



**THE TOP 10 CAUSES OF
CARTILAGE LOSS**

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Patients often ask us what they can do to help their cartilage. Cartilage is a connective tissue that protects our joints by acting as a cushion between the bones and absorbing shock. Arthritis occurs when the cartilage in the joint (e.g., knee, hip, shoulder, etc.) breaks down.

Understanding what causes cartilage loss in the first place is the key to understanding how you can keep more cartilage as you age. Regenexx has compiled the top 10 causes of cartilage loss along with some solutions to help prevent it.

1. Obesity, Mechanical

It's simple physics—being heavier places more wear-and-tear forces on cartilage, and [obesity is also linked to arthritis](#). While obesity can affect any joint, knee joints are particularly vulnerable to the impacts of obesity as [being overweight greatly increases the load on our knees, which can lead to pain and arthritis and increase the risk for knee replacement](#).

SOLUTION: The solution is simple, but it can be tough to accomplish—lose weight. Even if some damage has already been done to the joint, [losing weight will improve symptoms and slow the progression of arthritis](#). How to lose weight is addressed under number 2 below.

2. Obesity, Biochemical (Metabolic Syndrome)

While mechanical addresses the physical effects of obesity on the body, biochemical addresses the chemical reactions to obesity in the body. [Obesity not only breaks down cartilage by wear and tear but also causes changes in the patient's insulin-response system](#) that breaks down cartilage. This is called a “metabolic syndrome,” which is defined by obesity (apple- or pear-shaped body), high blood pressure, and early diabetes. [This syndrome dramatically destabilizes the chemical matrix \(structure\) of cartilage](#).

SOLUTION: Reduce carbohydrate and sugar load to reduce spikes in blood sugar and insulin release. Particularly if you have the genes that create the risk for metabolic syndrome (you likely have the genes if you have that middle-aged paunch, muffin top, or belly), you need a strict low-glycemic diet. This means no sodas, no added sugar, limited whole grains, no caffeine (it will spike your blood sugar), no fruit drinks, no baked goods, and so on. Some low-glycemic diet sites include [Zone](#), [Atkins](#), and [South Beach](#). While this solution will organically lead to weight loss, proper diet and nutrition need to be a permanent lifestyle (see number 5 below).

3. Trauma

Injuring the cartilage surface in a sudden traumatic event, such as a sports injury, can lead to a weak spot in the cartilage that can cause that area to break down easier with normal forces. Think of a strong fabric with a tear. The damage may be small, but the fabric will wear faster due to the tear.

SOLUTION: Look for regenerative-medicine cell-based solutions for cartilage repair before the problem becomes bigger. This might include [platelet rich plasma \(PRP\) or stem cell injections](#).

4. Joint Instability

Think of ligaments as duct tape that holds a joint together. Injured ligaments (e.g., torn or stretched) can cause the joint to move around too much; this is joint instability. All of this extra motion can also slowly continue to injure the cartilage in the joint, eventually leading to arthritis. Signs of instability include soreness or swelling after activity, and if the instability is severe, you might notice sudden shifting, popping, or cracking. [Realize that without a physician who will spend the time to look for injured ligaments, your joint instability may be missed.](#)

SOLUTION: Whether the ligament is loose or torn (partial or nonretracted), injections like [prolotherapy](#), PRP, and stem cells, in our clinical experience, can help reduce instability. [Click here for an example of how stem cell injections improved the symptoms and MRI appearance of one patient's torn anterior cruciate ligament \(ACL\)](#) and kept him out of surgery. If the instability is more severe, you may need to have it surgically corrected.

5. Poor Nutrition

You are what you eat. Even if you don't have an issue with obesity (numbers 1 and 2 above), poor dietary habits and lack of proper nutrition can wreak havoc not only on your cartilage and musculoskeletal system, but on your whole body.

