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**NUTRITION AND HEALTH INFO SHEET**

# Omega-3 Fatty Acids

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**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](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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