

## DEGENERATIVE JOINT DISEASE (ARTHRITIS) IN PETS

Your pet has been diagnosed with ***degenerative joint disease (DJD)***. In contrast to humans, who develop DJD as a result of aging and chronic wear and tear on joints, pets tend to develop arthritis secondary to joint trauma, instability or disease. Examples of conditions that ultimately lead to DJD include hip and elbow dysplasia and cranial cruciate ligament rupture. It is important to realize that *there is no single treatment that will eliminate or reverse DJD* once the process has begun.

What is arthritis? It is a slowly progressive condition that affects not only joint (articular) cartilage, causing it to gradually wear away, but also the joint membrane, fluid, and finally the bone underlying the joint cartilage. In a normal joint, the cartilage holds large amounts of water that give the cartilage its mechanical properties. Once the joint is damaged, inflammation develops and prevents the joint from maintaining a normal balance of chemicals that keep the joint healthy and allow the cartilage to retain the water necessary for proper function. The cartilage gradually becomes dehydrated and more easily stressed by daily activities. The fluid that bathes the cartilage and reduces friction between the joint surfaces also loses its viscosity or “thickness”, decreasing its lubricating properties and further damaging the joint surfaces. As the cartilage wears away, more inflammation develops and a vicious cycle of damage occurs. Cartilage can become completely worn away, creating “bone on bone” contact in the joint. This is a very painful situation.

Signs of DJD usually occur long after the process begins; therefore *early identification of arthritis is critical to effective treatment and more successful outcomes*. Pets with DJD may appear to be “slowing down” and may have difficulty rising and lying down. Routine activities like climbing stairs and jumping into a vehicle may be challenging. Your pet may want to take shorter walks or sit or lie down during activities. Lameness in the affected limb or limbs may be seen- by this time, DJD may be very advanced.

Diagnosis is relatively easily made using radiographs (x-rays). In some cases, arthroscopy may be recommended to allow direct assessment of the cartilage surfaces, something that is not possible when looking at plain x-rays.

Because no single drug or treatment can “cure” arthritis, therapies that help to preserve cartilage are combined with treatments that reduce inflammation. This is called ***multimodal DJD therapy***. The mainstay of DJD treatment, especially for acute “flare-ups” and for chronically affected joints, are **non-steroidal inflammatory drugs (NSAIDs)**. Examples of NSAIDs used in our clinic include Rimadyl, Metacam, Deramaxx and Previcox. These drugs very rapidly reduce inflammation in affected joints and also act as analgesics (pain relievers). Over-the-counter NSAIDs for humans (aspirin, ibuprofen, acetaminophen, naproxen) should NOT be used for treatment of arthritis in either dogs or cats. In fact, some of these drugs can create rapid, fatal complications. Over time, the lowest effective dose of an NSAID is given to avoid long term complications with their use and in many patients, NSAIDs can be discontinued as other modalities assist in controlling the symptoms of DJD.

Another component of multimodal therapy of DJD are the **chondroprotectants**. The most commonly used chondroprotectant agent is Adequan (polysulfated glycosaminoglycan). Adequan is given by injection and moves into the joints and joint cartilage. It helps the cartilage to hold more water, allowing it to resist degradation and retain its mechanical properties, modifying the progression of arthritis. Adequan is also thought to act as an anti-inflammatory and is probably most appropriately used earlier in the process of DJD (hence the importance of early recognition of problems in the joint).

**Nutraceuticals** such as glucosamine, chondroitin sulfate, and free fatty acids have been controversial for many years but recent research suggests that they are a valuable tool in the multimodal treatment of DJD. An excellent quality, highly bioavailable glucosamine/chondroitin supplement is Dasuquin (Nutramax Laboratories). Dasuquin also contains avocado soybean unsaponifiables - ASU- which also acts as an anti-inflammatory and works synergistically with the other components. Omega 3 fatty acids have proved to have anti-inflammatory actions and can be administered separately (Welactin- Nutramax Labs) or in specialty diets such as Purina j/m or Hill'd j/d.

As in humans, obesity places extra stress on the joints of our patients and may magnify the effect of conditions like DJD. **Weight loss** can be a very powerful treatment modality and reduces the damage to arthritic joints. Diets like Purina j/m contain supplements that reduce inflammation in joints suffering from DJD and can be used for weight loss as well. **Physical therapy**, while aiding in maintenance of muscle mass and joint range of motion, can also be extremely beneficial in achieving weight loss and is strongly recommended for patients with chronic DJD.

Recently, the area of **regenerative medicine** has gained significant attention in the treatment of tissue damage and facilitation of the body's repair mechanisms. There are a number of these treatments available including stem cell therapy (VetStem), interleukin-1 receptor antagonist protein (IRAP), platelet rich plasma, and ACell Vet. The mechanism of action of most of these treatment methods isn't definitively known, however most are thought to work as anti-inflammatories, blocking the production or action of destructive enzymes, or by facilitating tissue repair processes. These modalities are often used in situations where a patient is responding poorly to the above interventions.

In cases where there has been an acute exacerbation of arthritis or in chronic cases where pain control is insufficient, centrally acting **analgesics** such as Tramadol, a narcotic, or gabapentin may be prescribed. Both can be rather safely administered on a chronic basis.

Finally, **therapeutic laser treatments and acupuncture** may assist in reducing inflammation and blocking pain pathways.

In some cases (such as hip dysplasia), surgical intervention may eliminate pain and return the joint to normal function. Procedures such as total hip replacement may be options for your pet and will be discussed separately.

In conclusion, your pet will benefit from a comprehensive, multi-modal approach to its arthritis. Early identification and treatment give us the best opportunity for a successful outcome but please understand that DJD is a slowly progressive process and that every patient responds differently to treatment. In most situations, long term (or life-long) treatment will be necessary and re-evaluation of the treatment protocol for each patient will be required as time goes by and the disease process progresses. Periodic patient assessment will help us to tailor the treatments to your pet's individual and changing needs.

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