

Wild Alaskan Salmon Is a Powerhouse of Nutrition

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✓ Fact Checked

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STORY AT-A-GLANCE

- › Research suggests that eating oily fish once or twice a week may increase your lifespan by more than two years, and reduce your risk of dying from cardiovascular disease by 35%
- › Compared to those in the lowest percentiles, those with omega-3 blood levels in the highest 20% were 27% less likely to die of any cause; 40% less likely to die of coronary heart disease, and 48% less likely to die of an arrhythmia
- › If you want to maximize health benefits from fish, steer clear of farmed fish, particularly farmed salmon, and even more specifically, genetically engineered farmed salmon, which may end up being approved within the next two years – especially if you're seeking to improve your omega-3 to omega-6 ratio
- › The ratio of omega-3 to omega-6 fat of wild salmon is far superior to farmed. Whereas farmed salmon has a 1-to-1 ratio of omega-3s and omega-6s (due to its "junk food" diet), the ratio for wild sockeye salmon is between 6- and 9-to-1, which is a more ideal ratio
- › Avoid Atlantic salmon, as salmon labeled "Atlantic Salmon" typically comes from fish farms. Look for "Alaskan salmon," and "sockeye salmon," as Alaskan sockeye is not allowed to be farmed and is therefore bound to be wild

This article was previously published April 15, 2013, and has been updated with new information.

A slew of media reports encouraging you to eat more fish have surfaced lately, following the publication of a study on omega-3 fats and health. The research, published in *The Annals of Internal Medicine*,¹ suggests that eating oily fish once or twice a week may increase your lifespan.

Naturally, there's still the issue of environmental pollution and contamination, which was not addressed in this study. Do the benefits of eating fish really outweigh the risks of contamination?

In my view, I believe the benefits CAN outweigh the risks, provided you make really wise choices. There are few uncontaminated fish available these days so you need to know what to look for. Needless to say, toxins like mercury and PCB will not do your health any favors.

Lately, I've shifted my own diet a bit, and am now eating three ounces of Wild Alaskan salmon about every other day. But this is really the ONLY fish I'll eat on a regular basis, and the only one I feel comfortable recommending as a good source of healthful fats.

Higher Blood Levels of Omega-3 Linked to Longer Life Span

The featured study investigated how eating fatty fish affected health. Nearly 2,700 American seniors in their seventies were included in the study. None of them had prevalent coronary heart disease (CHD), stroke, or heart failure at the outset of the study.

Rather than rely on food diaries, the researchers measured blood levels of omega-3's instead. Since none of the participants took omega-3 supplements, their levels were indicative of their omega-3 consumption primarily from fish.

Phospholipid fatty acid levels and cardiovascular risk factors were measured in 1992, and the relationships with mortality and incidents of fatal or non-fatal CHD and stroke were assessed through 2008 — a total of 16 years. According to the featured NPR article:²

"After controlling for factors like age, sex and lifestyle, the researchers found that, on average, adults with the highest blood levels of omega-3 fatty acids lived 2.2 years longer. In particular, these adults had a 35% lower risk of dying from cardiovascular disease – which is in line with other studies that have tied omega-3's to cardiovascular benefits.

Higher levels of fatty acids were most strongly associated with decreased risk of coronary heart disease and stroke."

Compared to those in the lowest percentiles, those with omega-3 blood levels in the highest 20% were:

- 27% less likely to die of any cause
- 40% less likely to die of coronary heart disease, and
- 48% less likely to die of an arrhythmia

One drawback is that since it was not a randomized trial, the findings cannot prove causation, meaning there's no way of telling whether higher omega-3 blood levels were solely responsible for the health effects. That said, there's ample evidence that omega-3 is critical for optimal health, particularly cardiovascular health, so this research provides additional support for the value of optimizing your omega-3 intake.

In the following video, I interview Randy Hartnell, founder-president of Vital Choice Wild Seafood and Organics, about the differences between wild and farmed salmon. Hartnell spent more than 20 years as a commercial fisherman before forming his company in 2001, which features sustainably harvested wild salmon that are particularly low in heavy metals.

I'm a huge fan of their sockeye salmon, and Vital Choice salmon is about the only type of fish I eat, for reasons I'll discuss below.

