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Adam Ismail knows omegas Do you?

The leading advocate for EPA and DHA helps answer some of the biggest questions your customers have about essential fatty acids.

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NEW LABEL TO KNOW ABOUT PAGE 10 • **ADD POP TO SNACK AISLE** PAGE 13 • **3 FORWARD THINKERS SHARE VISION** PAGE 23

On the Cover: Adam Ismail, Global Organization for EPA and DHA Omega-3
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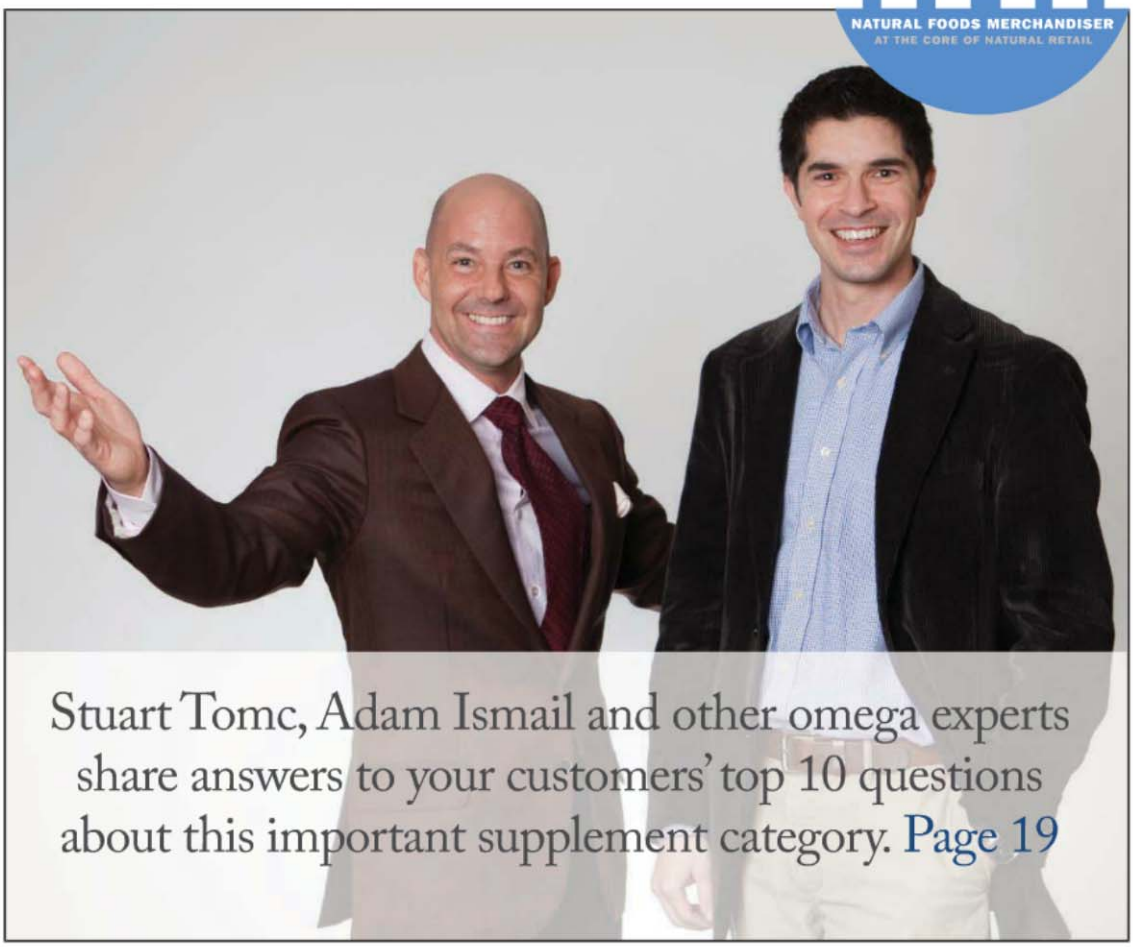
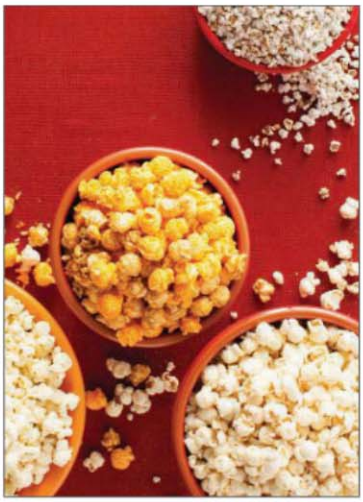


