

# ARTHRITIS TREATMENT OPTIONS



There are lots of treatments for arthritis. In fact, figuring out what your dog needs can be confusing and overwhelming. The following is a list of some of these products, with some explanation on how they work. Most of the treatments listed below are compatible with each other, so you can try any or all of them if you like. The goal with arthritis treatment and prevention is to keep the patient comfortable and active as long as we can. These new medications can help a great many dogs and cats stay happier longer.

1) **Glucosamine:** brands include Arthroflex, Cosequin, Dasuquin, Glycoflex and many others.

These nutritional supplements are recommended for any dog or cat that is a senior, already has arthritis or has had a joint injury or joint surgery. These products supply glycosaminoglycans such as glucosamine and chondroitin. Glycosaminoglycans, or GAGs, decrease inflammation in the joints (and elsewhere). They are also what the body uses to make joint fluid, so giving extra helps keep the joints better lubricated. They have been proven to slow the progression of arthritis. Pets started on these products early (even before symptoms develop) will have slower deterioration in their joints as they age. Many pets with arthritis will have less pain and stiffness when taking these supplements but **the primary goal of glucosamine is to prevent or slow joint deterioration, not to treat it once it is there.**

Pets started on arthritis supplements early (even before symptoms develop) will have less degenerative change in their joints as they age

Some brands of glucosamine also contain other nutritional ingredients that help the joints, such as MSM, Vitamin C (which improves absorption of glucosamine from the intestinal tract) and creatine. The more severe the symptoms of arthritis the more likely we are to add these additional ingredients. It usually takes two to four weeks to see improvement when beginning treatment if signs of pain are already present.

GAGs come in capsules, chewable tablets, liquids and granules to sprinkle on the food. Most dogs like the taste. Cats can be fussy but we have several products for cats as well and we can give you samples to try before you invest in an entire bag or bottle. The cost varies from about \$25 to \$100 depending on the product and the size. Most will last one to three months, depending on the size of your pet.

Some pet foods contain glucosamine, though most over-the-counter foods don't contain nearly enough to have any beneficial or therapeutic effect. You are best off using a prescription joint diet with extra glucosamine and/or fish oil. Prescription diets have been tested for efficacy and are much better regulated.

These diets are perfect for pets who are at risk for arthritis but do not yet have

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symptoms, or as an adjunct to other pain and anti-inflammatory medications. Providing fatty acids in the food is usually less expensive than giving supplements. **We highly recommend these foods for any pet having arthritis or at risk for arthritis to develop.**

Many of our clients are using their own glucosamine medications for their dogs. Be aware that in the sulfate form, or without added elements such as Vitamin C, dogs don't absorb glucosamine from the intestinal tract efficiently. A good quality glucosamine product for pets will say glucosamine HCl, not glucosamine sulfate, on the label. A dog may absorb eighty percent of a GAG product made for pets, but only forty percent of a human glucosamine sulfate product. This means you would need to give twice as much of a human product to see the same effect.

In addition to not always being the correct type of glucosamine, 38 of 40 human glucosamine products tested by consumerlabs.com did not actually contain the ingredients listed in the amounts stated on the label. Since there is no FDA oversight of nutraceutical products like these, some brands contain little or no active ingredients, despite label claims. For this reason, **we recommend getting your pet's supplement from us, not from a health food store or pharmacy.** Unless you are using a prescription joint diet you will need a supplement **in addition** to what is in your pet's regular food.

Cosequin and Dasuquin, our most-recommended products, are both made by a company called NutraMax. NutraMax is the only company that has done any significant testing of its glucosamine products for both safety and efficacy, so we like them. Cosequin has glucosamine, chondroitin and Vitamin C.

Dasuquin contains glucosamine, chondroitin, ASU and MSM. MSM, short for methylsulfonylmethane, is a source of organic sulfur, a compound used by cartilage, so it helps to keep cartilage healthier. Avocado/Soybean unsaponifiables (ASU) are extracts from avocado or soybeans. ASU augments both glucosamine and chondroitin – in other words if you add ASU to a glucosamine supplement it works better than if there is no ASU present.

