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NUTRITION AND HEALTH INFO SHEET

Omega-3 Fatty Acids

KARRIE HENEMAN, Assistant Project Scientist, Department of Nutrition, University of California, Davis; **SHERI ZIDENBERG-CHERR**, UC Cooperative Extension Nutrition Science Specialist, Department of Nutrition, University of California, Davis

What are omega-3 fatty acids?

Omega-3 fatty acids are a group of fatty acids important for human health. There are three main types of omega-3 fatty acids: eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), and alpha linolenic acid (ALA), which is converted in our bodies to EPA or DHA after consumption. High concentrations of omega-3 fatty acids are found in fish and plant oils (1), in addition to human milk and eggs from chickens fed a fishmeal diet.

What is the omega-3 fatty acid content of commonly consumed fish and plant oils? (2)

Fish	Omega-3 fatty acids (mg/3oz)	Plant oils	Omega-3 fatty acids (g/tbsp)
cod	134	pumpkin seeds	0.051
catfish	151	olive oil	0.103
haddock	203	walnuts, black	0.156
clams	241	soybean oil	1.231
shrimp	267	rapeseed oil	1.302
flounder	426	walnut oil	1.414
pollock	460	flaxseeds	2.350
tuna, canned	733	walnuts, English	2.574
salmon	1825	flaxseed oil	7.249

What are the beneficial effects associated with consumption of omega-3 fatty acids found in fish?

Consumption of omega-3 fatty acids from fish has been associated with a variety of beneficial effects, including a reduction in overall mortality. This is largely due to protection against coronary heart disease, in part through lowered heart rate and blood pressure (3). Other beneficial effects associated with fish consumption include reduced risk of stroke, depression, and mental decline with aging (3). Current research also suggests that a deficit in omega-3 fatty acids could negatively impact brain development in a fetus (4).

What are the current recommendations for fish consumption?

The American Heart Association recommends eating a variety of fish (particularly fatty fish) at least two times a week for people without coronary heart disease. (A serving is 3 ounces of cooked fish. See the metric conversion table at the end of this publication.) For people with coronary heart disease, the recommendation is 1 gram of omega-3 fatty acids per day (preferably from fatty fish) (5). However, some species of fish are high in mercury, a metal which can negatively impact brain development in young children and developing fetuses (see table below).



What is the omega-3 fatty acid and mercury content of fish and shellfish commonly eaten in the United States? (6)

Fish	Omega-3 fatty acids (g/3 oz)	Mercury (ppm)
cattfish*	0.15–0.20	0.05
clams*	0.24	below the level of detection
cod*	0.13–0.24	0.11
crabs*	0.34–0.40	0.06
flounder or sole*†	0.43	0.05
grouper	0.21	0.55
halibut†	0.40–1.00	0.26
herring*†	1.71–1.81	0.04
lobster	0.07–0.41	0.31
mahi mahi	0.12	0.19
orange roughy	0.002	0.54
oysters*†	0.37–1.17	below the level of detection
pollock*†	0.46	0.06
red snapper	0.27	0.60
salmon (fresh, frozen)*†	0.68–1.83	0.01
scallops*	0.17	0.05
shrimp*	0.27	below the level of detection
tuna (canned, light)*†	0.26–0.73	0.12
tuna (fresh, frozen)†	0.24–1.28	0.38

Note: Be sure to check local advisories regarding the safety of the fish you catch (7). Advisories for California water bodies can be found at http://oehha.ca.gov/fish/so_cal/index.html.

* Indicates fish and shellfish with lower levels of mercury (8).

† Indicates fish and shellfish highest in omega-3 fatty acids.

Because of the mercury danger, the United States Food and Drug Administration and the United States Environmental Protection Agency recommend not eating swordfish, tilefish, king mackerel, or shark for women who are pregnant, breastfeeding, or of childbearing age and for children and teens less than 17 years old (see table below). These groups may eat up to 12 ounces per week of a variety of fish low in mercury, but they should limit the amount of albacore tuna and tuna steaks or fillets to no more than 6 ounces per week (7). Overall, the health benefits of eating fish outweigh the potential risks, especially when the above safety recommendations are followed (9).

What fish have high levels of mercury? (6)

Fish	Mercury (ppm)	Omega-3 fatty acids (g/3 oz)
king mackerel	0.73	0.34
swordfish	0.97	0.70
shark	0.99	0.90
tilefish	1.45	0.80

METRIC CONVERSIONS

English	Conversion factor for English to metric	Conversion factor for metric to English	Metric
grain	64.80	0.015	milligram (mg)
fluid ounce (fl oz)	29.57	0.034	milliliter (ml)
fluid ounce (fl oz)	2.96	0.0034	deciliter (dl)
ounce (oz)	28.35	0.035	gram (g)
cup	236.6	0.004	milliliter (ml)

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E-mail inquiries: danrcs@ucdavis.edu

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