Media Tries to Mislead You About Healthful Fish Choices

According to lead author Dr. Dariush Mozaffarian, dean of the Jean Mayer Professor at the Tufts Friedman School of Nutrition Science and Policy, the reason we need omega-3 is because 95% of your cells' membranes are made of fat. Without fats such as omega-3, your cells cannot function properly. He recommends eating one or two servings of fatty fish per week to optimize your blood levels of omega-3.

Interestingly enough, the New York Times³ gets quite specific about the types of fish recommended: "... 3.5 ounces of farmed salmon, 5 ounces of anchovies or herring, or 15 to 18 ounces of cod or catfish."

FARMED salmon? I think not ... That is one of your WORST options, for a number of reasons that I will detail below. Cod and catfish also primarily come from aquatic fish farms these days. Unfortunately, fish farming has become big business, and a protected one at that.

Let me put it to you plainly: If you want to maximize health benefits from fish, you want to steer clear of farmed fish, particularly farmed salmon, and even more specifically genetically engineered (GE) farmed salmon. December 21, 2012, the US Food and Drug Administration took a giant step closer toward the final approval of the first genetically engineered (GE) food animal – a salmon designed to grow abnormally fast,⁴ and to an unnaturally large size.

Today, if you get Atlantic salmon, it is all farmed, as commercial fishing for wild Atlantic salmon is banned in the U.S. under the Endangered Species Act.⁵ Not only that, the FDA has approved the farming and sale of GE Atlantic salmon across the U.S. Most recently, a land-based salmon farm is going up in Pioneer, Ohio, in a 479,000 square-foot building, with the first harvest targeted for 2025.⁶

Why would they allow GE salmon? In its approval for the first GE farmed salmon from AquAdvantage, the FDA said:

"AquAdvantage Salmon has been genetically engineered to reach a growth marker important to the aquaculture industry more rapidly than its non-GE Atlantic salmon counterpart.

It does so because it contains an rDNA construct that is composed of the growth hormone gene from Chinook salmon under the control of a promoter (a sequence of DNA that turns on the expression of a gene) from ocean pout (another type of fish). This allows the salmon to grow faster."

In other words, it's about growing more fish, bigger and faster – and a big financial return in the end for the fish farm industry.

How to Identify Wild Salmon From Farm-Raised

Unfortunately, salmon are often mislabeled (and when they are, as of January 1, 2022,⁷ they're labeled as "bioengineered," a term that the USDA thought up, complete with a green, white and yellow label). Additionally, some studies have shown that as much as 70% to 80% of the fish marked "wild" are actually farmed. This includes restaurants, where 90% to 95% of salmon are farmed, yet may be mis-listed on the menu as "wild."

So, how can you tell whether a salmon is wild or farm-raised? The flesh of wild sockeye salmon is bright red, courtesy of its natural astaxanthin content. It's also very lean, so the fat marks, those white stripes you see in the meat, are very thin. If the fish is pale pink with wide fat marks, the salmon is farmed. That's why you should avoid Atlantic salmon which, as I said, comes only from fish farms.

The two designations you want to look for are: "Alaskan salmon," and "sockeye salmon," as Alaskan sockeye is not allowed to be farmed. So, canned salmon labeled "Alaskan Salmon" is a good bet, and if you find sockeye salmon, it's bound to be wild. Again, you can tell sockeye salmon from other salmon by its color; its flesh is bright red opposed to pink, courtesy of its superior astaxanthin content. Sockeye salmon actually has one of the highest concentrations of astaxanthin of any food.

Why Farmed Salmon Is an Inferior Choice

As the first video discusses, there are three major differences between wild-caught and farmed salmon, and once you realize how different the fish are, based on how they were

raised, you'll see why opting for the cheaper alternative isn't the wisest choice – especially if you're seeking to improve your omega-3 to omega-6 ratio:

1. Nutritional content – Wild salmon swim around in the wild, eating what nature programmed them to eat. Therefore, their nutritional profile is more complete, with micronutrients, fats, minerals, vitamins and antioxidants like astaxanthin (which gives salmon its pink, or in the case of sockeye, red-colored, flesh.)

Farmed salmon, on the other hand, are fed an artificial diet⁸ consisting of grain products like corn and soy (most of which is genetically modified), vegetable oils, vitamins, plant proteins and minerals, along with chicken and feather meal, artificial coloring and synthetic astaxanthin, which is not approved for human consumption, but is permitted to be used in fish feed.