**Dasuquin Advanced** is our most powerful glucosamine supplement. It's like a souped up Dasuquin, containing 5 additional nutritional support ingredients not found in regular Dasuquin. These extra ingredients help to reduce pain and damage inside the joint. Our goal in using it is to get your pet enough extra relief from pain that we can delay starting prescription medication or be able to reduce the dosage of the prescription medication. Since these added ingredients are nutritional supplements, they don't have the side effects that drugs do. Dasuquin Advanced has the same ingredients as Dasuquin, plus the following:

Green tea extract provides a compound called epigallocatechin gallate (EGCG). This compound inhibits the production of three different inflammatory chemicals. It works even better when combined with ASU.

Alpha-Lipoic acid (ALA) is an antioxidant. One of the chemicals green tea extract affects is prostaglandin E2. Prostaglandins are a major category of chemical messengers involved in pain and inflammation. Adding ALA to ASU inhibits prostaglandin E2 20% better than ASU alone. (Are you confused yet? Sorry about all the acronyms but even we have trouble saying unsaponifiable! ASU is much easier.)

Curcumin extract is a natural anti-inflammatory and antioxidant. Dasuquin Advanced contains a refined form of curcumin that is seven times more effective than standard curcumin extract. This is important, because unless it's manufactured properly, dogs absorb curcumin poorly.

Boswellia extract comes from the Boswellia plant. It has anti-inflammatory effects by itself but, like ALA, when it is used along with glucosamine, chondroitin and avocado extract it improves the effect and is 30% more effective at reducing prostaglandin E2.

Manganese is an essential mineral that improves absorption of glucosamine.

In summary, the ingredients in Dasuquin Advanced work together to: inhibit multiple inflammatory chemicals in the body; to support cartilage production; and to protect against cartilage breakdown.

2) **Fatty acid supplements:** These are also a nutritional supplement. Fatty acids are present in most pet foods at low levels. Premium diets contain more fatty acids than grocery store brands. Extra amounts, above and beyond what is available in most pet foods, have anti-inflammatory effects, so they help relieve joint inflammation. They are also helpful for other chronic inflammatory diseases, including allergic skin disease and chronic kidney failure. As with the GAGs, about two thirds of dogs seem to be helped by these. They take longer to show an effect, usually 2-8 weeks.

You might be able to use human products, but this depends on the size of your pet and whether the strength of the fatty acids in those products works out right. Please see the dosage chart in our separate Supplements handout. These dosages are usually at least twice the label dose, and with severe arthritis we may recommend four times the label dose of a product made for dogs! With human fish oil supplements you may need to give twenty capsules to get enough EPA for a large dog. This is expensive and impractical.

3) **Adequan injections:** Adequan is a glycosaminoglycan, similar to what is in supplements. It is an injectable instead of oral medication. For some dogs, the injections work much better than the oral granules. It starts to take effect much sooner than oral glucosamine so it's a better choice if your dog just blew out his ACL ligament and you need something on board quickly. It also works well for cats, many of whom won't eat oral glucosamine supplements. An injection is given twice weekly for four weeks. If it helps, we continue injections every 1-2 months to maintain the effect. Pet owners can often learn to give these injections themselves at home.

4) **MSM:** We usually add MSM when carprofen and glucosamine are no longer sufficient to keep a pet comfortable. It can be given by itself in a capsule or with glucosamine in a dual product. It has very few side effects.

5) **Cholodin:** This nutraceutical improves neuromuscular function. It can help with hind leg weakness as well as with cognitive and neurological problems.

6) **NSAIDs (Non-Steroidal Anti-Inflammatory Drugs):** These are the mainstay of arthritis treatment of both people and pets. Included in this category for humans are aspirin, ibuprofen, Celebrex, and many others. Products for pets include carprofen, deracoxib, meloxicam, and others. Some pets tolerate one better than another, or have fewer symptoms on a particular drug. We may try a few to see which works best. **Be careful not to substitute human products without our OK.** Pets have very different tolerances than humans, and drug dosages also may be very different between species. For example, **ibuprofen is very dangerous for dogs.** See our Long Term Use of NSAID Drugs handout or watch our YouTube video on the same topic, at [www.YouTube/BFVCTV](http://www.YouTube/BFVCTV) for more information.

7) **Acupuncture:** Acupuncture really helps some dogs a lot. Treatment begins with a 45-60 min acupuncture evaluation after which, the doctor can estimate how many treatments are needed and how often. At first, treatments will be more frequent and will become less frequent as the desired effect is seen. Follow-up acupuncture treatments require 30-40 min. appointments. We do not have an acupuncturist on staff

so we would refer you to another hospital for that.

