



International Conference of Sabaragamuwa University of Sri Lanka 2015 (ICSUSL 2015)

Which fish to eat: enjoying the benefits while minimizing the risks

Jogeir Toppe

Products sales and marketing service, FAO fisheries and aquaculture department, Rome, Italy

© 2016 Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Peer-review under responsibility of International Conference of Sabaragamuwa University of Sri Lanka 2015 (ICSUSL 2015).

Keywords:

* Corresponding author.

E-mail address: jogeir.Toppe@fao.org

1. The issue

While the consumption of seafood has well-established nutritional and health benefits, some fish species can be harmful when they accumulate contaminants. The question is how to maximize the positive consequences of seafood consumption while minimizing the concurrent negative consequences.

The risks of consuming potentially contaminated foods have traditionally received greater attention than the benefits of eating them. However, there is now a growing focus on the risks of *not* consuming certain foods, and among them fish products, given their potential beneficial components. Nutritional benefits derive not only from the long-chain polyunsaturated fatty acids (LCPUFAs) – docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) – but also from amino acids, micronutrients (vitamins, minerals) and possibly from other nutrients (e.g. taurine), all found in fish.

The fact that fish consumption helps prevent coronary heart disease (CHD) has been well known for some time. There is now an increasing focus on fish as a source of DHA and iodine, which are essential for the early development of the brain and neural system. These nutrients are almost exclusively found in foods from the aquatic environment. The role of fish in mitigating mental disorders, such as depression and dementia, is also receiving increased attention from scientists.

However, the presence of contaminants in some fish and fish products and other foods is of increasing concern to consumers. Some fish products are known to contain contaminants such as methyl mercury (mercury in its most

toxic form) and dioxins (alldioxin-like compounds).

In general, it is believed that the levels of such contaminants in seafood are well below the maximum levels established for their safe intake. Nevertheless, in fish caught in polluted waters or in large, long-lived predator species, the levels of contaminants might exceed the levels regarded as safe for consumption.

It is well known that ingested mercury might have a negative impact on the development of the neural system of children and that some fish species can be the main source of mercury in many diets. Fish can also be a source of dioxins in populations that consume fish frequently. However, the occurrence of dioxins among individuals in these populations is generally not higher than in populations having low fish consumption.¹ Therefore, reducing the consumption of fish might reduce the exposure to mercury in human diets, but the exposure to dioxins will probably be the same for individuals even if they significantly reduce their consumption of fish.

When consumption of a food can be associated with both potential health risks and benefits, risk managers try to identify an intake level that minimizes risks and maximizes benefits. It is particularly important to establish such levels when consumption levels are close to levels that should not be exceeded.²

Advice on limiting the consumption of fish for vulnerable groups, such as children and pregnant women, is being given by many public health authorities. While the intention is only to limit consumption of products believed to have elevated levels of contaminants, the effect in some cases has been a significant reduction in seafood consumption. However, a reduction in seafood consumption could result in a diet that might not ensure an optimal intake of essential nutrients. Both children and adults run this risk. As LCPUFAs are essential in the early development of the brain and neural system in children, advice aiming to limit the consumption of contaminated fish must be couched in such terms that not all fish is given a “bad name”. Similarly, as sea food consumption reduces cardiovascular diseases among the adult population, messages intended to reduce the exposure of fish products to contaminants should go hand in hand with the promotion of safe fish products.

2. Possible solutions

Most informed observers would probably agree that the solution to this issue consists of sound, science-based advice that weighs the benefits and costs for human health of consuming fish. Although much work has been done in this field, the subject is not exhausted and conclusions reached to date have not obtained universal endorsement. Addressing this issue is a complex and resource-demanding scientific task that includes: (i) an assessment of the health risks associated with the consumption of fish and other seafood; (ii) an assessment of the health benefits associated with the consumption of fish and other seafood; and (iii) a subsequent comparison of the health risks and health benefits.

Some studies have tried to balance the positive and negative sides of consuming foods of high nutritional value but that are also a source of contaminants. However, to date, the procedures used have been controversial, and experts in this field maintain that new procedures need to be developed in order to carry out quantitative selected issues in fisheries and aquaculture assessments of the risks and benefits to human health of consuming fish and other seafood.³ Once the methodology has been developed, the required data will need to be obtained. The new procedures should make it possible to compare nutritional benefits with the possibility of adverse effects while accounting for the uncertainties –this should be possible for all groups in the population. In addition, scientists should be able to make quantitative comparisons of the human health risks and benefits of seafood consumption.

3. Recent actions

In order to assist governments in giving advice to vulnerable population groups on the potential risks and benefits of consuming fish and seafood, the Codex Alimentarius Commission requested FAO and the WHO to hold an expert consultation on health risks associated with mercury and dioxins in fish and the health benefits of fish consumption. The Expert Consultation on the Risks and Benefits of Fish Consumption was held from 25 to 29 January 2010 at FAO Headquarters, Rome, Italy.⁴ Seventeen experts’ innutrition, toxicology and risk-benefit assessment discussed the risks and benefits of fish consumption. The experts agreed that consumption of fish provides energy, protein and a range of essential nutrients, and that eating fish is part of the cultural traditions of many peoples. In some populations, fish and fishery products are a major source of food and essential nutrients, and there may be no alternative and affordable food sources for these nutrients.

Download English Version:

<https://daneshyari.com/en/article/1266175>

Download Persian Version:

<https://daneshyari.com/article/1266175>

[Daneshyari.com](https://daneshyari.com)