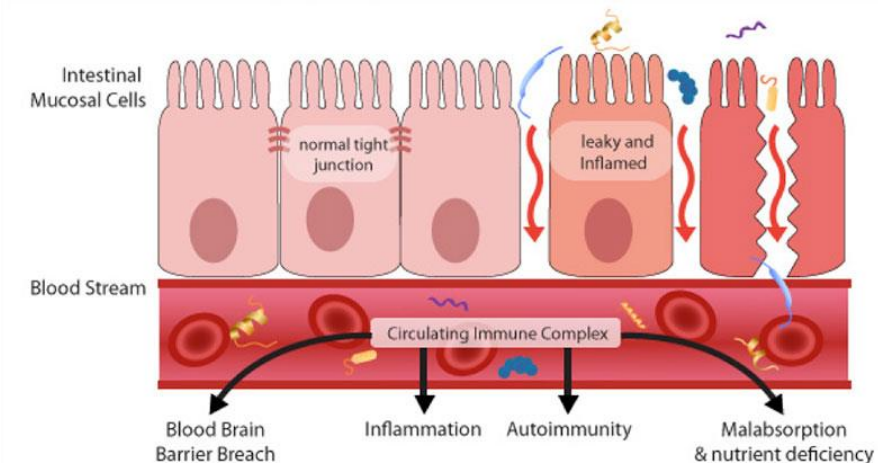


MORE ABOUT ZONULIN



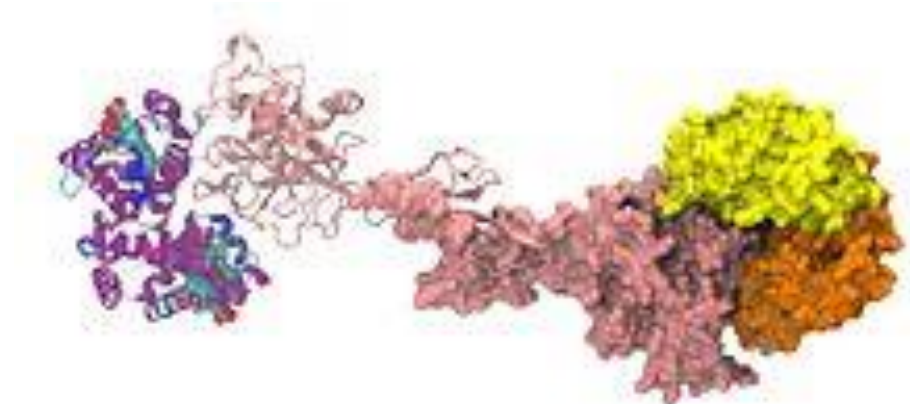
Zonulin For Testing Leaky Gut

- There is now a test for zonulin that we can access
- So understanding more about it may be helpful for you and clients
- It is important to understand this is just a piece of the puzzle that has been discovered
- It may or may not be the only factor or chemical in play with intestinal permeability or leaky gut



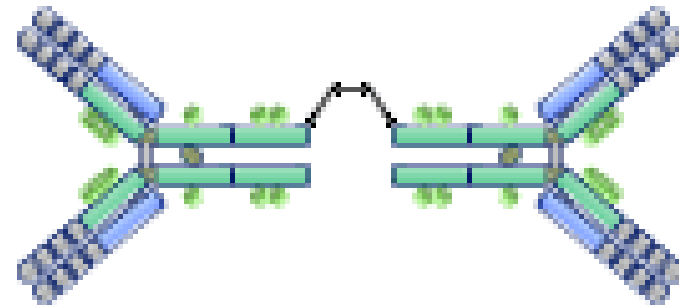
Zonulin

- Zonulin is a protein that is released as part of an immune response that regulates both the movement of fluids and large molecules
- Zonulin is also known as prehaptoglobin 2 (preHAP2)
- Haptoglobin is a hemoglobin binding protein that can modulate immune response
- It is usually inactive but as a protective mechanism - zonulin allows fluids to flow into the intestines to “flush out” the toxin or antigen – diarrhea may occur