Mother Nature never intended fish to eat these things, and as a consequence of this radically unnatural diet, the nutritional content of their flesh is also altered, and not for the better. Farmed salmon taste different than wild-caught, and much of it has to do with the altered fat ratio, which is dramatically different. Farmed salmon contain far more omega-6, courtesy of their grain-based diet.

The ratio of omega-3 to omega-6 fat of wild salmon is far superior to farmed. Wild salmon typically has 600 to 1,000% more omega-3s compared to omega-6s. So whereas farmed salmon has a 1- to- 1 ratio of omega-3s and omega-6s – again due to its "junk food" diet – the ratio for wild sockeye salmon is between 6 and 9 to 1.

This is important, because if you're trying to improve your omega-3 to omega-6 balance, you simply will not accomplish it with farmed salmon.

2. Fish Health – Wild salmon return to their native spawning grounds each year, without you having to do anything, while farmed salmon are kept in pens. Naturally, fish swimming in the wild get more exercise, and this alone makes wild fish healthier than their incarcerated counterparts.

As explained by Tony Farrell⁹ with the University of British Columbia Zoology department, fish kept in constrained environments become the aquatic version of "couch potatoes," with similar health consequences to what humans face when we don't exercise enough.

Recent research¹⁰ has shown that survival rates of fish that have received sufficient exercise is 13% higher than the "couch potato" controls, and the exercise-conditioned fish had better growth and stronger immune systems, courtesy of certain gene activations.

3. Environment — Nearly 99% of farmed salmon are raised in net pens in the open ocean. All the excess food that is dropped in ends up going out in the environment — the genetically engineered ingredients, the pesticides, the antibiotics and chemical additives. Anything the fish do not consume, along with all their now unnatural waste products, ends up contaminating the environment.

To learn more about the many hazards of fish farming, check out Center for Food Safety's article on the human health risks of aquaculture.¹¹

There's also the vegetarian or vegan ethical aspect. Wild sockeye salmon are the vegetarians of the salmon world. Their diet consists of krill, plankton and algae, and they are caught at the very end of their life cycle. By the time they enter the fishing grounds, they've lived 95% of their natural life in the wild. At the end of their life, they fight their way up-river to spawn, after which they die a natural death — unless they're caught by fishermen or get eaten by some other predator.

Lethal Salmon Virus Found in Installed Salmon Farms

In 2011, according to whistleblower Rick Routledge, professor and fisheries statistician at Simon Fraser University in Canada, wild river inlet sockeye were found to be infected with infectious salmon anemia virus (ISA), also known as salmon influenza.¹² This highly lethal and much-feared virus is directly attributed to farmed salmon, and has

proliferated in every region across the globe where Atlantic salmon farms have been installed.

At least 11 species of fish in the British Columbia's Fraser River were also been found to be infected with ISA, yet the Canadian food inspection agency has aggressively refuted the findings. In fact, everyone who spoke up about these salmon viruses, which can be traced back to salmon farms, was shut down in some way or another.

By muzzling scientists looking into this problem, the Canadian government was allowing potentially contaminated farm-raised salmon to be sold, exported, and consumed, which is yet another reason to avoid farmed salmon.

One thing officials did do in 2011, however, was to require that ISA be reported whenever and wherever it's found – a full 10 months before Routledge did just as the new rule said, and reported it.¹³ Today, we know that numerous salmon diseases can spread from salmon fish farms, and that:¹⁴

- ISA has only appeared where salmon are raised in aquaculture and has spread worldwide since first being reported in Norway in 1984.
- ISA can infect herring, as well as, salmon. ISA was first reported in Eastern Canada in 1996 and continues to cause problems there.
- In 2007, ISA began in a nonlethal form in Chile and became a virulent epidemic killing 70 per cent of the farm salmon. Chile does not have wild salmon.
- In January 2009, a group of Canadian scientists, including David Suzuki, signed a letter warning the Canadian Fisheries Minister of the risks of introducing ISA into B.C.

In 2022, as fish farms continue to grow in number, ISA isn't the only concern. In fact, Gizmodo reports that a different virus known as Piscine orthoreovirus-1, or PRV-1, may have spread from Atlantic salmon aquafarms to wild Pacific salmon.¹⁵ The disease can cause numerous ailments in salmon, including red blood cells that burst in their abdomens and eat away at their hearts and skeletal muscles. Looking at a study that researchers did to genotype the disease, Gizmodo said:

"Currently, PRV-1 is running rampant in farms where Atlantic salmon are raised. The authors found that more than 97% of fish in all Atlantic salmon farms had the virus by the time they were 18 months into the aquacultural production cycle. From those farms, the authors' findings suggest, PRV-1 is continually spreading to wild Pacific salmon ...

