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- 6 steps to treating creaky joints
- Top 5 herbs for easing pain

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HCM...
the number one heart disease in felines
It's currently incurable – but the right treatment can prolong his life.

BONUS INSIDE!



6

STEPS

to treating *arthritis*

It's the **LEADING** cause of **CHRONIC** pain in dogs. A multifaceted **HEALING** plan that draws on a range of therapies offers the **MOST** relief.

By Michelle Tilghman, DVM, CVA, CCRP, and Rosemary Tilghman, BS

Loyal, intelligent, loving...these are the words that come to mind when we think about dogs. They give so much to us, but how can we give back? One of the best ways is to become familiar with the leading cause of chronic pain in dogs.

Osteoarthritis is responsible for many veterinarian visits. Approximately ten to 12 million dogs have signs of osteoarthritis, and on average, veterinarians see about 45 cases a month. It's a serious problem, and if not treated can decrease both the quality and length of a dog's life.

Arthritis is defined as inflammation in the joint. The joint can actually be thought of as an "organ", with separate parts that come together as one (see sidebar opposite). Each part of the joint is affected, causing overall inflammation.

Step up to effective relief

Osteoarthritis needs to be treated with a multimodal approach, an integration of all medicines. This approach, from first to last, decreases pain by using both conventional and alternative

therapies. It is important to incorporate each modality because it covers different aspects of joint health.

1

In conventional medicine, drugs for chronic pain (non-steroidal anti-inflammatories or NSAIDS) are most commonly prescribed. Newer synthetic analgesics can be used with NSAIDS to increase pain control in instances of severe discomfort. Neuropathic (nerve) pain is very hard to control; Gabapentin is used for this. The use of different pain medications together is important because the pain cycle has to be interrupted in different areas of the joint. When given pain medication, the animal is more likely to respond to other modalities. For example, using short-term NSAIDS can increase joint mobility and therefore encourage the dog to use the joint properly. He has to be out of pain before he will be motivated to use the affected joint and regain strength.

2

Nutraceuticals encompass any substance from food that can provide medical benefits. The main nutraceuticals that can help with osteoarthritis are chondroitin sulfate, glucosamine, hyaluronan and the Omega-3 fatty acids.

- *Chondroitin sulfate* is an important structural component of cartilage and provides resistance to compression.
- *Glucosamine* is an amino sugar and precursor in the synthesis of glycosaminoglycans, a major component of joint cartilage.
- *Hyaluronan* (also called hyaluronic acid, HA) is an anionic, nonsulfated glycosaminoglycan usually found attached to proteins. HA and glucosamine are useful in supporting the joint, especially the articular cartilage.

Using these to supplement the diet can help joints by providing precursors for the synovial fluid and cartilage.

The Omega-3 essential fatty acids are EPA (eicosapentaenoic acid) and DHA (docosahexaenoic acid). Mammals must ingest these from a food source and do not produce them internally. The best sources of Omega-3s are fish such as sardines and anchovies. Omega-3s help interrupt the inflammation cycle in an arthritic joint.

3 Diet and nutrition are an essential component in treating osteoarthritis. In one study, it was found that overweight dogs with hind leg lameness and osteoarthritis experienced significant improvement with weight reduction. With osteoarthritis, the more weight the joint bears, the weaker it will become. In obesity, fat cells contribute to a level of chronic low-grade inflammation that can trigger a number of other problems. It is important for dogs to be within their normal weight range to decrease the severity of osteoarthritis.

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Four-part *harmony*

The joint can be broken down into four parts:

- 1 **Articular cartilage:** This is what covers the ends of the bones. In osteoarthritis, the cartilage becomes worn down and the joint does not glide over the surface of the cartilage.
- 2 **Joint capsule:** The ligamentous sac that surrounds the joint. It has an inner and outer layer and provides stability to the joint.
- 3 **Synovial fluid:** The viscous fluid inside the joint that decreases friction between each articular cartilage.
- 4 **Subchondral bone:** The bone the articular cartilage covers.

Since all parts of the joint are related, if one is injured it creates a snowball effect. In the early stages of osteoarthritis, the changes may be reversible, but in the later stages, chronic inflammation destroys the joint. In chronic arthritis, the articular cartilage is destroyed and the joint is down to the subchondral bone. This is where the phrase "bone on bone" comes from. When this happens, the entire joint becomes inflamed and the body produces calcium around the joint and joint capsule.

