

Cystic Fibrosis Research News

Citation:

Psoter KJ, DeRoos AJ, Wakefield J, Mayer J, Rosenfeld M. Air pollution exposure is associated with MRSA acquisition in young U.S. children with cystic fibrosis. *BMC Pulm Med*. 2017 Jul 27;17(1):106. doi: 10.1186/s12890-017-0449-8. PMID: 28750627

What was your research question? (50 words maximum)

We looked at whether children with CF exposed to higher levels of outdoor air pollution were more likely to acquire respiratory pathogens. We did not study *Pseudomonas aeruginosa*, because we studied this pathogen in a previous study.

Why is this important? (100 words maximum)

It is important to understand whether air pollution is a contributing factor to lung infections in children with CF. Understanding these effects can help us identify opportunities for intervention.

What did you do? (100 words maximum)

We gathered data from the CF Foundation Patient Registry for children under six years from 2003-2009 and from the United States Environmental Protection Agency for air pollution. We looked at the following bacteria: *Staphylococcus aureus* (MSSA and MRSA), *Stenotrophomonas maltophilia* and *Achromobacter xylosoxidans*. We then studied the association between early air pollution level exposure and the first time patients cultured known bacteria in the lungs.

What did you find? (100 words maximum)

We found that exposure to higher levels of air pollution was associated with a greater risk of culturing methicillin resistant *Staph aureus* (MRSA). This is similar to results we reported with *Pseudomonas aeruginosa* in a previous study. However, we did not find an increased risk of culturing any other organisms with exposure to air pollution.

What does this mean and reasons for caution? (100 words maximum)



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Children residing in areas with higher levels of air pollution were more likely to acquire MRSA. These results support the increasing evidence that air pollution is associated with unfavorable outcomes in the CF community. This study only looked at outdoor air pollution and did not consider indoor air pollution.

What's next? (100 words maximum)

Currently there is no further work planned for this study.