

ALLERGY AND AUTOIMMUNITY



Allergies and Autoimmune Diseases

- Autoimmune diseases are conditions where the immune system attacks a persons own body tissue
 - Examples are Celiac Disease, MS, Lupus, Diabetes Type I, Hashimotos
 - Like allergy, autoimmunity need to be seen as a loss of immune tolerance only in this case it is to a specific tissue in the body
 - Since gut bacteria and intestinal function controls immune tolerance, autoimmunity begins in the gut
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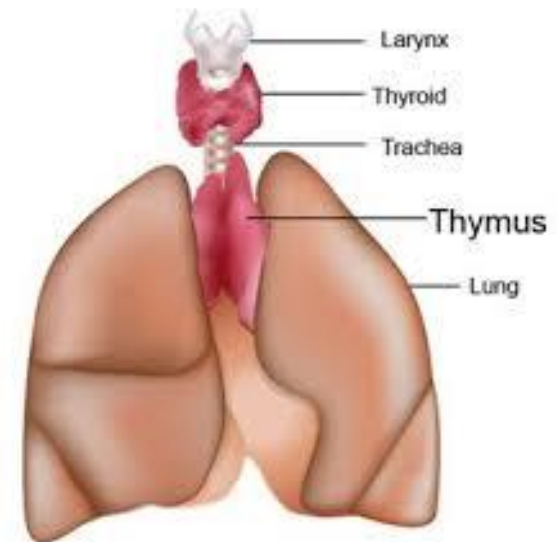
Immune Tolerance

- Refers to the lack of reaction by the immune system to a substance or body tissue
- Baby in the womb has immune tolerance
- Gut microflora has immune tolerance
- Everything else must be given immune tolerance and this is controlled by the gut microflora
- Otherwise we would be experiencing an immune reaction to everything we are exposed to



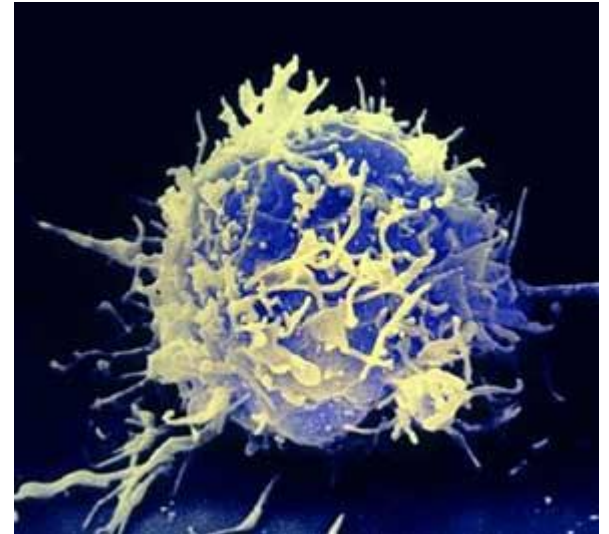
The Role of T-Cells

- The thymus makes T-cells which develop in to active T-cells that are essential for our immune health
- T-Cells are the attackers or the helpers in determining our ability to ward off pathogens
- When they are first produced, many of them are reactive self-antigens – meaning they will react to the persons own body
- 90% of these T-cells are removed will be eliminated by in the thymus



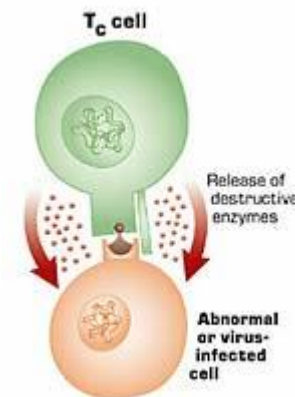
T-Cells

- The remaining T-cells that are non-reactive are called naïve T-cells and are released throughout the body
- Some of remaining self-reactive T-cells are also released
- All of these T-cells are kept under control by another type of T-cell known as T-regulatory cells (T-Reg Cells)
- In other words – T-Reg cells determine how the other T-cells behave and therefore are in control of immune system function



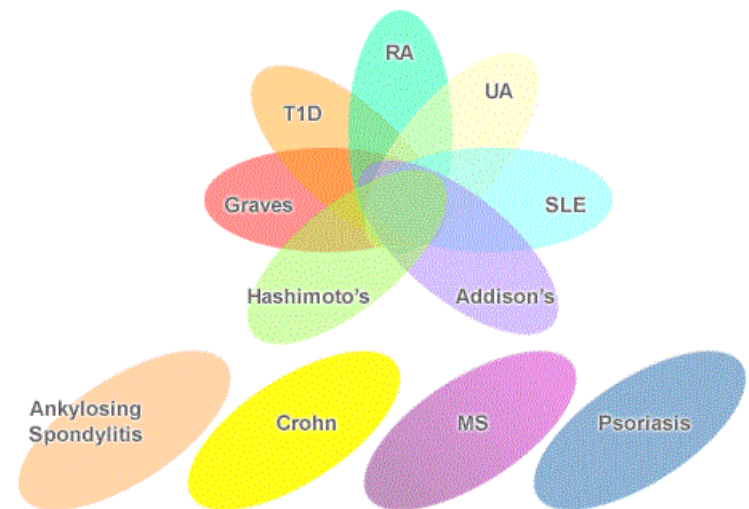
T-Reg Cell Function

- T-regulatory (t-reg) cells modulate the immune system and maintain tolerance despite the presence self-antigen T cells
- They promote anti-inflammatory cytokines which supresses self-antigen T cells activities
- T-reg cells exist as a distinct types of T-cells,
- They are produced in the thymus and production appears to be linked to production of self reactive T-cells.
- T-reg cells are produced in higher numbers to enable control.
- T-reg cells protect immune tolerance



