

Researchers find traces of mercury in high-fructose corn syrup

January 27 2009, By Michael Hawthorne

A swig of soda or bite of a candy bar might be sweet, but a new study suggests that food made with corn syrup also could be delivering tiny doses of toxic mercury.

For the first time, researchers say they have detected traces of the silvery metal in samples of high-fructose corn syrup, a widely used sweetener that has replaced sugar in many processed foods. The study was published Monday in the peer-reviewed journal *Environmental Health*.

Eating high-mercury fish is the chief source of exposure for most people. The new study raises concerns about a previously unknown dietary source of mercury, which has been linked to learning disabilities in children and heart disease in adults.

The source of the metal appears to be caustic soda and hydrochloric acid, which manufacturers of corn syrup use to help convert corn kernels into the food additive.

A handful of plants across the nation still make the soda and acid by mixing a briny solution in electrified vats of mercury. Some of the toxic metal ends up in the final product, according to industry documents cited in the study.

Corn syrup manufacturers insisted their products are mercury-free. But the study noted that at least one maker of caustic soda that has used the mercury-based technology listed the corn syrup industry as a client.

"This seems like an avoidable source of mercury that we didn't know was out there," said David Wallinga, one of the study's co-authors and a researcher at the Institute for Agriculture and Trade Policy, a Minnesota-based advocacy group.

The researchers cautioned that their study was limited. Only 20 samples were analyzed; mercury was detected in nine.

Still, the impact of the findings could be significant. High-fructose corn syrup has become such a staple in processed foods that the average American consumes about 12 teaspoons of it daily, according to federal estimates. Teenagers and young kids tend to eat more of it than adults.

There is no established safe dose for elemental mercury, the type discovered in corn syrup. But the U.S. Environmental Protection Agency says an average-sized woman should limit her exposure to 5.5 micrograms a day of methylmercury, the kind found in fish.

If that same woman regularly ate corn syrup contaminated at the highest level detected in the study — 0.57 micrograms per gram — the researchers estimated that she could end up consuming an amount of mercury that is five times higher than the EPA's safe dose.

One former EPA scientist who reviewed the paper said more study is needed to establish the risk, if any, posed by contaminated corn syrup. She urged the Food and Drug Administration to conduct a review of food made with the sweetener.

"For the most part, previous studies haven't found mercury in foods other than fish," said Kathryn Mahaffey, a former EPA scientist who co-wrote a landmark report to Congress on the perils of mercury contamination. "Is this an outlier or something we didn't know about before?"

In response to a 2005 Chicago Tribune series about mercury hazards, then-U.S. Sen. Barack Obama introduced legislation that would force chlorine plants to phase out its use or shut down. One plant in Wisconsin later vowed to switch to a mercury-free process by this year, leaving four others _ in Georgia, Ohio, Tennessee and West Virginia _ that still use the older technology.

The new study's lead author, Renee Dufault, began her research while investigating the Wisconsin plant for the FDA in the mid-2000s. But her results weren't published until now, a year after she retired from the agency.

An FDA spokesman said he still was waiting for a response to the study. Industry representatives, meanwhile, said the study was outdated.

"It is important that Americans are provided accurate, science-based information," Audrae Erickson, president of the Corn Refiners Association, said in a statement. "They should know that high fructose corn syrup is safe."

In another statement, the Chlorine Institute said: "It is conceivable that measurable mercury content can be found in high fructose corn syrup regardless of how it is processed."

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