

# COLLAGEN-NATIVE-TYPE 2

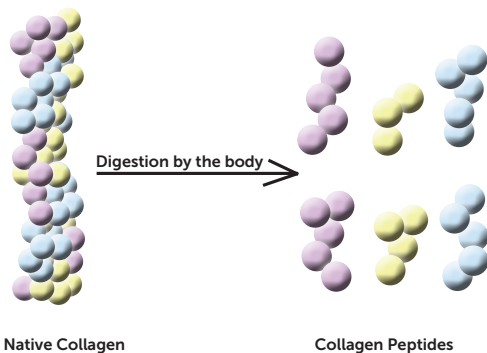
## Frequently Asked Questions



### Why "NATIVE"?

A protein is a three-dimensional molecule with a specific shape, and this shape allows it to carry out its specific role in the body. While the shapes of some proteins cause chemical reactions or relay signals, the helical shape of collagen provides structural support in tissues such as skin and cartilage.

We use the terms "native" or "undenatured" to describe proteins, including collagen, that are still in their natural three-dimensional shapes. While other collagen supplements contain proteins that have been broken into fragments, or "peptides," COLLAGEN-NATIVE-TYPE 2 is extracted gently to ensure that the collagen maintains its helical shape. Once ingested, the native collagen is broken down by the body's digestive system and then used to support collagen production in the body.



### Why "TYPE 2"?

Of the collagen types, type II is among the most abundant in the body and is a key component of the cartilage found in the joints, ribs, eyes and spine. Type II collagen can also stimulate the production of both type II and type I collagen, a protein abundant in skin, tendon, and bone. By supplementing with type II collagen, you therefore get the benefits of both type I and type II.

### Why bovine-sourced collagen?

COLLAGEN-NATIVE-TYPE 2 is specially sourced from bovine cartilage because bovine collagen is more similar to human collagen than chicken and marine-sourced collagen.

Asserin J, et al. The effect of oral collagen peptide supplementation on skin moisture and the dermal collagen network: Evidence from an ex vivo model and randomized, placebo-controlled clinical trials. *J Cosmet Dermatol*. 2015;14(4):291-301.

Bagchi D, et al. Effects of orally administered undenatured type II collagen against arthritic inflammatory diseases: A mechanistic explanation. *Int J Clin Pharm Res*. 2002;22(3/4):101-110.

Bagi CM, et al. Oral administration of undenatured native chicken type II collagen (UC-II) diminished deterioration of articular cartilage in a rat model of osteoarthritis. *Osteoarthr Cartilage*. 2017;25:2080-2090.

Clark KL, et al. 24-week study on the use of collagen hydrolysate as a dietary supplement in athletes with activity-related joint pain. *Curr Med Res Opin*. 2008;24(5):1485-1496.

Crowley DC, et al. Safety and efficacy of undenatured type II collagen in the treatment of osteoarthritis of the knee: a clinical trial. *Int J Med Sci*. 2009;6(6):312-321.

Gelse K, et al. Collagens—structure, function, and biosynthesis. *Adv Drug Deliv Rev*. 2003;55:1531-1546.

Harkness MLR, et al. Digestion of native collagen in the gut. *Gut*. 1978;19:240-243.

### What are the benefits of native type II collagen?

Native type II collagen offers the same benefits as collagen peptides—they both provide collagen building blocks to restore the body's supply. But, native type II collagen offers even more health advantages.

**Improved Skin Health:** Collagen is the most abundant protein in the second layer of skin, and its strand-like molecules link together to give structural support to the skin. While age-related collagen loss can lead to wrinkle formation, collagen supplementation can both reduce the appearance of wrinkles already present and protect against further wrinkle formation. Native type II collagen is particularly effective at stimulating collagen production to improve skin health and appearance, and it also promotes healing at sites of tissue damage and inflammation.

**Improved Joint Health:** Type II collagen is a major component of joint cartilage, and studies suggest that supplementing with type II collagen may promote the body's ability to regenerate cartilage and therefore repair joint damage. In fact, one study demonstrates that type II collagen promotes joint recovery after athletic activity. In several other studies, patients with osteoarthritis, an age-related joint disease, experienced less pain, less joint damage, and increased joint function after supplementing with type II collagen.

**Reduced Inflammation:** Native collagen has also been shown to be effective in treating inflammatory diseases such as rheumatoid arthritis and ulcerative colitis. With rheumatoid arthritis, a disease characterized by joint inflammation and damage, native collagen both helps rebuild the damaged joint cartilage and modifies the immune response to reduce pain and inflammation. Similarly, native collagen effectively treats ulcerative colitis, an inflammatory bowel disease, by improving the health of the gut lining and altering the body's immune response to lessen inflammation. In both of these cases, native collagen not only treats the symptoms, but addresses the underlying cause of the body's discomfort - a faulty immune response.

COLLAGEN-NATIVE-TYPE 2 is an excellent source of undenatured type II collagen, and supplementing with it is an easy and effective way to promote healthy skin and joints while reducing inflammation.

Koyama Y. Effects of collagen ingestion and their biological significance. *J Nutr Food Sci*. 2016;6(3).

Nagler-Anderson C, et al. Suppression of type II collagen-induced arthritis by intragastric administration of soluble type II collagen. *Proc Natl Acad Sci USA*. 1986;83:7443-7446.

Postlethwaite AE, et al. Chemotactic attraction of human fibroblasts to type I, II, and III collagens and collagen-derived peptides. *Proc Natl Acad Sci USA*. 1978;75(2):871-875.

Proksch E, et al. Oral intake of specific bioactive collagen peptides reduces skin wrinkles and increases dermal matrix synthesis. *Skin Pharmacol Physiol*. 2014;27:113-119.

Ramadass SK, et al. Type I collagen and its daughter peptides for targeting mucosal healing in ulcerative colitis: a new treatment strategy. *Eur J Pharm Sci*. 2016;91:216-224.

Sieper J, et al. Oral type II collagen treatment in early rheumatoid arthritis. *Arthritis Rheum*. 1995;39(1):41-51.

**These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure or prevent disease.**