



# Clinical Evidence Report

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## A MULTI-CENTER STUDY OF THE EFFECT OF A THERAPEUTIC FOOD SUPPLEMENTED WITH FISH OIL OMEGA-3 FATTY ACIDS ON THE CARPROFEN DOSAGE IN DOGS WITH OSTEOARTHRITIS.

Fritsch DA, Allen TA, Dodd CE, et al. *J Am Vet Med Assoc.* 2010. In press.

### BACKGROUND

Osteoarthritis (OA) or degenerative joint disease is a chronic, progressive disease characterized by pathological changes of movable joints accompanied by clinical signs of pain and disability. OA is associated with degeneration of articular cartilage, loss of proteoglycan and collagen, proliferation of new bone, and a variable inflammatory response. OA has been estimated to affect up to 20% of the canine population over 1 year of age. The goals of managing OA include: 1) prevention or risk factor management, 2) managing progression of the disease, and 3) controlling clinical signs. Proper nutrition, weight control, controlled exercise, physical therapy, anti-inflammatory and analgesic medication, and other disease-modifying agents are often incorporated into all three categories to manage OA. Previous studies demonstrated that a food containing high levels of eicosapentaenoic acid (EPA) helped improve the clinical signs of osteoarthritis in pet dogs, especially in the context of rising from a resting position, walking, running and playing with their owners. The mechanisms likely for the potential clinical benefits of omega-3 fatty acids include controlling inflammation and reducing the expression and activity of cartilage proteoglycan degrading enzymes. The primary objective of this study was to determine if a therapeutic food alters the dose of a non-steroidal anti-inflammatory drug (NSAID) required to manage clinical signs in dogs with OA.

### STUDY DETAILS

The investigation was conducted as a 90-day prospective, randomized (dietary treatments), double-masked, controlled study in 33 veterinary hospitals in the United States. OA was diagnosed based on compatible history, clinical signs and radiographic evidence of arthritis in one or more joints on the clinically affected limb. To be eligible for inclusion, dogs also had to be at least 1 year of age, weigh 25 pounds or more, consume dry food and be free of systemic disease as determined by history, physical examination, complete blood count (CBC), serum biochemistry analysis and urinalysis. Exclusion criteria included acute traumatic injuries, complicating disease conditions, preexisting conditions for which corrective surgery was anticipated during the feeding period, and recent intra-articular injection or arthrocentesis. Dogs satisfying the inclusion/exclusion criteria were randomly assigned to receive either a typical commercial dog food (control food) or a test food for 12 weeks. The test food (Hill's® Prescription Diet® j/d® Canine) contained a 39-fold increase in EPA concentration (0.4% EPA dry matter basis), compared to the control food (<0.01% EPA, dry matter basis). Owners could feed either a dry food or a combination of dry plus canned foods of the control or test formulas.

Pet owner and veterinary clinical evaluations were completed at 0, 3, 6, 9 and 12 weeks. The pet owner evaluation consisted of a standardized questionnaire that included assessments of the frequency and severity of the following signs: difficulty rising from rest, limping, stiffness, soreness when touched, vocalizing in pain, aggression, lagging behind on walks, and reluctance in running, walking, jumping, climbing stairs, playing and general activity. Based on these activities, pet owners were also asked to provide an overall assessment of the severity of their pets' pain. The veterinary clinical assessment consisted of careful evaluation of the following parameters: reluctance to bear weight, lameness, reduced range of motion, pain on palpation of the affected joint and reluctance to hold up the contralateral limb. All dogs were being administered the NSAID carprofen to help manage clinical signs of OA. At each evaluation period, the veterinarian considered the results of the orthopedic examination and the pet owner's assessment to determine if lowering the dose of carprofen was feasible.



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Carprofen dose reductions were possible in 46% of dogs consuming j/d Canine vs. 32% of dogs eating the control food. Carprofen dose increases were necessary in 5% of the dogs consuming the control food and in only 2% of dogs consuming j/d Canine. For the group receiving j/d Canine, the mean carprofen dose reduction was 25.6%. Significantly greater reductions in carprofen dose [mg/lb. body weight] were possible in the dogs consuming j/d Canine, compared with the control group ( $p=0.025$ ).

## CLINICAL IMPACT

This study indicates that nutritional management using a food with high levels of total omega-3 fatty acids and EPA helps improve the clinical signs of osteoarthritis in dogs. Furthermore, doses of NSAID can often be reduced in dogs with osteoarthritis consuming j/d Canine.