

# Osteoarthritis & Compliance

## Arthritis is a common concern for owners of older dogs

and it has been estimated that some form of osteoarthritis affects 20% of dogs age 1 or older. Osteoarthritis (OA) is a progressive disease characterized by joint pain and tenderness with local inflammation, cartilage loss, and sclerosis of subchondral bone. Trauma is the leading cause of OA with other risk factors being age, size, genetic predisposition, excessive exercise, and obesity.

### KEY POINTS

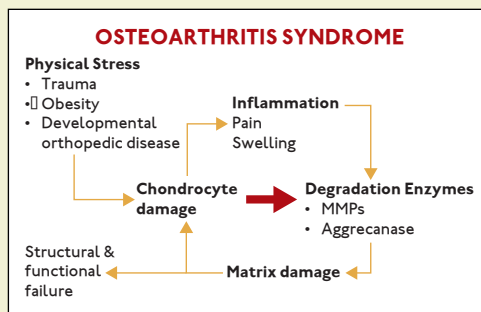
- Pain and disuse are the primary signs of OA.
- Healthy articular cartilage consists of chondrocytes, extracellular matrix (collagen and proteoglycans), and water.
- Injury to the joint disrupts normal homeostasis resulting in a cycle of inflammation and production of degradative enzymes.
- Management of osteoarthritis consists of controlling inflammation and ameliorating the degradation process.
- In the dog, the chondrocyte membrane selectively stores eicosapentaenoic acid (EPA), which controls inflammation and stops proteoglycan degradation.
- Omega-3 fatty acids and a low omega-6 to omega-3 ratio help reduce mediators that cause inflammation.
- Owners of older dogs are receptive to support diets to treat arthritis.

### OSTEOARTHRITIS — A PROGRESSIVE DISEASE

Articular cartilage is composed of chondrocytes and a matrix, which includes several types of collagen and proteoglycans. Damage to chondrocytes causes both inflammatory mediators and degradative enzymes to be released, which attack cartilage, degrading joint tissues further. Disruptive changes in joint cartilage are considered to be irreversible, resulting in joints that are unable to tolerate normal loads, which leads to further damage, inflammation, mechanical dysfunction, and progressive degeneration. Debilitating in varying degrees, OA can present with a variety of additional signs, such as personality change, which can be confusing to the pet owner.

### TREATMENT

Although the degradation process of osteoarthritis is irreversible, it can be ameliorated by treatment of inflammation with antiinflammatories and supplementation to block enzyme production and support the repair of collagen. Canine cartilage degradation is mainly caused by the enzymes metalloproteinase (MMP) and aggrecanase. It has been shown that high levels of EPA, the bioactive fatty acid for canine cartilage, control inflammation and stop the fragmentation of cartilage by turning off signal RNA (mRNA) that initiates production of MMPs and aggrecanase. In addition, natural glucosamine and chondroitin sulfate supplements help maintain joint and cartilage health by helping to repair collagen.



### DIET FOR MANAGEMENT OF OSTEOARTHRITIS

A diet formulated for older dogs with early and middle-stage osteoarthritis that includes EPA, omega-3 fatty acids, glucosamine, and chondroitin can aid in management and support of arthritic joints by slowing down the degradation process and helping to repair collagen.

### CASE STUDY

#### OSTEOARTHRITIS Sophie



#### Hx

- 10-year-old spayed Basset hound
- 42 pounds
- BCS 3 (Ideal body weight = 40 pounds)

#### Dx

- Medical exam shows OA with hips and stifle joints most affected

#### Rx

- Treat for inflammation and pain
- Begin feeding joint support food
- Manage food and treats to effect weight loss

#### PROBLEM

Arthritis and recent increase in weight

#### SOLUTION

Please turn the page ...

## SOLUTION

Sophie has been a patient at the Holter Veterinary Clinic her entire life. She has always weighed a few more pounds than she should and Mr. Kent, her owner, had been able to get her to lose weight in the past by feeding Prescription Diet® Canine r/d® and following an exercise program. However, Mr. Kent reported that Sophie recently has had trouble standing up, especially in the morning; has had difficulty going up and down the stairs; and is now reluctant to go on evening walks. With less exercise, she is beginning to gain weight again. The whole family has noticed that Sophie seems to be in pain at times.

