

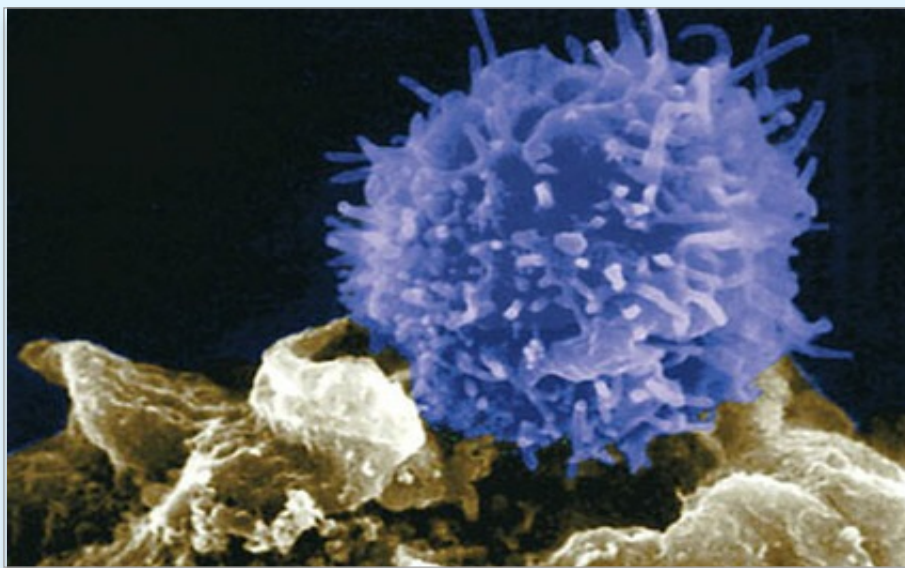
Tregs Dampen Immune Response

"The main function of the "Tregs" is to stop or suppress our own immune system from killing us as a result of inflammation and tissue destruction."

What was your favorite dinosaur? Mine was Tyrannosaurus Rex... T. rex. The way I saw it, T. rex was the most powerful force on the planet. In a weird "sort of" comparison, let's think about a class of white blood cells that are called T regulatory cells or Tregs. In an odd way they are one of the most powerful forces in our body.

Autoimmune disease is attributed to the third leading cause of death but some researchers consider Type II diabetes and many forms of vascular disease and some cancers as autoimmune conditions which would bump it up further. Many believe we are all marching toward autoimmunity due to the toxicities of our planet and as a natural part of aging.

The main function of the "Tregs" is to stop or suppress our own immune system from killing us as a result of inflammation and tissue destruction. In fact, the old name for T regulatory cells was suppressor T cells. One way we can maintain our health is to un-



derstand some of the dynamics that go into taking care of our T regulatory cells or Tregs.

White blood cells are broken into two basic categories: the innate immune system cells and the adaptive immune system cells. Innate cells include mast cells, natural killer cells, monocytes, macrophages, dendritic cells, neutrophils, eosinophils and basophils. The adaptive or acquired system has a group of cells called T cells or T lymphocytes which are a subset of lymphocytes.

T lymphocytes are produced in the bone marrow and then migrate and mature in the thymus. Newer research suggests that a significant number of undifferentiated T cells migrate to the gut. Undifferentiated cells are cells that can be modified or changed by their environment. As such these undifferentiated cells are programmed by the cytokine environment of the gut to either become T regulatory cells (Tregs) or pro-inflammatory T cells like Th17.

T regulatory cells regulate the amount of inflammation and ultimately will assist or down

regulate our immune system. Dr. Alex Vasquez presents this information in more detail on a link below. I want to thank him for his insight in this exciting field.

The undifferentiated cell programming process takes place in the mucosal lining of the gut, specifically in the gut associated lymphoid tissue or GALT for short. A healthy gut means healthy programming. Once programmed, these T cells migrate throughout the body and are responsible for creating inflammation and tissue damage via Th17 cells or suppressing inflammation via the Treg cells.

Let me repeat that because it's really important. "T regulatory cells or Tregs dampen immune responses and are an active part in the prevention and suppression of autoimmune diseases."

Th17 cells are active in the promotion of autoimmunity and tissue destruction. The goal then is to enhance Tregs performance and dampen Th17 expression.

How do we avoid Th17 expression? We want to make sure our patients are not deficient in vitamins A and D. Also, we want make sure they are not suffering from dysbiosis or obesity.

Dysbiosis is commonly understood as a pro-inflammatory condition. Obesity however is becoming a significant variable in autoimmune disease as adipose tissue is a precipitator of IL-6 which is pro-inflammatory. Obesity in itself then is a pro-inflammatory marker.

How do we support our Treg cells? For starters, make sure we have adequate levels of vitamin D. Vitamin D down regulates the cytokine IL-6. As IL-6 goes up, so does Th17. The balance of Tregs and Th17 is determined in part by the amount of IL-6. A deficiency of vitamin D will cause IL-6 to increase; thereby decreasing Treg cells.

Vitamin A is also essential. Several studies show significant increases in Tregs with vitamin A supplementation. This is the pre-formed vitamin A, not beta carotene.

A healthy gut is the next step, so that means a hypoallergenic diet, the right fatty acids and probiotics. We also want to add nutrients that support inflammatory inhibition of NF-kappa B. So, things like green tea, selenium, zinc, vitamin E, etc. are important. As mentioned, dysbiosis is a process that enhances inflammation. By reducing inflammation in the gut we indirectly support brain health, adrenal health, blood sugar regulation and optimize energy levels.

Dr. Vasquez has been promoting a 5 part protocol for the last 8 years: a Paleo Mediterranean-type diet, a combination fatty acid supplement like Optimal EFAs, a comprehensive multiple like ProMulti-Plus, sufficient levels of vitamin D and probiotics. The more I review research and listen to the biochemical gurus of today, the more I realize how profound his recommendations have been.

My T. rex comparison to Tregs may be stretching it a little, but the reality is that your patients are experiencing autoimmune system issues due to weak T regulatory cells. Reinforcing the principles that support Tregs will not only prolong life but will enable patients to enjoy life.

This is true prevention. Please take the time to review the webinar by Dr. Vasquez and look below for links and dosage recommendations.

Thanks for reading this week's edition. I'll see you next Tuesday.