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## Fish

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### Summary

- Eating two or more serves of fish weekly can reduce the risk of a range of diseases, from childhood asthma to prostate cancer.
  - Healthy ways to enjoy fish include baked, poached, grilled and steamed.
  - Pregnant women, women planning pregnancy and children up to six years of age should choose the fish they eat carefully.
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Australia's leading health research body, the National Health and Medical Research Council (NHMRC), suggests that Australians should eat more fish. Fish is nutritious, providing energy (kilojoules), protein, selenium, zinc, iodine and vitamins A and D (some species only). Fish is also an excellent source of readily available long-chain omega-3 fatty acids, which are well known for their health benefits and are essential for life.

Researchers worldwide have discovered that eating fish regularly – two or more serves weekly – may reduce the risk of diseases ranging from childhood asthma, cardiovascular diseases, prostate cancer and other diseases typical of Western societies. Healthy ways to enjoy fish include baked, poached, grilled and steamed.

### Health benefits of eating fish

Regular consumption (one to three times per week) of fish can reduce the risk of various diseases and disorders. Selected research findings include:

- **Asthma** – children who eat fish may be less likely to develop asthma.
- **Brain and eyes** – fish rich in omega-3 fatty acids can contribute to the health of brain tissue and the retina (the back of the eye).
- **Cardiovascular disease** – eating at least two serves of fish per week reduces the risk of heart disease and stroke by reducing blood clots and inflammation, improving blood vessel elasticity, lowering blood pressure, lowering blood fats and boosting 'good' cholesterol.
- **Dementia** – elderly people who eat fish at least once a week may have a lower risk of developing dementia, including Alzheimer's disease.
- **Diabetes** – fish may help people with diabetes manage their blood sugar levels.
- **Eyesight** – breastfed babies of mothers who eat fish have better eyesight, perhaps due to the omega-3 fatty acids transmitted in breastmilk. Eating fish two or more times a week is associated with reduced risk of age-related macular degeneration.
- **Inflammatory conditions** – regular fish consumption may relieve the symptoms of rheumatoid arthritis, psoriasis and autoimmune disease.
- **Prematurity** – eating fish during pregnancy may help reduce the risk of delivering a premature baby.

### Foods rich in omega-3 fatty acids

The National Heart Foundation recommends Australians consume at least 500 mg per day of long-chain omega-3 fatty acids. This can be achieved by eating a combination of two to three serves of oily fish every week and supplementing your intake with fish oil supplements (oil or capsule) and omega-3 enriched food or drinks (such as eggs, bread and milk),

Oily fish are those that contain at least ten per cent fat (healthy omega-3 oils), such as canned sardines, salmon and some varieties of canned tuna.

Approximate amounts of omega-3 fatty acids (EPA and DHA) per 150 g serve of varieties of fish are:

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- salmon (fresh Atlantic or Australian) >500 mg
- canned salmon 500–1000 mg
- canned sardines 1,500 mg
- trout (fresh rainbow), flathead 300–400 mg
- gemfish >500 mg
- canned tuna 300–500 mg
- rainbow trout, Smoked cod 300–400 mg
- barramundi, snapper, John Dory 200–300 mg.

Approximate amounts of omega-3 fatty acids in other foods are:

- two slices of fish oil-enriched white bread 50–120 mg
- lean beef or lamb (65 g serving) 20–90 mg respectively
- one fish oil-enriched egg 125 mg
- fish oil-enriched margarine (10 g) 60mg
- one regular egg 70–80 mg.

The best source of long-chain omega-3 fatty acids is fish, or alternatively fish oil capsules.

It is possible to consume too much omega-3 fatty acids. The upper level of intake is set at 3,000 mg per day. It is recommended not to take more than this from capsules without the supervision of a healthcare provider.

### **Fish oil reduces risk of heart disease**

Hundreds of studies have been done on fish or fish oils and their role in the prevention or treatment of heart disease. A review in the *British Medical Journal* recommends fish or fish oil supplements to prevent heart attacks, particularly in people with vascular disease. How omega-3 fats reduce heart disease is not known, but they are known to lower blood triglycerides and blood pressure, prevent clotting, are anti-inflammatory and reduce abnormal heart rhythms.

