The Wondrous Benefits of Grass-Fed Bone Broth

Being a food so ancient and deeply rooted in every culture on earth, bone broth is an indispensable ally that provides many health benefits. The main components present in bone broth are gelatin, various minerals and vitamins.

Minerals
The bones that we put in broth are rich in minerals. Among the most present are calcium, phosphorus and magnesium. Gelatin, being a hydrophilic colloid, is also able to make the minerals more assimilated by the body (6).

Stronger Bones and Joints
Glucosamine and chondroitin sulfate are often prescribed for bone rehabilitation. Glucosamine is one of the most commonly used complementary medicines in Western societies (13). Glucosamine stimulates the production of new collagen and helps repair joints. Note that collagen is found not only in joints, but also bones, skin, hair, arteries and many other places.

Stomach and Intestinal Health
Glycine appears to be able to maintain a high level of glutathione which is a powerful antioxidant against free radicals and therefore is indispensable for the maintenance and regeneration of tissue.

Bone broth seems to be particularly indicated for preventing and fighting many diseases of the digestive system such as ulcers, ulcerative colitis, Crohn's disease and intestinal cysts. Some studies show how many intestinal diseases such as those mentioned above have a common weakness in the defensive barrier of glycosaminoglycans (22), which are present in bone broth. Several studies have been conducted by various researchers showing gelatin to be miraculous in healing infections and intestinal ulcers, diarrhea and problems of nutrient absorption (6).

Glycine also manages to facilitate digestion as it stimulates greater gastric secretion making nutrients easier to assimilate and by preventing infections in the intestinal tract (24).

Better Utilization of Proteins
Researcher Carl Voit, after ten years of studies, concluded that gelatin helps metabolize more protein as it prevents its decomposition when ingested. Kirchmann and Krummacher continued these studies and found that gelatin, even in small quantities,
decreases the decomposition of ingested proteins by more than 60%, making them more available for the organism (6). This aspect makes bone broth a much more nutritious food than you might think.

**Detoxification**
Glycine intervenes in the process of detoxification of the body (26). Other studies show that glycine is effective in the process of alcohol detoxification and is essential for the reduction of oxidative stress (27).

**Younger Looking Skin**
In her book Deep Nutrition (28), Dr. Catherine Shanahan gathered together numerous studies demonstrating that collagen in the form of gelatin lessens not only most of the aging of joints and bones, but also skin and hair. The doctor concludes that the use of bone broth can ensure maximal cell stimulation and generation of tissue. In addition, glycine promotes the action of glutathione, a powerful antioxidant that fights free radicals (29), (30).

**Other Benefits**
Glycine’s interaction with neurotransmitters is able to improve sleep (31) and certain tests found that it was also able to improve memory (32). Again glycine, as well as other amino acids, having potent antioxidant powers, appears to be effective against asthma (33).

**References:**
1. Bone Fracture and Within-bone Nutrients: an Experimentally Based Method for Investigating Levels of Marrow Extraction, Alan K. Outram, 2002;
2. Determinants and implications of bone grease rendering: a Pacific Northwest example, Prince Paul, 2007;
3. A New Approach to Identifying Bone Marrow and Grease Exploitation: Why the "Indeterminate" Fragments should not be Ignored, Alan K. Outram, 2001;
4. Is chicken soup an essential drug?, Abraham Ohry, MD, Jenni Tsafir, 1999;
5. Medicine in the Bible & The Talmud: Selection from Classical Jewish sources, Fred Rosner, 1995;
6. Gelatin in Nutrition and Medicine, N. R. Gottohoffer, 1945;
7. What Are the Essential Elements Needed for the Determination of Amino Acid Requirements in Humans?, Peter Fürst, Peter Stehle, 2004;
8. Dispensable and Indispensable Amino Acids for Humans, Peter J. Reeds, 2000;
10. Urinary excretion of 5-oxoproline (pyroglutamic aciduria) as an index of glycine insufficiency in normal man, Jackson AA, Badaloo AV, Forrester T, Hibbert JM, Persaud C., 1987;
12. Optimizing amino acid and protein supply and utilization in the newborn, Alan A. Jackson, 1989;
14. Nutraceuticals as therapeutic agents in osteoarthritis. The role of glucosamine, chondroitin sulfate, and collagen hydrolysate, Deal CL, Moskowitz RW., 1999;
17. Glucosamine and chondroitin sulfate as therapeutic agents for knee and hip osteoarthritis, Bruyere O, Reginster JY, 2007;
20. Study on hydrophilic properties of gelatin as a clinical wound dressing. II. Water-absorbing property and hemostatic effect of gelatin, Takahashi H, Miyoshi T, Boki K, 1993;
22. Glycosaminoglycan (GAG) deficiency in protective barrier as an underlying, primary cause of ulcerative colitis, Chron’s disease interstitial cystitis and possibly Reiter’s syndrome, Russel AL, 1999;
26. Glicina, Treccani;
27. Impact of Glycine on Antioxidant Defence System in Rats with Alcohol Induced Liver Injury, R. Selvaraju, K. Subbhashindevi, 2011;
29. Urinary Excretion of 5-L-Oxoproline (Pyroglutamic Acid) Is Increased during Recovery from Severe Childwood Malnutrition and Responds to Supplemental Glycine, Chandarika Persaud, Terrence Forrester, Alan A. Jackson, 1996;
30. Glutathione Content as an Indicator for the Presence of Metabolic Pathways of Amino Acids in Astrogial Cultures, Ralf Dringen, Bernd Hamprecht, 1996;
31. Orexin Neurons Receive Glycinergic Innervations, Mari Hondo, Naoki Furutani, Miwako Yamasaki, Masahiko Watanabe, Takeshi Sakurai, 2011;
32. Glycine ingestion improves subjective sleep quality in human volunteers, correlating with polysomnographic changes, Wataru Yamadera, Kentaro Inagawa, Shintaro Chiba, Makoto Bannai, Michio Takahashi, Kazuhiro Nakayama, 2007;
33. Amino acids and asthma: a case-control study, A. Fogarty, E. Broadfield, S. Lewis, N. Lawson, J. Britton, 2004;
34. Chicken soup inhibits neutrophil chemotaxis in vitro, Rennard BO, Ertl RF, Gossman GL, Robbins RA, Rennard SI, 2000;

Further reading:
• Broth is Beautiful, Sally Fallon, 2000;
• Traditional Bone Broth in Modern Health and Disease, Allison Siebecker, 2005;
• Why Broth is Beautiful: Essential Roles for Proline, Glycine and Gelatin, Kaayla T. Daniel, 2003;