Zonulin

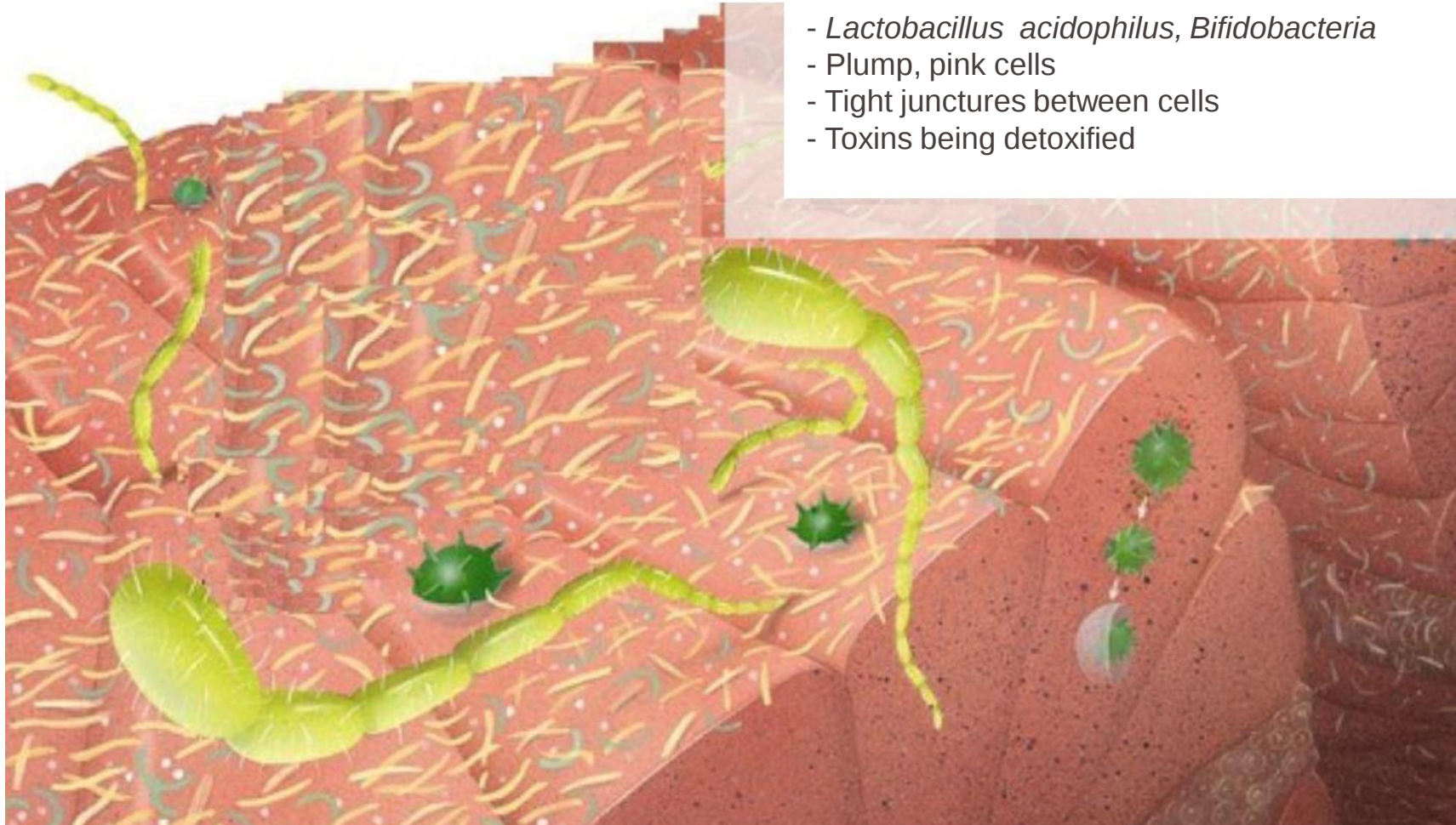
- The integrity of the gut lining plays a key role in determining the degree of inflammation that the body experiences
- Zonulin can be released from intestinal cells, it locks on to receptor sites on the surface of the cell and de-couples the proteins that are keeping the tight junctions “tight” which opens the junctions
- This allows an antigen or a food molecule to enter into the body which set off both SIgA and IgG reactions
- Leads to food sensitivities and the more the food is consumed the more sensitivity



- Zonulin open and closing the gut is a normal,fluid process
- It is important to remember that zonulin open the gut allows for fluids to flow the intestinal tract to flush out toxins
- Therefore, having IgG antibodies (when tested) does not confirm leaky gut
- Poor digestive function can lead to partial protein molecules which can slip into the bloodstream during a normal process of the gut opening and closing

