

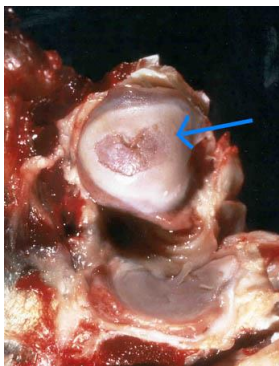
# ARTHRITIS 101

by Zeke Zekoff, DVM \*

As your dogs and cats live longer lives with the aid of modern medicines and preventative vaccinations, better diets, and control of where they wander outside the home, one of the inevitable health maladies that creeps up to affect many dogs and cats is **ARTHRITIS**. This common medical problem of senior citizens has become a life-shortening problem for many senior pets....especially larger breed dogs. What is arthritis? Basically, it is inflammation of anywhere where bones connect together in a joint. The inflammation is caused when the cartilage that lines the ends of the bones at the joint level in the body is worn down over time. Bone (a living part of the body with nerve endings) then directly contacts another bone which is missing its protective cartilage layer and the resultant pain and swelling affects the quality of life of your pet. Your pet's body reacts by adding extra bone to the area (spurs), which causes more pain. A good way to describe what happens in the joint itself is to compare it to the old Teflon non-stick pans we used to have (and may still have). When you first got the pan, the Teflon coating made an easy job of cooking scrambled eggs. Nothing stuck to the pan. Over time, the Teflon coating wore off, and when you cooked scrambled eggs, you ended up having to scrape the eggs off the pan. Your joint with arthritis is like that Teflon pan that has had its coating wear off with time.



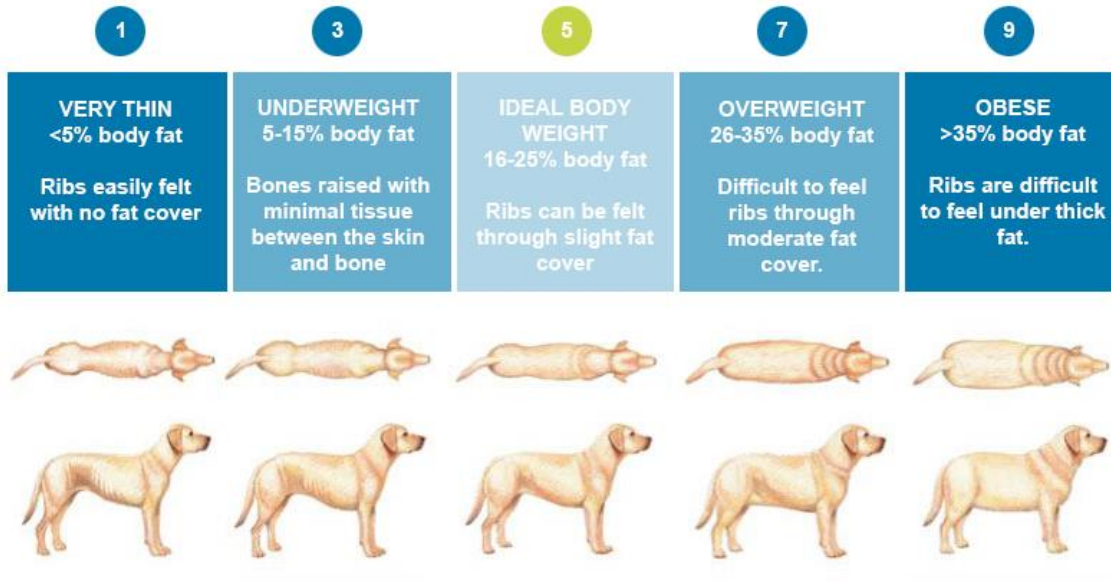
**Normal Canine Hip Joint Hip Joint with Dysplasia**



**Cartilage Erosion in Arthritis**

What can we do to help our pet that has arthritis? Many of the following suggestions are common sense suggestions that will primarily apply to dogs, but many can be used in cats also.

