

## Fish Eaters Stay Sharper with Age

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CHICAGO — Eating fish at least once a week is good for the brain, slowing age-related mental decline by the equivalent of three to four years, a study suggests.

The research adds to the growing evidence that a fish-rich diet helps keep the mind sharp. Previous studies found that people who ate fish lowered their risk of Alzheimer's disease and stroke. Fish such as salmon and tuna that are rich in omega-3 fatty acids also have been shown to prevent heart disease.

For the new study, researchers measured how well 3,718 people did on simple tests, such as recalling details of a story. The participants, all Chicago residents 65 and older, took the tests three times over six years. They also filled out a questionnaire about what they ate that included 139 foods.

"We found that people who ate one fish meal a week had a 10 percent slower annual decline in thinking," said co-author Martha Clare Morris, an epidemiologist at Rush University Medical Center. "Those who ate two fish meals a week showed a 13 percent slower annual decline."

At the same time, the Food and Drug Administration warns pregnant women, nursing mothers and children to avoid certain types of fish with high levels of mercury — shark, swordfish, king mackerel or tilefish. Mercury can damage the growing brains of fetuses and children.

The study of fish and mental sharpness was posted Monday on the Web site of the Archives of Neurology and will appear in the journal's December issue. It was published early online because of its general interest.

The researchers looked for, but failed to find, a link between omega-3 fatty acids and protection from brain decline. Previous studies found such a link.

Morris said it is possible that something else about eating fish worked to keep people's minds sharp. Or the food questionnaire might have been too broad to allow researchers to estimate omega-3 intakes accurately, said Dr. Pascale Barberger-Gateau, who does similar research at the University of Bordeaux in France but was not involved in the current study.

In the questionnaire, "only four seafood items were included, which did not allow this distinction," Barberger-Gateau said in an e-mail.

The questionnaire included four broad seafood categories: tuna fish sandwich; fish sticks/fish cakes/fish sandwich; fresh fish as a main dish; and shrimp/lobster/crab.

Testing participants' blood for omega-3 fatty acids would have given a more definitive measure, said Dr. William E. Connor of the Clinical Nutrition Department of Medicine at Oregon Health & Science University. He was not involved in the study.

### *Here's how fish rate according to different nutrients.*

**Best sources of omega 3** fatty acids: salmon, albacore tuna, mackerel, lake trout, Atlantic halibut, sardines, herring.

**Highest in protein** per serving: tuna, salmon, snapper, swordfish. Most fish are similar in protein content. Best source of protein in grams per calorie of fish are: lobster, shrimp, tuna, cod.

**Highest vitamin B-12** content: clams, mackerel, herring, blue fin tuna, rainbow trout, and salmon.

**Highest in iron:** clams, shrimp, mackerel, swordfish.

**Lowest in iron:** orange roughy, snapper, sea bass.

**Highest in zinc:** crab, lobster, swordfish, and clams.

**Highest in calcium:** canned salmon with bones.

**Highest in total fat, saturated fats, and calories:** mackerel.

**Lowest in total fat and saturated fat:** lobster, orange roughy.

**Highest in cholesterol:** shrimp, mackerel, lobster.

**Lowest in cholesterol:** yellowfin tuna, albacore, tuna, snapper, halibut, grouper.

**Most risky fish for pollutants:** wild catfish, shrimp, lake trout (warm-water fish and those in lakes from agrochemical run-off).

**Least risky fish for pollutants:** deep-water ocean fish, salmon and tuna.

**OMEGA-3 FATTY-ACID CONTENT OF POPULAR FISH\***

<b>FISH</b> <b>(Serving size = 6 ounces cooked, unless otherwise specified)</b>	<b>OMEGA 3</b> <b>FATS</b> <b>(grams)</b>
Salmon, sockeye	4
Salmon, Atlantic	3.1-3.7
Tuna, albacore	3.5
Sardines in sardine oil (3 oz)	2.8-3.3
Salmon, chinook	2
Salmon, coho	2
Salmon, king	1.9
Trout, rainbow, wild	1.7
Tuna, bluefin	1.5
Anchovy, European (3.3 oz)	1.4
Swordfish	1.4
Herring, Atlantic and Pacific (3 oz)	1.2-1.8
Oysters	1.1
Shark	1.0
Mackerel (3 oz, canned)	1.0

Pompano, Florida	1.0
Whiting	0.9
Flounder	0.9
Sole	0.9
Rockfish	0.8
Halibut, Pacific	0.8
Pike, walleye	0.6
Perch, ocean	0.6
Squid	0.6
Snapper	0.6
Cod, pacific	0.5
Haddock	0.4
Yellowtail	0.4
Catfish	0.3-0.4
Crab, Dungeness (3 oz, steamed)	0.3
Shrimp (3 oz, steamed)	0.3
Tuna (canned, 3 oz)	0.2-0.7
Lobster	0.2
Clams (3 oz, steamed)	0.2

**Other ways to increase your omega 3 intake is to incorporate some of these other sources of omega 3 oils into your diet:**

- flax oil or seeds
- pumpkin seeds
- walnuts or walnut oil
- grass fed beef
- eggs from naturally grazing hens