate). Of those three macronutrients, the proteins are

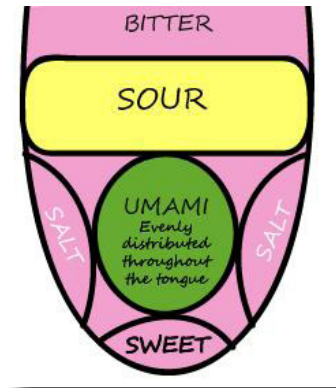
the most critical to obtain because they comprise your muscle fibers for survival, your immunoglobulins for survival, your bone matrix for survival (see it's all about survival!), so your hunting skills are impeccable. Unknown to you, proteins also operate your cellular metabolic processes.

Next to proteins in importance, fats are critically important. They serve the cell membranes, brain, thyroid, and mitochondrial beta-oxidation energy processes. They provide stamina and cellular longevity – both necessary for survival. Carbs are the least important, but they are important as a food source for the intestinal bacteria. They are easy to get by eating plants and herbs and tubers. They provide quick energy, a key energy ingredient for survival. Thus we have the three macronutrient food groups—protein, fat, and carbs—that the human beings must acquire from the outside world. You can readily see how modern culture is topsy-turvy making the least important the most consumed.

*The real benefit of complex carbohydrate foods, replete with the germ and fibers, is that they feed the intestinal probiotic cultures and cause them to proliferate. Good health results. This is why probiotic supplements often contain inulin or fructooligosaccharides. To be healthy, not only must human beings feed their cells, they must feed their intestinal biome.*

— Jack Tips, lectures on Leaky Gut, 1998

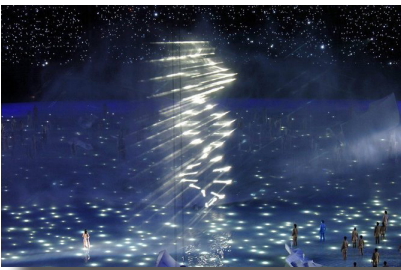
In the crucible of the distant past, let's discover how human genes learned to express either health or disease, because long ago, our bodies mastered their life-relationships with the Earth environment and passed that crucial information for-



ward with each generation. What was the diet that formed the rudiments of our genetic relationship with food and life? What level of exercise formed the basics of our muscle metabolism? What threats formed the *modus operandi* for our immune systems?

From this perspective, the ultimate and universal language among all species, all life, is DNA. It's the language that transcends time and space with its message of adaptability and survival. Some day, cuneiform tablets and hieroglyphics will return to dust, but DNA carries the timeless message of ever-present life into eternity.

Now you know that 80% of the genetic material in your body is not yours! It belongs to the bacteria in your intestines along with unwanted virus, fungi, and mycoplasmas inhabit-



ing your body. But most of your genes belong to bacteria. This is the basis for communications throughout the body – DNA communicates with similar DNA bio-

chemically and bioenergetically! Cell membranes communicate! This is the basis for foot reflexology—fractured DNA forms the “crystals” in the feet that the reflexologist massages to tell the body to heal itself.

With each prehistoric food eaten for survival; each plant, animal, and pathogen encountered; human epigenetics and genetics organized myriads of relationships with those flora and fauna molecules. The innately intelligent body learned how to adapt and use life-promoting molecules, and it struggled to neutralize, overcome, and survive the disruptive life-threatening molecules. These billions of “history lessons” are stored in the human *genome* – the sum total distillation and operating system contained within our genes.

But this is only part of the story—the part that began many thousands of years ago as we hunted, gathered, lived, repro-

duced, and died. There's another part of this story that deals with the *interpretation* of the information stored in our genes and that's called “epigenetics” which encompasses the cellular transcriptional process of what genetic stories our bodies choose to express. Epigenetics means that we can change (adapt) from health to disease, or from disease to health, quickly and without the need for gene mutation.

