

Exposure to formaldehyde at work linked to cognitive problems later

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A variety of jobs expose people to formaldehyde, a strong-smelling gas

used in manufacturing wood and chemical products, plastics and in other applications. A new study suggests that long-term exposure to formaldehyde during work may be associated with cognitive impairment later on. The research is published in the December 22, 2021, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

"We know that exposure to formaldehyde has been linked to certain cancers, and our results suggest that exposure to low amounts of formaldehyde also may be associated with lower level of cognitive functioning," said study author Noemie Letellier, Ph.D., of the University of Montpellier in France. "People whose work exposes them to formaldehyde may want to take precautions, and companies may want to look at ways to reduce workers' exposure to the hazardous chemical."

The study looked at 75,322 people in France with an average age of 58. Of those, 8%, or 6,026, were exposed to formaldehyde during their working life. Their occupations included nurses, caregivers, medical technicians, workers in the textile, chemistry and metal industries, carpenters and cleaners.

Lifetime formaldehyde exposure was calculated with a tool used to estimate a person's exposure to potential health hazards in different occupations. People were split into three equal groups according to their years of exposure to formaldehyde; low was considered six or fewer years, medium was seven to 21 years, and high was 22 or more years. Participants were also split into three groups according to their cumulative exposure, which is the total amount of formaldehyde a person is exposed to over their lifetime based on the probability, intensity and frequency of exposure.

Cognitive function was measured using seven common tests of word recall, memory, attention, reasoning and other thinking skills, to assess

each domain and to come up with a global cognitive score.

After adjusting for age, sex, education and other factors, researchers found people who were exposed to formaldehyde on the job had, on average, a 17% higher risk of having thinking and memory problems compared to those who were not exposed. This was true in every type of cognitive function the researchers tested.

For example, one of the cognitive tests is to match symbols to numbers according to a key located on the top of the page. The subject copies the symbol into spaces below a row of numbers. In this study, the maximum possible score was 135. The group not exposed to formaldehyde had an average score of 66, compared to an average score of 63 in the group that was exposed to formaldehyde.

Workers who were exposed to formaldehyde for 22 years or longer had a 21% higher risk of global [cognitive impairment](#) compared to those who were never exposed. Workers with the highest cumulative exposure to formaldehyde had a 19% greater risk on average of having cognitive impairment compared to those who had not been exposed.

"The use of formaldehyde has decreased over the last few decades; however, our results highlight the fact that there are still thousands of people whose work exposes them to the chemical, and they may face the risk of cognitive impairment later because of it," Letellier said.

The study does not prove that exposure to [formaldehyde](#) causes cognitive impairment, it only shows an association.

A limitation of the study is that it did not include self-employed or agricultural workers.

Provided by American Academy of Neurology

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