

7 Ways Collagen Can Boost Your Health

What is Collagen?

You might recognize it as an ingredient in your favorite body lotion or perhaps noticed supplements in the vitamin aisle that feature it. But what is collagen, exactly — and how can you incorporate it into your life?

Collagen is the most abundant protein in our bodies, especially type 1 collagen. Which is the type of collagen used in RADICAL PLUS®. Type 1 collagen is found in muscles, bones, skin, blood vessels, digestive system and tendons. It's what helps give our skin strength and elasticity, along with replacing dead skin cells. When it comes to our joints and tendons, in simplest terms, *it's the "glue" that helps hold the body together.*

Sadly, our body's collagen production naturally begins to slow down as we age. We can thank this degenerative process for signs of aging, such as wrinkles, sagging skin and joint pains due to weaker or decreased cartilage.

Other lifestyle factors — like eating a diet high in sugar, smoking and high amounts of sun exposure — also contribute to depleting collagen levels. It's been found that collagen-related diseases most commonly arise from a combination of either genetic defects, poor intake of collagen-rich foods, nutritional deficiencies and digestive problems affecting production (synthesis) of collagen.

Top 7 Collagen Benefits:

1. Improves Health of Skin and Hair

As we age, collagen production declines — it's happening as you read this! You'll notice it physically: looser skin, more wrinkles and less elasticity. Increasing collagen levels can help your skin look firmer, increase smoothness, and help your skin cells keep renewing and repairing normally.

Double-blind, placebo-controlled studies investigating the anti-aging properties of collagen have found that 2.5–5 grams of collagen hydrolysate used among women aged 35–55 once daily for eight weeks significantly improved skin elasticity, skin moisture, trans epidermal water loss (dryness) and skin roughness, all with little to no side effects. This makes collagen one of the best natural skin care ingredients available.

Collagen also reduces cellulite and stretch marks. When skin loses its elasticity as a result of decreased collagen, there's another side effect: more visible cellulite. Because your skin is now thinner, cellulite becomes more evident — no more hiding what's happening below the surface. Improving your skin's elasticity through collagen helps reduce that dimpling on your skin.

2. Reduces Joint Pains and Degeneration

Have you ever felt like you've got "skeleton legs," the types that feel extra stiff and cause pain when you move? Yup, that's likely a loss of collagen rearing its ugly head.

That's because when we lose collagen, our tendons and ligaments start moving with less ease, leading to stiffness, swollen joints and more.

With its gel-like, smooth structure that covers and holds our bones together, collagen allows us to glide and move without pain. Think of ingesting more collagen like greasing a creaky door hinge: It helps your joints move more easily, reduces pain often associated with aging and even reduces the risk of joint deterioration.

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2. Reduces Joint Pains and Degeneration (con't)

It's no surprise then that a recent study even found that collagen is an effective treatment for treating osteoarthritis and other joint pain and disorders.

Researchers at Harvard's Beth Israel Deaconess Medical Center in Boston found that supplementing with collagen helped patients suffering from rheumatoid arthritis find relief from painful symptoms by decreasing swelling in tender joints. Another study published in the *International Journal of Medical Sciences* found that people with osteoarthritis joint pain treated with collagen show significant enhancements in daily activities, such as walking up stairs, ascending or sleeping, and a general improvement in their quality of life.

3. Boosts Metabolism, Muscle Mass and Energy Output

A boost in collagen may help increase your metabolism by adding lean muscle mass to your frame and helping with the conversion of essential nutrients. One of glycine's most important roles is helping form muscle tissue by converting glucose into energy that feeds muscle cells. And remember that retaining muscle mass is crucial as you age, since it helps support posture, bone health and burns more calories than fat. When consuming collagen, you can benefit from also consuming vitamin C to ensure your body can convert the collagen into a useable protein. This can begin to restore the source or your energy and vitality.

That's not all that glycine can do for your metabolism. Research shows glycine also has important roles in both functions of the digestive and central nervous systems, which play big roles in maintaining a healthy, youthful body. Glycine seems to help slow the effects of aging by improving the body's use of antioxidants and is also used in the process of constructing healthy cells from DNA and RNA.

