

Shark fin soup from a toxicological perspective: eat it or leave it?

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By eating organisms from lower trophic levels, contaminants are passed on to organisms from higher trophic levels. Through this biomagnification process, predators at the top of the food chain accumulate considerable amounts of pollutants in their tissues. Sharks are, as well as marine mammals, apex predators in marine ecosystems. Marine mammals like toothed whales, especially killer whales as they also occasionally eat smaller marine mammal species, are among the most contaminated organisms on this planet. Some of the bigger shark species also eat marine mammals or even humans on a regular basis. Consequently, unless they have very efficient elimination pathways, the bioaccumulation of contaminants in those sharks should be at least similar to the bioaccumulation of pollutants in killer whales. However, in contrast to marine mammals, sharks do not only accumulate contaminants through their diet, but also through their gills during breathing. As such, sharks may even have higher levels of pollutants in their tissues compared to marine mammals. In the present study, the goals were to assess pollution in several shark species with an emphasis on the human consumption of sharks. Although meat of some of the smaller shark species is eaten frequently by humans, the most notable consumption of sharks by humans is through shark fin soup. Recipes for making shark fin soup can differ from one country to the other, but all recipes have multiple sessions in common during which the fins are boiled in water to make them weaker. After taking the fins out, the water is often thrown away without using it further in the recipe. Lipophilic contaminants like PCBs and PBDEs are relatively stable and strongly attached to a lipid matrix. Is the lipid matrix capable of withstanding several boiling sessions or do pollutants get lost along the way by throwing away the boiling water? To investigate this question, shark fins of bonnethead sharks (*Sphyrna tiburo*), the boiling water of different boiling steps and the final soup were analysed by GC-MS. Is it healthy to eat shark fin soup?