

# COLLAGEN AND JOINTS



Age-related collagen loss and joint disease lead to joint damage, but studies suggest that collagen supplementation may promote the body's ability to regenerate cartilage and repair joints, resulting in healthier joints with less pain and stiffness

## How do joints change with age?

Cartilage is a connective tissue that allows our joints to move freely, and it is largely made up of a structural protein called collagen. However, as we age, our bodies manufacture fewer of the specialized cells that produce collagen in joints. As a result, our cartilage breaks down faster than our bodies can regenerate it. These natural changes in our body lead to increased joint pain and stiffness, making it more difficult to participate in sports or even regular daily activities.

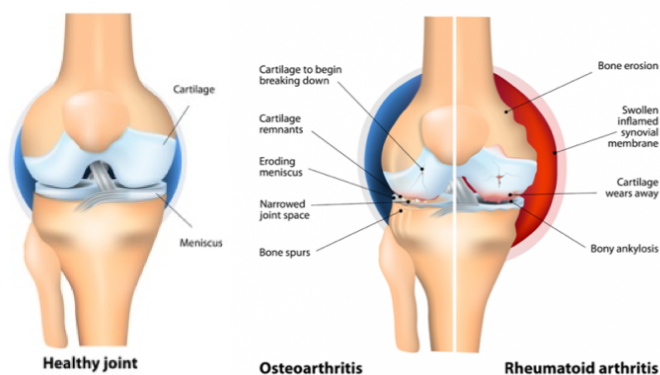


Figure 1 Osteoarthritis and rheumatoid arthritis affect joints in different ways, but are both associated with cartilage degradation, bone damage, and joint pain. Images from <https://ghr.nlm.nih.gov/condition/rheumatoid-arthritis> and <https://www.medicalnewstoday.com/articles/7621.php>.

## What are some other factors that impact joint health?

In addition to the effects of aging, our joint health can be impacted by specific diseases in the joints, the two most common being osteoarthritis and rheumatoid arthritis. Osteoarthritis involves the typical age-related joint pain and stiffness, but it also includes grating or cracking sensations, swelling, and bony growths. In rheumatoid arthritis, an autoimmune condition, the body is unable to distinguish between "self" and "non-self," resulting in the body attacking its own joint cartilage. These attacks on the cartilage lead to inflammation, stiffness, pain, and joint damage.

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

## How can COLLAGEN•NATIVE•TYPE 2 help alleviate joint pain?

Age-related joint damage, osteoarthritis, and rheumatoid arthritis all cause our cartilage to break down faster than our bodies can regenerate it. However, studies suggest that supplementing with collagen may promote the body's ability to regenerate cartilage and repair joints, resulting in less pain. In fact, patients with mild to moderate osteoarthritis experienced statistically significant improvements in knee function and decreases in pain following treatment with collagen supplementation. In the case of rheumatoid arthritis, evidence suggests that undenatured type II collagen modifies the body's immune response, lessening inflammation, suppressing the body's attack on cartilage, and resulting in healthier joints with less pain and stiffness.

COLLAGEN•NATIVE•TYPE 2 is an excellent source of undenatured type 2 collagen, and supplementing with it is an easy and effective way to combat joint pain while promoting overall joint health.

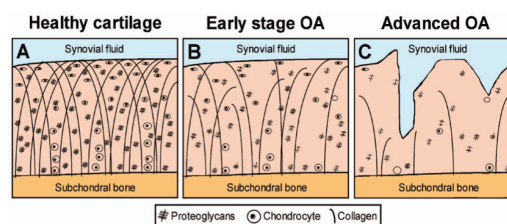


Figure 2 Collagen is a major component of articular cartilage, where it is produced by specialized cells known as chondrocytes. Loss of this collagen contributes to joint pain. Image from Oei EHG, et al. *Arthritis Care Res.* 2014;66(8).

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.

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.

Ding CH, et al. Oral administration of type II collagen suppresses pro-inflammatory mediator production by synoviocytes in rats with adjuvant arthritis. *Clin Exp Immunol.* 2003;132:416-423.

Fox AJS, et al. The basic science of articular cartilage: structure, composition, and function. *Sports Health.* 2009;1(6):461-468.

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

Lotz M, et al. Effects of aging on articular cartilage homeostasis. *Bone.* 2012;51(2):241-248.

Taruc-Uy RL, et al. Diagnosis and treatment of osteoarthritis. *Prim Care Clin Office Pract.* 2013;40:821-836.

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