Tuesday Minute Transcript

This Week's Topic

Science Pertaining To The Immune System.. Is Exploding

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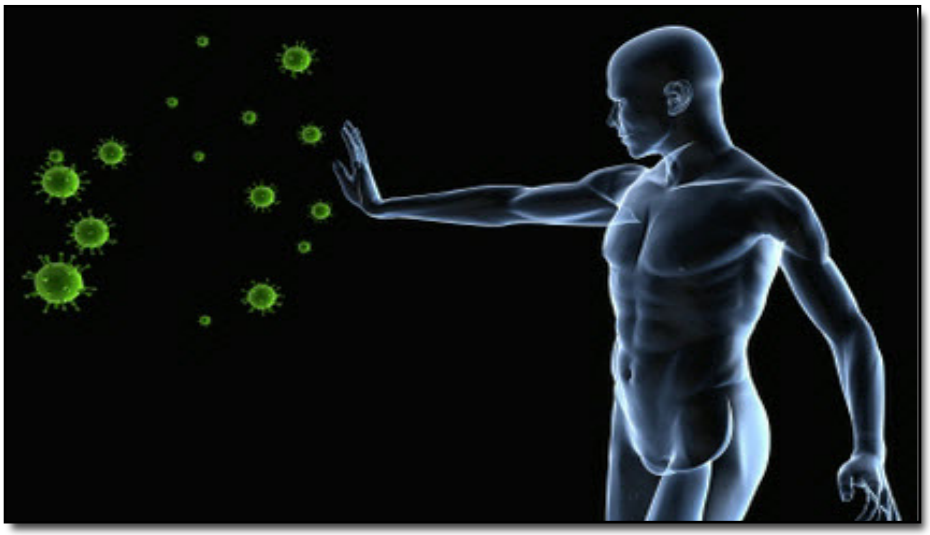
The science pertaining to the immune system is exploding. As you will see, we can affect the immune system in ways you may have never thought about. My thanks to Dr. Wally Schmitt, many of the ideas for this Tuesday minute came out of his webinar, The Immune System: Simplifying Complex Concepts part II.



As we know, the immune system is subdivided into the innate or non specific system and the adaptive or acquired system. The innate system does not have memory or provide any lasting immune protection. It's non specific and in many ways, it sets the stage for the adaptive immune system.

The innate triggers inflammation, it can also identify and remove foreign substances. It attracts the process of phagocytosis. You may be familiar with one of the cells called NK or Natural Killer cells. Natural killer cells fight viruses, intracellular bacteria, parasite infected cells and malignancies. NK cells can also modulate or curb neuro-inflammation by inhibiting autoreactive T cells.

The other subdivision, called the "adaptive or acquired" aspect of the immune system can be split further into the cellular or phagocytosis fraction what some people term T_H1. T_H1 refers to a type of T cells which originate in the thymus, hence T cell.

This is where we see the process of inflammation increasing and many of the autoimmune conditions. Conditions like arthritis, multiple sclerosis, type I diabetes fit the profile of a T_H1 cytokine profile. An up-regulation of T_H1 cells will increase NK cells, T cells, B cells, and macrophages.

Although we like to put chemicals and systems into specific categories, you will soon see that there is an elegant interplay between systems.

Still referring to the adaptive immune system, the other split is called T_H2 and contains the humoral /antibodies fraction. I

know it's an oversimplification but I think of smart bombs when I describe that part of the immune system. The antigen is tagged and the antibodies seek and destroy it.

When T_H2 is chronically upregulated, we may see autoimmune conditions like Graves' disease and Lupus. A T_H2 dominant pattern shows increases in IgG, IgA, IgM, and IgE production so we expect to see the histamine type reactions like allergies, asthma, and chemical sensitivities.

Ideally T_H1 and T_H2 should be in balance. If one side gets over worked or over stimulated, it becomes hyper vigilant. If one side is hyper vigilant, the other side can be under stimulated at the same time. Our goal is balance. So when there is lowered immune function, we want to increase it and when there is a hyper vigilant immune function we want to decrease it. We call this process modulation.

In his webinar, Dr. Schmitt goes into detail on how to clinically modulate T_H1 and T_H2. If T_H1 is elevated, we can use botanicals to reduce it. We can also stimulate the other side of the scale, T_H2. By increasing T_H2, we decrease T_H1.

What determines whether and to what extent T_H1 or T_H2 cells are expressed are cytokines. Cytokines are the chemical messengers of the immune system and operate like hormones for the endocrine system or neurotransmitters for the nervous system.

What's exciting and also confusing is that these chemical messengers are all linked together via shared receptors. For example, the hormone cortisol and catecholamine neurotransmitter affect the output of secretory IgA. Secretory IgA is the primary protector of mucosal lining.

Remember the GI tract, via the GALT or gut associated lymphoid tissue is home to 50-80% of the immune system and produces and uses 90% of the body's serotonin. Whenever we deal with any chronic issue, we have to address the gut.

The term "leaky gut" really refers to a loss of intestinal barrier function. Fasano, in his paper "Mechanisms of Disease, The Role of Intestinal Barrier Function in the Pathogenesis of Gastrointestinal Autoimmune Disease" (2005), concluded that the loss of intestinal barrier function is the major contributor to autoimmune pathogenesis.

Right now I hope you are saying to yourself. Heal the gut, Let's see: fix digestion, essential fatty acids, vitamin D, and reduce the factors that weaken the gut like food allergies and NSAIDS (nonsteroidal anti-inflammatory drugs).

Let's not forget that undigested food or protein substrates from things like gluten, diary, eggs, etc can bind to tissue enzymes resulting in a whole new entity. This new entity activates an immune response and now antibodies are created to attack that food. This is one of the proposed mechanisms for the autoimmune epidemic we are seeing in this country.

So the take home message is to:

1) Heal the gut. Surprise, surprise.

2) Regardless of the immune conditions, we need to make sure we have the right amount and the right type of white blood cells. Another Tuesday Minute, which you can find below, covers this concept in more detail.

3) Finally, if we are still seeing the symptoms, we may have to begin the process of nutritional neurolingual testing to see how to modulate T_H1 and T_H2.

That will take a weekend seminar to understand it completely but the link below to Dr. Schmitt's webinar will set your mind racing with options. Dr. Wally Schmitt lectures internationally; and his webinar, "The Immune System: Simplifying Complex Concepts" will do just that. Simplify the complex science of the immune system which can be helpful in everyone's practice.

Thanks for reading this weeks edition. See you next Tuesday.