**Recommendation**

Dr. Holter performed a wellness exam with a blood profile. Sophie's renal values were on the upper limits of normal but all other parameters, including urinalysis, were fine. An osteoarthritis workup was recommended and Mr. Kent agreed. Radiography showed a decrease in width of the joint space and some opacity in subchondral bone on her femurs. Because Sophie seemed to be in pain during the exam, Dr. Holter recommended a nonsteroidal antiinflammatory for a few weeks to help decrease the inflammation and resultant pain. She also recommended a new joint support food (Hill's® Prescription Diet® Canine j/d™) to help stabilize Sophie's hips and stifle. She explained to Mr. Kent that clinical trials have shown the efficacy of joint support food for dogs with arthritis, and reiterated that keeping the weight off would eliminate the stress injuries caused by overweight that are an integral part of the arthritis syndrome. She also pointed out that the lower protein and phosphorus levels in the new food were good for a dog Sophie's age. Once she was stabilized and no longer in pain, Sophie could resume mild exercise like short evening walks.

- Sophie was to begin eating Hill's Prescription Diet Canine j/d. The new food would be mixed with the old food 25%/75% for a few days; then 50%/50%; 75%/25%; and then 100% new food (1¼ cup in the morning and 1 cup in the afternoon).

**Acceptance**

Mr. Kent wanted to do everything he possibly could to make Sophie comfortable, and agreed to the food change. He also was pleased to learn that it was an appropriate new product for her age group, that the food relieved pain in clinical trials, and that Sophie could be treated for pain with antiinflammatories when needed. His remaining concern was treats for Sophie because the family snacked on popcorn in the evenings while watching television together, and he didn't want to have to exclude her. Dr. Holter observed that popcorn treats were probably not the best way to keep weight off, and recommended an alternative: a few kibbles of Sophie's daily allotted food could be put into a covered jar to use as an evening treat.

**Follow-Through**

The next day, Charlotte, the compliance technician, called Mr. Kent to see how Sophie was doing with the pain medicine and transition to the new food. Mr. Kent told her that although Sophie was not in pain and had adjusted nicely to the new food, she seemed hungry. Charlotte suggested that he try feeding Sophie a combination of ¼ can of Canine j/d mixed with water and ¾ cup dry Canine j/d, twice a day. This would fulfill Sophie's established daily calorie requirement but could help increase satiety. When Charlotte called 2 weeks later to schedule a recheck and weigh-in, Mr. Kent reported that Sophie didn't look like she'd lost any weight but at least she didn't seem hungry after the diet adjustment.

**Outcome for Sophie**

At her 2-month recheck, Sophie had actually lost half a pound and Mr. Kent said she was no longer struggling to get up in the morning or to get up the stairs. She seemed more comfortable, was eager to go on walks, and didn't lag behind as she had been. Mr. Kent and his entire family were happy to see their friend back in the middle of things and without pain.



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**Sophie is lucky that her family recognized she was in pain, as many pet owners just think that their pet is getting "old and lazy" when their behavior changes. In addition to pain medication and a new food, the doctor wisely advised substituting some daily kibble for popcorn treats, a healthy alternative to help her lose some weight. Timely follow-through to see how Sophie was doing provided welcome support, especially appreciated if clients are having difficulty. After 1 month, the Kents could see that Sophie was more active and feeling better. Although they could not see any weight loss as yet, the call inviting Sophie back for a re-check and weigh-in encouraged them to continue the recommended care. Sophie is a success story. If you have a similar success story, why not ask your client's permission to include it on your website, in a newsletter, or as part of a display in your reception area to help others recognize arthritis?**

**FORMULA FOR COMPLIANCE SUCCESS\***

C = R + A + FT

C = Compliance standards of quality patient care

R = Recommendation & Reinforcement by health care team

A = Acceptance of protocol by owner

FT = Follow-Through by health care team

\*See also, *Compliance in Companion Animal Practices*, © 2003 American Animal Hospital Association (info@aahanet.org), sponsored by an educational grant from Hill's Pet Nutrition, Inc.