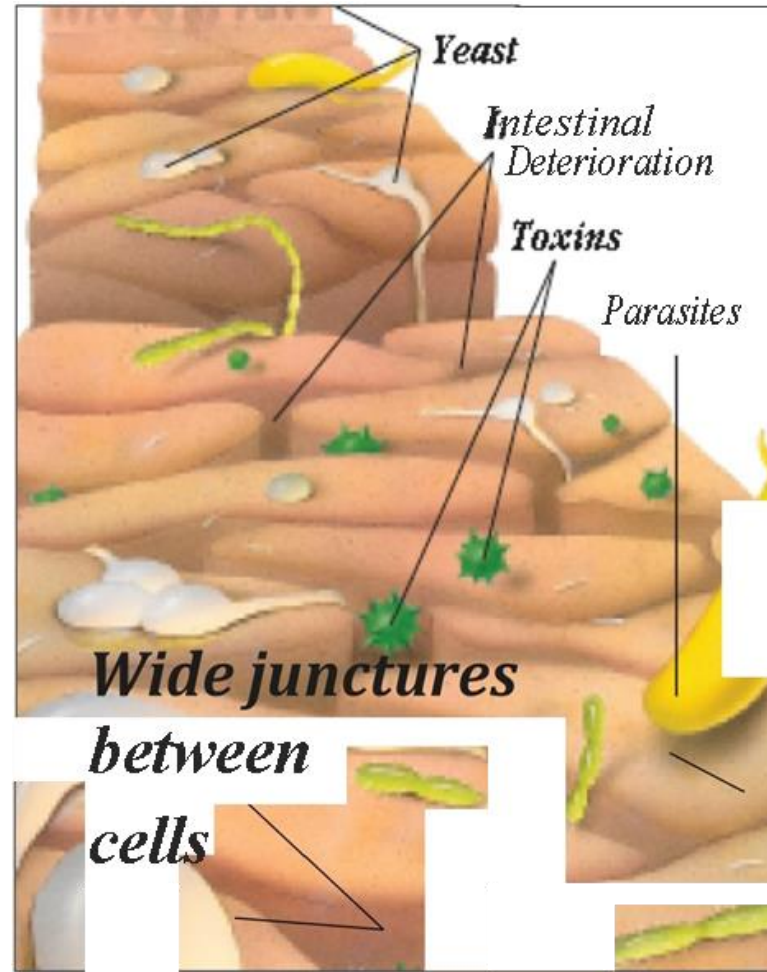


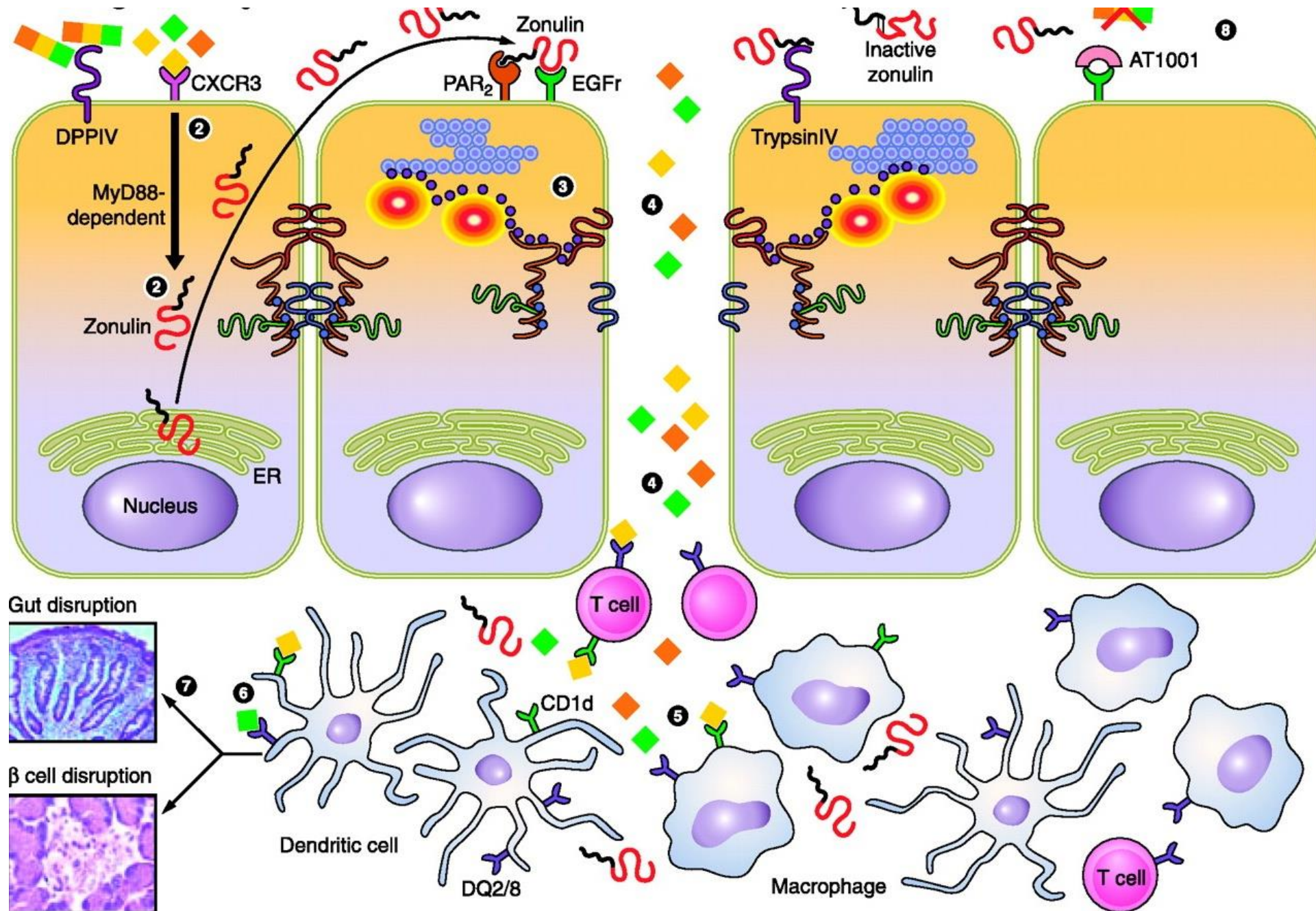
- Abundant healthy bacteria
- *Lactobacillus acidophilus*, *Bifidobacteria*
- Plump, pink cells
- Tight junctions between cells
- Toxins being detoxified



