Why eat more fish and seafood?

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Seafood is any form of sea life regarded as food by humans. Seafood prominently includes fish (finfish) and shellfish. Shellfish include various species of molluscs, crustaceans, and echinoderms. Edible sea plants, such as some seaweed and microalgae, are widely eaten as seafood around the world, especially in Asia. Most of the seafood harvest today is consumed by humans, but a significant proportion is used as fish food to farm other fish or to rear farm animals. Some seafood's like kelp are used as food for other plants (fertilizers).

Seafood is consumed all over the world; it provides the world's prime source of high-quality protein: 14-16% of the animal protein consumed world-wide; over one billion people rely on seafood as their primary source of animal protein. Fish is among the most common food allergens.

In Africa, fish already makes a vital contribution to food and nutritional security for 200 million Africans and provides income for over 10 million people – mostly small-scale fisheries, farmers, and entrepreneurs engaged in fish production, processing and trade. Fish has become a leading export commodity for Africa. However, many African countries are heavily reliant on unsustainable capture fisheries; accounting for 90% of the fish the continent produces. Already the per capita

fish supply in Africa has dropped from 8.8kg/capita in 1990 to 6.7kg/capita in 2005 and for a continent where food security is so precarious, the trend is worrying.

South Africa's population is not very large by world standards, and its people eat relatively little fish. A per capita consumption figure of 3.5 kg per person per year was published first in 1951. It has doubled by 2007 to 7.6 kg per person per year but still falls well below published figures for Spain (43.9 kg), Norway (50 kg), Seychelles (57.6 kg), Japan (66.1 kg), and Iceland 91.5 kg per person per year as was recorded in 2001. The Global average fish per capita figure from 2009 was 17 kg per person per year. The highest average fish consumption was recorded on the islands with Maldives (187.3 kg) and Tokelau (200 kg) per person per year leading.

Health Benefits of Fish:
Research over the past few decades has shown that the nutrients and minerals in seafood can make improvements in brain development and reproduction and has highlighted the role for seafood in the functionality of the human body.

Oil-rich fish such as trout, salmon, sardines, mackerel or herring are rich in long chain Omega-3 oils. These oils are found in every cell of the human body and are required for human biological functions such as brain functionality.

Whitefish such as hake, cob and Cape Salmon (geelbek) are very low in fat and calories which, combined with oily fish rich in Omega-3 such as sardines, trout, salmon, mackerel and fresh tuna, can help to protect against

coronary heart disease, as well as helping to develop the bones and teeth.

Including fish as a regular part of a balanced diet has shown to help the symptoms of rheumatoid arthritis, a painful condition that causes joints to swell up, reducing strength and mobility. Studies also show that sufferers feel less stiff and sore in the morning if they keep their fish oil intake topped up. Recent research has also found a link between Omega-3 fats and a slowing down in the wearing of cartilage that leads to osteoarthritis, opening the door for more research into whether eating more fish could help prevent the disease.

The health benefits derived from consuming the essential omega-3 fatty acids normally present in the flesh of marine oily fish have been widely reported, with an estimated 5 000 peer-reviewed papers appearing in scientific and medical journals. The great majority of these papers report the results of studies which involve feeding subjects purified liquid oils extracted from oily fish (often in the form of capsules), with a much smaller proportion involving the actual consumption of oily fish as part of the normal diet. This contrast in emphasis in the scientific literature is important in relation to current initiatives to promote the greater consumption of oily fish within a healthy balanced diet, as opposed to the use of fish oils as dietary supplements.

Many international bodies, such as the World Health Organization and the Food and Agriculture Organization of the United Nations, acknowledge the benefits of oily fish consumption and the fact that regular oily fish consumption (1-2 servings per week) is protective against coronary heart disease and related health problems. Unfortunately, in many parts of the world, including the western world, only a small proportion of people come close to meeting this target.

Fish is also high in minerals such as zinc, cobalt, copper, selenium, manganese, molybdenum, fluoride and iodine, which keep the body running smoothly. Iodine is essential for the thyroid gland, which controls growth

and metabolism, while selenium is used to make enzymes that protect cell walls from cancer-causing free radicals and helps prevent DNA damage caused by radiation and some chemicals. Fish is also a source of vitamin A, which is needed for healthy skin and eyes, and vitamin D, which is needed to help the body absorb calcium to strengthen teeth and bones.