SOLUTION: A good book on diet and nutrition is [Nutrition 2.0](#) by our own John Pitts, MD, available for free download at our online Regenexx Library or on Amazon. It's important to know what is and what is not good for you; [this link to five common food myths will help you get started](#). Add supplements to enhance cartilage health. [Glucosamine and chondroitin have been shown to preserve and protect cartilage. Glucosamine and chondroitin also slow the progression of arthritis.](#) Vitamin C also has a protective effect. [Resveratrol has been shown to protect and support cartilage cells. Vitamin E is also important for healthy cartilage.](#)

6. Medications

The most common medications injected into arthritic joints are also likely the most toxic to cartilage—[local anesthetics](#) and [steroid medications](#) cause cartilage cell death (called apoptosis). [Local anesthetics that contain epinephrine \(a common medication used to prolong the effects of anesthetics for injections\) are even more toxic due to their low pH and a preservative used to prolong the shelf life of the medication.](#)

In addition, commonly used [NSAID medications, like ibuprofen \(Motrin\), naproxen \(Naprosyn, Aleve\), and celecoxib \(Celebrex\), have been shown to have negative effects on cartilage cells.](#) In one study, [Celebrex, a prescription NSAID, reduced the production of good protective chemicals by cartilage cells and increased the production of bad chemicals.](#) In some drug-company sponsored trials, some researchers have suggested NSAIDs might protect cartilage, however [one large real-world patient study found no such protective effect.](#)

SOLUTION: Stay away from “cortisone shots,” NSAIDs, and other drugs. Before you undergo a procedure, [do your research on what local anesthetics your doctor is using](#) and how those will impact your cartilage and stem cells. High-quality supplements can not only help protect cartilage (see number 5 above) but can also relieve the pain and inflammation of arthritis as you age. These include [natural anti-inflammatories, like fish oil, glucosamine, chondroitin \(chondroitin has even been shown to beat Celebrex for arthritis\), and curcumin.](#) [Vitamin E may also be able to protect against chemical insults from medication.](#)

7. Hormonal Changes

The most important hormone related to cartilage breakdown is [leptin.](#) [Leptin is the hormonal switch that tells you when you're full.](#) In patients who chronically overeat (usually due to the right genes combined with a sugary or carbohydrate-loaded diet—see metabolic syndrome in number 2 above), too much leptin is produced. The body loses its sensitivity to leptin, and a metabolic syndrome sets in. [Lack of response to leptin has been associated with more arthritis.](#)

SOLUTION: You can reset your leptin switch, to better turn off your impulse to eat, by short-term fasting for 24–72 hours or by steeply reducing your food intake for a day or two. From there, an ongoing healthy diet (see number 2 above) is a major factor in managing leptin production. Leptin can also be better controlled by improving your sleep, decreasing your stress, and exercising.

8. Lack of Exercise

Lack of exercise can lead to a whole host of health issues, including problems with our joints. Joints are made for movement, so [regular exercise along with proper exercise techniques are important; however, the amount and level of exercise depends on the status of your joints](#). If your knees have no cartilage left, for example, high-impact exercise can really hurt your knees. If you have healthy cartilage, regular exercise can keep your cartilage healthy—[running seems to have a protective effect on normal, healthy cartilage](#).

SOLUTION: If you have cartilage loss, switch from high-impact to mid- or low-impact activities to help protect your existing cartilage. If you have normal, healthy joints, keep running and exercising—it seems to help protect joints from damage. [Download a free copy of ProActive to help you maintain your peak fitness performance as you age](#).

9. Poor Alignment and Biomechanics

We would all accept at face value that if our car alignment was off, our car's tires would wear unevenly. The same laws of physics apply to the human body. If you have asymmetrical cartilage loss (e.g., loss of cartilage in one knee and not the other), you may have a body-alignment problem that's wearing down certain joints faster.

SOLUTION: Read the chapter on "Symmetry" in Orthopedics 2.0 where there are many different types of care systems recommended to fix alignment issues. [Orthopedics 2.0 can be downloaded here for free](#). You can also take this [five-minute self-test on symmetry](#).

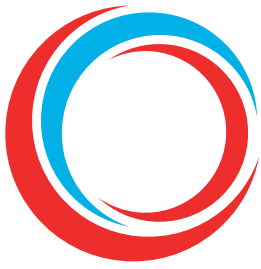
10. Aging and Genetics

Older patients seem to have less cartilage, and certain people just have the genetic makeup for weaker cartilage.

SOLUTION: While there may not be anything you can do about getting older and your genetics, you can care for the cartilage you do have by following the solutions covered in numbers 1 through 9 on this list.

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