

# RESEARCH SUMMARY

*Addressing community concerns about environmental conditions*

## ADOLESCENT ASTHMA SYMPTOMS AND INDUSTRIAL HOG FACILITIES

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### WHAT'S GOING ON?

In recent years, industrial hog facilities have replaced small, family-owned hog farms. Each facility houses hundreds to thousands of hogs in a limited area. Hog facilities flush animal waste from confinement houses into cesspools. Once the waste starts to decompose, it is sprayed onto nearby land as fertilizer. This can pollute the air, water, and land around the hog facility.

Research shows that neighbors of hog facilities report more breathing problems than other rural residents. Most studies focus on the effects of hog facilities on adults. Industrial hog facilities may affect children in different ways.

### MAJOR FINDINGS

**Students at schools within 3 miles of a hog facility reported 4% more wheezing than those at schools at least 3 miles from a hog facility.**

**At schools near hog facilities:**

- **7% more students reported that a doctor told them they had asthma**
- **7% more students used asthma medication**
- **6% more students visited doctors or emergency rooms or were hospitalized for asthma**

### WHAT WAS DONE

This study looks at asthma symptoms in children ages 12 to 14 and their exposure to hog facility pollution. Researchers looked at information about the kids' health and school environments, and the locations of hog facilities. The study included 265

North Carolina schools and 58,169 students in this study. Twenty-six percent of the students reported wheezing sometimes or difficulty breathing.



Industrial hog facility. Photo used with permission from Institute for Agriculture and Trade Policy ([www.iatp.org](http://www.iatp.org))

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## WHAT WAS FOUND

At schools where livestock odor could be smelled inside at least twice a month, twenty-three percent more students reported wheezing compared to students at schools with no odor. Wheezing was 4% more common at schools within 3 miles of at least one hog facility than at schools farther from the facilities.

At schools near hog facilities:

- 7% more students reported that a doctor told them they had asthma
- 7% more students used asthma medication
- 6% more students visited doctors or emergency rooms or were hospitalized for asthma

In general, these effects were greater for students with allergies than students without allergies.

## WHAT IT MEANS

A large number of students at schools near hog facilities reported difficulty breathing. Wheezing and asthma affect the ability of students to attend school and take part in social and physical activities. The treatment of asthma can be costly. Hog facilities are more often located in low income and African-American communities where children already have more asthma.

This research highlights the possible harmful health effects of industrial hog facilities by showing a link between exposure to hog facility pollution and wheezing in students.



This study included 265 schools in North Carolina



Industrial hog facility. Photo used with permission from Institute for Agriculture and Trade Policy ([www.iatp.org](http://www.iatp.org))

## REFERENCE

Mirabelli, M.C., Wing, S., Marshall, S.W., & Wilcosky, T.C. (2006). Asthma symptoms among adolescents attending public schools located near confined swine feeding operations. *Pediatrics*, 118(1): e66-75.

## EXCHANGE PROJECT

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## COMMUNITY DRIVEN RESEARCH



[www.ncejn.org](http://www.ncejn.org)

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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