The Benefits of Omega-3 Oil Supplementation for Animals

REVENUETION® Improving Patient Health and Practice Revenues Series
40% of practices surveyed indicated that their clients had a great deal of interest in improving their animals' overall health by using nutritional supplements.

AUTHORS

GARY J. STUER, DVM, CVA, CVCHM
Bethel Animal Hospital, Portland Veterinary Specialists

MICHAEL J. DELUCA JR., CMRP
Integrative Wellness and Development LLC

BRIANNA WOODWARD
Integrative Wellness and Development LLC

INTRODUCTION

The authors recently surveyed over 12,000 veterinarians from around the US regarding their use of nutritional supplements in their practices. The survey revealed an ever-growing number of veterinarians and their clients were expressing a strong interest in improving the overall health of their animals through the strategic use of nutritional supplements.

A growing body of medical research supports the hypothesis that supplementing companion animal diets with Omega-3 Essential Fatty Acids (EFAs) derived from fish, krill, marine micro-algae, flaxseed and other sources can yield favorable improvements in pre-existing conditions. While helping promote general wellness, this strategy is also realizing specific benefits to cardiovascular, skin, fur, joint, brain, and other organ health. It has been well-documented that most cats, dogs, and horses can benefit from Essential Fatty Acid supplementation. An increasing number of veterinarians are recommending EFA supplementation to patients across the board as an important foundational health protocol. In addition to improving their patients’ overall health, this strategy is generating increased practice revenue which can later be invested in revenue generating treatment equipment. This not only adds additional fee-for-service practice revenues, but provides the practice with increased capabilities to better serve their patients and attract new patients.

This article will focus on some of the many clinical studies confirming the benefits of recommending nutritional supplementation of Omega-3 EAs. In addition, the article will discuss newest developments for practices to have easier access to the complete range of nutritional supplements for animals, as well as how to successfully grow practice revenues in the process.
Omega-3 EFA Supplements: A Host of Benefits

**Essential Fatty Acids** are polyunsaturated fatty acids. Unsaturated fats differ from saturated fats in that they contain at least one double bond between carbon atoms, yielding chains with fewer hydrogen atoms. Polyunsaturated fatty acids vary in the number of carbon and hydrogen atoms they contain, as well as the type and number of double bonds between carbon atoms. A number of fatty acids are considered essential components of human and companion animal diets because they cannot be naturally synthesized within the body. Research has confirmed that a number of basic bodily functions require, or are enhanced by, the supplementation of omega-3 fatty acids. *Eicosapentaenoic acid* (EPA) and *docosahexaenoic acid* (DHA) - both long-chain fatty acids abundant in cold water fish - are considered the most important EFAs for bodily function. Dogs and humans can convert a small amount of alpha-linolenic acid (ALA) (a shorter chain fatty acid found abundantly in flaxseed) into EPA and DHA when the enzyme delta-6 desaturase is present. Cats, however, have essentially no ability to utilize ALA.

In general, veterinary scientists typically agree that companion animals consume an excess of omega-6 fatty acids in their modern diet compared to what their ancestors once consumed. The surplus of omega-6 fatty acids causes an imbalance in the ratio of omega-6 to omega-3 fatty acids in the body. Omega fatty acid imbalance can be harmful; omega-6 fatty acids tend to produce pro-inflammatory prostaglandins during metabolic processes, whereas omega-3 fatty acids produce less inflammatory materials. Researchers have not yet reached a decision on the ideal ratio of omega-3 to omega-6 fatty acids might be. However, as the number of scientific studies on the topic has increased, it has become clear that proper omega-6 to omega-3 fatty acid ratio is vital for building and maintaining pet health, including essential functions such as the body’s anti-inflammatory response.

**Benefits for Inflammation:** Omega-3-polyunsaturated fatty acids (PUFA) stimulate the formation of mediators (Resolvins and Protectins) that play a critical role in resolving inflammation. N-3 PUFAs incorporated into the cell membrane cause a decrease in the arachidonic acid pathway that produces 2- and 4-series prostaglandins, both of which are pro-inflammatory. Omega-3 PUFAs increase production of mediators of resolution via the eicosapentaenoic pathway resulting in less inflammation and osteoarthritis with improved clinical signs. EPA is the only n-3 PUFA with selectivity for the chondrocyte cell membrane, decreasing inflammation, and reducing or preventing aggrecan (cartilage specific proteoglycan core protein) degradation.
Although ALA is added to some pet foods, studies show that the body is typically unable to successfully convert the added ALA into an adequate amount of EPA and DHA, if, at all. Pet foods containing EPA and DHA molecules often do not contain as much of the fatty acids as proper supplementation provides. When they are present in pet food, EPA and DHA have the tendency to break down over time. By the time fortified food is consumed, the EFAs may no longer hold the original nutritional value. Ultimately, EPA and DHA supplementation appears to be a more effective method of administering long-chain omega-3 fatty acids compared to feeding animals fortified foods.

