

# Omega-3 Fish Oils and Heart Disease

## Patient information - Department: Cardiovascular Prevention and Lipid Disorders Service

Omega-3 fatty acids are a type of polyunsaturated fat. EPA and DHA are the two main omega-3 long chain fatty acids found in oily fish. Omega-3 fats found in oily fish are the best way to increase tissue omega-3 levels rather than plant sources or fish oil supplements.



Over the past 5 years there has been little evidence showing omega-3 benefit in cardiovascular disease, including in those with type-2 diabetes. However higher doses of omega-3 fatty acids can help to lower triglyceride levels and increase HDL cholesterol <sup>(1)</sup>.

### Oily fish are the best source of EPA and DHA

Oil content	Fish
High content >1000 mg/100 g of fish	Salmon, Sardines, Mackerel, Pilchards, Tuna (fresh) and Herring
Medium content 500 – 1000 mg/100 g of fish	Oysters Mussels, Kahawai, Squid, Flounder and common Warehou
Fair content up to 500 mg/100 g of fish	Eel, Scallops, Hoki, Orange Roughy, Prawns, Tarakihi and most other white fish varieties

Canned tuna - check individual labels as amounts can vary among brands. When buying canned fish choose fish in Springwater rather than brine.

### How much omega-3 should I consume?

You can meet your weekly omega-3 target of 430-610mg/day easily. To reduce the risk of heart disease we recommend you eat two to three servings of fish, including oily fish, per week.

You can achieve this weekly target by including either: one 150g serve of fresh salmon, two 75g cans of sardines or two to three serves of fish with a medium to high omega-3 content per week.



### Do I need to be worried about mercury levels?

There has been concern about Mercury levels in certain varieties of fish. Most of us do not need to be concerned about mercury in fish as the levels are not high enough to cause any harm.

If you are pregnant, planning a pregnancy, breastfeeding or for children younger than 6 years old you should limit your intake of fish that contain high levels of mercury. It is recommended you limit your intake of these fish to no more than once a fortnight <sup>(2)</sup>.

#### These include:

- Marlin
- Shark
- Swordfish
- Orange Roughy
- Dogfish (excluding rig)
- Southern Bluefish Tuna

## What about omega-3 supplements?

A well-balanced diet that includes two to three serves of fish, including oily fish, per week will provide the adequate amount of omega-3 that your body needs.

Fish oil supplements may however be of benefit for those with high triglycerides and cardiac arrhythmia post-acute coronary syndrome.

Supplementation of 1g/day confers no CVD benefit in individuals without prior CVD, however there is now strong evidence of 25% reductions in CVD events in those with increased triglycerides and with increased CVD risk using high dose (4 grams) purified EPA<sup>(3)</sup> These highly purified products are not available in NZ yet.

**People taking blood thinners such as aspirin or Warfarin, Dabigatran, Clopidogrel, Ticagrelor or any other blood thinners need to check with their doctor first. People taking these medications will also need to monitor food intake, as one serve of oily fish plus the addition of omega-3 supplements could easily provide levels higher than what is recommended.**

## What to look for on an Omega-3 supplement label?

- Whether you are choosing fish oil capsules or oil calculate the total omega-3 content by adding the EPA and DHA content
- An Omega-3 dose of 500-1000mg is usually contained in two to three 1g fish oil capsules.

### Example

Total fish oil	1000mg
Eicosapentaenoic (EPA)	180mg
Docosahexaenoic (DHA)	120mg

← =300mg  
← Omega-3



Helpful tip: Labels usually list the amount per capsule. In this example, 3 capsules would provide 900mg of omega-3

## Other factors to consider when buying a fish oil supplement:

- Buy supplements with a long shelf life (the older the oil, the more likely it is to be rancid)
- Avoid buying supplements from retailers that store them under bright lights (this can speed up the oxidation process)
- Store your supplements in a cool dark cupboard or in the fridge.
- Care needs to be taken with the use of omega-3 supplements as excessive intakes of omega-3 (levels **≥3000mg** per day) can increase the risk of bleeding.
- People on blood thinners are also at an increased risk of bleeding if their intake of omega-3 is **≥2000mg** per day.

## References:

1. Abdelhamid AS, Brown TJ, Brainard JS, Biswas P, Thorpe GC, Moore HJ, Deane KHO, et al; Omega-3 fatty acids for the primary and secondary prevention of cardiovascular disease (Review). Cochrane Database of systematic Review. (7) 2018
2. Food Standards Australia & New Zealand, 2018 <http://www.foodstandards.gov.au/consumer/chemicals/mercury/Pages/default.aspx>
3. Bhatt DL, et al; Cardiovascular Risk Reduction with Icosapent Ethyl for Hypertriglyceridemia. N Engl J Med 2019; 380:11-22