

Working with solvents tied to cognitive problems for less-educated people

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Exposure to solvents at work may be associated with reduced thinking skills later in life for those who have less than a high school education, according to a study published in the May 29, 2012, print issue of *Neurology*, the medical journal of the American Academy of Neurology.

The thinking skills of people with more education were not affected, even if they had the same amount of exposure to solvents.

"People with more education may have a greater cognitive reserve that acts like a buffer allowing the brain to maintain its ability to function in spite of damage," said study author Lisa F. Berkman, PhD, of Harvard University in Cambridge, Mass. "This may be because education helps build up a dense network of connections among [brain cells](#)."

The study involved 4,134 people who worked at the French national gas and electric company. The majority of the people worked at the company for their entire career. Their [lifetime exposure](#) to four types of solvents—chlorinated solvents, petroleum solvents, benzene and non-benzene aromatic solvents—was assessed. The participants took a test of thinking skills when they were an average of 59 years old and 91 percent were retired.

A total of 58 percent of the participants had less than a [high school education](#). Of those, 32 percent had cognitive impairment, or problems with [thinking skills](#), compared to 16 percent of those with more education. Among the less-educated, those who were highly exposed to

chlorinated and petroleum solvents were 14 percent more likely to have [cognitive problems](#) than those with no exposure. People highly exposed to benzene were 24 percent more likely to have cognitive problems, and those highly exposed to non-benzene aromatic solvents were 36 percent more likely to have cognitive problems.

"These findings suggest that efforts to improve quality and quantity of education early in life could help protect people's cognitive abilities later in life," Berkman said, who worked alongside study author Erika Sabbath, ScD. "Investment in [education](#) could serve as a broad shield against both known and unknown exposures across the lifetime. This is especially important given that some evidence shows that federal levels of permissible exposure for some solvents may be insufficient to protect workers against the health consequences of exposure."

Provided by American Academy of Neurology

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