Leaky Gut

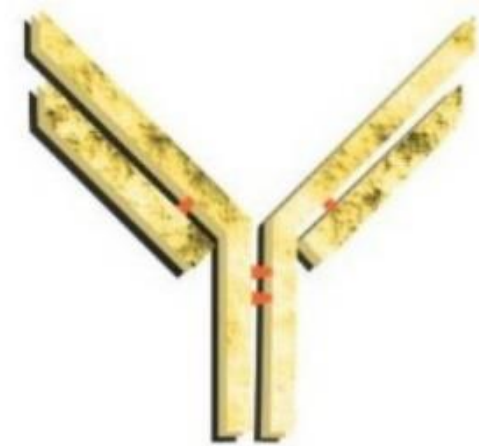
Atrophied
Unhealthy
Cells





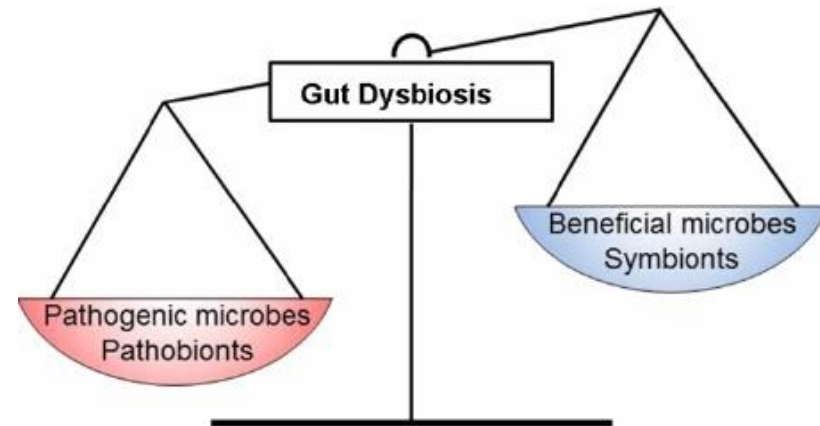
Zonulin

- Once zonulin has opened the gut – large molecules can pass – inflammation occurs and IgG antibodies can form
- If these are food molecules, then food intolerances occur and once this happens consuming the food produces more inflammation and more IgG antibodies.
- Issues linked to leaky gut: chronic inflammation and pain, heart failure, depression, food and chemical sensitivities, CFS, Yeast overgrowth, autoimmunity, schizophrenia, certain cancers- brain, breast, lung, ovarian and pancreatic



