

Brothy Benefits

An Age-Old Tradition Making a Comeback
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Bone broth, or stock, can be considered the first nutritional “supplement.” This nourishing liquid is a concentrated source of vitamins, minerals, glucosamine, and other substances that promote healing and stave off sickness. Current research, as well as from years past, supports the traditional practice of consuming gelatin and other nutrients found in abundance in broths made from chicken, fish, or beef bones. The nutrients in broth support bones, joints, digestion, immunity, and overall healing. Its powers are summed up with an old South American proverb, “Good broth will resurrect the dead.” Fortunately, these cold winter months provide the perfect time to partake in this traditional tonic.

A Traditional Practice Explored

All cultures around the globe have used stock as part of their traditional dishes, including French, Chinese, Japanese, African, Middle Eastern, and Russian. Here in the good ol’ US of A, stocks are essential for stews, gravies, sauces, and delectable soups. The meat flavor of stock is necessary to so many dishes that food scientists decided to create a synthetic alternative - MSG, which is a poor, unhealthful substitute found in many of today’s commercial products. Traditionally, all parts of the animals were used, nothing was wasted – bones, hooves, carcasses, and tough meat went into making stock. Although making broth is not as popular as days past, it is a practice that is coming back in vogue due to its heart-warming aroma and healing abilities.⁶

Main Broth Players

When examining the values of broth, minerals take first place. Properly-prepared broth contains a generous amount of a wide range of minerals, such as calcium, magnesium, phosphorus, and silicon. Since these naturally-derived minerals are extracted from bone, they are in an ideal balance and easily utilized by the body.¹ From the bone, heart,¹ and cancer protection² of calcium, to the muscle relaxation and energy boost from magnesium,³ the functions of the minerals provided in this healing food are endless. Bone broth also contains the added material from cartilage and tendons, namely chondroitin sulphates, and glucosamine, nutrients currently in the spotlight for soothing arthritis and joint pain.⁴ It is often suggested to consume “bone soup” everyday to help repair and improve the strength of bones and tendons, skin, vessels, ligaments, and cartilage.¹⁸

Gelatin is what makes broth congeal when cooled. The therapeutic use of this substance has a long history. Although not a complete protein itself, gelatin allows the body to more fully utilize proteins from other foods⁵ and prevents the breakdown of protein in the body, allowing one to maintain muscle and support healing.⁷ It has a solid reputation of calming an irritated digestive tract and aiding digestion.⁸ French research back in the early 1900’s found gelatin to be beneficial to such conditions as peptic ulcers, infections, jaundice, and cancer.⁶ It has also been valued for its role in cartilage and bone health^{4,5} as well as that of the skin, immune system, and muscles.⁹ As you might guess, the best way to get the therapeutic benefits of gelatin comes from stock made with cartilage and bones from organic chicken or meat.¹⁹

Stock is also endowed with a good amount of two specific amino acids, proline and glycine, found in the gelatin. They are the forefront players in making the collagenous fibers throughout the body that are in charge of building cartilage, like that found in joints. As the simplest amino acid, glycine is used in the body to create hemoglobin, creatine, and bile salts, as well as DNA and RNA. Glycine is also involved in the manufacture of glucose, which means if levels get too low, hypoglycemic-like symptoms could result.⁶ This amino also acts as a precursor for glutathione, the premier internal antioxidant responsible for helping the body remove toxic substances that can cause harm if allowed to linger.⁶

Desiring Better Digestion? Try Some Broth!

Scientific literature undoubtedly supports gelatin's role in digestive health. For example, it increases the utilization of the protein in grains like wheat, oats, and barley. Gelatin also greatly improves the digestibility of beans, as well as meat protein.^{7,8} This explains why gelatin-dense stocks are such a vital part of American kitchen traditions like gravies, stews, and soups.⁷ Research conducted in the 1920's found that individuals suffering from celiac disease given gelatin "milks" found "striking and almost uniformly good results..."⁷ Going back a little further to 1905, Erich Cohn of the Medical Polyclinic of the University of Bonn recommended gelatin to those with "intestinal catarrh," otherwise known as inflammation of the mucus membranes of the intestinal system, which is now referred to as irritable bowel syndrome.⁷ Essentially, broth makes a wonderful, overall digestive tonic.

It is a textbook-known fact that the amino acid glycine, readily found in gelatin, improves digestion by enhancing gastric acid secretion.^{9,10} In fact, research published in 1982 in the *American Journal of Physiology* found that this substance promoted digestion by boosting the secretion of gastric juice, bringing the amount of hydrochloric acid in the stomach to normal levels.^{Error! Bookmark not defined.} This is excellent news for those suffering from many intestinal conditions, including indigestion. It is now understood that indigestion is not caused by excess acid, as most people mistakenly believe; rather, it is a result of too *little* acid.^{11,12} Furthermore, the ability to secrete gastric acid naturally decreases with age.¹³ Stomach acid is necessary for many functions, particularly protein digestion.¹¹ Inadequate breakdown of protein can lead to greater problems like immune system stress, food allergies, eczema, joint pain, bone loss, skin issues, and more.^{14,15} Adequate acidity of the stomach is also critical for the absorption of many nutrients, such as calcium, folic acid, B vitamins, and magnesium.^{11,16}

A considerable amount of research has discovered that babies digest cow's milk better with the addition of gelatin. It essentially brings cow's milk closer to human milk. The American researcher Francis Pottenger made the point that gelatin is a hydrophilic colloid, which means that it attracts and holds liquids; thus, it facilitates digestion by attracting digestive juices to food in the gut.^{Error! Bookmark not defined.} As a result, infants fed gelatin-enriched formulas have shown reduced allergic symptoms, vomiting, colic, diarrhea, constipation and respiratory ailments than those on straight cow's milk.⁷

Warding off the Sniffles

There is truth behind the old wives' tale that chicken soup can remedy colds. Dr. Stephen Rennard, a pulmonary specialist at the University of Nebraska's Medical Center, found that chicken soup elicits an anti-inflammatory effect on the body – which is mainly due to the mineral-rich stock at its base. The viral bugs that cause a cold or flu lead to the stimulation of inflammatory compounds in the body, which are to blame for many, if not most, of the resulting symptoms.¹⁷ As in many chicken soup recipes, Rennard's version calls for nutrient-rich ingredients like onions, carrots, celery, parsley, sweet potatoes, turnips, and more, which also disseminate nutrients into the broth-base to make a power-packed punch of nutrition and cold-fighting potential.