**Commentary:** *The mapping of the human genome (all the genes that make up a human being) reveals that all our health and all our chronic degenerative diseases are built into that code. Chronic-degenerative diseases are simply the body's perfect expression of the causative application of epigenetics on the genome. Autoimmune diseases are the perfect expression of exactly what the immune system is supposed to do under the circumstances encountered. We keep calling it “the immune system gone wrong!” It's not “gone wrong,” it doing what it's supposed to be doing under the circumstances. The cause can come from pathogens, from things ingested (toxins, altered foods, additives) and breathed, from chemicals, from prescription drugs, and electromagnetic radiations. So to correct such diseases, the person must correct the cause and restore the body's optimal vitality which is both a biochemical (plant and food nutrients) and bioenergetic (resonance) alignment. This is the basis of the Pathogen Purge Program<sup>26</sup>.*

— Notes from 2008 class on “The Care, Feeding, and Elimination of Pathogens” with Dr. Jack Tips

Plants and herbs communicate with your genetics and helps guide how your body operates. They do this three ways by: 1) the messages that the “sampling bacteria” in the intestines release, 2) their molecular components that are absorbed into the body and directly affect epigenetic expressions, and 3) bioenergetic resonance information to which the body's impressionable bioelectric field responds. This relational process continued for thousands of years and developed the way that the human genome is expressed for optimal health (gene transcription, histone folding). It continues today.

The established reactions become precedents, the expected way for a human being to maintain health, prevent and treat

<sup>26</sup> **Pathogen Purge Program** – Protocol available at [www.systemicformulasmedia.com](http://www.systemicformulasmedia.com)



diseases. This is why, “*There exists in Nature, a plant with the innate ability to prevent and help the body cure every disease.*” Human beings and plants exist in an inseparable symbiotic relationship, “The Great Cycle of Life.” This is also why 20th Century herbalist Doc Wheelwright said that, “*Herbs are God’s medicines.*”

By contemplating ancient life, we now understand that our genetics and epigenetics have developed a high level of expertise of adaptability and survival. Our genes learned how to accommodate eating and drinking from the materials of the Earth. They learned how to combat the onslaught of pathogens. They learned how to detoxify the acquired and metabolic wastes of our life processes. The proof? Survival!

By contemplating ancient life, we now understand that our genetics and epigenetics have developed a high level of expertise of adaptability and survival. Our genes learned how to accommodate eating and drinking from the materials of the Earth. They learned how to combat the onslaught of pathogens. They learned how to detoxify the acquired and metabolic wastes of our life processes. The proof? Survival!

**So today, based on our hunter/gatherer genetics, our bodies are all calibrated to function optimally when we:**

- Eat a variety of organic leaves, vegetables, seeds, nuts, fruit (mostly raw, some cooked<sup>27</sup>). Thus avoid pesticides (commercial food), and genetically modified foods.
- Consume small amounts of many different herbs (large amounts become therapeutic, e.g. can create side-effects), and spices.
- Drink natural water (rain, spring, filtered).
- Augment the diet with wild-caught, natural-life, natural diet animal proteins (what our ancestors did). Note: vegetarians must be aware of the latest research and account for deficiencies in proteins, methionine<sup>28</sup>, and vitamins B12/folate should they wish to have optimal health on a vegetarian diet. We’re all agreed that commercially-produced, forced-fattened meat (cows are given antibiotics to make them fat as well as prevent

bacterial diseases that easily occur in their unnatural environment) is inhumane and unacceptable for human health, but free range, grass fed cows and milk products are a different story for other discussion.

- Have times of feast and times of famine (thus the case for fasting one day a week).
- Breathe oxygen rich, clean air.
- Exert the muscles (exercise).
- Sleep, refreshing (the primal reason for shelter was for safe sleep, not comfort).
- Experience good will, love, and touch.
- Live vigilantly in freedom, without fear.



**Lifespan and Health.** Clean, organic food; clean air; clean water. There’s a theme developing isn’t there! Today it’s a major challenge to obtain clean air, water, and food—you know, the kind to which our genetics are accustomed. So why was an average lifespan so short way back when? Well, between tribal warfare, saber tooth tigers, tsunamis, earthquakes, and giant crocs, life was hard and wounds were often fatal. Nutrition was often incomplete. Historically, pathogens often got the upper hand while antibodies were being established. However, it was **infant mortality** that drove the lifespan statistics down compared with our modern times. Let’s not forget the records of patriarchs whose lifespans were centuries.

So our concept that ancient people did not live very long lives is skewed by infant mortality that lowers the average. Couple that with wars and violence, and elders were in shorter supply. Further, lack of sanitation exposed the body to virulent pathogens, and lack of modern-day emergency-room procedures both account for early loss of life.