Stuart Tomc, Adam Ismail and other omega experts share answers to your customers' top 10 questions about this important supplement category. Page 19



Snack selections that pop Page 13

Sodium research report worth its salt? Page 27

Rhonda Bone shares her natural way Page 34

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By Lisa Marshall

Reeling in omega questions?

DIVE INTO THE ANSWERS YOUR CUSTOMERS SEEK

Stuart Tomc, national educator for Nordic Naturals, and Adam Ismail, executive director of the Global Organization for DHA and EPA Omega-3, help answer top omega questions.

Rebecca Wilson Studio

They are among the best-selling nutritional compounds in the world. Global retail sales of omega-3 fatty acids in all applications reached $25 billion in 2012 via roughly 8,000 manufacturers, according to the Global Organization for DHA and EPA Omega-3 (GOED). Supplement sales alone amounted to $3.2 billion and are growing at a clip of 8 percent to 10 percent per year as companies roll out everything from simple fish oil pills to ultra-concentrated designer formulas to products targeted at kids and vegetarians.

But with the growing cornucopia of offerings has come one major downside of the omega-3 boom: "Consumers are confused," says Gretchen Vannice, RD, author of *Omega-3 Handbook* (CreateSpace Independent Publishing Platform, 2011). "We are bombarded with marketing messages and different ways to get omega-3s, but how much, what type and how to get them can be difficult to figure out."

To cut through the confusion, here are the 10 most common omega-3 questions answered.


Adam Ismail


Gretchen Vannice, RD


Stuart Tomc


Michael Murray, ND

REBECCA WILSON STUDIO

"If the market demand keeps growing the way it is, in three to four years we may reach the limits of what the anchovy fishery can provide."

-Adam Ismail, Global Organization for EPA and DHA Omega-3

1 Why are omega-3s important?

"A diet that is deficient in omega-3 fatty acids, particularly eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), results in altered cell membranes," says Michael Murray, ND, director of product development at Natural Factors. "Without a healthy membrane, cells lose their ability to hold water, vital nutrients and electrolytes and to communicate with other cells."

By far, most of the omega-3s research to date has focused on heart health. In 2008, Harvard researchers published a seminal study demonstrating that people who ate just 250 mg of combined EPA/DHA daily were 36 percent less likely to die of a heart attack than those who ate none. Since then, numerous studies have suggested that boosting EPA/DHA consumption can improve heart health by preventing irregular heartbeats and blood clots, boosting vascular function, and decreasing plaque growth and inflammation.

Additionally, omega-3s are "absolutely critical in infant development," Vannice says. They may also support eye and brain health. Studies show that DHA in particular is abundant in the cells of the retina and gray matter, and that animals who lack it at critical developmental stages are more likely to have vision problems and learning deficits. Mounting evidence also suggests that people who eat more DHA throughout life are less likely to develop dementia. A 2006 study of 900 men and women followed for nine years found that those with the highest DHA levels were 47 percent less likely to develop dementia than those with the lowest.

Vannice says it's best to start getting enough omega-3s early, rather than waiting until your senior years and trying to catch up.

2 EPA, DHA and ALA: What's the difference?

According to Stuart Tomc, national educator for Nordic Naturals, DHA is a structural fat that makes up the brain, nervous system and eyeballs and produces compounds critical for preserving cognitive health. EPA produces anti-inflammatory compounds and has been shown to lower heart-damaging triglycerides. Alpha-linolenic acid (ALA)—found in vegetarian sources such as flaxseeds, leafy green vegetables and chia seeds—can counteract the pro-inflammatory impact of eating too many omega-6 fatty acids (found in soy and corn oil). Also, ALA can be converted to EPA/DHA—but only to a very small degree.