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Pain shows in MANY ways

The main symptoms of arthritis are pain and lameness. However, many dogs are stoical, so even with palpation they don't show signs of pain. And dogs are masters at compensating with the other three legs to minimize the pain. But pain can be seen in other ways, such as lameness, lethargy, aggression and obesity. Not wanting to walk as far, lying down on a walk, snapping at other dogs in the family, and isolating behavior can all be signs of pain. Vocalization is not an accurate indicator of pain in dogs. To diagnose arthritis, a thorough exam is needed by a veterinarian. This exam should include gait analysis, muscle and joint palpation, and radiographs (x-rays).

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4 Physical therapy is also important for the treatment of osteoarthritis. The benefit is that it gets a dog up and moving.

Geriatric animals with osteoarthritis usually have muscle atrophy or wasting of the limb where the lameness is present. For example, hind end weakness is usually caused by atrophy of the pelvic stabilizer muscles (the gluteal, adductors and hamstrings). These muscles stabilize the pelvis and make it easier to stand and walk with the rear legs.

In physical therapy, an underwater treadmill and exercises can be used to help build muscle mass, which makes everyday tasks such as walking, sitting and standing easier. A regimen of home exercises can also be used when the dog is not in physical therapy. Over time, physical therapy and home exercises will increase strength. Physical therapy can also be helpful for obese animals by decreasing weight while building muscle. It's the same theory as using cardio and strength training. Overall, physical therapy and home exercises are among the most important modalities. In other words, if the dog doesn't use it, he will lose it.

5 Traditional Chinese Medicine (TCM) encompasses acupuncture, massage, herbs and energy work (Qi Gong). Acupuncture and herbs are most commonly used to treat osteoarthritis. In fact, the





Balancing act

– Omegas 3 and 6



largest category of TCM herbs is used for osteoarthritis. Electro acupuncture is very effective at reducing the pain of osteoarthritis by increasing blood flow to the joint, using both spinal and central nervous system pathways and neurotransmitters for pain control.

TCM looks at how the whole body is affected by osteoarthritis. For example, in hind end weakness the dog is likely to overcompensate in the front end. Other changes also happen internally and affect the entire body, including the dog's attitude.

In one study, it was found that **OVERWEIGHT** dogs with hind leg **LAMENESS** and **OSTEOARTHRITIS** experienced **SIGNIFICANT** improvement with weight **REDUCTION**.

6 Regenerative medicine or stem cell therapy also plays a role in treating arthritis. Veterinarians are using the animal's own fat tissue for stem cell therapy, with great success. Therapeutic lasers, meanwhile, use a combination of light wavelengths combined into a single beam to reduce inflammation in the joint.

Osteoarthritis affects many dogs, so it's important to have your own companion checked for early signs of the disease. If properly diagnosed, there are many ways to effectively treat it. If your dog might be in pain, don't you owe it to him to help him feel better? 🐾

Dog lovers have long turned to fatty acids to rejuvenate lackluster coats. More recent studies have shown that the benefits of Omega fatty acids extend beyond simple aesthetics, and play a role in controlling allergies, inflammation and overall general health.

- The inability of animals to synthesize Omega-6 and Omega-3 fatty acids via $\Delta 12$ and $\Delta 15$ desaturases is the cornerstone of fatty acid essentiality. Both Omegas 3 and 6 are the biologic foundation in a range of metabolic processes – including immune function, histamine reaction and inflammatory response. If the diet contains too much Omega-3 and not enough Omega-6 (or vice versa) these metabolic processes cannot properly take place.
- Processed dog foods also contribute to the imbalanced ratio of EFAs. Biochemically delicate EFAs face exposure to heat and oxygen during the manufacturing process. This renders them rancid and much less beneficial. Ingredients are listed on the food's packaging, but their presence in full active form is questionable. Inappropriate storage in the distribution process and on store shelves also contributes to this rancidity.
- Chronic conditions and age affect a dog's biologic ability to make the best use of dietary EFAs. Both these factors contribute to a decrease in metabolic activity. The immune system's ability to regulate healthy histamine activity declines. Endogenous enzymes are depleted. As a result, EFAs and dietary nutrients are misused.

A quality supplement will contain a blend of flaxseed oil and virgin olive oil in addition to fish oil (such as salmon). Additional EPA and DHA in an antioxidant-protected EFA formula provide maximum benefits. By replenishing the diet with a robust fatty acid supplement, we can help optimize the diet while maintaining healthy inflammatory reaction and supporting overall health.