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Study: Mercury levels in tuna remain nearly unchanged since 1971

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By Responsible Seafood Advocate

More aggressive emission reduction targets needed to reduce mercury levels in tuna, scientists conclude

Mercury levels in tuna appear to be unchanged since 1971 despite efforts to reduce them in the environment, concludes a new study published in *[Environmental Science & Technology](https://pubs.acs.org/doi/10.1021/acs.estlett.3c00949)*. (<https://pubs.acs.org/doi/10.1021/acs.estlett.3c00949>). The scientists warn that more aggressive emission reduction targets are needed to start nudging down tuna mercury levels.

Tuna is one of the most popular seafoods worldwide but can build up high levels of methylmercury from feeding on contaminated prey, like smaller fish or crustaceans. Environmental protection policies have helped reduce mercury pollution from human activities, like burning coal and mining worldwide. However, people can still be exposed to methylmercury, and fetuses and young children are at the highest risk of harm.

An international team of scientists set out to determine whether lower atmospheric emissions resulted in lower concentrations of mercury in the oceans, specifically the methylmercury found in food sources that sit at the top of the food chain, like tuna. The team investigated trends of mercury in tuna over the past 50 years and predicted how different environmental protection policies might affect mercury levels in the oceans and tuna in the future.



A study concludes that mercury levels in tuna appear to be unchanged since 1971 and calls for more aggressive emission-reduction targets.

The researchers gathered data on total mercury levels from muscle samples of nearly 3,000 tuna caught in the Pacific, Atlantic and Indian Oceans between 1971 and 2022. They focused on tropical tuna types like skipjack, bigeye and yellowfin, which make up 94 percent of global tuna catches. These tuna species usually stay in one area, so the contamination levels in their muscles reflect the pollution in their habitat.



(<https://globalseafood.typeform.com/podcastq124>).

After standardizing the data, the researchers found that mercury levels in tuna stayed mostly the same worldwide from 1971 to 2022, except for a rise in the northwestern Pacific Ocean in the late 1990s. At the same time, airborne mercury decreased globally. The scientists theorized that the stable tuna levels

might be due to older “legacy” mercury from deeper ocean layers mixing with shallower waters where tropical tuna swim and feed. This mercury might have been released years or decades earlier and doesn't yet reflect the effects of recent reductions in air pollution.

The researchers' mathematical models that simulate three progressively more restrictive environmental policies support this theory. With the most restrictive policy, it would take 10 to 25 years to lower mercury levels in the oceans and it would take even longer for tuna levels to drop. Though their models don't cover every factor in tuna and ocean life, the team points to the need for global efforts to cut mercury emissions more aggressively. They also stress the importance of ongoing monitoring of mercury in marine life.

[Read the full article here \(https://pubs.acs.org/doi/10.1021/acs.estlett.3c00949\)](https://pubs.acs.org/doi/10.1021/acs.estlett.3c00949).

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