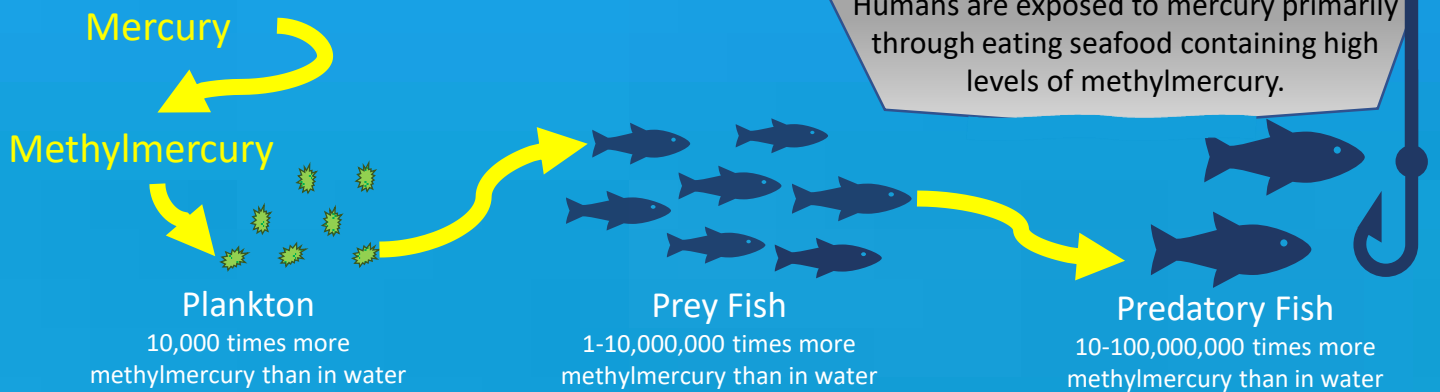


# Mercury: From Source to Seafood

## How does mercury get into seafood?

In fresh or salt water environments, bacteria transform inorganic mercury into toxic methylmercury. Methylmercury is easily taken in by living organisms.



In a process called **biomagnification**, methylmercury becomes more concentrated as it moves up the aquatic food chain.

## What are the risks and benefits of eating seafood?

### Health Risks from Mercury

Mercury crosses the blood-brain barrier, causing :

- Problems with memory, speech, fine motor skills, personality development and cognitive function;
- Neurological problems during development in young children;
- Heart and immune health problems with high mercury exposure.

### Health Benefits of Seafood

Seafood provides:

- Nutrients essential for healthy growth and development in young children;
- The highest levels of omega-3 polyunsaturated fatty acids of any foods, which improve heart health, liver function and eyesight;
- Essential trace elements and vitamins like selenium, iodine and vitamin D.

## How can I enjoy the benefits of seafood and limit risks of methylmercury exposure?

Be an informed seafood consumer and know the sources of your food.



Limit your consumption of predatory fish like shark, swordfish and tuna.

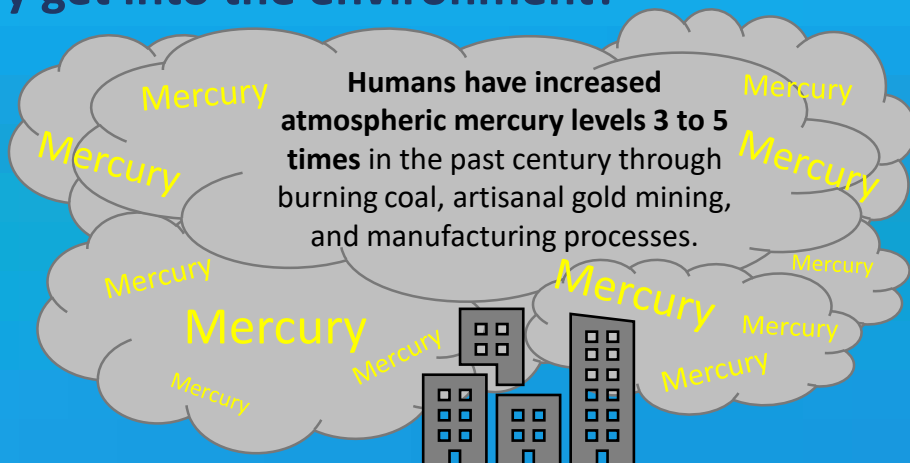


Eat seafood lower on the food chain like crabs, clams, salmon and sardines.

# Reducing mercury for a healthier world

## How does mercury get into the environment?

Mercury in rocks and soils is naturally released into the atmosphere through volcanic eruptions and forest fires.



Mercury from the atmosphere settles in aquatic systems through rainwater and snowfall, and mercury released from point sources like chemical plants leaks into local estuaries and other nearby bodies of water.

## How is Dartmouth Superfund research addressing mercury?

We want to understand the environmental components that influence methylmercury production and biomagnification in different aquatic systems. Our current research focuses on two mercury-contaminated sites: the Penobscot River in Maine and Berry's Creek in New Jersey. By looking at how environmental factors like salinity and water temperature affect both the conversion of mercury to toxic methylmercury and its bioaccumulation in the aquatic food chain, we are learning what drives these processes, informing how to reduce human exposure and improve coastal ecosystem health.



We work with New Hampshire and Vermont high school science classes on an annual project collecting dragonfly larvae as a measure of mercury levels in local ecosystems. The results are added to a national mercury monitoring database, and our partnership advances mercury research and inspires the next generation of environmental scientists.



## How is our research connecting mercury science and policy?

The Coastal and Marine Mercury Ecosystem Research Collaborative (C-MERC) papers focus on the sources, cycling, and bioaccumulation of mercury to help policymakers and the public understand mercury's effects on marine ecosystems and people: [www.c-merc.org](http://www.c-merc.org)

Our C-MERC science helped inform the Minamata Convention, a global commitment to reducing mercury in the environment and discharges to water. As of May 2017, the agreement is ratified by over 50 countries, allowing it to enter into full force in August 2017. Learn more at: <http://mercuryconvention.org>

## Where can I find more information?

Watch our video **Mercury: From Source to Seafood**: [www.source2seafood.org](http://www.source2seafood.org)

Visit our program website: [www.dartmouth.edu/~toxmetal](http://www.dartmouth.edu/~toxmetal)

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