

Letellier N, Choron G, Artaud F, Descatha A, Goldberg M, Zins M, Elbaz A, Berr C

**Association between occupational solvent exposure and cognitive performances in the French CONSTANCES study**

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**ABSTRACT**

**OBJECTIVE** - The objective of this study was to evaluate the association between occupational exposure to solvents and cognitive performance in middle-aged and early-ageing participants, taking into account the working environment. **METHODS** - In the French Cohorte des consultants des Centres d'examen de santé (CONSTANCES) cohort, 41 854 participants aged 45-69 years completed a self-reported, lifetime occupational exposure questionnaire. Exposure to solvents (gasoline for hand washing, trichloroethylene, white spirit, cellulosic thinner) was first considered as a binary variable (exposed/not exposed). We computed number of solvent types to which participants were exposed, solvent exposure time and delay since last exposure. Cognitive performance was assessed and analysed in reference to norms of neuropsychological battery previously established in CONSTANCES according to age, sex and education. Multiple linear and modified Poisson regression were used to estimate the associations between solvent exposure and cognitive performance adjusting for individual and environmental characteristics, and working conditions (night shift, repetitive and noisy work). **RESULTS** - Men had a greater risk of global cognitive impairment when they were exposed to gasoline (relative risk (RR)=1.12, 95% CI 1.03 to 1.22), white spirit (RR=1.14, 95% CI 1.05 to 1.25) or cellulosic thinner (RR=1.17, 95% CI 1.06 to 1.31) at the workplace, even after adjusting for confounders. Women exposed to white spirit or exposed for more than 20 years had poorer global cognitive performance. **CONCLUSION** - These findings strengthen our understanding of the detrimental effect of solvent exposure on cognitive health not only in men but also in women for the first time, in a large general population middle-aged and early-ageing sample from France, taking into account working conditions.

**KEYWORDS:** Cognition; Occupational exposure; Solvent; Women; Working conditions

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