GAPS DIET CLASS SERIES

Class Two

Immune System Function, GAPS Scenarios and Related Symptoms

I. IMMUNE SYSTEM

A. A healthy immune system starts before birth. Babies are born with an immature immune system and the gut flora must be established within the first 20 days of life. The two ways the immune system is originally established is either through the mother and/or the environment. Hopefully they receive both. An example of the ideal scenario would include:

- Healthy mother
- Vaginal Birth
- First colostrum and breastfed from day one
- No invasive chemicals introduced to child too early
- Child plays in dirt, soil and/or farms from a young age
- Child weaned after breastfeeding with quality nutritious foods

B. There are two main components of the immune system, T-Cell Helper Type 1 (Th1) and T-Cell Helper Type 2 (Th2)

C. Th1 – First Line of Defense

Responsible for the protection against environment (dust, pollen, animal hair, food, drink, chemicals, pathogens)

Bifidobacteria (healthy bacteria in the colon) activates immune system cells called lymphocytes. Lymphocytes protect the gut wall (enterocytes) from invaders. Lymphocytes in the gut wall produce immunoglobulins. Immunoglobulin A (IgA) is produced in the mucous membranes and secreted in body fluids. These include breathing passages, nose, throat, bladder, urethra, vagina, saliva, tears, sweat, colostrums, breast milk and the mucous membranes of the digestive system.

*When Th1 is working appropriately, you can be in contact with anything from the environment, without having any reactions.*
D. IgA is the most critical part of your immune system in your gut, and without good bacteria, you cannot produce the needed lymphocytes (which produce IgA). The job of IgA is to destroy incoming bacteria, viruses, fungus and parasites.

E. When gut flora is damaged, the important players of the immune system become ineffective, making the person immune-compromised. Why? Because the immune system requires gut flora to do its job.

F. Th2 – Second Line of Defense
   Responsible for protection within the body.

   Th2 immunity is found in the fluids of the body (blood and lymphatics). When the First Army Th1 becomes compromised (damaged gut wall) the Th2 army becomes activated. Th2 is not equipped, nor trained, to defend the body properly. This creates an overactive immune system. Immunoglobulin E (IgE) and Immunoglobulin G (IgG) is secreted and is the master of handling allergic reactions in the body such as asthma, eczema, hay fever and other allergies.

G. Activation of IgE and IgG means that the first line of defense (the gut) has already been breached and IgA has been overwhelmed. Allergies are born in the gut. Most allergies are from a compromised gut lining, and therefore a deficiency in healthy gut flora.

H. Imagine a castle with high walls. Guarding the castle walls are soldiers with guns, cannons and other powerful weapons. This is Th1 (IgA) immunity. This is your main defense for your castle.

   Inside the castle are civilians growing food and making dinner for themselves and the soldiers. They have pots, pans and pitchforks. This is Th2 (IgE and IgG) immunity. Their job is to grow and make food, not fight battles.

I. When the soldiers (Th1) are killed and enemies start flooding into the fort, civilians (Th2) now are forced to become soldiers. They do not have the right training, or weapons, to defend well. They will fight the best they can, but have limited resources or strength to fight enemies.

J. The body is FORCED to activate Th2 when Th1 breaks down, and becomes hyperactive. Therefore, when Th2 (IgE and IgG) type antibodies are found in high amounts in the bloodstream, it is a sign your immune system has weakened. If you are having allergies, food sensitivities, hay fever, eczema, asthma, sensitivities to mold, strong odors, etc. your castle wall (gut) has been breached. Allergens are getting into your bloodstream and causing an immune system response.

   *When Th2 is activated, you will have allergic reactions to dust, pollen, animals, food, drink, chemicals, etc.*
   *This is a histamine reaction often times.*
K. Allergy testing is problematic at this point. People spend thousands of dollars checking for allergies with blood tests. It depends on what you are eating and what you are breathing at that time when you get the test. The allergy test will be different every single time, and if you do enough testing, you will find that you are allergic to practically everything. The reason is because your castle wall (gut) has been breached and everything is spilling into your bloodstream causing an immune system response. At this point, equally important to removing allergens from your daily life, it is critical to heal the damaged gut lining.

II. THE ROLE OF THE GUT FLORA

A. The gut flora keeps the soldiers on the walls alert, well trained, fed and ready to fight. When the gut flora is absent or not functioning properly, the soldiers, get lazy and weak, or even die.

B. When the soldiers are sick or dying, the castle wall (your gut) gets breached. Now enemies are getting through to your bloodstream and have access to the rest of your body.

C. The gut flora is data for the immune system. It is the majority of your genetic code.

D. Transient vs Colonizing Bacteria – You need both. Transient bacteria are all of your fermented foods and most probiotics supplements on the market containing strains such as lactobacillus acidophilus, bifidus, etc. Colonizing bacteria are found in soil organisms. You and your children should be playing in the dirt and living on the farm!

III. GAPS RELATED SYMPTOMS

A. If good flora is absent, what is present? Opportunistic pathogens begin to take over.

- Reduced or Absent Populations of Good Flora – Gut taken over by pathogens
- Candida, Clostridia, Viruses, H. Pylori, etc

B. Now we have a compromised gut, and therefore, a compromised immune system. What are the resulting symptoms?

- Digestive problems
- Allergies
- Asthma
- Eczema
- Malnutrition
- Bed Wetting
- Thrush
- Chronic Cystitis
B. Digestive Problems
   • Colic
   • Bloating/gas
   • Diarrhea
   • Constipation
   • Feeding difficulties
   • Food allergies/intolerances
   • Fecal compaction
   • Inflammatory bowels

IV. GAPS TYPICAL SCENARIO - CHILDREN

A. There are many factors that can lead up to a damaged gut lining. You may have experienced one or more of
   the following triggers. Usually it is a combination of these factors leading to a compromised immune system.
   • Mother or father with gut dysbiosis or candida/fungal infections
   • The baby does not develop normal gut flora
   • Immune system compromised
   • Ear infections, Chest infections, antibiotics
   • Further damage to gut flora and immune system
   • Vaccinations
   • Weaning diet consisting of Standard American Processed Foods and formulas
   • Gut dysbiosis
   • Toxicity
   • Brain dysfunction

B. The first 20 days of life are critical for the immune system of a newborn infant. If mother or father has
   abnormal gut flora, this will likely pass to the newborn. Other factors that determine the immune system are
   the method of birth (vaginal vs c-section) and the amount of invasive medical procedures performed on the
   child.

C. Children are born compromised and continue to receive treatments (formula, vaccines, antibiotics, etc.) that
   further weaken their immune system. Many children do not get a good start unfortunately today. When the
   immune system is weak, we often see a re-occurrence of ear infections and chest infections resulting in
   antibiotic use. In addition, we often see skin conditions (eczema, psoriasis) leading to steroid use.
IV. GAPS TYPICAL SCENARIO - ADULT

A. The majority of GAPS Adults were GAPS children, but not always.

• Usually was a GAPS child
• Antibiotics or other influences damages gut flora
• Abnormal digestion and abnormal absorption of food leads to nutritional deficiencies
• Gut dysbiosis leads to damaged gut wall
• Toxins, microbes and undigested food enters the body
• Food allergies and intolerances
• Immune system gets compromised
• Autoimmunity joins in
• Toxins enter the brain causing Gut and Psychology Syndrome
• Toxins enter the body causing Gut and Physiology Syndrome

V. HOMEWORK

A. Read pages 26-48 of GAPS book

B. Recipe – Make sauerkraut juice to add to bone broth soups. 1-2 teaspoons per cup.