8) **Therapy laser treatments:** The therapy laser uses light to decrease inflammation, pain and swelling, without the side effects of drugs. We use it often for arthritis treatment. If this is an option for your dog or cat, we will give you a handout specifically on its use.

9) **Ketamine**, an anesthetic agent we've been using for 40 years or more, has some new uses as well. It's now being used in humans for chronic pain syndromes and severe depression. Painful neurological conditions such as spinal cord injury, shingles, phantom limb pain and chronic regional pain syndromes can respond to as little as one subcutaneous injection a month. It also comes in a nasal spray for people, called Spravato™. Studies are underway on an implantable device for dogs, called Rx Activator™. The dog wears a small pump in a backpack, so it can receive tiny ketamine doses over time.

We are beginning to use subcutaneous injections of ketamine for chronic pain in dogs as well, though we aren't sure yet how well it will work. It's an inexpensive generic drug, since it's been around for so long, so it's easy to try. We plan to start using it for intervertebral disc disease, bone cancer, severe arthritis and other chronic, painful conditions.

10) Instead of gabapentin, we will be switching to **amantadine** for our second line arthritis drug. We have been using amantadine as a third tier drug for arthritis and a first tier one for neurologic pain, but it is moving up the ranks for arthritis treatment. Amantadine is inexpensive and it only needs to be administered twice a day, whereas gabapentin should be given every 8 hours in dogs for best effect.

Amantadine takes a long time to start working, 4-6 weeks, so it's not a good drug for acute pain conditions. Arthritis is chronic, though, so we have time to let it take effect. While we are waiting for it to do that, we can experiment with a ketamine injection, CBD or additional supplements. We can also use therapy laser and Assisi Loop treatment.

11) **NV-01 (for dogs) & NV-02 (for cats):** These monthly injections consist of antibodies that bind with a chemical messenger called nerve growth factor or NGF, which is important in osteoarthritis.

Dogs have only 1-1.5 mm of cartilage lining their joints, compared with 4-5 mm in humans.

The feline NV-02 drug, frunevetmab, has been developed by Zoetis and is sold under the name **Solensia**™. A 3-month study showed that 77% of cat owners noticed signs of improvement in their cat's pain, improving their mobility, comfort and well-being. It is safe for use in cats with stage 1 and 2 chronic kidney disease, CKD, which is reassuring. Most older cats with arthritis also are in some stage of CKD.

The most common side effects of Solensia were vomiting and injection site pain. Solensia is not for use in pregnant or lactating cats. It also can affect human women who are trying to conceive, or are pregnant or breastfeeding, if they inject any Solensia into themselves.

The dog version, betinvetmab, also made by Zoetis, is called **Librela**™. Librela just became available in the fall of 2023.

12) **Laser therapy** is a drug-free and surgery-free way to reduce pain for pets and people. It can be used virtually anywhere there is pain, swelling or inflammation. We have a separate handout on using the therapy laser. The other "modality" we use for treating many different kinds of pain is PEMF, for pulsed electromagnetic field therapy. Most people are still not aware of this newer device for pain, called **The Assisi Loop**™.

The Assisi Loop is a device we use to deliver pulsed electromagnetic wave therapy to areas of the body where there is pain or inflammation. The device sets up a microcurrent, a trickle of electromagnetic energy that stimulates cells to help speed healing. It has no side effects because it's not a pharmaceutical, and it's non-invasive. It is used for:

- Orthopedic injuries
- Degenerative disorders
- Neurological problems
- Post-surgical pain and swelling
- Inflammatory conditions
- Wound care



This is an Assisi Loop being used for stifle (knee) pain in a dog.

**Other medications and treatments:** With advanced arthritis, we may need several drugs to manage the pain. Hydromorphone, codeine, ketamine and CBD are some of the drugs we might try if needed. See our Pain Management 101 handout for more information on these.

For more information on all of these topics, visit our website library at [www.bestfriendsvet.com](http://www.bestfriendsvet.com) and our YouTube channel, BFVCTV!

The Assisi Loop:

- Reduces pain and inflammation
- Increases mobility
- Improves circulation
- Speeds healing
- Reduces the need for pain medication