In addition, it's been found that arginine boosts the body's ability to make protein from other amino acids, which is important for repairing muscle tissue, healing wounds, sparing tissue wasting, boosting the metabolism, and aiding in proper growth and development. And glutamine also helps maintain adequate energy by facilitating the synthesizing of many chemicals. This amino acid provides "fuel" to our cells, including carbon and nitrogen.

4. Strengthens Nails, Hair and Teeth

Ever had peeling and splitting nails? Well, a lack of collagen could be to blame. Collagen protein is the building block of your fingernails, hair and teeth. Adding collagen into your diet regimen can help keep your nails strong and possibly even reverse the signs of hair loss.

A study published in the *Journal of Investigative Dermatology* found that there's an "essential relationships between extracellular matrix (ECM) and hair follicle regeneration, suggesting that collagen could be a potential therapeutic target for hair loss and other skin-related diseases."

5. Improves Liver Health

If you're looking to detox your body of harmful substances, improve blood flow and keep your heart young, collagen is extremely helpful.

That's because glycine helps minimize damage your liver experiences when it absorbs foreign substances, toxins or alcohol that shouldn't be passing through it.

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5. Improves Liver Health (cont'd)

One of the easiest ways to cleanse your liver is with a bone broth fast. I often recommend a three-day bone broth detox to rapidly repair leaky gut. This may help your body rid itself of chemicals and “reset” your gut, improving overall immune function. Studies have even found that glycine can be used to help reduce alcohol-induced liver damage and other forms of acute or chronic liver injury.

6. Protects Cardiovascular Health

The amino acid proline helps your artery walls release fat buildup in the bloodstream, shrinking the fat in the arteries and minimizing fat accumulation. Proline is needed for tissue repair within the joints and arteries, plus it helps control blood pressure. As part of collagen found within joints, it buffers our bodies from the effects of vibration or shock and helps us hold on to valuable cartilage as we get older. It's also linked with the prevention of arteriosclerosis (hardening of the arteries) since it helps our arteries stay clear of dangerous plaque buildup.

In addition, arginine helps with nitric oxide production, which allows for better vasodilation — meaning the widening of arteries and relaxation of muscle cells and blood vessels that allows for better circulation.

7. Helps Heal Leaky Gut

If you suffer from leaky gut syndrome, a condition where bad-for-you toxins are able to pass through your digestive tract, collagen can be super-helpful. It helps break down proteins and soothes your gut's lining, healing damaged cell walls and infusing it with healing amino acids.

The biggest digestive benefit of consuming more collagen is that it helps form connective tissue and therefore “seals and heals” the protective lining of the gastrointestinal tract. Today, we know that many illnesses can actually be traced back to inflammation or irritation stemming from an unhealthy gut. Poor gut health — including changes in the gut microbiome and permeability in the gut lining — allows particles to pass into the bloodstream where they can kick off an inflammatory cascade (hence the name leaky gut syndrome).

Studies have found that in patients with inflammatory bowel disease, serum concentrations of collagen are decreased. Because the amino acids in collagen build the tissue that lines the colon and GI tract, supplementing with collagen can help treat gastrointestinal symptoms and disorders, including leaky gut syndrome, IBS, acid reflux, Crohn's disease and ulcerative colitis. In addition to helping heal leaky gut, collagen also helps with the absorption of water within the intestines, keeping things moving more freely out of body.

Types and Sources of Collagen:

A little-known fact is that there are at least 16 different types of collagen within the human body. These include collagen types 1, 2, 3, 5 and 10. However, the vast majority of the collagen — between 80% and 90% — consists of types 1, 2, and 3.

Type 1 collagen specifically accounts for almost 90% of the body's supply according to some findings. There are also different types of collagen used in collagen supplements.

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Here are their primary benefits of Type 1 collagen, which is what is used in RADICAL PLUS®:

Type 1/Type I: This is by far the most abundant, and almost considered to be the strongest, type of collagen found in the human body. It's made up of eosinophilic fibers that form parts of the body, including tendons, ligaments, organs and skin (dermis). Type 1 collagen also helps form bones and can be found within the GI tract. It's very important for wound healing, giving skin its stretchy and elastic quality, and holding together tissue so it doesn't tear.

When it comes to sources of collagen we get from our diets, the main ones are foods very high in protein, including beef, chicken, fish and egg shell membranes.

