

**Title:** Study Finds More Toxins in Farmed than Wild Salmon.

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Jan. 9--Farm-raised salmon contain higher levels of certain pollutants that can cause cancer than salmon caught in the wild, according to a new study that advises consumers to eat no more than one meal a month of the popular fish.

The first thorough study of the topic raises another food dilemma for Americans, who could be torn between the proven benefits of eating fish and the emerging, but still unclear questions about the safety of farm-raised salmon.

Salmon consumption has soared in the U.S. in the last decade, in part because the fish is one of the leading sources of heart-healthy omega-3 fatty acids.

But in the study published Friday in the journal *Science*, researchers concluded that salmon's benefits are partially offset by toxic contaminants including polychlorinated biphenyls, or PCBs, a chemical mixture that was banned in the 1970s but remains pervasive in the environment.

Analysis showed only European farm-raised salmon posed a risk serious enough to counterbalance its beneficial effects.

Relying on guidelines established by the Environmental Protection Agency, the authors concluded that eating more than one meal of farm-raised salmon a month could slightly increase the risk of getting cancer later in life.

However, the Food and Drug Administration joined industry officials in contending that consumers have nothing to fear.

"We don't see a public health concern here," said Terry Troxell, director of the FDA's office of plant and dairy foods and beverages. "We're more concerned that this study will cause people to shift their diets from salmon to alternatives that are less healthy."

Even before the study was published, it prompted a heated debate about the benefits and risks of eating salmon. Marketed as an alternative to red meat, salmon is the third most popular seafood eaten in the United States, behind shrimp and tuna, according to the National Fisheries Institute.

To produce the new study, researchers analyzed more than 700 whole salmon or fillets purchased from supermarkets and wholesalers in Chicago and 15 other cities in North America and Europe.

Fish raised in North and South America, where most salmon purchased in the United States comes from, contained lower levels of the toxins than those raised in Europe, according to the study.

Lake Michigan salmon were not included in the study of wild salmon.

Filletts tested for the study were raw, with the skin left on, Troxell said. Removing the scales and grilling salmon can remove a significant amount of PCBs and other pollutants that build up in fat.

Many scientists and public-health groups agreed that the benefits of eating salmon and other fatty fish outweigh any risks. The American Heart Association recommends eating three ounces of cooked fish, including salmon, at least twice a week to reduce the risk of heart disease.

"I would still feed salmon to my grandchildren, and to suggest otherwise is almost inexcusable," said Michael Gallo, professor of environmental and community medicine at Rutgers University, who criticized the study's conclusions but praised the researchers for highlighting differences between farm-raised and wild salmon.

By raising salmon in floating ocean pens, the industry has been able to cut costs and stock supermarkets year-round at lower prices. Farm-raised salmon costs about \$5 a pound, a third of the cost for most wild salmon, said Alex Trent, executive director of Salmon of the Americas, a trade group for salmon farmers.

PCB levels are about seven times higher in farm-raised salmon because they are fed ground-up fish and fish oil contaminated with the pollutant, unlike their cousins in the wild, which eat a variety of aquatic life. The industry is addressing the problem by replacing fish oil with soybean or canola oil, Trent said.

Although PCBs were banned in the late 1970s, they are among a class of pollutants that build up in fatty tissues, don't break down easily in the environment and can be spread easily among air, water and land.

Exposure to PCBs may increase the risk of cancer and cause developmental problems in infants. The EPA considers PCBs to be probable human carcinogens, though the conclusion is based on animal studies that have been criticized by some scientists.

The other toxins analyzed in the salmon study were dioxins, an industrial byproduct, and two banned pesticides, toxaphene and dieldrin.

Authors of the study, funded by the Pew Charitable Trusts, said they hoped their research would speed up changes in the diet of farm-raised salmon.

"People need to ask more questions when they are at the supermarket," said Ronald Hites, the study's lead author. "Food choices are personal decisions, but people should be able to make informed decisions."

The authors also focused attention on conflicting advice from two federal agencies about consuming fish contaminated with PCBs.

The combined concentrations of PCBs, toxaphene and dieldrin in the tested salmon trigger EPA guidelines that warn consumers to limit eating more than one meal a month of the contaminated fish, according to the study. But the PCB levels are about 1/50th the FDA's legal limit for commercial fish of 2,000 parts per billion.

The FDA has the final say on the issue, but the EPA's guidelines are intended to help states establish food advisories.

Persistent levels of PCBs in Illinois have led state officials to caution sport fishermen to limit eating the amount of fish they catch in many waterways.

However, these fish generally have higher levels than the farm-raised salmon.

"What is legal isn't necessarily what is safe," said Jane Houlihan, vice president for research at the Environmental Working Group, a nonprofit research organization that conducted a similar study last year that found higher levels of PCBs in farm-raised salmon than wild salmon. "As long as the government fails to speak with one voice about this issue, consumers are going to be confused about what they should do."

FDA officials defended their standard but said they are reviewing it as part of an investigation of PCBs in the nation's food supply.

At Burhop's Seafood in Wilmette, manager Kevin Pierce said the latest fish study is bound to draw more questions from his customers.

"I had some of the wild salmon FedExed here during the holidays because enough of my customers are on top of this issue," Pierce said. "If they are uncomfortable about anything, I always tell them they've got about 25 other choices."

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