

# How colds cause coughs and wheezes

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Cold-like infections make 'cough receptors' in the airways more sensitive, making asthmatics more prone to bouts of coughing and wheezing, reveal scientists presenting their findings at the Society for General Microbiology's Spring Conference in Dublin. The work could lead to drugs that reduce virus-induced coughing in those suffering chronic lung diseases.

Asthmatics often report bouts of coughing, wheezing and breathlessness when they have a cold and there is no current medicine that sufficiently treats this problem. Researchers at Queen's University Belfast are investigating 'cough receptors' that line the [cells](#) of the airway and how these are affected by rhinovirus – a virus frequently responsible for the common cold. The team showed that rhinovirus infection caused an increase in the number of these [cough](#) receptors– making the airways more sensitive.

Dr Hani'ah Abdullah, who is working on the project, explained how these receptors, called transient receptor potential (TRP) receptors, work. "TRP receptors respond to chemical and physical stimuli in the environment such as pollutants in the air, a change in air temperature and some of the toxic chemicals found in cigarette smoke. Once activated, these receptors cause the individual to cough and wheeze." she said.

Professor Louise Cosby and Dr Lorcan McGarvey from the Centre for Infection and Immunity, Queen's University Belfast, are jointly leading the research team of scientists and clinicians. Their group took airway cells from mild asthmatics and healthy individuals and infected them in

the laboratory with rhinovirus, which is the most common [virus](#) to exacerbate symptoms of asthma. The results showed that rhinovirus infection caused an increase in the number of TRP receptors in the airway cells and that this effect was most pronounced in the mild asthmatics. "The increase in receptor numbers makes individuals more sensitive to environmental stimuli, making them more likely to suffer from prolonged bouts of coughing," explained Dr Abdullah.

The findings of this study may lead to new drugs that reduce virus-induced cough and wheeze in asthmatics and those with other chronic lung diseases. "It's feasible that therapies could be developed that block either the sensitivity of cough [receptors](#) or their increase in number. This would keep symptoms under control and ultimately improve the lives of asthmatics," said Dr Abdullah.

Provided by Society for General Microbiology

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