

Gut Treatment Leaky Gut Review

TWO STEPS TO RESTORING GUT BARRIER INTEGRITY:

1. Address underlying pathologies
 - a. Such as SIBO, parasites, dysbiosis, food intolerances, etc.
2. Rebuild a healthy gut ecosystem

If you have addressed the underlying pathologies and the patient is already on a Paleo template diet, but they're still having symptoms, consider running Cyrex Array 3, Array 4, and/or Array 10. Then have the patient remove the foods that have been identified as either equivocal or out of range on these arrays for 60 days.

PERMANENT REMOVAL OF ALL THESE FOODS IS NOT NECESSARY IN ALL CASES

For example, I have had patients that have tested positive for cross-reactive antigens such as dairy products or corn, and we've healed their gut and taken steps to restore their gut barrier integrity. Then we've retested them a few months down the line after doing a challenge with corn and dairy, and they are no longer producing antibodies.

SPECIFIC NUTRIENTS PLAY AN IMPORTANT ROLE IN REGULATING GUT BARRIER INTEGRITY INCLUDING:

- Vitamin A
 - Regulates the growth and differentiation of intestinal cells.
- Vitamin D
 - Deficiency has been correlated with the severity of inflammatory bowel disease and is characterized by intestinal permeability.
- Zinc
 - Supplementation improved mucosal repair in patients with diarrhea.
 - High dose needed (110 mg t.i.d.).
 - 8-week maximum duration as long-term supplementation can cause copper deficiency with serious consequences.
- Short-chain fatty acids:
 - Low butyrate can cause tight junction lesions and impaired intestinal permeability.
 - Best way to increase butyrate over the long term is to increase consumption of fermentable fiber and possibly use prebiotics.

- Prebiotics
 - Galacto-oligosaccharide (GOS) and fructo-oligosaccharides, (FOSs) have been shown to aid intestinal barrier function.
- Probiotics:
 - E. coli Nissle 1917 (Mutaflor) was shown to prevent barrier disruption caused by infection of intestinal cells.
 - Lactobacillus plantarum in products such as VSL#3 and Ideal Bowel Support was shown to increase tight junction function and improve barrier integrity.
 - Saccharomyces boulardii has been shown to restore barrier integrity, according to lactulose/mannitol tests.
- Glutamine
 - Plays a key role maintaining mucosal cell integrity and gut barrier function.
- Colostrum
 - Protects against NSAID-induced permeability in rats. There's unfortunately little research on its effect in humans.

To get the benefits of both colostrum and glutamine, you can use a high-quality bioactive whey protein powder. ProSerum is one brand that I recommend.

- Lubiprostone:
 - A prokinetic, chloride channel activator used for constipation predominant IBS.
 - It also improves barrier function in some studies.
- Elemental diet:
 - Can be very effective if severe intestinal permeability doesn't respond to anything else. For example, in patients with severe inflammation and IBD.
 - The reason that it works is that it contains only foods that are absorbed extremely high up in the small intestine, so it gives the gut a rest. That reduces the inflammation and permeability because the enterocytes of the cells in the small intestine regenerate on their own every three days. If the enterocytes are not being triggered by food, then they can heal.
 - Can be problematic because it will starve the beneficial bacteria in the colon as well.

SUMMARY OF INTERVENTIONS TO RESTORE INTESTINAL BARRIER INTEGRITY

Intervention	Notes
Elimination diet	Run Cyrex Arrays 3, 4 & 10 and remove positive/equivocal foods
Vitamins A & D	Best obtained from high-vitamin cod liver oil
Zinc	Very high dose (110 mg TID) required; 8 week maximum duration, don't do long term!
Butyrate/SFCAs	3-4 g/d of sodium-potassium butyrate, and/or prebiotics and fermentable fiber
Probiotics	E. coli Nissle 1917, L. plantarum, S. boulardii, SBOs, transient commensals
Glutamine or whey	20-40 g/d of glutamine, and/or bioactive whey if tolerated (whey has colostrum too)
Lubiprostone	May be particularly useful in IP w/ constipation
Elemental diet	For severe IP that doesn't respond to anything else