

## Plenary 2: Functional Food

### Functional foods for cardiovascular health

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**Background** – Nuts and fish are examples of traditional foods with increasingly recognized health functionality.

**Review** – Regular consumption of nuts and fish can help reduce the risk of cardiovascular (CV) disease. Both foods are complex mixtures of bioactive nutrients which can act through multiple mechanisms to deliver CV and metabolic benefits. Nuts are rich sources of monounsaturated and polyunsaturated fats, fibre and protein but also contain other potentially cardioprotective constituents including phytosterols and tocopherols (1). Regular consumption is associated with reduced incidence of coronary heart disease (CHD) and type 2 diabetes (T2DM). Kelly et al (2) reported that eating 30g (one serve)/week resulted in 8.3% reduction in risk of CHD death. Jiang et al (3) reported an inverse association between nut consumption and the incidence of T2DM in the Nurses Health Study; women who consumed nuts at least 5 times/week had the greatest benefit (RR: 0.73 compared with <once/week). These benefits may be attributable to improved lipids and other cardiometabolic risk factors (4). Oily fish are good sources of protein and various micronutrients, as well as long chain omega 3 polyunsaturated fatty acids. Epidemiological studies suggest that regular consumption of fish reduces the risk of CHD and T2DM. Modest consumption of fish (eg, 1-2 servings/wk) reduces risk of death from CHD by 36% (95% confidence interval, 20%-50%; P<.001) and total mortality by 17% (95% confidence interval, 0%-32%; P = .046) (5). Greater intakes decrease risk further in a dose-dependent manner, up to about 5 serves/ week (6). After 30 years of regularly eating fish at least once/week, inverse associations were found between fish intake and systolic blood pressure, fasting glucose, total serum cholesterol and triglyceride levels. Multinomial logistic regression revealed that a 100 g/week decrease in fish intake was associated with a 19% greater likelihood of having an additional CV or metabolic risk factor (7). Bioactive nutrients in nuts and fish can influence CV and metabolic regulation through a multiplicity of physiological mechanisms, in particular endothelial function. The latter may also be significant for mental health (8).

**Conclusion** – Nuts and fish are two functional foods that are recommended as part of a healthy diet. Evidence for broad based health benefits is steadily increasing.

#### References

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