The majority of health benefits that have put omega-3s in the spotlight come from EPA/DHA. However, many consumers assume that if they're getting enough ALA—often the source of omega-3s in functional foods—they're covered. That's not the case.

3 How much should I take?

Murray recommends 1,000 mg of EPA/DHA per day for general health and as much as 3,000 mg daily for specific health concerns such as heart disease risk. Some practitioners worry that taking too much can lead to excess bleeding or interfere with blood sugar control, but the European Food Safety Authority recently published a statement saying that people can safely take as much as 5 grams of EPA/DHA per day. (For higher amounts, it's still best to consult a doctor.) Tomc says the best way to determine

how much you need is to take a blood test to check your current levels. He recommends the Omega-3 Blood Spot Test by Lipid Technologies, although other companies offer similar tests.

4 Can I get enough omega-3s from food?

"Absolutely, but with caveats," says Tomc. The first step is to "nix the 6," which means cutting back on foods that are high in omega-6s, such as soy and safflower oil, because they promote inflammation and appear to interfere with the conversion of ALA to EPA/DHA. Then load up on two to three servings of oily fish (sardines, wild-caught salmon) per week, and be sure to get enough ALA via greens, chia seeds and flaxseed meal. Tomc says the first question retailers should ask consumers shopping for omega-3 supplements is: "What's your diet like?" The more they are getting via food, the fewer pills they need.

5 What is Lovaza?

Launched in 2004, Lovaza was the first prescription-grade fish oil pill. With 465 mg EPA and 375 mg DHA per capsule, it is more concentrated (90 percent) than even the highest-grade over-the-counter fish oils, meaning you have to take fewer capsules to get the dose you're after. By comparison, Nordic Naturals' ProOmega contains 325 mg EPA and 225 mg DHA per capsule. Lovaza is also approved by the Food and Drug Administration and may be covered by insurance, which most over-the-counter supplements are not. But when it comes to health outcomes, there is—to date—no comparative data to determine that prescription is better, Tomc says. According to Murray, the only time consumers might want to consider a prescription brand is if their insurance covers it and their co-pay is less than what they would pay for an nonprescription product.

6 What's with all these EPA-only supplements?

In January, Amarin Pharmaceuticals launched Vascepa, the first FDA-approved EPA-only drug. Several other companies, including Nordic Naturals, ReNew Life Formulas and Now Foods, also offer EPA-only supplements. Research suggests that highly concentrated EPA can lower triglyceride levels without boosting LDL, or "bad," cholesterol (a potential side effect of taking highly concentrated EPA/DHA supplements). For that reason, Tomc says EPA-only supplements have become a popular choice for people with mixed dyslipidemia, meaning they have high triglycerides and high LDL cholesterol.

7 What is krill?

Krill are tiny, shrimp-like crustaceans that feed on algae (mostly in Antarctica), accumulating EPA and DHA in the process. Because the water there is among the cleanest on earth, and krill are at the bottom of the food chain, they are said to contain fewer toxins than fish. They also offer trace amounts of the eye-nurturing antioxidant astaxanthin and have a different molecular structure than fish oil supplements. Krill have a phospholipid structure, which is more similar to human cell membranes. Therefore, some marketers say phospholipid sources of DHA/EPA are absorbed more quickly. But there is not enough research yet to say for sure, notes Adam Ismail, executive director of GOED. Consumers also report that they can digest krill supplements better. "About half the people who use krill had previously taken fish oil and stopped because they had problems with fish burps," Ismail says. "They don't have those problems with krill oil."

The downside: Krill oil pills are far less concentrated than fish oil capsules. Even "extra-strength" krill oil products contain just 64 mg EPA and 30 mg DHA per softgel. "It's better than nothing," Vannice says. "But to get enough of the EPA/DHA from krill in this form would cost consumers significantly more than standard fish oil. Is it worth the additional cost? We don't know yet." For now, if consumers can deal with fish burps, or don't experience them, she recommends fish oil.