Homemade Healing Elixir

The proof presented confirms what grandmas all around the world have known for decades – bone broths are healing tonics for many ills. Luckily, it is something easily incorporated into everyday meals. Use this nourishing liquid when cooking grains, vegetables, beans, or stews, gravies, sauces, and soups of any kind. Simply warming up a mug full with a dash of sea salt is a satisfying and healing beverage. The basic broth-making method is quite simple. In a big pot, soak your choice of bones, either chicken, duck, turkey, beef, lamb, or fish, in cold filtered water with a little apple cider vinegar, which helps liberate the nutrients, for an hour or two. A good tip is to freeze the bones and cartilage from other meals, such as roasted chicken or grilled fish, until you have enough for a batch of stock. To impart a

better flavor and color, first brown the meaty bones from beef and lamb in a hot oven. Add your choice of vegetables, such as carrots, celery, broccoli stocks, and onion. Herbs go nicely in stock as well, such as basil, thyme, and garlic.¹⁸ Slowly bring the water to a boil, and skim the scum that rises to the top. Allow everything to simmer up to 24 hours or more (less for delicate fish bones), then strain and *voila* – homemade, nutrient-dense stock! Use it, freeze the extra (in jars filled three-quarters full), or chill it in the fridge and remove the fat that congeals on the top. The fat is fine to keep in the stock; it just depends on your culinary taste buds. Keep your delicious elixir in the fridge for several days or freezer for several months.^{Error! Bookmark not defined.} One caveat is to choose bones from animals allowed to roam free to eat their natural diets and aren't overwhelmed with antibiotics, steroids, and hormones.

Revitalizing the lost tradition of broth-making regularly is a do-able process. Consuming this “nature’s supplement” in some fashion every day will maximize its healing influences. When in a time-crunch, there are high-quality pre-made products available as well. Don’t let this winter season go by without taking full advantage of the healing gifts of this traditional elixir. As the renowned researcher Dr. Pottenger once said, “A big stock pot is the most important gift a bride could receive.”¹⁹ Although a little old-fashioned, the point is made clear; incorporating stock-making into your cooking repertoire will pay off many times over.

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⁴ Medline abstract of Koyama, et al. Ingestion of gelatin has differential effect on bone mineral density and bodyweight in protein undernutrition, *Journal of Nutrition and Science of Vitaminology*, 2000, 47, 1, 84-86.)

⁵ Oesser, S, et al. Oral administration of (14) C labeled gelatin hydrolysate leads to an accumulation of radioactivity in cartilage of mice (C57/BL), *Journal of Nutrition*, 1999, 10, 1891-1895.

⁶ Kaayla T. Daniel, MS CCN. Why Broth is Beautiful. *Wise Traditions in Food, Farming and the Healing Arts*, the quarterly magazine of the Weston A. Price Foundation, Spring 2003

⁷ Gotthoffer, NR, *Gelatin in Nutrition and Medicine* (Graylake IL, Grayslake Gelatin Company, 1945), pp. 25-37.

⁸ Pottenger, FM, Hydrophilic colloid diet, *Health and Healing Wisdom*, Price Pottenger Nutrition Foundation Health Journal, Spring 1997, 21, 1, 17

⁹ Richardson, CT, et al. Studies on the mechanism of food-stimulated gastric acid secretion in normal human subjects. *Journal of Clinical Investigation*, 1976, 58, 623-631.

¹⁰ Wald, A and Adibi, SA, Stimulation of gastric acid secretion by glycine and related oligopeptides in humans, *American Journal of Physiology*, 1982, 5, 242, G86-G88

¹¹ Murray, Michael, N.D. *Natural Alternatives to Over-the-Counter and Prescription Drugs*. 1994. Quill William Morrow

¹² Wright, Jonathan, M.D. The Myth of Acid Indigestion. *Nutrition and Healing*. Vol 8, Issue 9. Sept. 2001

¹³ Murray, Michael, N.D. *Natural Alternatives to Over-the-Counter and Prescription Drugs*. 1994. Quill William Morrow.

¹⁴ Mayron LW. Portals of entry: A review. *Ann Allergy* 1978;40:399.

¹⁵ Atkins, Robert, *Dr. Atkins' Vita-Nutrient Solution* (Simon & Schuster, 1998), pp. 234.235

¹⁶ Healthnotes. *The Natural Pharmacy: Complete Home Reference to Natural Medicine*. CD Rom. 1999.

¹⁷ Chicken Soup Inhibits Neutrophil Chemotaxis In Vitro" Chest, Vol. 118, No. 4, October 2000, chestjournal.org

¹⁸ Rogers, Sherry, M.D. *Pain Free in 6 weeks*. Sand Key Compnay. 2001.

¹⁹ Pottenger. 55 Lubec, G, et al. Amino acid isomerisation and microwave exposure, *Lancet*, 1989, 2, 8676, 1392-1393.