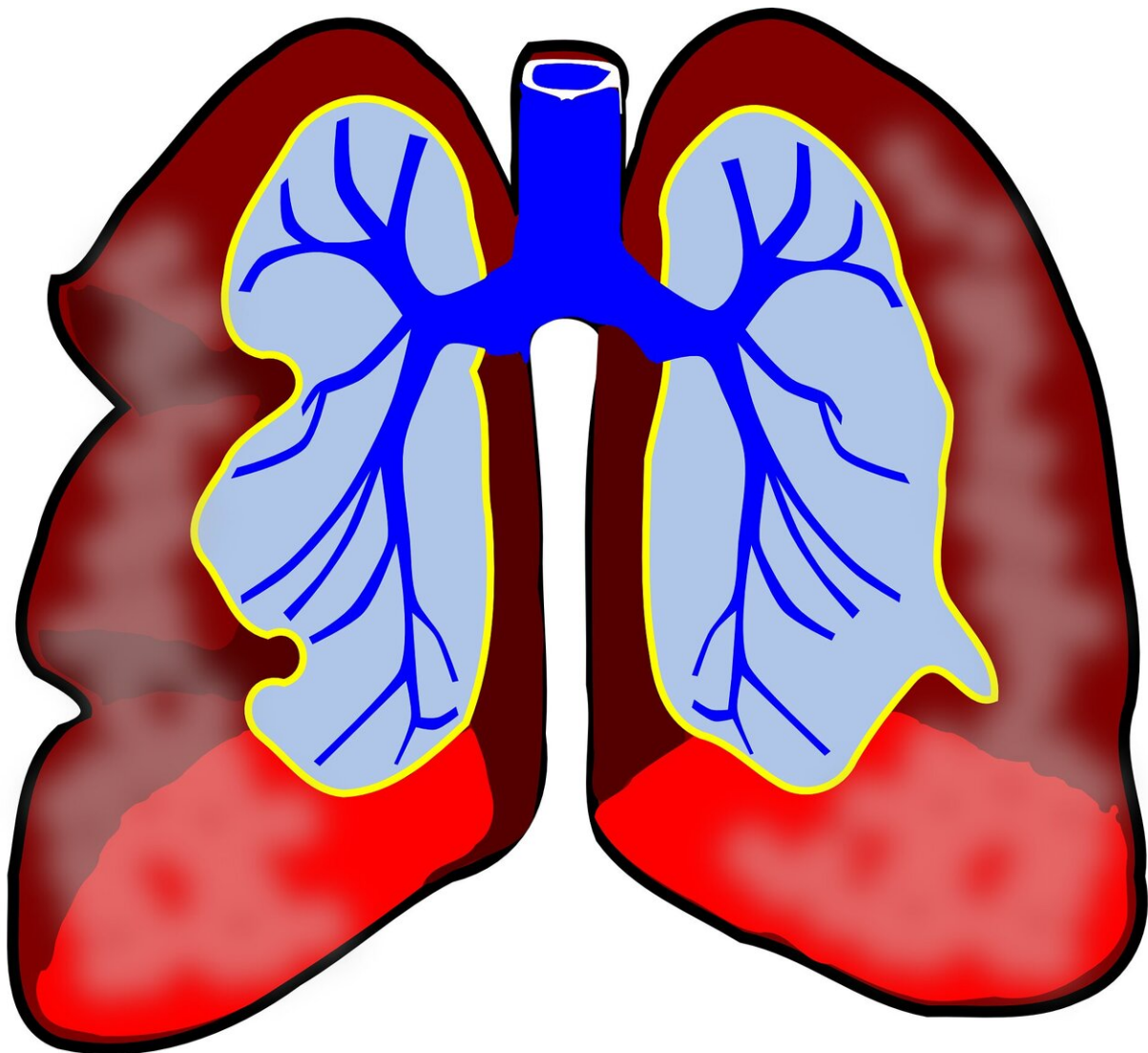


# Bronchitis as a child predicts worse lung health in middle age

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People who had bronchitis at least once before the age of seven are more likely to develop lung problems in later life, according to new research presented at the 'virtual' European Respiratory Society International Congress.

However, the [lung diseases](#) they suffer from by the age of 53 were usually asthma and pneumonia rather than [chronic bronchitis](#), said Dr. Jennifer Perret, a researcher in the Allergy and Lung Health Unit at the University of Melbourne (Victoria, Australia).

