

GLUTAMINE AND THE GUT

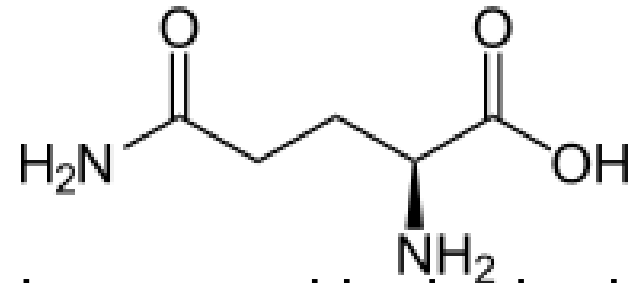


Glutamine

- The large intestines uses glutamine as a source of energy (not glucose)
- Small intestines also uses it (as well as glucose)
- Most prevalent amino acid in the body
- We build muscle with it (among other things)
- Glutamine prevents deterioration of gut permeability and preserves mucosal structure.
- Aids the body in recovery from injury and infection – is the primary amino acid needed for repair



Glutamine



- Acts as an anti-inflammatory in the gut and in the body and has analgesic properties
- It is the precursor for neurotransmitters GABA and glutamate in the brain and helps with memory, focus and concentration
- GABA also regulates many functions of the GI tract such as intestinal motility, gastric acid production, gastric emptying

Glutamine

- Glutamine regulates nitric oxide synthesis by endothelial cells - critical for lowering inflammation in the blood vessel walls and maintaining the blood vessels
- Low glutamine is a factor in dysbiosis and yeast overgrowth
- Protein digestion is essential for making we get glutamine from our food



Glutamine Sources

- Supplements – often contain other beneficial intestinal ingredients like marshmallow, slippery elm, n-acetylglucosamine (good for IBD, Crohn's and Colitis)
- Intestinew (Renew Life)
- Food Sources: Dairy products(whey), eggs, legumes, almonds, sunflower seeds, pistachios, cabbage, kale, bone broth



Making Bone Broth

- Save bones from roasts or buy fresh bones at the butcher
- Use a stock pot and place the bones in the pot – should be at least 2/3 full
- Add some carrots, onions celery and peppercorns
- Fill the pot with water
- Bring to a boil and lower to simmer – cover with a lid
- Let simmer for 8 -12 hours or until the water level has drop in half
- Slower mean more glutamine
 - should be gelatinous



Vegetarian Option

- Glutamine in plant form is glutamic acid (glutamate) and must be converted to glutamine by gut bacteria
- North Coast Naturals has a fermented glutamine powder
- Fermented plant foods would also have glutamine
- Veggie broth can be made with the glutamine powder
- Fill a pot with veggies and add the glutamine powder – follow the same method as the bone broth
- Can be added to smoothies



Final Thoughts

- If you have very troubled digestion then starting with bone broths and glutamine supplement lowers the inflammation in the intestines and improves the quality and ability of the gut lining.
- This will help you benefit from the prebiotics and probiotics the more the gut lining is improved.

