

THE SECRET CAUSE OF INFLAM-AGING ...

Lies Deep Within Your Gut.

Do these conditions look familiar?

- Fibromyalgia Pain
- Chronic Joint Pain
- Chronic Fatigue
- Weight Gain
- Anxiety/Depression
- Cognitive Decline
- Rising Blood Pressure
- Rising Triglycerides & Cholesterol
- Either Hypoglycemia or Rising Blood Sugar

These are, of course, conditions you see in your patients day in and day out. And as you are probably aware, there is an inflammatory component contributing to each. Inflammation of sufficient intensity and duration to cause any of these patho-physiologies has been termed by researchers, “INFLAM-AGING”. (1)

That term simply means that your patho-physiological age exceeds your chronological age — a thirty-year-old looking and feeling like a forty-year-old — a fifty-year old who feels stiff and sore, with no energy, and with both blood pressure and blood sugar rising for no apparent reason.

What drives INFLAM-AGING?

The fundamental causes always include ...

An Unhealthy MICROBIOTA.

Hippocrates has been quoted as saying in 400 B.C., “death sits in the bowels” and “bad digestion is the root of all evil,” showing that the importance of the intestines in human health has been long recognized. It was almost 2,000 years later when in 1683 Antony Van Leeuwenhoek, the Father of Microbiology, described “very little animalcules, very prettily a-moving,” which he had seen under a microscope in plaque scraped from his own teeth. For more than 300 years after Leeuwenhoek’s initial sighting of bacteria, the human microbiome – the one hundred trillion microbes that live in and on all mucus and epithelial surfaces of the human body – remained largely unstudied. (2)

Current research shows that your gut microbiota has far reaching health effects, as it is intimately involved in numerous aspects of normal physiology – from nutrition status to behavior and stress response, to mediation of immune system reactivity. (3)

Consider these facts:

- More than 70% of your immune system resides in the lining of your intestinal tract, and is activated from there by your microbiota to perform immune functions throughout your body. (4)
- Your microbiota contains 10 times as many bacterial cells than the number of human cells present in your body.
- Incredibly, there are 100 times the number of microbiota genes in your body than human genes.
- The surface area of your gut if it were spread out flat is the size of a tennis court – nearly 3,000 square feet.
- Your gut contains at least 500-1,000 different species, and a recent analysis involving multiple subjects suggests that the collective human microbiome is composed of over 35,000 bacterial species.
- Research also shows there are direct Axes (communication systems) originating from your microbiota-controlled gut lining:
 - a Gut-Brain Axis (5)
 - a Gut-Hypothalamus Axis (6)
 - a Gut-Liver Axis (7)
 - a Gut-Adipose Axis (8)
 - a Gut-Pancreas Axis (9)
 - a Gut-Muscle Axis (10)
 - a Gut-Immune System Axis (11)

Pause to appreciate the implications. Your gut microbiota is far more than an inflammatory mediator for conditions IN the gut (such as Crohn's Disease, Ulcerative Colitis, and Irritable Bowel); it controls a broad array of inflammatory patho-physiologies FROM the gut.

Look at the list of conditions at the top of this article. As a chiropractor you are repeatedly confronted with chronic pain patients. These patients respond well to your chiropractic care, but likely not well enough. There is an underlying immune-mediated microbiota-controlled inflammatory reactivity that can only be fully addressed with probiotic + prebiotic (= synbiotic) supplementation.

Consider the remaining conditions on that list. Chronic Fatigue? Hundreds of studies from the research literature link chronic fatigue to the INFLAM-AGING initiated by inflammation generated in the gut wall. Weight Gain? Research shows that weight gain, particularly abdominal weight gain, is almost entirely driven by the Gut-Adipose Axis with input from the Gut-Liver Axis, plus the interplay between the Gut-Hypothalamus, Gut-Liver, and Gut-Pancreas

Axes. (12) Abdominal weight gain cannot be fully and permanently controlled without restoring a healthy microbiota – restored by synbiotic supplementation.

Are there more patho-physiologies – manifestations of INFLAM-AGING – on the above list that you encounter everyday? Can you help these patients? Emotional instability (13), Cognitive Decline (14), elevated Blood Pressure (15), rising Blood Sugar (16), and high Cholesterol (17) can all derive from microbiota-driven INFLAM-AGING. And these inflammatory processes often begin in youth, long before they become clinically diagnosable. Truly, many of these conditions may trace their origin to childhood or adolescence, when imbalanced microbiota first cause any of the gut-related axes go functionally awry.

With a less than ideal microbiota you are living in a constant state of low-grade systemic inflammation. Then, in accord with the principle that any chain breaks at its weakest link --- that inflammation tends to rear its ugly head as your own individualized patho-physiologies.

There is a broad array of assaults on the microbiota. First, many individuals never develop a normal microbiota as infants ...

- caesarean birth
- lack of breastfeeding
- entering a world through a mother's microbiota-deficient birth canal
- early life ingestion of fruit and other sugars (when lactose is the sugar needed).

Following infancy, there are many other forces that devastate the microbiota. "Ordinary" drugs are a big factor ...

- Antibiotics
- proton pump inhibitors
- antihistamines
- NSAIDs ...

all devastate the microbiota. In our sick world there are very few who do not take one or more of these drugs --- take them routinely --- and think that doing so is "normal."

Lack of sunlight and vitamin D (and preponderance of blue/green frequency light in video screens and indoor lighting) also inhibits a well-developed, balanced microbiota.

Your Gut-Immune Axis is the master control center of the Immune System by ...

- initiating the release or inhibition of pro-inflammatory cytokines
- initiating the release or inhibition of anti-inflammatory cytokines
- activating macrophages when the need is perceived

- being saturated with billions of mast cells, the most fundamental component of the innate immune response (18)
- connecting the immune system to the nervous system as mast cells cluster around sympathetic and parasympathetic nerve endings in the gut wall (19)
- receiving parasympathetic feedback provoked by the inflammatory cytokine Interleukin-2 (20)
- responding with an alarm reaction to the toxins produced by abnormal bacteria, fungi, yeast, or viruses in the GI tract --- triggering the release of the pro-inflammatory cytokines Interleukin-1 and Interleukin-2 (21)

INFLAM-AGING defense? There is no such thing until you cultivate an immune-controlling microbiota. Supplementing with probiotics alone is not adequate. You must add prebiotics to create a maximally anti-inflammatory synbiotic. Think of the probiotics as a crop you are planting, and the prebiotics as the fertilizer assuring proliferation.

And not just any probiotics will yield maximum benefits. Some popular probiotics are actually pro-inflammatory, and must be avoided. In fact, *Lactobacillus acidophilus*, perhaps the most ubiquitous species in low quality probiotics supplements, causes wheezing, especially in children, and can exacerbate asthma.

Now that you appreciate a major cause of INFLAM-AGING, you and your patients need a synbiotic specifically blended to enhance the Gut-Immune Axis.