Cystic Fibrosis Research News

Citation:

Psoter KJ, DeRoos AJ, Kaufman JD, Mayer JD, Wakefield J, Rosenfeld M. Fine particulate matter exposure and initial Pseudomonas aeruginosa acquisition in cystic fibrosis. Ann Am Thorac Soc. 2015; 12(3):385-391.

What was your research question? (50 words)

We conducted a study to determine whether exposure to air pollution is connected to the timing of initial *Pseudomonas aeruginosa* (Pa) acquisition in children 6 years of age or younger.

Why is this important? (100 words)

Air pollution can cause increased inflammation in the airways, making it more difficult to successfully clear pathogens. However, little information is available regarding the different species of bacteria found in the lungs of CF patients and levels of exposure to air pollution.

What did you do? (100 words)

We examined the relationship of air pollution exposure and the initial culturing of Pa in young children with CF. We used data from 2003 to 2009 in the Cystic Fibrosis Foundation Patient Registry.

What did you find? (100 words)

We found a strong association between increased exposure to high levels of air pollution and earlier culturing of Pa. Exposure to high levels of air pollution may play an important, unrecognized role in the cause of initial Pa infection.

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

These results are in accordance with previous studies showing associations between air pollution levels and other CF outcomes (pulmonary exacerbations and lung function decline). They also emphasize the public health importance of ambient air quality on respiratory health.

What's next? (50 words)

Additional studies that could explain risk factors for initial Pa acquisition are needed. In addition, studies that correlate early childhood lung inflammation, Pa acquisition, and air pollution levels could inform our understanding of the typical progression of Pa infection.