

Mercury levels in shark fins illegal and dangerous to human health

May 29 2020, by Angela Nicoletti



Shark fins in Hong Kong market. Credit: Stan Shea

Shark fins recently sampled from markets in China and Hong Kong contained dangerously high levels of mercury.

Florida International University marine biology Ph.D. student Laura Garcia Barcia—collaborating with a team from the United States and Hong Kong—conducted the first study measuring levels of toxic mercury in [shark fins](#) sold in Asian markets. The team found the samples all had staggeringly high amounts of mercury that are dangerous to [human health](#)—far surpassing guidelines and [legal limits](#) set by the

Hong Kong Center for Food Safety.

"The results were astonishing," Garcia Barcia said. "The mercury levels are super high and, on average, 6 to 10 times higher than what a safe level of mercury would be considered in Hong Kong."

The team examined 267 shark fin trimmings from the nine of the most common shark species in the fin trade, testing each one for levels of total mercury and methyl-mercury—the organic, highly toxic form of mercury. The concentrations in each shark fin sampled for this study exceeded the maximum legal limit in Hong Kong of 0.5 parts per million.

The highest of 55.52 parts per million came from a great hammerhead. The lowest level found in the fins sampled was 0.02 parts per million from a blue shark—the most common species found in the trade.

While it's still unclear whether high levels of mercury impact sharks, the impacts on humans are well-known. Prolonged exposure to mercury can lead to brain and central nervous system damage. It can also interfere with fetal cognitive development.

Yong Cai, co-author of the study and chair of FIU's Chemistry and Biochemistry department, points out that [fish species](#) containing [mercury](#) higher than one part per million are often listed as "Choices to Avoid" by the Food and Drug Administration. Mercury concentrations at 50 parts per million is considered extremely dangerous.

FIU marine scientist Demian Chapman, co-author of the study, said exceeding these limits isn't just a health concern—it's actually illegal. The Hong Kong Food Adulteration Legislation states anyone who sells a food product with levels above the legal limit can face fines and criminal charges.

The findings from this study will be used to launch educational campaigns which, the scientists hope, will help reduce demand for shark fins. According to FIU research, around 100 million sharks are killed every year. They are being illegally fished and their fins and meat illegally traded and nearly one-third of the shark species in the global fin trade are at risk of extinction. Other campaigns have focused on the role sharks have in maintaining healthy oceans, but that message hasn't resonated with the older demographics in Hong Kong and China who purchase them.

"Not every human cares about eating an animal that's endangered. But every human is worried about their health," Chapman said. "That could be a very powerful driver of change in the future."

The research was supported by Betsy & Peter Snow and the FIU Institute of Environment. The findings were published in *Marine Pollution Bulletin*.

More information: Laura Garcia Barcia et al. Mercury and arsenic in processed fins from nine of the most traded shark species in the Hong Kong and China dried seafood markets: The potential health risks of shark fin soup, *Marine Pollution Bulletin* (2020). [DOI: 10.1016/j.marpolbul.2020.111281](https://doi.org/10.1016/j.marpolbul.2020.111281)

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