

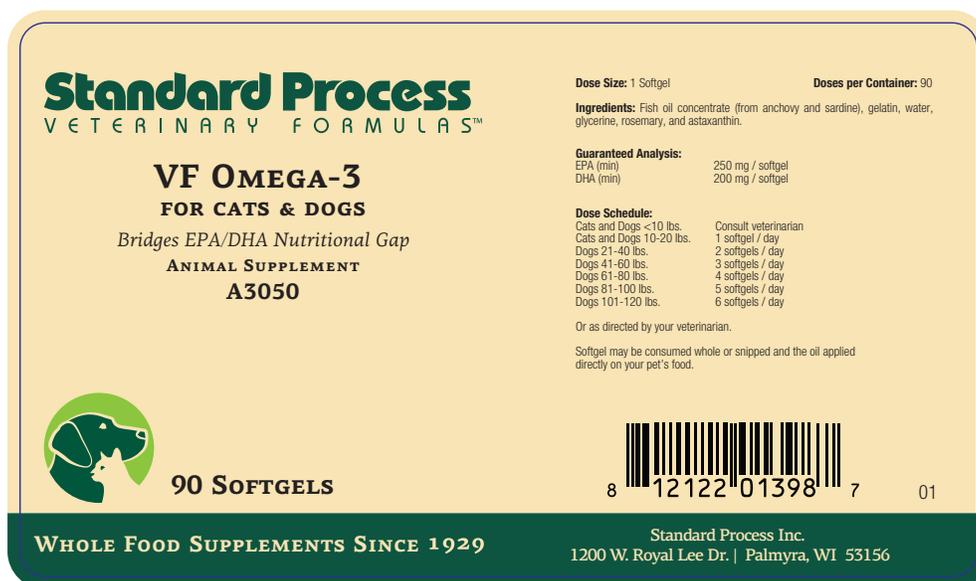
Canine Omega Pilot Study

Eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) are long chain omega-3 fatty acids (FAs) that can be endogenously synthesized from the essential omega-3 FAs, alpha-linolenic acid (ALA). Dogs are able to convert ALA to EPA and DHA,¹ however the process is inefficient in dogs and nearly nonexistent in cats.² Further, diets of canines and felines tend to be higher in omega-6 FAs, resulting in an imbalanced ratio of omega-6 to omega-3 FAs that is dominated by omega-6 FAs.³ Therefore, dogs and cats both require foods rich in EPA and DHA.

The omega ratio measures the ratio of omega-6:omega-3 in the whole blood of dogs. A desirable omega-6:omega-3 ratio for dogs is less than 5:1. An optimal omega ratio helps support canine skin and coat, joint health, and immune responses.^{4,5,6,7} The omega-3 index is a measurement that is highly correlated to the omega ratio. The omega-3 index measures the amount of EPA and DHA in red blood cell membranes, which is expressed as a percentage of all fatty acids. In humans, the omega-3 index has been studied to be a strong predictor of all-cause mortality.⁸ An optimal range for dogs is between 3%-8%.

Objective

Determine whether supplementation with VF Omega-3 in canines would improve the status of the omega-3 fatty acids reflected by the omega ratio and omega-3 index.



Standard Process
VETERINARY FORMULAS™

VF OMEGA-3
FOR CATS & DOGS
Bridges EPA/DHA Nutritional Gap
ANIMAL SUPPLEMENT
A3050

Dose Size: 1 Softgel
Doses per Container: 90

Ingredients: Fish oil concentrate (from anchovy and sardine), gelatin, water, glycerine, rosemary, and astaxanthin.

Guaranteed Analysis:

EPA (min)	250 mg / softgel
DHA (min)	200 mg / softgel

Dose Schedule:

Cats and Dogs <10 lbs.	Consult veterinarian
Cats and Dogs 10-20 lbs.	1 softgel / day
Dogs 21-40 lbs.	2 softgels / day
Dogs 41-60 lbs.	3 softgels / day
Dogs 61-80 lbs.	4 softgels / day
Dogs 81-100 lbs.	5 softgels / day
Dogs 101-120 lbs.	6 softgels / day

Or as directed by your veterinarian.

Softgel may be consumed whole or snipped and the oil applied directly on your pet's food.

 **90 SOFTGELS**

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Standard Process Inc.
1200 W. Royal Lee Dr. | Palmyra, WI 53156

WHOLE FOOD SUPPLEMENTS SINCE 1929

Methods

12 client-owned dogs who were not previously consuming an omega-3 rich supplement were included in a 4 month intervention trial. Each dog was orally administered VF Omega-3 for 4 months. Dosing was individually determined for each dog based on veterinary recommendations and baseline omega ratios (Table.1). Dosing ranged from 19 mg EPA+DHA/kg/d to 112.5 mg EPA+DHA/kg/d. A dried blood spot was collected from the dogs before and after the trial and the omega ratio was calculated (omega-6 (AA): omega-3 (EPA+DHA)). The adjusted omega-3 index was calculated from omega 6 to 3 ratios as post hoc analysis.