Proper levels of omega-3 essential fatty acids in pets are a scientifically proven method of supporting bodily function, including that of the cardiovascular system, skin, joints, and kidneys, especially in pets with inflammatory conditions. Other research by Bauer published in the Journal of the AVMA has demonstrated that omega-3 fatty acids are also beneficial for the body’s other organs and tissues. EFA supplementation (especially DHA) is beneficial beginning with gestation and early development and is important for neurological and retinal growth. EFAs remain important mid-life and then later throughout the aging process, as EFAs have a positive effect on the immune system. A growing body of evidence from studies published in the Journal of the AVMA and the International Journal of Developmental Neuroscience shows EPA and DHA can improve anti-inflammatory processes and support the body, maintaining and enhancing routine function. EFAs (specifically DHA) are important because they enhance cell membrane fluidity and stability, thus supporting pet health at a cellular level.

**Benefits for Cardiovascular Health:** An increasing number of studies support the claim that supplementation of EFA and DHA in pet and human diets can promote cardiovascular health. In one study published in the Journal of Veterinary Internal Medicine, dogs with stable chronic heart failure secondary to idiopathic dilated cardiomyopathy were given either a placebo or a fish oil treatment. Compared to the placebo group, dogs who had received fish oil demonstrated a decrease in PGE. The fish oil group also had reduced IL-1 concentrations (a measure often used to predict survival time). Other studies have found that in dogs with chronic valvular diseases, inflammatory cytokines tumor necrosis factor and IL-1 levels (factors often elevated in patients with chronic heart failure) were often reduced when long-chain omega-3 fatty acids were administered. Omega-3 fatty acids also have protective effects on the heart and support a regular heart rhythm. In another study published in Cardiovase Research, long-chain omega-3 fatty acids were found to alter atrial structure and decrease susceptibility to atrial fibrillation in dogs with experimentally induced cardiac pacing.

Another study found long-term administration of long-chain omega-3 fatty acids to notably reduce myocardial infarct size (independent of oxygen consumption or blood flow) in dogs with occlusion-reperfusion myocardial ischemia. In a double-blind study of Boxers with clinical ventricular arrhythmias, canines administered fish oil treatment showed reduced ventricular premature contractions/24 hours compared to Boxers who’d received flax oil or sunflower oil. The results of the study indicate the potential of fish oil as a therapy for canines with ventricular premature contractions. Other research on dogs with cardiac
arrhythmias, such as chronic valvular disease or dilated cardiomyopathy, suggests that fish oil may be beneficial for minimizing cachexia and increasing food consumption in canines with chronic heart failure-induced anorexia.14 Furthermore, initial equine studies have demonstrated that fish oil supplements have the capacity to reduce heart rates in horses and, in fit horses, modify exercise metabolism.1 Studies published in the *Journal of Veterinary Dermatology* confirmed that Omega-3 fatty acids (DHA especially) have been linked to improved skin and coat health.39-41

**Benefits for Skin and Coat Health:** Long-term administration of omega-3 fatty acids is important for skin and coat treatment because skin cells are constantly replaced.3 Another investigation published in *Veterinary Dermatology* found that dogs experiencing confirmed atopy, idiopathic pruritus, or flea allergy had anti-inflammatory responses when given DHA and EPA supplements.39 Yet another study published in the *Journal of Animal Physiology and Animal Nutrition* on non-seasonal atopy found improvements in early atopy canine patients post-DHA and EPA administration.42

