Impact Case Study

UoA 3B: Allied Health Professions, Dentistry, Nursing and Pharmacy (Biomedical Sciences)

Benefits and Risks of Fish Consumption in Pregnancy

Summary

Research undertaken at Ulster University about fish consumption during pregnancy has had a global impact on public health advice. Its findings have been adopted by the UN's Food and Agriculture Organisation (FAO) and the World Health Organization (WHO), and evaluated by the European Food Safety Authority (EFSA).

Impact

Fish consumption exposes pregnant women to potentially harmful amounts of methyl-mercury, to which the developing foetal brain is particularly sensitive. However, fish is also an excellent source of protein and essential nutrients, and is the primary source of n-3 (omega-3) polyunsaturated fatty acids (PUFA), which are important for brain development.

Limiting maternal fish intake could therefore pose a threat to children's optimal neurological development.

Work by the Seychelles Child Development Study (SCDS) has found no adverse associations between maternal methyl-mercury exposure and developmental outcomes in children. Ulster University's research went much further, indicating that the beneficial effects of the n-3 PUFA present in fish can outweigh any potential adverse effects of prenatal methyl-mercury exposure on neurodevelopmental outcomes in children.

Experts and global leaders in health matters have used the collaborative research undertaken in the Seychelles by researchers at Ulster to revise the guidelines on fish intake during pregnancy. A joint report by the FAO/WHO concluded that maternal fish consumption contributes to optimal neurodevelopment in their offspring. Data from studies undertaken in the SCDS were central to these conclusions and Ulsters' research was cited in the report.

This report was a landmark in global recommendations for maternal advice on fish consumption during pregnancy. Most countries have previously recommended that fish intake should be limited during pregnancy because of the concerns of methyl-mercury neurotoxicity to the foetus. This was the first time in an official advisory publication that the direct benefits of the n-3 PUFA from fish eaten during pregnancy were indicated to outweigh any possible risks of methyl-mercury on child development.

Following the FAO/WHO report, the European Commission invited the European Food Safety Authority (EFSA) to consider the Ulster University findings as a basis for updating European recommendations. The Dietary Guidelines for Americans announced in 2010, recognised the health benefits of consuming a variety of seafood in the amounts recommended and that these benefits could outweigh the potential health risks associated with methyl-mercury. This new guidance has positively impacted on the advice given to pregnant women on fish consumption.

The results of this important research by Ulster University continues to shape health strategies nationally and internationally, informing policymakers on the risk-benefit analysis of fish consumption during pregnancy.