Health Hazards of Fish and Shellfish:
Fish and shellfish have a natural tendency to concentrate mercury in their bodies, often in the form of methyl-mercury, a highly toxic organic compound of mercury. Species of fish that are high on the food chain, such as shark, swordfish, king mackerel, albacore tuna, and tilefish contain higher concentrations of mercury than others. This is because mercury is stored in the muscle tissue of fish, and when a predatory fish eats another fish, it assumes the entire body burden of mercury in the consumed fish. Since fish are less efficient at depurating than accumulating methyl-mercury, fish-tissue concentrations increase over time. Thus, species that are high on the food chain amass body burdens of mercury that can be ten times higher than the species they consume. This process is called bio-magnification. The first occurrence of widespread mercury poisoning in humans occurred this way in Minamata, Japan, now called Minamata disease.

Buy the right fish:
Only buy fish that is refrigerated or displayed on a thick bed of fresh clean ice that is not melting (preferably in a case or under some type of cover).

- Fish should smell fresh and mild, not fishy, sour, or ammonia-like.
- A fish's eyes should be clear and bulge a little.
- Whole fish and fillets should have firm, shiny flesh and bright red gills free from milky slime.
- The flesh should spring back when pressed.
- Fish fillets should display no discoloration, darkening or drying around the edges.
- Prawn flesh should be translucent and shiny with little or no odour.
- Some refrigerated seafood may have time/ temperature indicators on their packaging,

which show if the product has been stored at the proper temperature. Always check the indicators when they are present and only buy the seafood if the indicator shows that the product is safe to eat.

Selecting Shellfish:

- Look for the label. Look for tags on sacks or containers of live shellfish (in the shell) and labels on containers or packages of shucked shellfish. These tags and labels contain specific information about the product, for instance the harvest, shelf live, or use buy date.
- Discard Cracked/Broken Ones. Throw away mussels, oysters, and clams if their shells are cracked or broken.
- Do a "Tap Test". Live mussels, oysters and clams will close up when the sell is tapped. If they don't close when tapped, do not select them.
- Check for Leg Movement: Live spiny lobster or crayfish and crabs should show some leg movement. They spoil rapidly after death, so preferably only live crayfish or crabs should be selected to buy.

Frozen Seafood:

Frozen seafood can spoil if the fish thaws during transport and is left at warm temperatures for too long.

- Don't buy frozen seafood if its package is open, torn, or crushed on the edges.
- Avoid packages that are positioned above the "frost line" or top of the freezer case.
- Avoid packages with signs of frost or ice crystals, which may mean the fish has been stored a long time or thawed and refrozen.

Cold Storage of Seafood:

For the best flavour, clean and cook your fish within 2 hours after catching it or at least try to cook it on the same day. However, most anglers must keep their catch for a longer time. Seafood purchasers most off the time only purchase the seafood at a later stage down the cold chain. The colder the storage temperature, the longer the seafood can be held. If handled and cleaned properly, fish can be refrigerated for 24 hours with very little flavour loss. Fish stored on crushed ice will remain fresh for 2 or 3 days, but they must be drained often. Super chilled (-2˚C) white-meat fish can normally be kept for up to 7 to 14

days. Lean fish can be stored longer than oily fish and whole fish longer than fillets or steaks. To prepare fish for storing, wipe with paper towels. Rinse in cold water especially if the intestines were penetrated during cleaning.

Super-chilling is when storing fish on crushed ice and covering them with a salt-ice mixture. This method holds fish at about -2˚C, which is a colder temperature than refrigerator. It is especially helpful on long trips when freezing facilities are not available. Wrap the whole fish, fillets or steaks in plastic wrap or aluminium foil before super-chilling. As the ice melts, add more of the salt-ice mixture.

For maximum shelf-life of frozen seafood, the ideal holding temperature is between - 32˚C and -52˚C, the colder the better.

Conclusion:
Fish and seafood are very important parts of a healthy diet. Fish and shellfish are an important source of protein, vitamins and minerals, and they are low in saturated fat. But seafood's claim to fame is its omega-3 fatty acids, including docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA), which are beneficial for human health. Eating fish once or twice a week may also reduce the risk of a stroke, depression, Alzheimer's disease, and other chronic conditions.

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