Seafood and health
A vocational training module
Overview

- Seafood for health
- Vitamins, minerals & nutrients - how much seafood do we need?
- Contaminants
- Quality assurance
- Sustainability
- Aquaculture
- Summary
Seafood for health

The health benefits of seafood are such that unnecessarily limiting it in the diet can do more harm than good.

High level evidence supports the assertion that regular consumption of seafood in the diet can:

- significantly reduce the risk of total mortality, cardiovascular disease and stroke
- significantly benefit foetal neurological development
- benefit other conditions – diabetes, rheumatoid arthritis and some cancers
Nutrients, vitamins and minerals

Seafood is an excellent source of energy and contains a range of nutrients beneficial for human health.

- Omega-3 fatty acids
- Protein
- Vitamin D
- Iodine
- Selenium
- Calcium
- Vitamin B12
- Vitamins A and E
Omega-3 fatty acids

- Omega-3 fatty acids are essential to our health
- Our bodies cannot produce them so we need to get them from our diet
- EPA (eicosapentaenoic) & DHA (docosahexaenoic acid) are long chain, poly-unsaturated fatty acids & part of the omega-3 family
Omega-3 fatty acids

- **Heart**: Reduced risk of heart disease and heart rhythm disorders
- **Blood**: Benefits for blood clotting and blood vessel function
- **Brain**: Important for development and may help treat ADHD and depression
- **Eyes**: Helps maintain and improve eyesight
- **Lungs**: May reduce asthma
- **Joints**: May ease symptoms of rheumatoid arthritis
Omega-3 fatty acids

How much do we need?

- **Adults**: 500 - 600 mg per day or 3500 - 4000 mg per week
- **Adults (history of heart disease)**: 1000 mg per day or 7000 mg per week
- **Children under 14**: 40 - 70 mg per day
Omega-3 fatty acids

How much Omega-3 is in a 150g serve of a variety of fish and seafood?
Protein

■ Most seafood is rich in protein
■ Used to repair and maintain cells, including muscles, bones, fingernails and hair
■ Vital for our digestive function and antibody production
■ Energy source
■ Basis for hormones such as adrenaline
■ Seafood = a healthy source of protein
■ RDI: 0.75g/kg for women and 0.84g/kg for men
Vitamin D

Seafood is the second best source of vitamin D after the sun.

- **Strong bones** - works with calcium
- Improves **immune function, skin condition** and **muscle strength**
- Oily fish is a rich source of vitamin D
- Recommended Daily Intake (RDI): 400 - 600 micrograms (µg)
Iodine

Seafood is the best source of iodine. Iodine is a mineral vital for:

- thyroid function
- growth
- metabolism
- cellular oxygenation
- central nervous system
- RDI is 150μg (from 14 years)
Selenium

Seafood is an excellent source of selenium, a powerful antioxidant present in most finfish. A high level of selenium is retained when cooking seafood.

This mineral:
- prevents cellular damage
- regulates thyroid function
- supports a healthy immune function
- RDI: 70 μg/day for men and 60 μg/day for women
Calcium

Calcium is a mineral stored in teeth and bones that is vital for:

- development and maintenance of the skeleton
- muscles, nerves and heart function
- assists to prevent osteoporosis
- salt intake reduces calcium absorption
Calcium

Bony fish such as sardines and salmon are very rich in calcium.

- 113 grams of sardines with bones = 496 mg of calcium (nearly half RDI)
- RDI: 1000 mg/day for men and women. After 51 years for women and 70 years for men, RDI increases to 1300 mg/day
Vitamin B12

Vitamin B12 is found in most finfish and shellfish.

- aids **DNA synthesis** and normal **blood function** (particularly red blood cells)
- aids **neurological function**
- may help retention of **cognitive function** in the elderly
- RDI: 2.4 µg
Vitamins A & E – the anti-oxidants

Vitamins A & E protect cells against damage from pollution, cigarette smoke and UV exposure.

Vitamin E is important for:

- heart
- skin
- nervous and circulatory systems

Oily fish like salmon and tuna are good sources of Vitamin A & E.
Contaminants

- A food contaminant is a substance which at high levels of consumption can cause adverse health effects (FSANZ 2009).

- Dioxins are a “group of environmentally persistent chemicals” which are by-products of combustion and have potential adverse effects on human health (FSANZ 2010).

- Mercury is a common metal found naturally in the environment and aquatic food chain (FSANZ 2004).
Contaminants

- ‘Investigations show that the level of mercury in most fish caught and sold in Australia is low. This means we can all continue to enjoy the many benefits from eating fish without concern’ (FSANZ, 2004).

- Seafood is ‘safe for all population groups to eat 2-3 serves per week of most types of fish’ (FSANZ 2004).
Quality assurance

- Australian seafood is closely monitored.
- FSANZ sets the maximum permitted limits to contaminants for seafood consumption. Standards are listed in the Food Standards Code - regularly updated and are enforceable through legislation (Safe Food NSW, 2004).
Sustainable Fishing

- The Department of Agriculture, Fisheries and Forestry closely regulates the Australian fishing industry objectives of sustainability.
- Consumers can buy Australian Seafood with confidence - purchasing stock from a resource that is monitored, regulated and protected.
Aquaculture

- 17,000 years ago Aboriginal Australians farmed short-fin Eels and other fish at Budj Bim in Victoria.

- Many aquaculture operators provide funding for research to improve sustainability - in their best interests.

- New innovations reduce environmental impact of farms.

- All forms of farming, including aquaculture, impact on their environment.

- Contemporary Australian aquaculturists are motivated to operate environmentally sustainable ventures = maximised output & quality, commercially valuable image as a sustainable venture.
Summary

- Seafood is an excellent source of energy & protein.
- It contains many vitamins, minerals and nutrients that are vital and beneficial for our health.
- It is recommended for adults to consume 2-3 serves of seafood per week as part of a healthy diet.
- Australian regulations and guidelines for the seafood industry ensure that Australian seafood is of a very high standard.
- Aquaculture is an environmentally safe and sustainable way to keep the Australian seafood industry strong.
Questions?
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