The findings come from the Tasmanian Longitudinal Health Study, which followed 8,583 people who were born in Tasmania in 1961 and started school in 1968. When the participants joined the study as children, the researchers investigated their lung function using a spirometer to measure how much air they could breathe out forcibly in one second and the total volume of air exhaled. Their parents completed a questionnaire that asked whether the children had suffered asthma or [bronchitis](#) by the age of seven. Childhood bronchitis was defined as a "loose, rattly or chesty cough".

The participants were followed up for an average of 46 years. In 2004, 5,729 of the participants responded to a further survey. Between 2012 and 2016, 3,609 participants completed another questionnaire and 2,629 underwent a clinical examination that included spirometry before and after using an asthma reliever inhaler (bronchodilator) to open the airways, in order to assess the difference in lung function.

The researchers categorised 3,085 participants into four groups: the reference group of those who never suffered from bronchitis before the age of seven (1,616 participants, 53%), the non-recurrent group who had between one and five episodes (873, 28%) lasting less than a month, the recurrent group who had at least six episodes (555, 18%) lasting less than a month, and the protracted recurrent group who had six or more

episodes (41, 1.3%) lasting an average of a month or more.

In the reference group who had parents that did not recall a history of [childhood](#) bronchitis, the prevalence of chronic bronchitis in the previous two years or current asthma within the past year by the time the participants reached the average age of 53 was 5% and 8.5% respectively; and the prevalence of ever having pneumonia or asthma diagnosed by a doctor was 14% and 19% respectively.

Compared to the reference group, people who had non-recurrent, recurrent or protracted recurrent episodes of bronchitis as children had a 1.4-fold, 2-fold and 3.2-fold increased [risk of pneumonia](#), respectively, by the time they reached the average age of 53; a 1.3-fold, 2.7-fold and 6.4-fold increased risk of ever suffering from asthma, respectively; and a 1.3-fold, 2-fold and 4.5-fold increased risk of currently suffering from asthma, respectively.

The data showed that approximately 14 out of every 100 people in the reference group who did not have bronchitis as children were diagnosed with pneumonia by middle age, nine in every 100 suffered from current, chronic asthma, and 19 in every hundred had an asthma diagnosis by middle age.

In comparison, among those who suffered from non-recurrent, recurrent or protracted recurrent bronchitis as children, the researchers estimated that approximately 19, 25 and 35 in every 100, respectively, would be diagnosed with pneumonia by middle age, 11, 16 and 29 in every 100, respectively, would suffer from chronic asthma, and 33, 50 and 70 in every 100, respectively, would ever have had asthma diagnosed by a doctor. However, the estimates for those who had protracted recurrent bronchitis as children need to be interpreted cautiously due to the small numbers in this group.

Dr. Perret said: "The associations with asthma and pneumonia strengthened with increasing severity of childhood bronchitis. However, there was no statistically significant link between childhood bronchitis and chronic bronchitis in middle-age. This was an unexpected finding and further study would be informative. We are currently exploring these associations. "

The link between childhood bronchitis and lung function in middle age was also less clear. When the researchers looked at how well the lungs functioned without the help of an asthma reliever inhaler in middle age, they found that the association between childhood bronchitis and worse lung function became stronger the more often a person had suffered from bronchitis as a child.

"However, there were too few people who had protracted recurrent bronchitis as children to estimate confidently the associations for this subgroup. We will investigate whether this and the other associations are still present after excluding people who also had a history of childhood asthma or wheezing," said Dr. Perret.

She continued: "Our findings strengthen the evidence that adult lung disease can originate in early childhood and that childhood bronchitis may adversely affect lung health in middle age. This work does not include data from adolescence and earlier adulthood, which could potentially provide further insights and which we are investigating.

"We have seen already that children with protracted bacterial bronchitis are at increased risk of serious chronic infective lung disease after two to five years, so studies like ours are important to document the potential for symptomatic [children](#) to develop lung conditions such as asthma and worse [lung function](#) in later life."

Chris Brightling, who was not involved in the research, is the European

Respiratory Society Science Council Chair and is Professor of Respiratory Medicine at the University of Leicester, UK. He said: "This is a well-conducted and long-running study that provides important information on how childhood illness can have long-term consequences. The researchers show that there is an association between suffering bronchitis as a child and a risk of pneumonia and [asthma](#) by the age of 53 and that the risk of worse [lung](#) health in middle-age increased with increasing severity of childhood bronchitis. These findings may enable doctors to identify patients who may need more careful monitoring and earlier interventions in order to keep them in good health."

Provided by European Lung Foundation

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