**Benefits for Joint Health:** In all cases of joint inflammation and degeneration, products high in omega-3 polyunsaturated fatty acids (PUFAs) are always recommended. Omega-3 fatty acids also benefit the synovial fluid.71 Omega-3 polyunsaturated fatty acid (PUFAs) supplementation attempts to temper the inflammatory pathway of osteoarthritis. N-3 PUFAs incorporated into the cell membrane cause a decrease in the arachidonic acid pathway which produces 2- and 4- series prostaglandins, both of which, are pro-inflammatory.72 N-3 PUFAs will instead promote the eicosapentaenoic pathway and 3- and 5- series prostaglandins, thromboxanes, and leukotrienes which are less inflammatory and thus help to reduce the inflammation associated with osteoarthritis and resulting clinical signs.71 The most common n-3 fatty acids used for supplementation include alpha-linolenic acid (ALA), docosahexaenoic acid (DHA), and eicosapentaenoic acid (EPA). EPA is the only n-3 PUFA with selectivity for the chondrocyte cell membrane, decreasing inflammation, and aggrecan degradation.71

**Benefits for Neurological and Vision Health:** Essential omega-3 fatty acids have been shown to have a significant impact on neurological health and development.45-47 DHA protects brain cells48,49, as well as improves learning, memory50-54 and vision.17,22,54,55 Several studies have deduced omega-3 fatty acids are important in puppies and kittens as they develop neurologically and retinally.10,17-22 Pregnant mothers who have received omega-3 fatty acid-enriched meals transfer DHA to offspring through gestation and lactation.17 Furthermore, puppies weaned on DHA-enriched foods have shown increased responses in electroretinographic and training tests.17,56
CASE STUDY ONE: A FOURTEEN-YEAR OLD

spayed female Golden retriever presented for continuing care. Her degenerative joint disease and rear end ataxia had been stable for over a year with monthly acupuncture treatments and supplements, including joint supplements. The owner reported that in the past month, the patient had shown some cognitive issues where she paced aimlessly at night and increasingly was having periods of time where she seemed confused. An omega-3 supplement was prescribed at a relatively high dose (20 mg/kg bid, based on the content of EPA and DHA). At a recheck one month later, the owner reported that the cognitive issues had reduced in severity and frequency. After three months of supplementation, the owner was no longer observing any form of cognitive lapses in his dog.

After three months of Omega-3 supplementation, the owner was no longer observing any form of cognitive lapses in his dog.

CASE STUDY TWO: AN EIGHT-YEAR OLD

male Labrador retriever presented for an annual examination. His owner described periods of rear limb lameness that were occurring after strenuous exercise. Radiographs were done and revealed mild degenerative changes in the coxo-femoral joints as well as some lumbar ventral spondylosis. Omega-3 supplementation was recommended at a dose of 30 mg/kg (based on the content of DHA and EPA). Within three weeks, the patient was no longer exhibiting lameness.

After three weeks of Omega-3 supplementation, the patient was no longer exhibiting lameness.

CASE STUDY THREE: A TWO-YEAR OLD

spayed female, hound mix had been rescued from the south and adopted locally. At the initial examination, the patient had tremendous flaking and dandruff along with significant pruritis. There was no evidence of infection, and there was no history of diet or previous medical issues. An omega 3 supplement (15 mg/kg based on DHA and EPA) was prescribed. Within two weeks, there was noticeable improvement in the patient’s coat quality. After six weeks, the flaking and dandruff had disappeared.

Within two weeks of Omega-3 supplementation, there was noticeable improvement in the patient’s coat and skin quality.
There are no known side effects of Omega-3 pet supplementation, but some studies indicate over-supplementation may result in altered platelet function, in cats especially. Slow introduction and careful observation is recommended when administering Omega-3 fatty acids to companion animals previously diagnosed with gastrointestinal problems, pancreatitis, or problems digesting dietary fat.

Nutritional supplements high in Omega-3 polyunsaturated fatty acids include:

- **Welactin** by Nutramax®, **Omega-3 Pet** by Nordic Naturals, **Ultra EFA** by RX Vitamins® for Pets, and **Free Form** by Bayer
- **Derma 3.6.9.™ Pro** and **Omega 3.6.9. Pro™** by Vetri-SCIENCE®, **CanineOmega3™** and **FelineOmega3™** from Ascenta
- **Super EPAVET** from Thorne Research, **Omega-3 Support** by NOW® Pets, and **Flexiden® Advanced** by Vétoquinol
- **EO.3™ Omega-3** by Kentucky Equine Research, and **Contribute™** by Kentucky Performance Products

**Additional Health Benefits:** Companion animals with cancer, gastrointestinal diseases, autoimmune disorders, arthritis, renal diseases, hypertension, and hyperlipidemia have all experienced improvements through Omega-3 use. Omega-3 fatty acids are also beneficial for protecting kidney function. A separate study found that Omega-3 fatty acids improved long-term glucose levels in overweight cats.

