

EFFECTS OF DIETARY COMPONENTS ON MERCURY BIOACCESSIBILITY FROM SEAFOOD PRODUCTS

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Food is the main source of human exposure to mercury. Fish consumption and especially marine large predators such as swordfish, shark and tuna provide high amounts of methylmercury, which can represent a risk for certain population groups. Several studies have shown that the bioaccessibility of mercury from swordfish after applying an *in vitro* gastrointestinal digestion is highly variable (15-85%). Furthermore, parameters such as gastric pH and the concentrations of pepsin and bile salts, significantly affect the solubilization of this trace element during the gastrointestinal digestion of seafood products. The present study evaluates whether the solubilization of mercury during digestion also can be affected by dietary components. For this propose an *in vitro* gastrointestinal digestion of swordfish samples in the presence of increasing concentrations of cysteine, phytate, pectin, chitosan, polyphenols and bifidobacteria has been carried out. The results show the ability of some of these components to decrease the bioaccessibility of mercury, especially the phytate with reductions between 37 and 66%. These data indicate the need of evaluating the bioaccessibility considering all the components of a diet and not just the food that provides the contaminant. These results also show that there may be dietary strategies to reduce the oral exposure to mercury.

Keywords: Bioavailability, mercury, gastric phase, intestinal phase

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