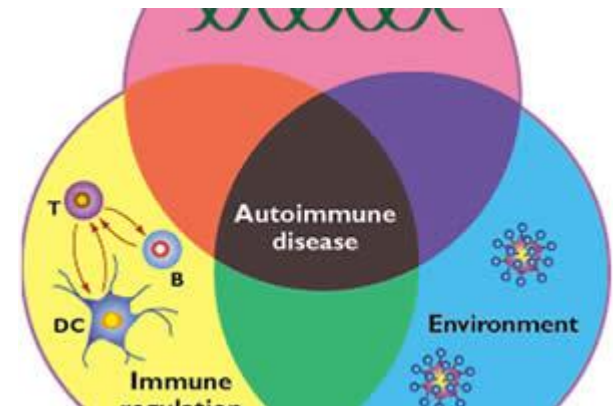
T-Regulatory Cells

- Studies show that depletion of T-reg cells in normal mice immediately induces autoimmune disease and IBD
- In healthy humans, the blood shows presence of T-reg cells active against autoimmune antibodies
- Autoimmune antibodies are implicated in type 1 diabetes, MS, and rheumatoid arthritis.
- Without the control exerted by T-reg cells we all have the potential to develop an autoimmune disease.



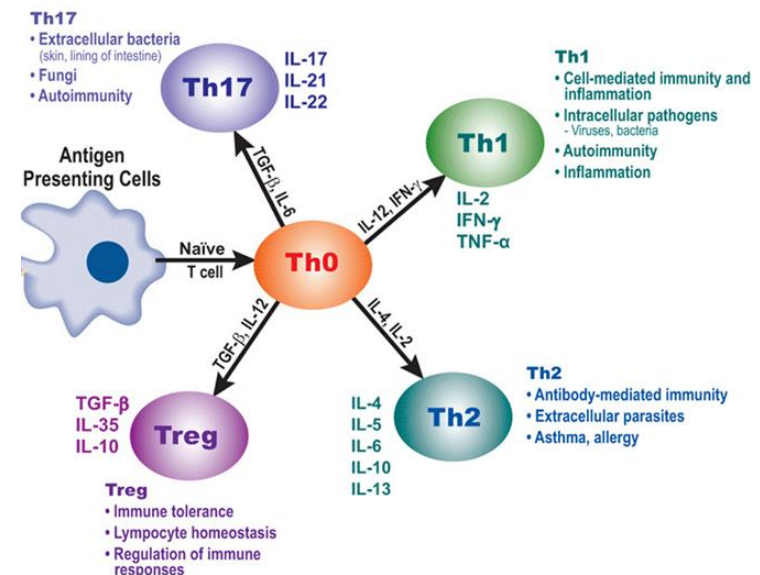
T-Cells

- The immune system can recognize foreign proteins – our food proteins and body tissue both have immune tolerance and therefore are not seen as foreign
- If a killer-T cell sees a type of body tissue protein or a food protein as foreign it attacks
- T-reg cells are also produced in the intestine from naïve T-cells by our good gut bacteria
- So good gut health can prevent allergy and autoimmunity



T-regulatory Cells

- T-reg cell populations can potentially be stimulated by externally applied factors.
- This means that autoimmune diseases and allergy can potentially be resolved in the intestinal immune system
- Having sufficient good bacteria is the key to maintaining a normal response (to produce T-reg cells)
- The maintenance of immune system balance by the gut affects autoimmunity in the body as well



Supplementing With Probiotics

- Will generate T-reg cells in the intestines
- Creates an environment of high concentration of TGF-B And IL-10 in the intestinal mucosa.
- The goal is to re-create immune tolerance which can provide a significant decrease in autoimmune and allergic symptoms
- There is a theory that doing this combined with exposing person to a small amount of the antigen will work even better



Allergy Strategy

- Removing the allergen in the short term is helpful
- Strengthening the intestinal microflora is also needed
- Supporting the intestinal wall lining and correcting leaky gut also important
- It is important to understand that the allergy is a symptom of a bigger problem that must be addressed for optimal health
- Probiotics, prebiotics and fermented foods are key to this process

Autoimmunity Strategy

- Same strategy for the gut flora as allergy with strains that support the immune system and inhibit inflammation
- Plant sterols can play a role in supporting the immune system and calming the autoimmune reaction
- In severe cases a leaky gut protocol may be necessary which can involve the removal of foods
- Both autoimmune and allergy strategies will take years so finding a protocol that you can live with is key