This isn't just disgusting. It's also potentially devastating for wild Chinook populations, which are already facing numerous threats like overfishing, encroaching human development, and habitat loss. The authors suspect that infectious disease has also played a role in their decline."

Aside from the unknown effects on human health from eating salmon with lethal fish viruses like this, these contaminated farmed salmon may also pose a threat to local watersheds far from the site of origination, as viruses are preserved by cold so when you wash the fish the viruses get flushed down your drain.

The Best and Worst Fish in Terms of Environmental Toxins

Interestingly enough, and fortunately for us, the types of fish that tend to suffer the least amount of toxic contamination also happen to be some of the best sources of fat and antioxidants. So, by choosing wisely, the benefits of a diet high in fish can still outweigh the risks.

Most major waterways in the world are contaminated with mercury, heavy metals and chemicals like dioxins, PCBs and other agricultural chemicals that wind up in the environment.

However, the risk of authentic wild-caught Alaskan sockeye salmon accumulating high amounts of mercury and other toxins is reduced because of its short life cycle, which is only about three years. Additionally, bioaccumulation of toxins is also reduced by the fact that it doesn't feed on other, already contaminated, fish.

If you still want to take precautions, you can do what I do: Whenever I eat fish, I eat it with chlorella tablets. The chlorella is a potent mercury binder and if taken with fish will

help bind the mercury before your body can absorb it, so it can be safely excreted in your stool.

Other fish with short lifecycles also tend to be better alternatives in terms of fat content, so it's a win-win situation — lower contamination risk and higher nutritional value. A general guideline is that the closer to the bottom of the food chain the fish is, the less contamination it will have accumulated. This includes:

- **Sardines**
- Anchovies
- Herring

If you insist on eating typical, store-bought fish and want to know more about the extent of your mercury exposure, I urge you to check out the online mercury calculator¹⁶ to get an idea of the risks. Additionally, as mentioned above, you may want to consider taking natural mercury chelators with any fish dinner. This includes zeolite (green clay), chlorella, and fermented vegetables.

Additionally, an observational study published in 2022 found that eating too much of certain kinds of fish could increase your risk of skin cancer.¹⁷ Specifically, the team found that:

"... people averaging about 14 grams of tuna each day had a 20-percent higher risk for malignant melanoma than those averaging just 0.3 grams per day. Similarly, those eating 17.8 grams of nonfried fish per day had an 18-percent higher risk of developing melanoma and a 25-percent higher risk for stage 0 melanoma." Study authors added:

"We speculate that our findings could possibly be attributed to contaminants in fish, such as polychlorinated biphenyls, dioxins, arsenic and mercury. Previous research has found that higher fish intake is associated with higher levels of these contaminants within the body and has identified associations between these contaminants and a higher risk of skin cancer.

However, we note that our study did not investigate the concentrations of these contaminants in participants' bodies and so further research is needed to confirm this relationship."

We also know that larger fish, which tend to live longer and have the highest contamination levels and should be avoided include (please note this is not an exhaustive listing):

Tuna (tuna steaks, sushi, and canned)	Sea bass and largemouth bass	Marlin
Halibut	Pike	Walleye
Shark	Sword fish	White croaker

Enjoy Your Fish, but Choose Wisely!

Fish has always been the best source for the animal-based omega-3 fats EPA and DHA, but as levels of pollution have increased, this treasure of a food has become less and less viable as a primary source of healthful fats. However, there are still exceptions, and the key is to understand which types of fish are the least contaminated.

I strongly recommend buying wild fish, and Wild Alaskan salmon is in my opinion one of the absolute best, both in terms of nutrition and potential contamination.

Remember, fish farms are the aquatic version of a confined animal feeding operation (CAFO), and just like land-based cattle and chicken farms, fish farms breed disease due to crowding too many fish together in a small space.

They also produce toxic waste and fish of inferior quality. These fish are further contaminated by drugs and genetically engineered corn and soy meal feed, and in the case of salmon, synthetic astaxanthin, which is made from petrochemicals that are not approved for human consumption.

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