Fish Oil Claims Not Supported by Research

By ANAHAD O'CONNOR

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CreditTony Cenicola/The New York Times

Fish oil is now the third most widely used dietary supplement in the United States, after vitamins and minerals, according to a recent report from the National Institutes of Health. At least 10 percent of Americans take fish oil regularly, most believing that the omega-3 fatty acids in the supplements will protect their cardiovascular health.

But there is one big problem: The vast majority of clinical trials involving fish oil have found no evidence that it lowers the risk of heart attack and stroke.

From 2005 to 2012, at least two dozen rigorous studies of fish oil were published in leading medical journals, most of which looked at whether fish oil could prevent cardiovascular events in high-risk populations. These were people who had a history of heart disease or strong risk factors for it, like high cholesterol, hypertension or Type 2 diabetes.

All but two of these studies found that compared with a placebo, fish oil showed no benefit.

And yet during this time, sales of fish oil more than doubled, not just in the United States but worldwide, said Andrew Grey, an associate professor of medicine at the University of Auckland in New Zealand and the author of a 2014 study on fish oil in JAMA Internal Medicine.

“There’s a major disconnect,” Dr. Grey said. “The sales are going up despite the progressive accumulation of trials that show no effect.”

In theory at least, there are good reasons that fish oil should improve cardiovascular health. Most fish oil supplements are rich in two omega-3 fatty acids — eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) — that can have a blood-thinning effect, much like aspirin, that may reduce the likelihood of clots. Omega-3s can also reduce inflammation, which plays a role in atherosclerosis. And the Food and Drug Administration has approved at least three prescription types of fish oil — Vascepa, Lovaza and a generic form — for the treatment of very high triglycerides, a risk factor for heart disease.

But these properties of omega-3 fatty acids have not translated into notable benefits in most large clinical trials.

Some of the earliest enthusiasm for fish oil goes back to research carried out in the 1970s by the Danish scientists Dr. Hans Olaf Bang and Dr. Jorn Dyerberg, who determined that Inuits living in northern Greenland had remarkably low rates of cardiovascular disease, which they attributed to an omega-3-rich diet consisting mainly of fish, seal and whale blubber. Dr. George Fodor, a cardiologist at the University of Ottawa, outlined flaws in much of this early research, and he concluded that the rate of heart disease among the Inuit was vastly underestimated. But the halo effect around fish oils persists.

The case for fish oil was bolstered by several studies from the 1990s, including an Italian study that found that heart attack survivors who were treated with a gram of fish oil daily had a drop in mortality, compared with patients taking vitamin E. These findings prompted groups like the American Heart
Association to endorse fish oil about a decade ago as a way for heart patients to get more omega-3s in their diets.

“But since then, there has been a spate of studies showing no benefit,” said Dr. James Stein, the director of preventive cardiology at University of Wisconsin Hospital and Clinics. Among them was a clinical trial of 12,000 people, published in The New England Journal of Medicine in 2013, that found that a gram of fish oil daily did not reduce the rate of death from heart attacks and strokes in people with evidence of atherosclerosis.

“I think that the era of fish oil as medication could be considered over now,” said the study’s lead author, Dr. Gianni Tognoni of the Institute for Pharmacological Research in Milan.

Dr. Stein said the early fish oil studies took place in an era when cardiovascular disease was treated very differently than it is today, with far less use of statins, beta blockers, blood thinners and other intensive therapies. So the effect of fish oil, even if it were minor, he said, would have been more noticeable.

“The standard of care is so good today that adding something as small as a fish oil capsule doesn’t move the needle of difference,” he said. “It’s hard to improve it with an intervention that’s not very strong.”

Dr. Stein also cautions that fish oil can be hazardous when combined with aspirin or other blood thinners. “Very frequently we find people taking aspirin or a ‘super aspirin’ and they’re taking fish oil, too, and they’re bruising very easily and having nosebleeds,” he said. “And then when we stop the fish oil, it gets better.”

Like many cardiologists, Dr. Stein encourages his patients to avoid fish oil supplements and focus instead on eating fatty fish at least twice a week, in line with federal guidelines on safe fish intake, because fish contains a variety of healthful nutrients other than just EPA and DHA. “We don’t recommend fish oil unless someone gets absolutely no fish in their diets,” Dr. Stein said.

But some experts say the case for fish oil remains open. Dr. JoAnn Manson, the chief of preventive medicine at Brigham and Women’s Hospital in Boston, said the large clinical trials of fish oil focused only on people who already had heart disease or were at very high risk. Fish oil has also been promoted for the prevention of a variety of other conditions, including cancer, Alzheimer’s and depression.

Dr. Manson is leading a five-year clinical trial, called the Vital study, of 26,000 people who are more representative of the general population. Set to be completed next year, it will determine whether fish oil and vitamin D, separately or combined, have any effect on the long-term prevention of heart disease, Type 2 diabetes, and other diseases in people who do not have many strong risk factors.

Dr. Manson says that although she recommends eating fatty fish first, she usually does not stop people from taking fish oil, in part because it does not seem to have major side effects in generally healthy people.

“But I do think people should realize that the jury is still out,” she said, “and that they may be spending a lot of money on these supplements without getting any benefit.”

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