

RESEARCH SUMMARY

Addressing community concerns about environmental conditions

ADOLESCENT ASTHMA SYMPTOMS AND PULP AND PAPER MILLS

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WHAT'S GOING ON?

Pulp and paper mills release hazardous chemicals into the air, some of which have obnoxious odors. These chemicals may be especially harmful to children, the elderly, people with breathing problems such as asthma, and those who are sensitive to air pollution.

Asthma symptoms, including wheezing, are common among children, but there has been little research into the effects of emissions from paper mills on children's health. Responding to community concerns about possible health impacts of pulp and paper mills, researchers conducted a study of middle school children in North Carolina. The goal was to find out whether paper mills affect children's health.

MAJOR FINDINGS

Students who went to school near pulp or paper factories and who were exposed to tobacco smoke were more likely to wheeze than those who were only exposed to tobacco smoke.

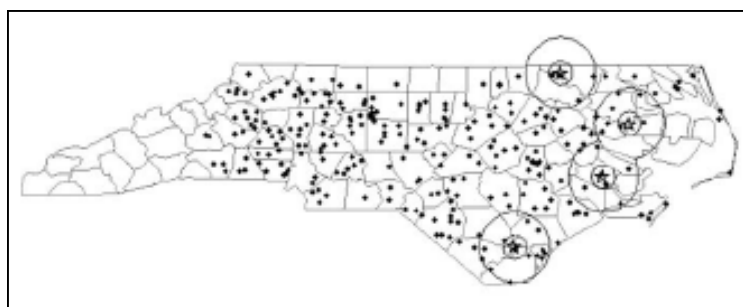
Over 13% of students reported wheezing in the last year.

WHAT WAS DONE

This study looks at wheezing reported by children ages 12 - 14 in relation to their schools' exposure to pollution from pulp and paper mills.

Researchers looked at information about the

kids' health, such as exposure to tobacco smoke, how close their schools were to paper mills, and whether paper mill odors were reported by school staff. The study included 266 North Carolina schools and 64,432 students.



Each dot on this North Carolina map represents a school included in this study. Each star represents a pulp and paper mill. The circles around each pulp and paper mill show the 10-mile & 30-mile buffer around the mill.

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WHAT WAS FOUND

Over 13% of the students reported daytime wheezing in the past year. Eight schools were located within 10 miles of at least one pulp and paper mill, and staff at nine schools said they noticed paper mill odor.

For students who were not exposed to tobacco smoke, no differences in wheezing were found between schools near versus those far from paper mills. However, for students exposed to tobacco smoke, either because they smoked or had smokers in their homes, the prevalence of wheezing differed according to the measures of schools' exposure to pollution from paper mills.

Among students exposed to tobacco smoke, those who attended schools where staff noticed paper mill odor reported 12% more wheezing than similar students at schools where no odor was reported. Those attending schools within 10 miles of a mill reported 21% more wheezing than similar students at schools located at least 30 miles from the nearest mill (15%). Those who attended schools within 10 miles of a mill where staff also noticed odor reported 28% more wheezing.



This study looked at more than 64,000 students in 266 North Carolina schools.

WHAT IT MEANS

Air pollution from pulp and paper factories may have a greater effect on children who are exposed to tobacco smoke than other children. It is already well-known that tobacco smoke adversely affects children's breathing and that they should not smoke or be exposed to smoke in their homes. This study shows that the situation for these children may be worsened by exposure to pollution from pulp and paper mills. In this study, 61% of middle school children either smoked or had smokers in their homes. This is a significant public health problem. Also, a large number of students reported wheezing. Wheezing and asthma may have negative medical, behavioral, and educational consequences for children. This research highlights the possible harmful health effects of tobacco smoke in combination with pulp and paper mill pollution exposure in students.

REFERENCE

Mirabelli, M.C., & Wing, S. (2006). Proximity to pulp and paper mills and wheezing symptoms among adolescents in North Carolina. *Environmental Research*, 102(1): 96-100.

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COMMUNITY DRIVEN RESEARCH



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NC Environmental Justice Network, Concerned Citizens of Tillery, and UNC School of Public Health seek to make a long-term impact on unjust patterns of environmental contamination through a partnership in research. This study was inspired by community concerns. A Community Research Advisory committee contributed to review of the research plan, recruitment of schools, review and interpretation of results, and feedback to participating schools.



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