

Researchers discover how mercury gets into fish we eat

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Researchers from the Hebrew University of Jerusalem and the US have discovered the mechanism whereby dangerous mercury eventually finds its way into the fish we eat from the open seas and oceans.

The researchers, Prof. Menachem Luria from the Fredy and Nadine Herrmann Institute of [Earth Sciences](#) at the Hebrew University and Dr. Daniel Obrist of the University of Nevada, found that "passive" mercury normally found in the atmosphere is converted into an "active," oxidized form in the presence of bromine. The passive mercury is generally non-transferable, whereas the active form is readily absorbed into the environment.

The air over the Dead Sea was chosen for the experiments on mercury [oxidation](#) – even though it does not contain any fish – since it has unusually high levels of bromine that is emitted from the surface into the atmosphere, converting the mercury there into the oxidized mercury.

"In the world generally, the amount of oxidized mercury in the atmosphere constitutes about one percent of all the mercury in the atmosphere," said Prof. Luria, "while above the Dead Sea the oxidized mercury often amounts up to about 50 percent."

In fact, the bromine in the air over the Dead Sea is 200 times greater than over other bodies of water, say the researchers, due not only to the high level of bromine present on the surface but also to the high rate of its evaporation into the [atmosphere](#) because of the very high

temperatures there. It is important to note, they emphasize, that this process of conversion of passive into active mercury occurs over all bodies of water, even though it may be at much lower levels than at the Dead Sea.

Although health officials in the world have issued warnings from time to time about the danger of mercury found in fish, the process by which the inactive mercury is converted into the active, oxidized form was previously unknown. The current research has now revealed how this occurs, with the resultant introduction of this dangerous, active form of [mercury](#) into the [fish](#) food chain and ultimately into humans through the consumption of sea food. .

The research by Prof. Luria and Obrist was supported by the National Science Foundation of the US, and the results were published in *Nature Geoscience* journal. This is the latest of numerous research projects conducted in the [Dead Sea](#) area, which serves as a natural laboratory for a long list of biological-chemical and geophysical research projects, commented Prof. Luria.

Provided by Hebrew University of Jerusalem

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