Table.1 Baseline Characteristics and Dosing

Dog	Weight (kg)	Baseline Omega Ratio (omega 6:omega 3)	EPA+DHA Dose [^] (mg/kg/d)	Dose of VF Omega-3 [^] (mg/day)
1	25	8.0	36.0	900
2	26	7.6	34.6	900
3	13	10.7	34.6	450
4	15.5	35.3	87.1	1350
5	25	10.2	36.0	900
6	27	6.3	33.3	900
7	6.8	7.7	19.0	129
8	18	6.6	50.0	900
9	8	54.8	112.5	900
10	8	17.6	56.3	450
11	5	13.8	90.0	450
12	6.4	12.3	70.3	450

[^]The omega-3 dose was determined by the veterinarian based on the baseline omega ratio, not the recommended dose schedule listed on the VF Omega-3 label.

Results

All dogs reported abnormal omega ratio scores pre-intervention ranging from 6.3 to 54.8 (Figure 1). There was a significant improvement in omega ratio scores from pre- to post-intervention ($P < 0.01$). 50% of participating dogs ($n=6$) improved their omega ratio into a targeted normal range (< 5.0) after the intervention. This translated to improved adjusted omega-3 index scores. Similar to omega ratio scores, all dogs reported abnormal adjusted omega-3 index scores pre-intervention ranging from 0.3% to 2.1% (Figure 2). There was a significant improvement in adjusted omega-3 index scores from pre- to post-intervention ($P < 0.01$). A total of 5 dogs improved their adjusted omega-3 index scores into a targeted normal range ($> 3%$) after the intervention.

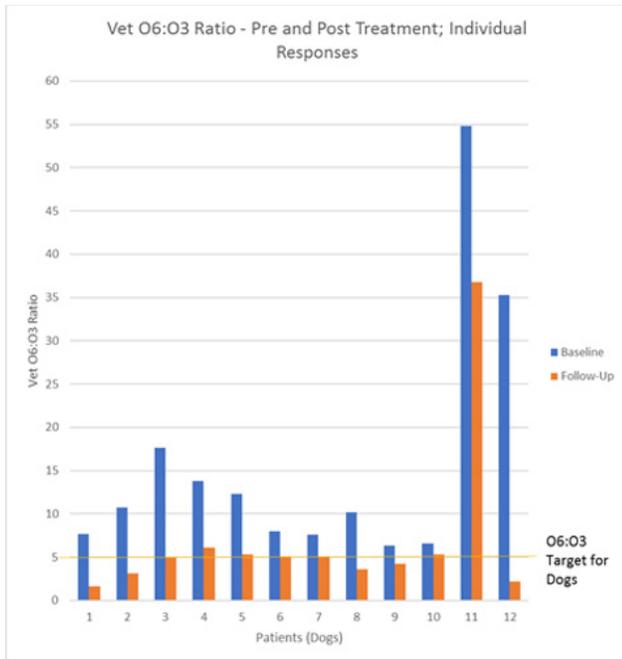


Figure 1. Individual responses in omega 6: omega 3 ratio, pre- and post- supplement intervention.

^The omega-3 dose was determined by the veterinarian based on the baseline omega ratio, not the recommended dose schedule listed on the VF Omega-3 label. See Table 1 for dosages used in the study.

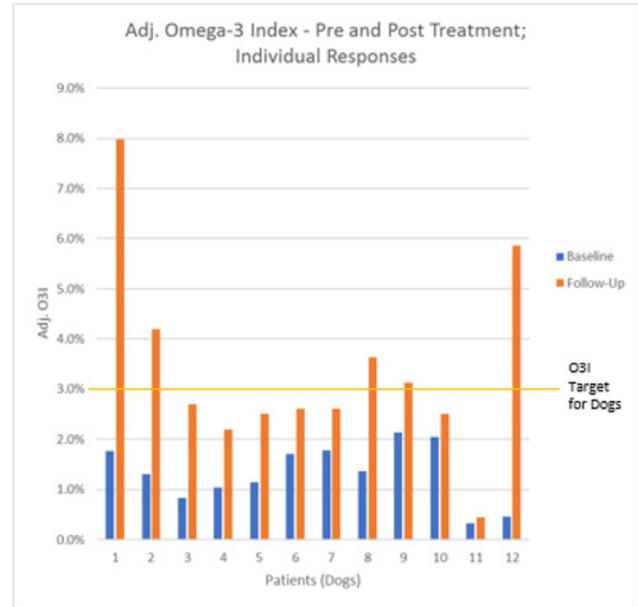


Figure 2. Individual responses in adjusted omega-3 index, pre- and post- supplement intervention.

^The omega-3 dose was determined by the veterinarian based on the baseline omega ratio, not the recommended dose schedule listed on the VF Omega-3 label. See Table 1 for dosages used in the study.

Conclusion:

The results of this study indicate that VF Omega-3 given at a dose between 19 mg EPA+DHA/kg/d to 112.5 mg EPA+DHA/kg/d for 4 months improves the omega 3 status reflected by the omega ratio and the adjusted omega-3 index in canines.

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