8 Are there enough fish to meet the demand for supplements?

For now, yes, Ismail says. Roughly 80 percent of fish oil supplements are derived from anchovies (which have the highest concentration of EPA/DHA of any fish) from one fishery in Peru. As of right now, demand is not outstripping supply. "But if the market demand keeps growing the way it is, in three to four years we may reach the limits of what the anchovy fishery can provide," Ismail says. With that in mind, companies are working on manufacturing efficiencies to produce more EPA/DHA using fewer fish. Others are looking to different sources such as salmon, menhaden, algae and krill. Stay tuned.

9 Are there heavy metals in omega-3 supplements?

In reality, supplements are probably less likely to contain toxins than whole fish are, Ismail says. Most fish oil purveyors remove heavy metals like mercury and lead during the manufacturing process. And supplements made from virgin, or unprocessed, oils such as krill or salmon tend to come from pristine waters with few contaminants. "Within the last year we have tested 60 products from shelves around the world, and we never found one that had detectable levels of mercury, lead, cadmium or arsenic," Ismail says.

That said, consumers are better off choosing a medium- to high-grade fish oil product, says Vannice. "The least expensive fish oil usually has the lowest concentration per pill, and it may not have the attention to purity or freshness that other products do," she explains.

10 I'm a vegetarian. How can I get enough EPA/DHA?

"It is very difficult," Murray says. Studies show vegetarians take in only about 5 mg of EPA and 33 mg of DHA daily, far short of what dietitians recommend. While they load up on plant-based ALA, the body converts less than 10 percent of it to EPA and less than 1 percent to DHA, according to a 2006 review by British researchers. Vannice says this is of particular concern for pregnant and nursing women, whose babies depend on EPA/DHA for proper development. Her advice: Take an algae-based supplement, and eat DHA-fortified egg yolks and other foods.

Do youth need omegas too?

Should children take EPA/DHA supplements?

If they aren't getting enough via their diet—which most don't—then absolutely, says Gretchen Vannice, RD, a Portland-based consultant who specializes in omega-3 fatty acids.

"I would recommend it for all kids who are not eating fish regularly."

In addition to nurturing cells in growing organs, and providing a lipid barrier that plumps up skin—making the complexion and hair look more healthy (a bonus for teens)—the long chain fatty acids may also play an important role in combating attention deficits and behavior issues, she says.

"We know that children with ADHD and other problems with focus have lower levels of omega-3 fatty acids in their blood compared with other children, and there have been some clinical trials showing there is benefit to supplementation."

One June 2012 study, published in the journal *Nutrition*, looked at 90 children, ages 7 to 12, who rated high on measures of ADHD. Some were given 500 mg EPA/DHA-rich fish oil, while others were given safflower oil. After four months, those who saw a boost in DHA in their blood saw significant improvements in reading and fewer behavior problems.

Another trial, published by University of Oxford researchers in 2012, looked at 224 kids between ages 7 and 9 who scored poorly on school reading tests, and found the poorest readers saw scores improve by as much as 50 percent above what was expected after supplementing with 600 mg daily of algae-based DHA.

Not all studies have been so encouraging. One recent Cochrane review of 13 trials with 1,011 participants found "little evidence that supplementation provides any benefit for the symptoms of ADHD," and lamented the small sample size and other weaknesses in existing studies.

Vannice agrees that more research is needed on the EPA/DHA-behavior link. But for now, there are plenty of other reasons kids should be sure they're getting enough as their bodies are forming.

"It's like making a cake," she says. "If you forget the oil, the recipe is just not going to be quite right."

She recommends 500 mg daily via food and supplements, and warns that many fish sticks and white fish (like tilapia) contain almost no EPA/DHA. (Eat tuna and salmon instead).

For parents buying supplements for their kids, consider liquid formulations and chewable capsules until they can swallow pills. Steer clear of gummies, which tend to have little EPA/DHA and more sugar, she says. *–L.M.*