

Degenerative Joint Disease and Your Pet

Degenerative joint disease (DJD), also known as arthritis or osteoarthritis (OA), is a progressive deterioration of joint cartilage resulting in inflammation and irreversible changes in the joints. DJD can affect cats and dogs, males or females of any age or any breed. Two broad classes of DJD are primary and secondary. Primary DJD is believed to be a result of long-term exercise combined with aging and has no known predisposing cause. Secondary DJD is much more common and is the result of some initiating cause such as joint instability, trauma, bone or cartilage defects or poor joint conformation. Working dogs, athletic dogs, and obese animals are at increased risk for developing DJD because of the increased stress placed on the joints.

DIAGNOSIS

The diagnosis of DJD is usually made based on clinical signs found in the history and physical examination. Pets suffering from DJD often show intermittent lameness that slowly becomes more severe and frequent over time. The clinical signs are often worse after exercise, prolonged periods of recumbency and weather changes. Some pets will walk with a stiff gait, rather than exhibiting obvious lameness. On physical examination pets with DJD may show stiffness in their gait, reduced range of motion in the affected joint(s), crepitus, joint swelling, pain and joint instability. Often radiographs will be taken to assess the degree of change in the affected joint(s), to assess changes over a period of time or to look for fractures, bone infections or tumors. In some cases, the severity of the changes seen on radiographs does not correlate with a pet's clinical signs. Additionally, other diagnostic tools may be employed to better define the problem in a specific animal. Joint fluid may be collected for analysis. Blood work may be needed to look for underlying metabolic problems, infections or to check the health of the liver and kidneys prior to using various medications.

TREATMENT OPTIONS

There are a variety of treatment options available for pets suffering from DJD. These treatments can be generally classified as drugs and supplements to decrease inflammation and pain, weight optimization, treatments to reduce pain, supplements to protect the joints, diet, surgery, rehabilitation, mechanical devices and lifestyle changes.

1.) Medical Analgesia

a.) Anti-inflammatory Drugs

i.) NSAIDs - Non-Steroidal Anti-Inflammatory Drugs include such over the counter medications as aspirin, ibuprofen, and acetaminophen and such prescription medications as **carprofen (Rimadyl®, Novox®), etodolac (EtoGesic®), deracoxib (Deramaxx®), meloxicam (Metacam®), firocoxib (Previcox®) and robenacoxib (Onsior®)**. Over the counter medications are generally less expensive, but may not be as effective and are generally not as safe as prescription medications. The primary side effects of these medications are gastrointestinal problems, including vomiting, diarrhea and loss of appetite, which may progress to more severe problems such as stomach or small intestinal ulceration. Some of these medications are not recommended for pets with documented bleeding disorders or liver or kidney problems. Also, there has been some research that indicates that aspirin may actually damage cartilage over time. These medications are typically started at an initial recommended dose. The dose is then decreased to the lowest effective level.

ii.) Glucocorticoids or Steroids - The most common oral steroid used to treat DJD is prednisone or prednisolone. Steroids are more potent anti-inflammatory drugs than NSAIDs, but they also can have significant side effects. Most animals on steroids will experience increased drinking and urination and increased appetite. As a result some animals may have urine or stool accidents in the house. Additional side effects include increased panting, behavioral changes, slowed healing and suppression of the immune system making infections a potential problem. Pets are typically started on an initial dose of steroids to control the inflammation. As with NSAIDs, the steroid dose is then decreased to the lowest level that will keep the pet comfortable. In some cases steroids can be injected into affected joints.

NOTE: NSAIDs and steroids should **NEVER** be given together as severe gastrointestinal upset and/or ulceration may occur. Please let us know if your pet is already taking either type of medication.

b.) Gabapentin is an anticonvulsant that also has analgesic properties and is useful as adjunctive treatment for chronic pain in dogs and cats. A reduction in gabapentin dose may be necessary for those pets with pre-existing liver and/or kidney disease. The most common side effect is sedation. Abrupt discontinuation of the drug may precipitate seizures in animals prone to them. A human product called Neurontin® contains xylitol and should **NEVER** be used in dogs and with great caution in cats since xylitol can cause hypoglycemia (low blood sugar) and liver toxicity.

c.) Amantadine is an NMDA receptor antagonist that is useful as adjunctive treatment for chronic pain in dogs and cats, particularly in those patients tolerant of opioids. Amantadine is often combined with NSAIDs or opiates. Use with caution in patients with glaucoma, liver disease, renal disease, congestive heart failure or seizure disorders. Side effects include agitation, loose stools, flatulence and diarrhea.

d.) Tramadol – In humans, tramadol is metabolized into a variety of metabolites with opioid-like activity; how much of this occurs in pets is debatable. Tramadol can be used separately or in combination with steroids, NSAIDs and chondroprotective agents and can be used in dogs and cats. A reduction in tramadol dose may be necessary for those pets with pre-existing liver and/or kidney disease. Side effects from tramadol are rare, but include upset stomach, pupil constriction, decreased heart rate, cough suppression and constipation. A human product called Ultracet® contains acetaminophen in addition to tramadol and should **NEVER** be used in cats at any dose and should be used with great caution in dogs.

e.) Oral Opioids are potent pain relievers and possible options include codeine and hydrocodone for dogs and buprenorphine for cats.

f.) Anti-inflammatory Supplements

i.) Avocado/Soybean-Unsaponifiables (ASUs) may protect cartilage by inhibiting cartilage degradation and promoting cartilage repair and can be found in **Dasuquin®**, which also contains glucosamine, chondroitin and MSM (see below).

ii.) Omega-3 Fatty Acids (Eicosapentaenoic acid or EPA in dogs and Docosahexaenoic acid or DHA in cats) may reduce the degree of inflammation and can be found in **Hill's Prescription Diet j/d Canine®** (see below) and **Free Form Snip Tips®**.

iii.) MicroLactin® is dried milk protein from the milk of hyperimmunized cows. Classified as a biological response modifier, MicroLactin® is found in **Duralactin®** and contains biologically active factors that reduce inflammation and subsequent tissue damage by blocking

cytokines, thereby reducing neutrophil activity. Cyclo-oxygenase (COX) activity is not affected by MicroLactin®, thereby maintaining normal protective levels of prostaglandins, reducing the risk of gastrointestinal upset.

