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Half of fish tested in an Amazon river have unsafe levels of mercury

At four locations close to the Yanomami Indigenous reserve in Brazil, many species of fish were found to have mercury levels considered unsafe for consumption



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By **Luke Taylor**



Fish is a major part of the diet for Yanomami people
 Pulsar Images/Alamy

Mercury pollution from illegal mining in the Brazilian Amazon means that many species of fish that people depend on for food in the northern state of Roraima are now unsafe to eat.

The toxic metal mercury is used to separate gold from sediment and an estimated 45 per cent of that used by illegal miners in the Amazon is dumped in rivers.

To determine the health risk this poses to local communities, **Ana Claudia Santiago de Vasconcellos** at the Oswaldo Cruz Foundation in Rio de Janeiro, Brazil, and her colleagues measured mercury levels in 75 fish caught at four locations on the Branco river.

The Branco is one of Roraima's major waterways and is close to a reserve created to protect the Yanomami, the world's largest relatively isolated Indigenous group.

At three of the four points tested, around half of all fish were found to have mercury levels deemed unsafe by the World Health Organization. At the fourth location in Boa Vista, the capital of Roraima, 25.5 per cent of fish had unsafe mercury levels.

"The study shows that people in cities are now also at a high risk of getting sick from consuming mercury in fish. It's not just the Yanomami, but the entire population of the state of Roraima," says study author **Ciro Campos** at Instituto Socioambiental, a Brazilian NGO that works on social and environmental issues.

Levels of methylmercury, the organic form of mercury ingested by fish, **are typically highest in the largest predators** as the chemical accumulates **faster than it can be excreted** as it passes up the food chain.

Some herbivorous fish species had mercury levels low enough to make them safe for moderate consumption, but in most carnivorous fish, which make up a large part of local diets, the contamination was so high that they shouldn't be eaten at all, say the researchers.

"There is no safe amount of fish consumption for all the groups analysed, considering their diet of several types of fish, except for men who consume less than 50 grams [of fish] a day," says Vasconcellos.

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Mercury poisoning is particularly dangerous in pregnancy, as it is associated with a higher risk of miscarriage and developmental issues.

There is growing evidence that it is causing **neurological disorders** in Amazonian peoples, **particularly learning disabilities in children and visual and motor issues**.

The researchers were surprised to find that the pollution is reaching areas far away from gold mining. In the lower basin of the Branco, which is more than 200 kilometres south-west of the reserve's illegal mining hotspot, 45 per cent of all fish tested had unsafe mercury levels.

It is likely that mercury is reaching even more distant areas of the Amazon, including the city of Manaus, which is home to more than 2 million people, says Campos.

The boom in illegal mining under Brazil's president Jair Bolsonaro is causing a public health crisis, he says.

Between October 2018 and December 2021, the area destroyed by mining in the Yanomami territory more than doubled from around **1200 hectares to 3200**, **according to Instituto Socioambiental**.

"It is urgent to stop the contamination of rivers by mercury and monitor the damage already caused to the environment and people's health," says Campos.

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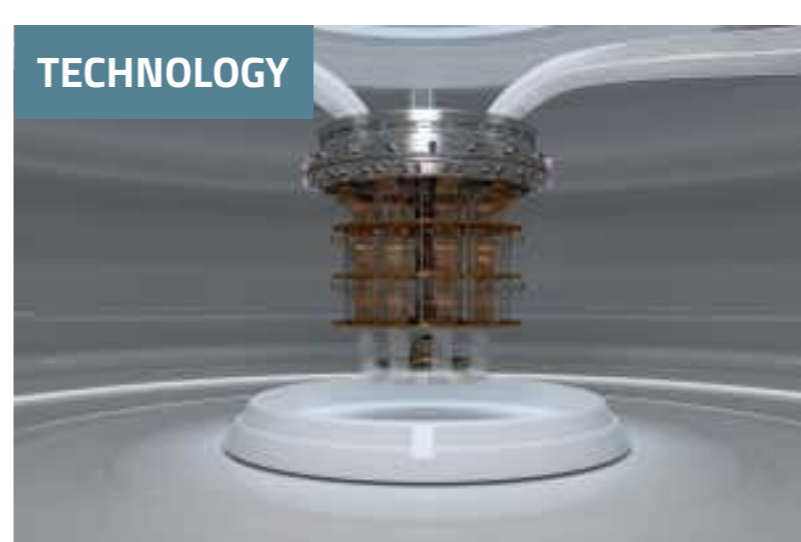
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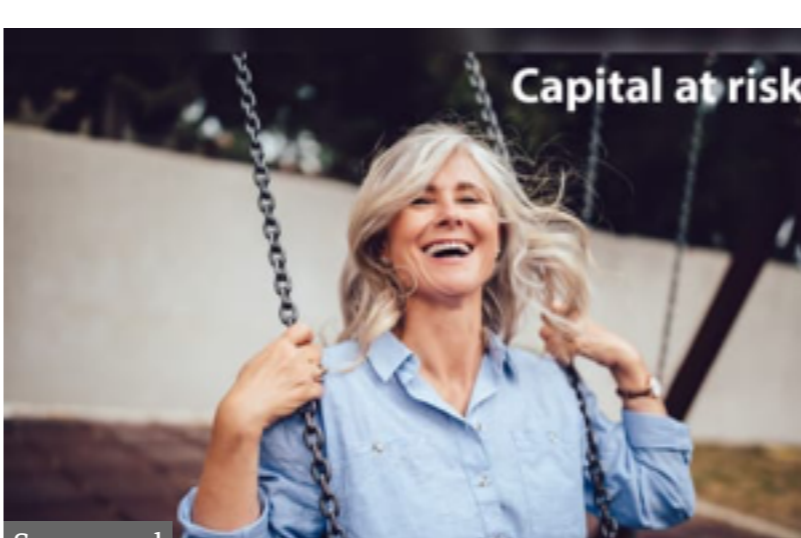
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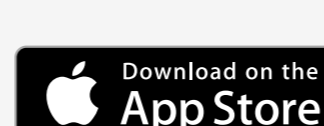
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