

Is the latest fish oil study more fear mongering?



Once again, we've been regaled with headlines that cast aspersions on a tried and true supplement that many of us take:

- "Fish oil supplements may raise risk of stroke, heart issues, study suggests"—*CNN*
- "Alarming Study: The Hidden Dangers of Fish Oil Supplements on Heart Health"—*SciTech Daily*
- "Regular use of fish oil supplements may increase first time heart disease and stroke risk"—*Medical News Today*

I've been asked a lot of questions about this latest study. Here are some of my answers:

What is your take on this latest study? Are there any limitations or flaws in the study that practitioners should be aware of?

First of all, it's an observational study. The authors acknowledge that it's not definitive: ". . . *no causal relations can be drawn from our findings*". Such is the case with the field of nutritional epidemiology—it's been much criticized lately for

showing associations that are sketchy.

Nevertheless, the latest *BMJ* study is large and there are other investigations that have shown a relationship between fish oil consumption and the incidence of atrial fibrillation. It may be that polyunsaturated fatty acids alter membrane fluidity in the heart muscle cells whose ATP-dependent sodium/potassium pumps propagate electrical signaling. It seems to be dose-dependent, with high intake of Omega-3s heightening risk, while moderate intake has no effect.

One of the drawbacks of the study is that it did not characterize the fish oil supplements subjects took. They were of variable quality and potency. They undoubtedly contained various ratios of EPA to DHA. The questionnaire and interview administered at the beginning of the study period only elicited a simple yes/no response about Omega-3 supplement use.

Responses were not verified at the end of the study, which makes it impossible to discern whether subjects were consistently taking fish oil throughout the duration of the observation period lasting many years.

A critique of over-the-counter fish oil is that it delivers ample amounts of DHA, which is claimed by some to vitiate the cardiovascular benefits of EPA. While possible, it seems disingenuous to claim, as do some of the interpreters of this study, that OTC supplements are uniquely harmful while only high potency prescription EPA delivers cardiovascular benefits. At any rate, DHA plays an outsized role in cognitive preservation.

The magnitude of the increased risk for afib among takers of fish oil supplements was small—13%, hardly enough to warrant the conclusion that *“Regular use of fish oil supplements might be a risk factor for atrial fibrillation and stroke among the general population.”* The heightened risk for stroke was barely at the limits of statistical significance—5%.

As with much of nutritional epidemiology, it’s hard to tease out the impacts of uncontrolled variables on the outcomes. It is possible that the folks taking fish oil were “sicker”—individuals whose heart health concerns prompted them to take Omega-3s for prevention. We’ve seen that with some vitamin studies that paradoxically showed “worse” outcomes for those taking, say, multivitamins—the “worried well”. Indeed, in this study, the cohort of fish oil users was older, predominantly white and female—potential confounders.

As to the heightened risk of stroke—which was very slight—the study was not designed to distinguish between thrombotic strokes (those due to blood clots) vs. hemorrhagic strokes (brain bleeds). It’s plausible that fish oil’s blood thinning effects might lead to more of the latter, but it’s also possible that those strokes were a consequence of new-onset afib in non-anti-coagulated individuals. Because the effect was so small—if even real—it may be impossible to design a study with sufficient power to answer that question.

What would you tell patients who may now have concerns about fish oil given this latest negative media attention?

There’s been so much back and forth about fish oil, it’s confusing to the public. Much of the interpretation of studies like these reflects a negative bias about supplements by the media and orthodox medicine. They seem to delight in informing people that *“Ha, you were taking those supplements because you thought they were so beneficial, and you were actually doing yourself harm!”* There’s clickbait value to that assertion, plus it services an agenda, that contends that unregulated

supplement use by laypersons in self-care is, at best, without value, at worst, deleterious.

As I previously stated, the magnitude of the alleged harmful effects of fish oil on people without known cardiovascular risk is so small as to call into question its applicability. And yet *there were demonstrable benefits for those with established cardiovascular disease*. Until that paradox can be reconciled by better-designed randomized controlled prospective studies, I see no reason to alarm people who take fish oil for prevention.

I would also maintain that the advantages of taking Omega-3 supplements extend beyond just cardiovascular protection; they confer a wide variety of documented benefits, especially with regard to brain, eye, reproductive, liver and joint health, and may have cancer-preventive effects.

There appears to be a double standard: It strikes me as strange that, when a minor negative signal is uncovered with fish oil use, it becomes controversialized; at the same time medications like statins, for example, with their known proclivity to potentiate type 2 diabetes and changes in liver enzymes, are touted for primary prevention, justified by a favorable risk-benefit ratio.

Do you typically recommend fish oil and if you do, why?

I do. I'm aware of studies like these, and I've considered them. This latest study will probably not have a big impact on my prescribing. For patients with atrial fibrillation—well, they already have it. Taking or not taking fish oil has not been demonstrated to have any impact on the *frequency* of intermittent bouts of AF, which should be controlled anyway with medication or ablation. Participants in this study who already had AF *actually enjoyed a modest degree of protection from death*.

For patients at high risk of stroke, it seems counterintuitive to recommend administering prescription blood thinners for prevention, while withholding fish oil that also confers anti thrombotic benefits.

I personally take Omega-3 supplements—around 2 grams per day. I think that's well within a threshold where harm would be minimal or non-existent—and the benefits many—for the average healthy person seeking prevention.

For people with *known* cardiovascular disease, or high risk factors, who comprise a sizable percentage of the adult population, I'm encouraged by this study's findings, substantiating Omega-3's benefits in at-risk persons.

Yet the headlines misleadingly only emphasized the *negative* findings about fish oil.

Unfortunately, doctors are very literal, and many are likely to inform patients that they should stop their fish oil because of the "dangers" hinted at by this study. I'm not buying it.