



Link between Autoimmune disease and Nutrition

Developed societies have successfully reduced the burden of infectious disease, yet remain an environment where metabolic, cardiovascular, and autoimmune diseases thrive. The typical “Western diet”, includes high fat, high omega-6 fatty acids, high sugar, and excess salt intake, as well as the frequent consumption of processed and fast foods. These factors all contribute to promote obesity, metabolic syndrome, cardiovascular disease, and autoimmune disease.

What is autoimmune disease?

When everything goes right, your body’s immune response is a marvelous defense system, protecting against foreign invaders, injury, and infection. In a healthy immune system, the body can tell the difference between a foreign invader and itself. But in autoimmune disease, the immune response is flawed and begins to attack the body since it cannot distinguish between itself and foreign cells, or, it is not able to regulate the intensity of the immune response. Regardless of the reason, the result remains the same: tissue damage and the development of an autoimmune disease.

Autoimmune diseases can affect nearly every part of the body. Scientists have identified more than 80 clinically distinct, autoimmune diseases; including systemic lupus erythematosus, type 1 diabetes, rheumatoid arthritis, Sjögren’s syndrome, multiple sclerosis, and chronic inflammatory bowel disease. For example, in Sjögren’s (pronounced SHOW-grun’s) syndrome, your white blood cells attack moisture-producing glands, causing symptoms like dry eyes and dry mouth. In type 1 diabetes, the immune system attacks the insulin-producing cells in the pancreas. People who suffer from autoimmune diseases often experience one or more of the following: loss of function, disability, increased hospitalizations and outpatient visits, decreased productivity, and impaired quality of life.

Nutraceutical can help

Many studies have explored the association between vitamin D and autoimmune disease. A study published in The Lancet that followed participants for 30 years revealed that children who received supplemental vitamin D during the first year of life had a significantly lower risk for developing type 1 diabetes. The benefit is attributable to improvement of immune system function and a reduction in the risk of the development of autoimmune disease.. Researchers have already discovered vitamin D receptors in many of the body’s cells, including islet

cells of pancreas, lymphocytes, and enterocytes. This has led to the revelation that vitamin D helps keep the immune system functioning properly by inhibiting the proliferation of T cells and decreasing the production of pro-inflammatory cytokines.

Microbiome and Autoimmunity

Increasingly, research is connecting bacteria in our body with health and illness. The microbiome, the bacteria living in the large intestine, plays a major role in our immune system function and overall health. Approximately 70 percent of our immune system is located in the intestinal tract. An unhealthy or unbalanced microbiota may contribute to inflammation and exacerbate the development of autoimmune diseases. Harmful bacteria carry and produce toxins that can damage the protective mucus layer in the intestine, make the intestine more permeable and possibly trigger autoimmune disorders; thus prebiotics and probiotics have been called the “next frontier” in therapeutics by health researchers. Animal and some human studies have shown that probiotic cultures can enhance levels of immune-reactive cells, regulate immune factors, modulate immune dysregulation, and promote gut barrier function and anti-inflammatory responses.

Power of Omega-3 fatty acids

Omega-3 fatty acids are a type of fat found primarily in fatty fish and fish oil, and in a less potent form in walnuts, flaxseeds and chia seeds. Of the main types of omega-3 fatty acids, DHA appears to be more biologically active than EPA and ALA. The anti-inflammatory properties of omega-3 fatty acids make them useful in the management of autoimmune diseases; thus they have been investigated in conditions such as arthritis, Crohn’s disease, lupus erythematosus, multiple sclerosis, and rheumatoid arthritis. Animal studies suggest that omega-3 fatty acids may improve autoimmune disorders. In mice, those fed a diet enriched with omega-3s showed improvement in autoimmune antibodies, autoimmune response, inflammation and intestinal barrier function. In a 2010 review article, researchers reported that meta- analyses of randomized, controlled trials indicated a reduction in tender joints and a decreased use of nonsteroidal, anti-inflammatory drugs with fish oil supplementation in long-standing rheumatoid arthritis. Other studies have found improvements in ‘time to fatigue’ and ‘grip strength’ related to fish oil consumption.