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Study links C8 exposure to liver damage

By Ken Ward Jr.

Staff writer

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CHARLESTON, W.Va. -- Those with increased levels of the chemical C8 in the blood are more likely to exhibit early signs of liver disease, a new scientific study reports.

The study examined liver enzymes in the blood of more than 2,200 Americans. Blood samples were taken as part of the U.S. National Health and Nutritional Examination Survey, a U.S. Centers for Disease Control program used to study the health status of the general American population.

Scientists from several Taiwanese medical institutions wrote the paper, which was published earlier this month in the peer-reviewed American Journal of Gastroenterology.

It is believed to be the first study to report a link between increased C8 levels in the general population and abnormal liver test results. Previous studies focused on highly exposed populations, such as chemical plant workers and residents living near such facilities.

C8 is another name for perfluorooctanoic acid, or PFOA. It is one of a family of perfluorinated chemicals, or PFCs. In West Virginia, DuPont Co. has used C8 since the 1950s at its Washington Works plant south of Parkersburg. C8 is a processing agent used to make Teflon and other nonstick and stain-resistant products.

Around the world, researchers are finding that people have C8 and other PFCs in their blood at low levels. People can be exposed by drinking contaminated water, eating tainted food, or through food packaging and stain-proofing agents on furniture or carpeting.

Evidence is mounting about the dangers of these chemicals. But regulators have yet to set binding limits for emissions or human exposure.

In the new article, scientists reported that higher blood concentrations of C8 were associated with elevated liver enzymes, which can be an indicator of liver damage or liver disease.

The article said that the "potential biological significance" between C8 and liver enzymes was small and sub-clinical, meaning there were no symptoms and the connection was hard to detect.

"As PFOA are metabolically inert, it is difficult to detect the same metabolic effect in the low exposure group of the general population and in the occupational studies presented with a high concentration level," the article said.

The article said scientists found the association between C8 and elevated liver enzymes to be more evident in those suffering from obesity or insulin resistance. It was also more evident among non-smokers and those with lower alcohol consumption.

"Although the potential biological significance between PFOA and liver enzymes is small and sub-clinical in the general U.S. population, our data suggest that it would be prudent to monitor the liver enzymes of people with low exposure to PFOA, particularly in subjects who are obese," the article said. "Further studies are needed to confirm these findings and to clarify whether these associations are causal."

Reach Ken Ward Jr. at kw...@wvgazette.com or 304-348-1702.