

Collagen

Collagen is a hard, insoluble, fibrous protein found in muscles, bones, tendons, skin, nails, blood vessels, and the digestive tract. It is abundant in three key amino acids: glycine, proline, and hydroxyproline.

Collagen is the primary structural protein in the body, essentially acting like the “glue” that holds us together. It has several roles in the body, including providing elasticity and strength to our skin, repairing and replacing skin cells, and maintaining the health of joints, bones, ligaments, tendons, hair, skin, and nails.

Types of Collagen

The majority (90%) of collagen in our bodies come from three types: Type 1, Type 2, and Type 3.

Type of Collagen	Function	Source
Type 1	Promote hair, skin, nails, and bone health	Animal skin, hide, tendons, scales Bones of cows, pigs, chicken, fish
Type 2	Improve joint and cartilage health	Cartilage, often derived from poultry
Type 3	Promote hair, skin, nails, and bone health	Bone, tendon, cartilage and connective tissue of cows, pigs, chicken, fish

While dietary collagen can only be obtained from animal sources, there are plenty of foods in plant-based diets that help boost collagen formation in the body. See the next table for reference.



Boosting Collagen Naturally

The following table includes nutrients that promote collagen formation in the body.

Nutrient	Sources
Proline	Egg whites, meat, cheese, and soy
Glycine	Fish, meat, dairy, spinach, kale, cabbage, cauliflower, pumpkin, banana, and kiwi
Hydroxyproline	Meat, fish, eggs, carob seeds, alfalfa sprouts
Vitamin C	Citrus fruits, kiwi, strawberries, bell peppers, broccoli, and kale
Anthocyanins and antioxidants	Berries, herbs and spices such as oregano, rosemary, cinnamon, and turmeric
Copper	Beef liver, sunflower seeds, cashews, chickpeas, lentils, dark chocolate, hazelnuts

How to Make Homemade Bone Broth

Homemade bone broth contains many beneficial nutrients, including several amino acids (especially glycine) and trace minerals. It's also a great way to get more collagen and the nutrients your body needs to make collagen into your diet. While it may sound daunting, making your own bone broth is actually fairly simple.

In a large stock pot, simmer your bones of choice (chicken, beef, turkey, or fish) covered, over low heat for 48 hours. This will extract the most collagen and nutrients from the bones. You can also do this in a slow cooker if you don't want to use a stovetop.

Once the broth has finished cooking, transfer to glass jars or containers, let cool, and refrigerate or freeze. As the broth cools, you will notice a layer of gelatin forming. This is a good sign as the gelatin layer is the main source of collagen in bone broth, so be sure to keep it!

Helpful tips:

- Although not necessary, roasting your bones before simmering can improve the flavor of the broth.
- Since toxins are stored in fat and bone broth contains a lot of it, quality is key when purchasing bones. Look for bones from "organic", "sustainable", "grass-fed", "pasture-raised", and/or "free-range" sources.
- Add various vegetables, herbs, and spices to your broth for more flavor and nutrients. This is a great way to use up vegetable scraps like onion peels and carrot tops that you might normally throw away. Some other examples of additions include celery, garlic, ginger root, rosemary, and bay leaves, but feel free to experiment.
- Add 1-2 tbsp of apple cider vinegar to your pot to give it a slightly acidic taste and assist with breaking down the bones.