Causes of Leaky Gut - Dysbiosis

- Cause of Dysbiosis
- Diet – processed foods
- Hormones – including estrogen, testosterone and progesterone as well as thyroid hormones
- Antibiotics, corticosteroids
- Infections
- Stress
- Chemotherapy
- Radiation

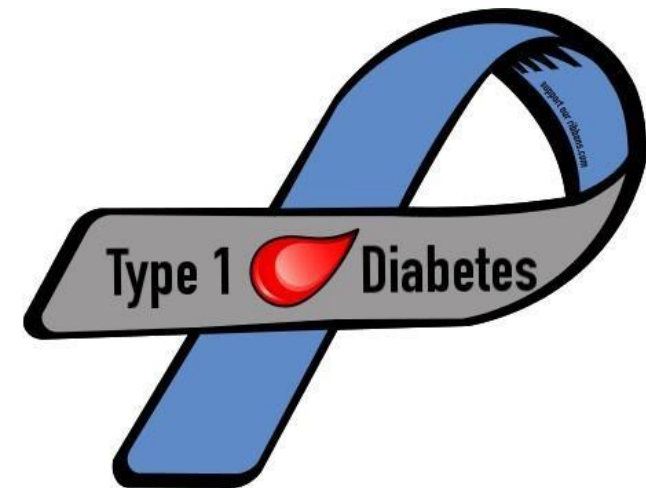


Imbalances

- Dysbiosis
- Malabsorption
- Bacterial and yeast overgrowth
- Immune response and issue with integrity of the gut lining
- Further degeneration of the gut lining
- More food sensitivities

Obesity

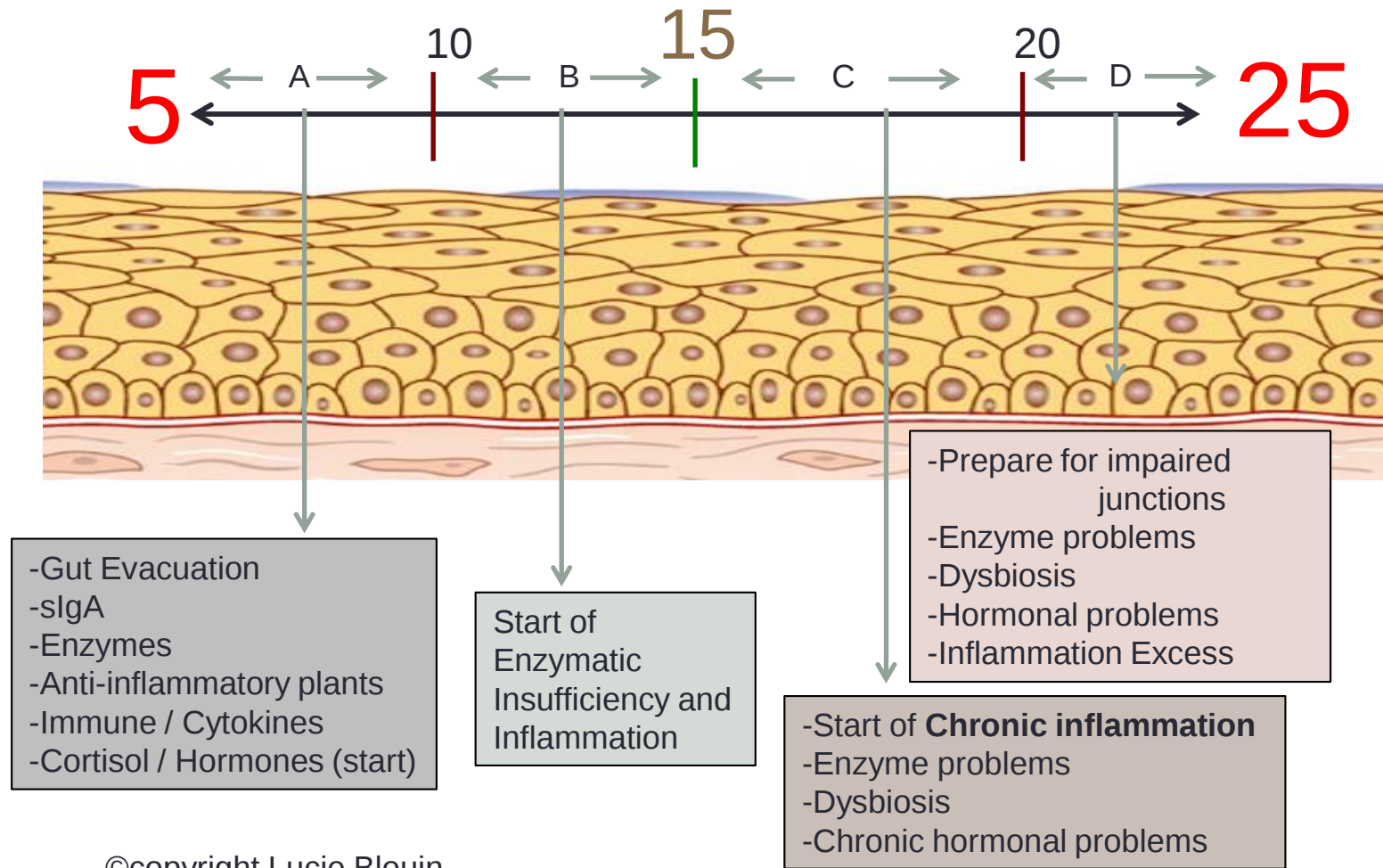
- Higher zonulin levels are observed in those with Type 1 diabetes (and their family levels – not as high) than controls
- Several studies have found higher levels of zonulin as well as several chemical markers in the blood in people who are obese as compared to those of normal weight
- Also, higher zonulin are also associated with insulin-resistance in obese subjects which also links it to Type 2 diabetes



