

Childhood Asthma Study Fact Sheet

Purpose of Study: The childhood asthma project examines how air pollutants produced by car and truck traffic may be associated with changes in respiratory symptoms, airway inflammation and asthma in children.

Who can participate? The study includes sibling pairs where the older sibling (age 7-15) has been diagnosed with asthma and the younger pre-school sibling (age 5-12) has not been diagnosed with asthma but may be at increased risk for developing this disease. Children must live in non-smoking homes.

Home Visits: For each child in the sibling pair, the research nurses will conduct 2 home visits within a six month period (one in the heating season and one in the non-heating season) to collect health and exposure data. The health data includes questionnaires on symptoms and a measure of nitric oxide (NO) in the child's exhaled breath.

Measuring Exposure: Families from high and low traffic areas in Worcester County will be part of the study. Each child will wear 2 small clip on badges to measure their exposures to the chemicals in car and truck exhaust. Research nurses will also ask about in-home sources of these chemicals and collect a sample of dust to look for in-home allergens. In addition, exposures to criteria air pollutants will be collected from 2 Massachusetts Department of Environmental Protection centralized monitoring sites to control use for comparison.

Overall Goal: To examine how distance from roadways may result in different levels of volatile organic compounds that may increase asthma risk in children. Understanding how pollutants from traffic effect human health will help policy workers who have to regulate pollution controls on cars and trucks, as well as city planners, who determine where residential areas and roadways are located.

