

Follow-up study on occupational exposure to organic solvents and neurobehavioral performances of automotive painters

Abstract

Background/Aims:

This study assessed occupational exposure to organic solvents and neurobehavioral performance of exposed automotive painters. The mean personal air toluene concentration (PATC), urinary hippuric acid concentration, and standard score (SS) of the modified WHO Neurobehavioral Core Test Battery (NCTB) of exposed workers in 2008 were compared with those obtained in 2004.

Methods:

The study subjects consisted of 48 automotive painters who had participated in the 2004 study. They were re-examined in 2008 using PATC, urinary hippuric acid concentration, and 7 test items of the NCTB. A questionnaire was used to obtain sociodemographic information.

Results:

The mean PATC in 2008 was 0.403 ppm, which was significantly lower ($P < 0.001$). The mean SS for the Digit Span Test, Benton Visual Retention Test, Pursuit Aiming Test, and Total NCTB were significantly higher in 2008 compared to those in 2004 with the exception of the Santa Ana Manual Dexterity Test that showed significantly lower mean SS in 2008 compared to those in 2004.

Conclusion:

The lower concentration of solvents in the workplace and a shorter duration of exposure have contributed toward an improvement in the neurobehavioral performance of automotive painters in 2008 as compared to those in 2004 with the exception of manual dexterity.