EPA United States Environmental Protection Agency

Office of Research and Development

Press Release

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Study Examines Exposure of Air Pollutants to NC Highway Patrol Troopers

Research Triangle Park, NC...In August, the U.S. Environmental Protection Agency's Office of Research and Development began a study to measure potential exposures to air pollutants by N.C. Highway Patrol Troopers while they are in their patrol cars and to evaluate health effects from exposure.

The study is being conducted by EPA's National Exposure Research Laboratory and the National Health and Environmental Effects Research Laboratory in collaboration with the N.C. Highway Patrol and University of North Carolina-Chapel Hill.

The average American spends 1.5 hours each day in an automobile. Individuals whose jobs involve being on the road such as patrol troopers may spend up to 9 hours driving**.** During this time, a person may be exposed to high concentrations of toxic air pollutants from vehicle and other fuel combustion sources.

EPA has established air quality standards for outdoor air to protect public health and the environment. Scientists are interested in measuring pollutants inside automobiles to gain better insight into how people may be exposed to regulated pollutants outside. The chemicals to be measured in the study are: ozone, fine particles, nitric oxide, nitrogen dioxide, carbon monoxide and polycyclic aromatic hydrocarbons (PAHs).

Results are expected in January 2002 and will be used to better estimate exposure to pollutants; determine how motorists and riders may be exposed to toxic gases and provide new information on immediate health effects. The study also will improve understanding of the potential occupational risk to air toxics among patrol troopers.

A total of 12 patrol troopers will participate in the six week study. Patrol cars will be equipped with air quality monitors while troopers are on normal duty. Scientists will measure a variety of air pollutants from automobile emissions and conduct tests to determine lung function and heart rate variability which have been shown in other studies to be affected by exposure to fine particles. Health parameters will be measured before and after the work shift, and heart rate variability will be assessed continuously during work and the night after a patrol.

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