Zonulin

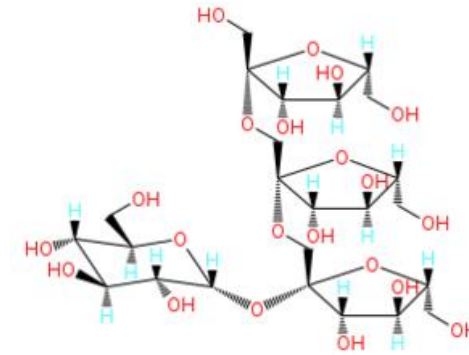


- For asymptomatic Crohn's sufferers, "leaky gut" (therefore a Zonulin increase) occurs up to 1 year before a relapse
- IBD – not a lot has been studied but small intestine 'leaky gut' has been linked to the period preceding the outbreak of the colitis patches
- Learn more about zonulin – free webinar on the CAHN-Pro site:
- <http://cahnpro.org/pages/free-webinars>



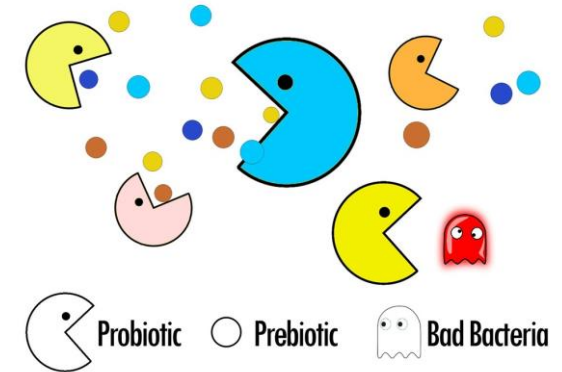
Lowering Zonulin

- Reading the research – no one seems to make the connection that the gut bacteria is playing the regulatory role
- However, one study of athletes found probiotic supplementation lowered slightly elevated zonulin levels to normal
- Another study found that probiotics lowered infection, sepsis and zonulin levels in those having colectomy surgery
- Other studies have show similar results
- Inulin-enriched pasta was fed to 20 male subjects whose zonulin levels were stimulated and significantly lowered zonulin and decreases leaky gut – however they were healthy males



So what should we make of all this?

- We know there is some info about probiotics and prebiotics lowering zonulin
- The problem is the person – how bad is the individual's situation
- Butyrate improves intestinal permeability and lowers inflammation – could it lower zonulin?
- Same with glutamine – repairs the gut lining – could it also lower zonulin?
- Zonulin is just one mechanism for leaky gut that has been identified – there may others so we have to wait and see



In the meantime...

- Explain to the client the leaky gut issue and depending on their issues – that it will take time
- The gut protocol does not change – probiotics, fermented foods, prebiotics, glutamine and butyrate supplements are all options – what has to change is the clients expectations
- Zonulin testing can help measure progress:
https://www.fluidsiq.com/human_testing.php?lang=en
- This could help the client stay the course