2.) Weight Optimization – Reducing the weight of overweight pets is one of the most important aspects of effectively treating DJD because it reduces the amount of stress placed on joints and reduces the amount of biologically active adipose tissue that produces pro-inflammatory compounds. For most animals weight loss involves dietary management (adjusting the amount and/or type of food that is fed) and exercise. Often prescription diets that are high in fiber and low in calories are recommended to maximize weight loss. Most treats should be eliminated. Some low calorie treats, either store bought or homemade, may be permissible. Many dogs enjoy fruits and vegetables and these can be used as treats without adding significant amounts of calories or fat to the pet’s diet. Some overweight dogs suffer from low thyroid levels (hypothyroidism). These dogs will need to have their thyroid levels medically supplemented in order to increase their metabolism and encourage weight loss.

3.) Physical Analgesia

a.) Laser Therapy applies the concept of photobiostimulation to provide pain relief and a decrease in the inflammatory cycle. Using a veterinary-specific unit, light of a specific wavelength is applied to the affected area(s) for specific periods of time resulting in numerous biologic and physiologic benefits.

b.) Acupuncture is intended to correct imbalances in the body’s flow of energy (Qi or Chi) and involves the insertion of special needles into the skin at specific locations on the body. The needles may be manipulated manually or electrically. Acupuncture has been used to treat a wide variety of conditions including acute and chronic pain in both people and pets.

c.) Myofascial Trigger Point Treatment – Myofascial trigger points are essentially hard knots in muscles caused by overuse. These trigger points do not relax and can cause pain. Trigger points may irritate the nerves around them and cause referred pain, or pain that is felt in other parts of the body. Treatment of trigger points may include massage, dry needling (insertion of needles) and/or injections of local anesthetics and/or steroids into the trigger points.

d.) Transcutaneous Electrical Nerve Stimulation (TENS) involves the stimulation of nerves to reduce both acute and chronic pain. A TENS unit is connected to the skin with electrodes and electrical pulses are applied. These electrical pulses vary by pulse width, frequency and intensity.

4.) Chondroprotective Agents include a number of compounds, including polysulfated glycosaminoglycans (PSGAGs) and are intended to maintain and restore the mechanisms that protect cartilage by encouraging growth of cartilage cells and joint fluid, minimizing inflammation and preventing or removing blood clots in nearby blood vessels. The most commonly used agents are glucosamine, chondroitin and methylsulfonylmethane (MSM). They can be administered orally (**Dasuquin®** above and **Cosequin for Cats®**) or by injection (**Adequan® Canine**). These products are generally very safe for pets. Typically, pets are maintained on a consistent dose for long periods of time, often for the life of the pet. It may take six to eight weeks before clinical improvement is seen when using these products. Many of these agents are available without a prescription and are therefore not tightly regulated by the FDA. Consequently, the consistency and quality of ingredients can vary widely between products.

5.) Diet – Hill’s Prescription Diet j/d Canine® can help manage canine arthritis. Beneficial nutritional components include: a.) high levels of EPA, which works to turn off the gene that causes cartilage damage, b.) high levels of omega-3 fatty acids to help reduce mediators that cause inflammation, c.) glucosamine and chondroitin to provide building blocks for cartilage repair and d.) L-carnitine to help maintain optimum body weight in dogs.

6.) Surgery

a.) Orthopedic Surgery is intended to support, repair or replace damaged joints. These surgical procedures can dramatically decrease pain and increase mobility, thereby improving the comfort level of many pets. These procedures are best performed by a board certified veterinary surgeon.

b.) Stem Cell Therapy is a new area that shows promise in the treatment of DJD in pets. Stem cells are multipotent cells, meaning they can develop into a wide variety of tissue types, induce repair and stimulate regeneration. First, under local or general anesthesia, a sample of the patient’s own abdominal fat is collected. The fat is then shipped to a special laboratory where the patient’s stem cells are isolated and concentrated from the fat. Finally, the patient’s stem cells are returned to the veterinary clinic where they are injected directly into the site of the injury and/or injected intravenously.

7.) Physical Rehabilitation involves the treatment of injury or illness to decrease pain and restore function. Rehab for your pet may include: warm water whirlpool, underwater treadmill, chiropractic adjustment, TENS therapy, acupuncture, hot and cold therapy, massage, ultrasound treatment and exercises to stretch, strengthen and increase range of motion.

8.) Mechanical Devices – In some cases, customized braces, harnesses and/or carts may be very helpful in decreasing a pet’s discomfort and increasing their mobility.

9.) Lifestyle Changes – Light to moderate exercise is generally recommended for most animals with DJD in an effort to control weight and to maintain muscle mass and muscle tone. However, severely affected animals may need a period of enforced rest. Running, jumping, quick turns and stairs should be avoided due to the increased stress these activities place on the joints.

With proper management many pets with DJD can be made significantly more comfortable and their quality of life can be improved. The type of treatment to be used will depend on the individual pet and will be decided between the pet owner and the veterinarian.

If you ever have any questions regarding any of the above information, please do not hesitate to contact us. Visit us online at www.WhiteBearAnimalHospital.com.

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