- Weight control** is probably the most important component of arthritis management. *This is something that must be started early on in your pet's life and should not wait till it is older.* It is the constant pounding on the joints caused by years of being overweight that causes the cartilage ('Teflon') to wear off sooner. Older dogs and cats that are obese can still benefit from weight loss, and as a result of being more mobile, can have months (if not years) added to their life spans. We can give you nutritional counseling on how to manage the obese dog and cat. The most 'guilty party' in the obese pet is its two-legged parent who 'loves' the pet to death with excessive treats. Most OTC treats are heavy in calories. You need to give less and more healthy snacks. For dogs we recommend butter-free popcorn, mini rice cakes, baby carrots or canned green beans, oyster crackers, and Cheerios. If you cut the snacks, you cut the weight! For cats, get precision self feeders with timers.



**Nutraceuticals and supplements** (not a vitamin, not a medicine) in order to encourage the body to lay down more cartilage in the joints.

The most common nutraceutical we recommend is the use of glucosamine/chondroitin (G/C). This is made out of animal cartilage, with the OTC (Over the Counter) brands using beef trachea, and their are some veterinary versions using shark cartilage (possibly better bioavailability). The theory is that when we give the body the basic building blocks for cartilage (glucosamine/chondroitin), it will then start to lay more cartilage down where it is being worn off. It also has an anti-inflammatory effect due to its actions. G/C is available for humans in many OTC brands of arthritis treatments. Many premium senior dog foods have sub therapeutic doses of G/C built into the food. Check the labels first A chewable version of this available at TSAC is called **r Zoom Chews and Dasuquin Advanced**. It is very popular and has carnitine, as well as omega-3 supplementation built into it. Another nutraceutical we carry that is a step above the Synovichews is **PhyCox-JS**. This chewable supplement is a natural source of phycocyanin



that is derived from blue sea algae and is a natural cox-2 inhibitor (fights inflammation).



- **Adequan® injections** are available as an arthritis treatment. They are not inexpensive, but they really do work. Initially used in horses (where joint problems are a constant concern), they found their way to be used in dogs and cats with joint problems. This unique chemical is proven to ‘restart’ chondrocytes (cartilage producing cells) in producing more cartilage in the joints, as well as increase synovial fluid production (joint juice) in those same joints. Adequan® Canine (polysulfated glycosaminoglycan) is administered twice a week for four weeks, then twice a month for 2 months, before tapering off to a once/month for long-term use. The drug is injected intramuscularly or subcutaneously. It goes to work in the joint in about two hours and stays in the joint for about three days. With Adequan® Canine you should see signs of improvement within two to four weeks as the effects build up in the body. Your dog (and even cats) may begin to act like the playful, active dog (cat) you remember. The other great benefit is that they can be safely used with other arthritis treatments such as nutraceuticals, pain relievers, Class IV laser treatment and nutritional supplements without any side effects. The secret is to start it early when signs of arthritis first start showing.



- **Duralactin** is also considered a nutraceutical, but its unique action deserves to be **looked at separately**. This product is made from milk whey from hyper-immunized cows from New Zealand. Its unique action helps stem the flow of white blood cells (WBC's) to the site of inflammation, such as occurs in arthritis. If WBC's collect at the site of inflammation, they will naturally break down in the area. The by-products released only add to the inflammation and resultant pain. This pleasant, vanilla-smelling tablet comes in a 1000mg dose. The usual dose for a dog is 1000mg per 40 – 80# of dog's body weight, every 12 hours, long-term. We have had many clients, who, when they start the medication, see an improvement enough to the point that they can cut back on their dog's pain medication dosing. For cats there is a smaller tablet or a liquid version.
- **Acetyl-L-Carnitine** is an amino acid that has been looked at as a compound that **helps in neurological and muscular conditions**. It is thought to facilitate energy transport and support production of acetylcholine (primary neurotransmitter). The dose we have been recommending is 50mg/kg of body weight (2.2 lbs. per kg.) every 12 hours. It is available at health food stores in 250mg and 500mg capsules/tablets.