Here's more information on fish collagen and how it benefits us:

- **Fish collagen ← the type of collagen used in RADICAL PLUS®:** Collagen derived from fish has been found to be easily absorbed and provide mostly type 1 collagen, with the amino acids glycine, proline and hydroxyproline. Because type 1 can be found throughout the entire body, consuming more **fish collagen** has been associated with benefits for the joints, skin, vital organs, blood vessels, digestion and bones. Hydroxyproline is an important component of the collagen triple helix, and lower levels have been associated with joint degradation and therefore symptoms/signs of aging. Hydroxyproline is needed for collagen stability and is created by modifying normal proline amino acids after the collagen chain is built. This reaction also requires vitamin C (to assist in the addition of oxygen), which is why vitamin C deficiency can cause abnormalities in collagen levels.

Nutritional Facts about Collagen:

Just how healthy is collagen for you?
Very!

Collagen is often referred to as a "complex protein," which is not surprising considering it contains a whopping 19 different amino acids. These include a mix of both nonessential (also called conditional) and essential types. Collagen is a particularly great way to get more conditional amino acids, like arginine, glutamine, glycine and proline.

Collagen is composed of three chains, wound together in a tight triple helix. Each chain is over 1,400 amino acids long! Proline and glycine are the primary types of amino acids found in collagen chains. Both proline and glycine are two important amino acids that aren't abundant in animal meats, which is where most people eating a "Western diet" get the majority of their protein from.

This means that people are lacking these amino acids in their diets — since they regularly avoid eating some of the best natural sources (like organ meats).

For reasons you'll see below, "nonessential" amino acids are actually pretty darn important — so don't let the name fool you! Under normal circumstances they're produced by your body. However, when you're sick, under a lot of physical or emotional stress, or otherwise unhealthy, your body may not be able to produce enough of these amino acids on its own. The body then needs help from outside sources, mainly your diet or supplements, to get its fill.

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The highest percentages of amino acids found within collagen, along with some of their key benefits, include:

- **Glycine:** Around one-third of the protein found in collagen is **glycine**. While size-wise it's the smallest amino acid, glycine has big effects. To ensure our cells function properly, glycine helps build healthy DNA strands. It's also one of three amino acids that form creatine, which promotes healthy muscle growth and boosts energy production during workouts.
- **Glutamine:** Considered to be one of the most important and abundant amino acids in the body, **glutamine** is both created within our muscles and also obtained from food sources. Research shows that glutamine has benefits for preventing anxiety, tension, sleep disorders/insomnia, a lack of concentration, poor digestive health, a weakened immune system and low energy.

According to a report printed the *American Journal of Clinical Nutrition*, it's been shown to have positive effects of production of growth hormone, which can improve aspects of mental health, such as helping with release of GABA that boosts feelings of "inner calm and tranquility." Nitrogen, created by glutamine in high amounts, also helps with wound healing and prevents muscle wasting and joint pains.

- **Arginine:** Arginine (also commonly called **L-arginine**) breaks down into nitric oxide within the body, which is an important compound for arterial and heart health. Arginine has also been shown to improve circulation, help strengthen the immune system and has a positive influence on male libido.

All these amino acids are found in RADICAL PLUS®!

Getting Collagen Into Your Body and Life!

Q: What is the best way to get more collagen into your body?

A: By taking a collagen supplement!

The best collagen supplement is typically found as hydrolyzed collagen, **which helps form new collagen**. When you hydrolyze collagen, collagen peptides become bioavailable.

This is the process we use in the formulation and manufacturing of RADICAL PLUS®

Our ancestors chowed down on quite a bit of collagen as a natural way of life, since earlier traditional diets incorporated whole-animal eating. Simply put, they ate many animal parts, like skin, tendons and ligaments, that we now commonly avoid or discard.

Liquid collagen protein supplements are another easy way to increase your collagen intake. Collagen supplements can provide your body with collagen's healthy benefits.

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Final Thoughts on Collagen...

It's important to note that there are many factors that support the formation and use of collagen in the body such as vitamin C, manganese, copper, proline and foods high in anthocyanidins (such as blueberries, cherries and blackberries). ***This is why we use blueberry extract in RADICAL PLUS®***

In order for collagen to be activated in the body, you always want to take your supplements with a source of amino acids and vitamin C if possible, or make sure that your supplement already includes these activating nutrients to ensure absorption and usefulness.

RADICAL PLUS® has been formulated with ALL these factors in mind!

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