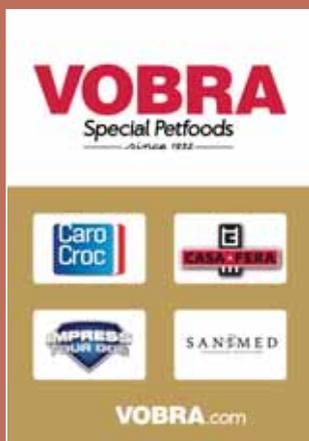




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Fish Oil in Mobility Foods for Dogs

Dogs afflicted by degenerative joint disease move slower and have trouble when getting up from a lying position. The pain prompts the dog to diminish use of the joint. Motion becomes more and more restricted and lameness may develop. Most of the dogs concerned are older and suffer from so-called osteoarthritis.

Sham treatment of canine osteoarthritis generally leads to improvement as perceived by owners and investigators. This placebo effect may be caused by positive expectancy and/or spontaneous course of the disease. Bias is excluded when assessors do not know which dogs are receiving real or placebo treatment. Double-blinded, placebo-controlled trials are considered the gold standard in clinical studies. If an intervention induces greater improvement than placebo treatment, it is truly effective.

Marine fish oils are rich in the omega-3 fatty acids named eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Model studies suggest that EPA and DHA suppress both inflammation-induced pain and degeneration of joint cartilage. Thus, the two omega-3s might fight osteoarthritis. Proof of efficacy must come from well-designed trials in dogs with osteoarthritis.

In its simplest design, a double-blinded, placebo-controlled trial involves forming of two groups of osteoarthritic dogs, assessing baseline severity of disease status, administering an intervention or placebo treatment to the groups and collecting follow-up assessment. The changes over time in joint impairment are compared to see if the reduction in pre-existing severity of osteoarthritis differs between actively-treated dogs and placebo controls. The overall results of five studies indicate that fish oil consumption has very weak impact on dogs with naturally occurring osteoarthritis.

Fish oil supplements

In 1992, Miller et al. (1) published a non-blinded, non-controlled study on oral administration of capsules containing a variety of fatty acids, including EPA, to 22 dogs with symptomatic pelvic arthritis. The authors suggested tentatively that the improvement in symptoms seen in six excellent responders was due to the supplement. Twenty years after the open study, Hielm-Björkman et al. (2) reported their randomised, double-blinded, placebo-controlled study on fish oil supplementation.



The study (2) comprised of osteoarthritic dogs receiving either fish oil (n = 35) or corn oil with fish smell (n = 36) for 16 weeks. A 30-kg test dog consumed 0.42 g EPA and 0.09 g DHA per MJ of metabolisable energy. Owners quantified their dogs' lameness on a 10-cm line (0 cm = no lameness; 10 cm = worse possible). Group-mean changes were -0.5 and -0.3 cm for control and test dogs. The minus sign represents a decrease in severity. Veterinarians assessed mobility on a 0-12 scale (0 = no difficulty) and noted changes of +0.2 and -0.3.

Another randomised, double-blinded, placebo-controlled study (3) compared triglyceride omega-3 oil and mineral oil. Test dogs ingested 0.19 g EPA and 0.13 g DHA/MJ. There were 41 test and 33 control dogs with osteoarthritis that completed the 12-weeks trial. A

single investigator described the dogs' debilitating condition on a 10-cm line (0 cm = normal). The median changed by -0.1 and -4.3 cm for the control and test group.

Veterinary mobility foods

Three randomised, double-blinded, placebo-controlled trials compared regular food and commercial therapeutic diets containing fish meal and/or fish oil (4-6). EPA and DHA levels in each veterinary diet were identical: 0.24 (4, 5) or 0.30 g/MJ (6). The reference foods contained negligible amounts of the two omega-3s, but also differed from the test foods as to ingredients and various nutrients. The diet groups had 15-71 osteoarthritic dogs and feeding periods lasted 13-24 weeks.

In two studies carried out by the same researchers (4, 5), owners scored the improvement of 13 clinical signs by 1 (better), 2 (about the same) or 3 (worse). The scores were not shown (5) or yielded overall outcomes of 1.82 and 1.75 for the control and fish-oil group (4). Veterinarians scored 5 clinical signs on a 1-5 scale (1 = least severe). Baseline values were not given (4) or comprehensive score changes were -0.19 and -0.37 for controls and probands (5). In the third study (6), owners graded the most impaired activities of their dogs on a 0-4 scale (0 = no problem). Mean change in score was -0.4 for the controls and -0.7 for the test dogs.

Final considerations

Within each of the five trials (2-6), the differences between the changes over time in clinical scores for control and test dogs did not reach statistical significance. This also holds for peak vertical force of affected limbs (2, 5, 6) which is an

objective measure of the degree of lameness.

Osteoarthritic dogs will attempt to unload the lame limb during weight bearing on the stance phase of the stride.

The numerical improvements of clinical signs and peak vertical force

were almost always slightly greater in test dogs so that insufficient sample size may explain lack of statistical significance.

Doses of fish oil higher than those used are unlikely to increase effect size (7) and neither is longer duration of exposure as blood levels of EPA and DHA plateau within 12 weeks (4).

In relation to the measurement scales and baseline scores, the placebo-corrected effects of fish oil were very small. The fish-oil effect on canine osteoarthritis is hardly perceptible to owners and of questionable clinical relevance.

List of references is available on request from the author (beynen@freeler.nl)



Dr Anton C Beynen writes this exclusive column on dog and cat nutrition every month. He is affiliated with Vobra Special Petfoods.