- **Management of the environment** is an often, overlooked component of **arthritis management**. Just as we get older and do not look forward to climbing those stairs to get to the second floor, neither does your senior pet. As much as possible, we need to reduce the number of stairs that your pet will have to negotiate. Consider building a ramp outside if your arthritic dog needs to negotiate stairs to get outside. This may mean changing its place of sleep, or how it goes out of the house to use the bathroom. Slippery wood, linoleum or tile floors are hard to negotiate for your arthritis senior pet. We encourage that you lay down carpet runners or strips of carpet in those areas that are heavily traveled by your pet. Avoiding the ‘splits’ can help prevent damage to the stifles (knees) and hips of your 4-legged companion. If a dog likes to sleep in your bed, rather than it having to jump up onto

the bed, try creating a stair-case-like effect with a ramp or several ‘boxes’ of various heights so that it can more easily make it onto and off the bed. Raising your dog’s food bowl can also help with its neck and front leg joints as it eats. One last environmental change is the use of a warmer sleeping surface. Nothing can make it harder to get started in the morning or after sleeping when you have ‘cold joints’. If your pet does not have a ‘bed’ to sleep on, and it sleeps on wood, tile, or linoleum floor, try to get it to sleep on a bed that raises it above those surfaces. Larger pet stores, or Internet Stores such as Chewy.com sell ‘orthopedic’ pet beds that have ‘egg crate’ foam cushion with a fabric cover. For cats, if its litter box has high sides, get one with lower sides to make it easier to get into the litter box, and keep that litter box on the floor of the home where it spends the most time.

- **Exercise management is another important aspect.** Just like Goldilocks and the Three Bears, you do not want to over-exercise, under-exercise, but rather make it ‘just right!’ Many dogs especially will try to be brave and try to keep up with you as you walk, jog, or run. They ignore the pain signals that the body is sending out, and then the pounding on the joints will result in increased pain later on. Moderate, daily, low-impact exercise is preferred, and helps to improve strength and stamina, joint mobility, and stimulates joint cartilage metabolism. While helping to maintain your dog’s weight, it also decreases the need for pain-relieving medications. Swimming is a good aerobic exercise, and is especially good for dogs with arthritis as there is no jarring impact. Because the water supports the weight of your dog, it is a good, non-weight bearing activity. Swimming in warm water has the added benefit of relaxing tight muscles (especially important for arthritis-symptom dogs) and increasing blood circulation. Warm water relaxes muscles so the dog will not feel pain when exercising, thus improving joint lubrication. Older dogs will also benefit from the cardiovascular strengthening and weight loss that comes with swimming. An exercise regimen for each animal is defined differently, and this will have to be determined on a case-by-case basis. For cats, encourage exercise with cat trees to climb up, feeding in several locations in the house so that it does not hover in just one area. Using such things as laser pointers can encourage moderate exercise and activity in your cat.
- **Class IV Laser is a new non-invasive modality of treatment for the inflammation and pain of arthritis.** In the mid 90’s, veterinary medicine was introduced to this new form of treatment for inflammation in animals. Not the cutting type of laser you envision from the James Bond films, or from Star Trek films, but it is the use of light energy in what is called photobiomodulation. Laser (which stands for Light Amplification by the Stimulated Emission of Radiation) light in the red and the near-infrared range has biostimulatory properties. At the cellular level, the laser energy causes changes inside the cell which among other things results in a cascade of secondary effects. These include DNA and RNA synthesis; activation of fibroblasts, macrophages and lymphocytes; growth factor release; neurotransmitter release; vasodilatation; collagen synthesis; improvement of cell membrane permeability and function of the Na<sup>+</sup>/K<sup>+</sup> pump. This increased metabolic activity will increase oxygen and nutrient availability, which leads to enhanced protein and enzyme production. These factors will accelerate/stimulate cell reproduction and growth, which leads to faster repair of damaged tissues, moderates the inflammatory response, and provides analgesia. Bottom line is that with a



continued series of treatments with a Class IV laser (we have the K-laser), this non-invasive method of treatment has been shown to be anti-inflammatory, analgesic, improve vascular activity, improve nerve function, and increase metabolic activity, all without the side-effects associated with oral or injectable use of pain medications.