For The Record: I, personally, hold emergency medicine on a high pedestal, so please understand that discussions that reveal the dark side of modern medicine are focused on internal drug medicine, cell-damaging tests (Radioactive Thallium/

<sup>27</sup> For more info, see *The Pro-Vital Plan For Optimal Nutrition*, [www.openbookhealth.com](http://www.openbookhealth.com)  
<sup>28</sup> Ingenbleek, I, The Oxidative Stress of Hyperhomocysteinemia Results from Reduced Bioavailability of Sulfur-Containing Reductants, *The Open Clinical Chemistry Journal*, 2011, 4, 34-44

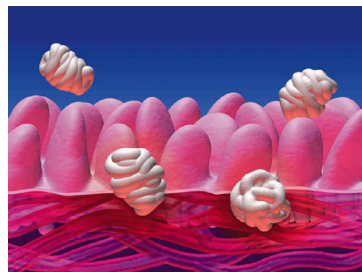
Gamma Radiation Heart Stress Test, Barium dyes, X-radiation, etc.) and Big Pharma's conveyor belt of causing, supporting and maintaining people's chronic degenerative diseases for drug sales.

**Summary:** Now we should have a foundation of understanding that the Natural Health model has promoted the Leaky Gut theory for 40 years, and now in the 21st Century, it is repeatedly proven, time and again, by Medical research to be true. The Natural Health practitioners deserve the accolades for serving humanity with the understanding and remedial programs for an underlying cause of the massive decline in human health experienced in cultures that have: 1) Big Agriculture that limits food selections and puts inflammatory, pesticide-poisons into the food supply, 2) Big Pharma whose corporate agenda is to addict people to at least 14 toxic medications that can never cure, 3) Big Medicine that must serve Insurance and Big Pharma directives in the suppression, not cure, of disease, 4) denatured foods, 5) high levels of toxicity and poor control over environmental pollutants, 6) populations whose mental capacities are impaired by a general "dumbing down" of I.Q. as a result of Leaky Gut and the aforementioned cultural afflictions coupled with a resulting loss of self-reliance and dependence on institutions to take care of them.

**SF:** What can a person do to stop Leaky Gut?

**JT:** Here is a plan for overcoming leaky gut using Systemic Formulas:

**I Remove the cause.** Establish a diet with raw, organic fermented vegetables, kefir, and homemade, raw milk yogurt if dairy works for you. Avoid grains, for the most part, particularly if sensitive to gluten. Some people can eat grains, particularly non-modified, organic, sprouted, and fermented grain products. Grains should never be a primary part of the human diet. Read, *The Pro-Vita! Plan for Optimal Nutrition* and build a diet plan on proteins, fats, and vegetables. Use the Z-Glut'n (Gluten Control) formula whenever using grains or dairy.



**2 Repair the damage.** If you have ever had an antibiotic, begin a probiotic supplementation program with raw, organic, fermented vegetables and supplemental probiotic cultures such as Systemic's ABC (*Acidophilus, Bifidus, Bulgaricus* Probiotic) formula.

**3 Use supplemental fiber.** Feed your probiotic colonies. Fiber supports lower cholesterol, healthy bowel movements, binding of heavy metal toxins released by the gall bladder, and allows your immune system to lower the whole body inflammatory threshold. Systemic's FBR (Fibers) provides both soluble and insoluble fibers plus *bacillus coagulans* to support optimal gastrointestinal health.

**4 Support cell membranes with beneficial fats.** Fats are grossly neglected in the modern, processed food diet. (No, not even the canola oil/soy oil/safflower oil salad dressings from the health food store can support your health.) Supplement with Systemic's VISTA (Membrane Rejuvenation) formula containing Cardiolipin and the phosphatidyl lipids.

**5 Specific therapeutic support.** Systemic's **ACCELL-Therapeutic formula provides an array of intestine-supporting nutrients.** Systemic AO (Aloe Vera concentrate) formula provides the mucopolysaccharides and allantoin that helps soothe and heal.

**Next:** See further discourses on Leaky Gut in which we will examine clinical procedures (lab testing, questionnaires, and detailed programs) that correct Leaky Gut. If you've had enough chatting and need to cut to the chase, practitioners

will find the Leaky Gut protocol on the Systemic Media Site: [www.systemicformulasmedia.com](http://www.systemicformulasmedia.com)

Best wishes in your natural health endeavors!

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