### **A word of caution on mercury**

While it is recommended to eat two or more fish meals a week, it is wise to avoid fish high in mercury. Excess mercury appears to affect the nervous system, causing:

- numb or tingling fingers, lips and toes
- developmental delays in walking and talking in children
- muscle and joint pain
- increased risk of heart attack.

Fish high in mercury include shark, swordfish (broadbill) and marlin, ray, gemfish, ling, orange roughy (sea perch) and southern blue fin tuna. This is of particular importance for pregnant women, nursing mothers, women planning pregnancy and children up to six years old. Pregnant women are advised to consume no more than one serve (150 g) per fortnight of marlin, shark, or swordfish and no other fish that fortnight or one serve (150 g) per week orange roughy and no other fish that week.

If catching and eating your own fish, don't fish in polluted waters. Bottom feeder species, such as catfish, may ingest more pollutants.

### **Types of fish cuts**

The types of fish cuts available include:

- fillet – the boneless flank of the fish
- dressed – with head and fins (entrails, scales and gills are removed)
- steak – cross-sections taken from a dressed fish
- gutted – whole fish with entrails removed.

### **Healthy ways to cook fish**

Healthy ways to cook fish include:

- Baking – make shallow cuts along the top of the fish. Put into a greased dish and cover with foil. Flavour with herbs, lemon juice and olive oil. Bake at around 180 °C and baste frequently.
- Shallow frying – dry and flour the fish. Place a small amount of oil or butter in the pan. Fry the fish at a medium heat.
- Grilling – cut slashes into whole fish to help the heat penetrate the flesh. Place fish on a preheated grill. Baste frequently.
- Poaching – not suitable for flaky varieties. Place fish in gently simmering stock. Whole fish should be placed in a pan of cold stock, which is then slowly brought up to a gentle simmer.
- Steaming – put fish in a steamer or on a plate over a saucepan containing gently boiling water. Cover.

### **Cooking times for fresh fish**

To estimate the cooking time of a fresh piece of fish, measure the meat at its thickest part. Suggested cooking times include:

- One cm thick – bake for 3 minutes, shallow fry for 4 minutes, grill for 5 minutes, poach for 8 minutes, steam for 3 minutes.
- Two cm thick – bake for 11 minutes, shallow fry for 7 minutes, grill for 6 minutes, poach for 10 minutes, steam for 7 minutes.
- Three cm thick – bake for 15 minutes, shallow fry for 10 minutes, grill for 9 minutes, poach for 12 minutes, steam for 11 minutes.
- Four cm thick – bake for 20 minutes, shallow fry for 13 minutes, grill for 11 minutes, poach for 13 minutes, steam for 14 minutes.

### **Cooking times for frozen fish**

To estimate the cooking time of a frozen piece of fish, measure the meat at its thickest part. Suggested cooking times include:

- One cm thick – bake for 17 minutes, shallow fry for 7 minutes, grill for 12 minutes, poach for 10 minutes, steam for 5 minutes.
- Two cm thick – bake for 22 minutes, shallow fry for 11 minutes, grill for 15 minutes, poach for 15 minutes, steam for 11 minutes.
- Three cm thick – bake for 35 minutes, shallow fry for 15 minutes, grill for 24 minutes, poach for 22 minutes, steam for 13 minutes.
- Four cm thick – bake for 39 minutes, shallow fry for 18 minutes, grill for 28 minutes, poach for 28 minutes, steam for 16 minutes.

### **Sustainable fish shopping**

All fishing has some impact, but some fish choices are far better than others. Some fish types may be overfished, associated with by-catch of birds or mammals (long lines used to catch swordfish also snare turtles, sharks, dolphins and seabirds), or may be killed in the process of commercial fishing for other species.

### **Where to get help**

- Dietitians Association of Australia Tel. 1800 812 942
- Australian Marine Conservation Society (for information about sustainable fishing).

### **Things to remember**

- Eating two or more serves of fish weekly can reduce the risk of a range of diseases, from childhood asthma to prostate cancer.
- Healthy ways to enjoy fish include baked, poached, grilled and steamed.
- Pregnant women, women planning pregnancy and children up to six years of age should choose the fish they eat carefully.

**This page has been produced in consultation with and approved by:**

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