At Integrative Wellness and Development LLC, it is our mission to assist Veterinary practices, their patients and their clients by providing access to the best educational information, products and treatment equipment. The results are improved animal health, client satisfaction and practice revenue generation. Through our Revenuetion Program we combine several key resources to assist you in achieving these results. It’s as easy as 1-2-3:

1. **Vets First Choice** - the industry’s best Online Pharmacy and Prescription Management System with no sign-up or monthly fees. – plus guidance on how to most effectively use it for maximum results. We will help you sign up with this service, and arrange for you and your staff to become fully trained on using it. We will provide you simple, useful educational materials for you, your staff and your clients to support innovative treatment recommendations that will result in maximum patient health and practice revenue generation. As we assist you in learning to maximize your revenues generated through your online pharmacy, you will quickly be able to afford to add additional revenue generating equipment to your practice.

2. **Exclusive special offers** on the industry’s leading brands of Underwater Treadmills, Therapeutic Lasers, Diagnostic Ultrasound, Digital Radiography and more. With these special discounts and the extra revenue generated from your on-line pharmacy, any practice can easily afford this equipment and generate tens of thousands of dollars in additional fee-for-service practice revenues.

3. **MBFLoyalty** - a powerful Customer Loyalty Program that provides incentives for clients to return for multiple annual visits and save money while you generate more service revenues, and gain - as well as retain - more clients.
HOW TO ACCESS A BROADER RANGE OF SUPPLEMENTS

With the increased interest in nutritional supplements from pet and horse owners and staff, a dilemma emerges: how can one practice possibly stock all the offerings? For most practices today, simply managing the current range of conventional products takes a significant amount of time, resources and cash outlays.

New technologies and approaches solve the problem. By partnering with an accredited pharmacy that stocks a broad range of supplements for you presents an opportunity. Practitioners and practice managers should be selective: in choosing a partner verify the pharmacy’s quality and licensing.

In addition, consider the following in deciding your pharmacy partner:

- **The broadest range of nutritional supplements at fair and competitive pricing**
- **An ability for the veterinarian or staff to easily create valid digital prescriptions and recommendations for clients**
- **An ability for clients to easily and securely purchase your recommended supplements online and to receive timely home or barn delivery**
- **Ability for the practice to capture both the revenues and profits from these product sales**
- **Ability to automate reminders to refill and renew expired prescriptions**
- **Ability to choose automatic shipments to support long-term care and compliance**
OPTIONS FOR A SUPPLEMENT SUPPLY PARTNER

As practices consider a partner to gain access to the complete range of supplements, they should consider who is leading with technology.

A relatively new provider has emerged with a combination of technology and the complete range of products: **Vets First Choice** is a service that comes with a digital prescription management platform and an accredited pharmacy (based in Omaha, NE). With this service, practices have access to the complete range of medications. The platform is easy to use for both staff and clients, and studies by the company show compliance rates above 80% for long-term/chronic medications.

Brands of Omega-3 Oil supplements offered by Vets First Choice include: Nutramax®, Vétoquinol, VetriSCIENCE®, RX Vitamins™ for Pets, Thorne Research®, Bayer®, Ascenta®, Nordic Naturals®, Kentucky Performance Products®, Arenus®, Response Products®, Finish Line® Horse Products, Kentucky Equine Research, NOW® Pets, and many others. Through a partnership with leading manufacturers of pharmaceuticals, nutraceuticals, holistic supplements and herbal formulas, practitioners have access to more than 7000 such products to benefit their patients and their practices.

CONCLUSION

Nutritional supplements can offer veterinary practitioners new treatment options. New technologies and resources, such as the Vets First Choice Digital Prescription Management System, can give to practitioners and their clients, easy and convenient access to the complete range of these new options to pursue potentially better long-term health outcomes for their patients, and additional revenues for their practices. The Revenuetion™ Program can help veterinarians maximize the revenues these products produce for their practices, and provide access to special offers on state-of-the-art revenue-generating treatment equipment. This will help increase their ability to improve patient care, client satisfaction and the financial health of their practice.