

Inhaling antibiotics improves chest infection symptoms

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The method, that uses a nebulizer to introduce antibiotics directly into the lungs, avoids many of the side effects of oral or injection medications.

Scientists at the University of Dundee studied 440 patients with bronchiectasis, a [chronic lung disease](#), who were randomly assigned to receive an antibiotic called aztreonam or a placebo for three months.

By analyzing the quantity of bacteria in the lungs, scientists were able to show that a group of [lung](#) disease patients who carry a high quantity of bacteria in the lungs had a dramatic improvement in cough and other symptoms with aztreonam treatment. Patients that received the placebo or who did not test positive for bacteria did not benefit.

Bronchiectasis is a [lung condition](#) which causes the airways to abnormally widen. The widening of the airways causes this mucus to be retained within the lung, which makes people with bronchiectasis more likely to get chest infections. The condition affects around 10,000 people in Scotland.

Although the results need to be confirmed with further studies, scientists believe that the findings could allow them to screen patients to assess which ones would benefit the most from antibiotic treatment, which could reduce unnecessary antibiotic use and the spread of antibiotic resistance.

Professor James Chalmers, GSK/British Lung Foundation Professor of Respiratory Research at the University of Dundee and lead author of the study, said, "With no new [antibiotics](#) on the market since the 1980s, preserving these antibiotics is absolutely crucial in stemming the growing tide of antibiotic resistance.

"Most people with lung diseases like COPD, asthma or bronchiectasis will get antibiotics for chest infections, but when taken via tablets, most of the antibiotic doesn't get into the lungs and instead causes side effects elsewhere. Delivering antibiotics directly to the lungs makes a lot of sense.

"By finding a test which predicts which patients will benefit from having an antibiotic delivered into the lungs, we can do better both for the individual patient and for society by preventing the spread of antibiotic resistance."

The research was published in the *American Journal of Respiratory and Critical Care Medicine* and funded by the British Lung Foundation and the EMBARC2 consortium.

Provided by University of Dundee

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