

## **The Best Bone Broth Recipe For Healing Leaky Gut**

2014 was considered by many to be the year of the gut. We learned that leaky gut is linked with belly fat, that gut bacteria imbalances are linked with obesity, and even that exercise and whey protein increase the health of the gut microbiome.

With all this new science, we still need to get back to the basics in the kitchen to support gut health. Nutrient-rich bone broth has been a favorite staple by many functional medicine practitioners and primal nutrition experts. When prepared properly, this gelatinous substance is rich in healthy minerals, collagen, cartilage, glycine, and more.

### **What Is in Bone?**

Bone is mineralized collagen (hydroxyapatite + collagen); in fact, by weight, bone is nearly 25 percent collagen.<sup>1</sup> In addition to collagen, bones are rich in osteocalcin (a compound that helps stabilize the mineral structure of bone), albumin, and alkaline phosphatase (an enzyme that helps neutralize bacterial endotoxin). Cooking bones in a stock can help liberate these nutrients, which are hard to get from other dietary sources.

The marrow from bones has long been used to increase red blood cell count.<sup>2</sup> (In the video below, we discuss how to cook the bones to get the marrow out prior to making the broth.)

### **Getting Collagen and Glycosaminoglycans from Chicken and/or Pigs' Feet**

When cooked in a broth, beef knuckle bones, chicken and pigs' feet, and fish heads release many glycosaminoglycans, gelatin-like substances that include keratin, hyaluronic acid, and chondroitin sulfate. These natural shock absorbers are great for repairing the health of the gut, skin, hair, joints, and more.

### **The Trick to Get Really Thick Gelatinous Bone Broth**

I've been experimenting with bone broth on and off for the past six years, and have recently found the best strategy to get really thick, gelatinous bone broth.

#### **Here are the steps:**

**Step 1)** Purchase organically raised beef marrow and rib bones, wild-caught salmon heads, and either chicken or pigs' feet. If you can't get the feet, you can settle with knuckle bones, but I've found that pigs' feet in particular really help get the broth thick and gelatinous.

**Step 2)** Cook marrow bones at 400 degrees for 35-40 minutes. Pull out the marrow and eat or save and mix in a vegetable dish.

**Step 3)** Place cooked marrow bones, ribs, fish (salmon) heads, feet (chicken, pig, or beef), and knuckle bones into a stock pot. Fill with 4:1 ratio of water to apple cider vinegar. (I have a 16-quart stockpot, so one 32 oz container of vinegar works well.) Let sit for at least 20 minutes, then bring to a full boil and simmer for 24-48 hours.

NOTES: Make sure to use filtered water and organic bones. When I first started making broth shortly

after finishing college, I didn't have the financial resources to buy organic bones and filtered water. I discovered several years later that my heavy metals (arsenic, lead, and cadmium) were extremely elevated, so I paused on the broth and did some chelation. (The metals could have been from other sources besides the broth, but my intuition told me broth was part of it.)

**Step 4)** After 6-12 hours of letting stock simmer, add vegetables and spices. To get the alkalinity up in the cooking, I like combining chopped carrots, celery, onions, leeks, bay leaves, collard greens, and tarragon. (But you can add whatever you'd like!)

TIP: Blend some or all of these vegetables in a food processor or Vitamix prior to putting into broth. This allows for a much darker and tastier broth.

**Step 5)** Once the vegetables have been in broth for 12 to 18 hours or so, I've found that you're not going to get much more yield by cooking longer. About 20 minutes before pulling the broth off the stove, you want to add chopped parsley. Sally Fallon discusses the rationale for this step in her book *Nourishing Traditions*; but, in brief, it helps to chelate the minerals and collagen components so that they are bio-available in your broth.

Let the broth cool and then filter it into glass jars. After the broth has cooled completely, you'll have fat on the top. Simply scoop it off and throw away. Much of the endocrine-disrupting chemicals that animals collect are fat soluble.

Enjoy your broth as a stand-alone drink or base for cooking vegetables. The meaty-like flavor enhances the palatability of the vegetables, and makes them easier for kids to enjoy as well.

#### References

- 1) Collins, M. J., Nielsen Marsh, C. M., Hiller, J., Smith, C. I., Roberts, J. P., Prigodich, R. V., et al. (2002). The survival of organic matter in bone: a review. *Archaeometry*, 44(3), 383–394.
- 2) Liu, D.-C., Asian and Pacific Council. Food & Fertilizer Technology Center. (2002). Better Utilization of By-products from the Meat Industry.