- Pain management via oral medications is usually the first thing people want to talk about when it comes to arthritis treatment.** Pain management is not a curative step, but a quality of life issue. Although we cannot ‘cure’ arthritis (short of total hip replacement for those dogs with hip dysplasia), we can make its quality of life much better if we can manage the pain. In recent years we have had veterinary drug manufacturers coming out with many new oral pain management drugs for arthritis. Among those medications in the NSAID (non-steroidal anti-inflammatory drugs) category are **Rimadyl®, Carprofen (generic Rimadyl®), Galliprant®, Metacam® and Onsior® (for Cats)**. These medications are good drugs, but as with headache medications for yourself, finding the right one for your dog and cat that works and has the least side-effects can be a challenge. Starting with a trial basis on various medications is a good way to start. Almost all of the medications can have effects on the body, especially the gastrointestinal tract (usually the stomach). Most of these medications do better when given with a small amount of food to help buffer the stomach. A potent and relatively inexpensive pain medication that can be added to the NSAID therapy is **Gabapentin**. It’s mechanism of action is against Neuropathic Pain, and can especially help in chronic pain situations. The use of aspirin (buffered preferred or in the form of **Ecotrin® - Maalox-coated aspirin**) can be the first start on the pain control trail. The approximate dose for a 60 lb dog is one 5-grain aspirin (325mg) every 12 hours, with a small amount of food. Smaller dogs can take ‘baby aspirin’ or the ‘low-dose adult aspirin’ which is 81mg (1 & ¼ grain). The dose is 1 tablet/15# of dog’s body weight every 12 hours with a small meal. Use only AS NEEDED! When starting any pain medication protocol, we will advise you as to potential side-effects. Most (if not all) pain medications need monitoring of blood values if you are to keep your pets on them long term. If we need to protect the stomach beyond just giving it food with the treatment, we will recommend stomach-coating and protective medications. With all the pain medications, the secret is to find the right one first, than work to reduce the dose of the medication and frequency of giving the medication to the lowest level you can and still get effective pain relief. With cats, we are limited primarily to the use of Metacam liquid, Onsior® or a baby aspirin (check with us first on the dose for this). Their unique physiology does not allow us to use the wider range of medicines we have available for dogs. Doses will be closely monitored to avoid major side effects.



### Miscellaneous arthritis management tips:

- Massage**. It can increase flexibility, circulation, calmness and a general sense of wellness. Professional animal massage therapists can be found to provide your dog or cat with a more thorough treatment.
- Extra Time**. Don’t rush a dog or cat with arthritis. It often takes extra time to walk, climb stairs, or get in and out of the car. Support and help them if needed or just give them extra time to get around.
- Peace and Quiet**. As your dog and cat ages, he or she may not be as tolerant or patient as

they used to be. Sore joints make it difficult for your pet to enjoy rambunctious, playful children. They may snap at a child if painful or strike out if forced to move suddenly. Supervise playtime and consider keeping your arthritic dog or cat away from very young children. To reduce joint pain and inflammation via a lot of movement, you may want to limit their time as the center of attention.

4. **Grooming**. Arthritic dogs and cats may have a difficult time keeping themselves clean, especially in those hard to reach areas. Help your dog and cat stay groomed by gently removing mats and tangles. Be sure to allot enough time for this as they may not be very tolerant.

5. **Omega-3 Fish Oils**. This natural ingredient can help due to its natural anti-inflammatory properties in the body. The anti-inflammatory fish oil dose is about **180 mg of EPA/10# of dog's body weight every 24 hours**. Cats do better with the DHA component of Omega-3 at a level of **130 – 150mg/cat per day**. We have some palatable solutions (Welactin) of this or also in chewable supplements (Catalyst).



6. **Acupuncture and Veterinary Chiropractic Treatment**. Alternative forms of treatment that can work for some animals. This can be combined with K-laser treatment to make it more effective, as well as some Eastern Medicine (Chinese herbs). We can direct you to where you can get this done.

7. **Stem cell Therapy**. Regenerative medicine uses a concentrated form of autologous adipose-derived (fat cells) adult stem cells to treat traumatic and degenerative diseases, including bowed tendons, ligament injuries, osteoarthritis, and osteochondral defects in horses and dogs. Another alternative is Plasma Enriched Platelets injections directly into the joints. These new and innovative treatments are somewhat costly, but it may be able to help your dog's arthritic condition. You can research this at [www.vet-stem.com](http://www.vet-stem.com) as far as methods and veterinarians who have received training in this form of treatment.

**Phew! A lot of things to think about when it comes to arthritis in pets, but we will be there to help you wade through this information. Use the above article as a primer to get to know your options and see if we can help your senior pet have a better-quality life.**