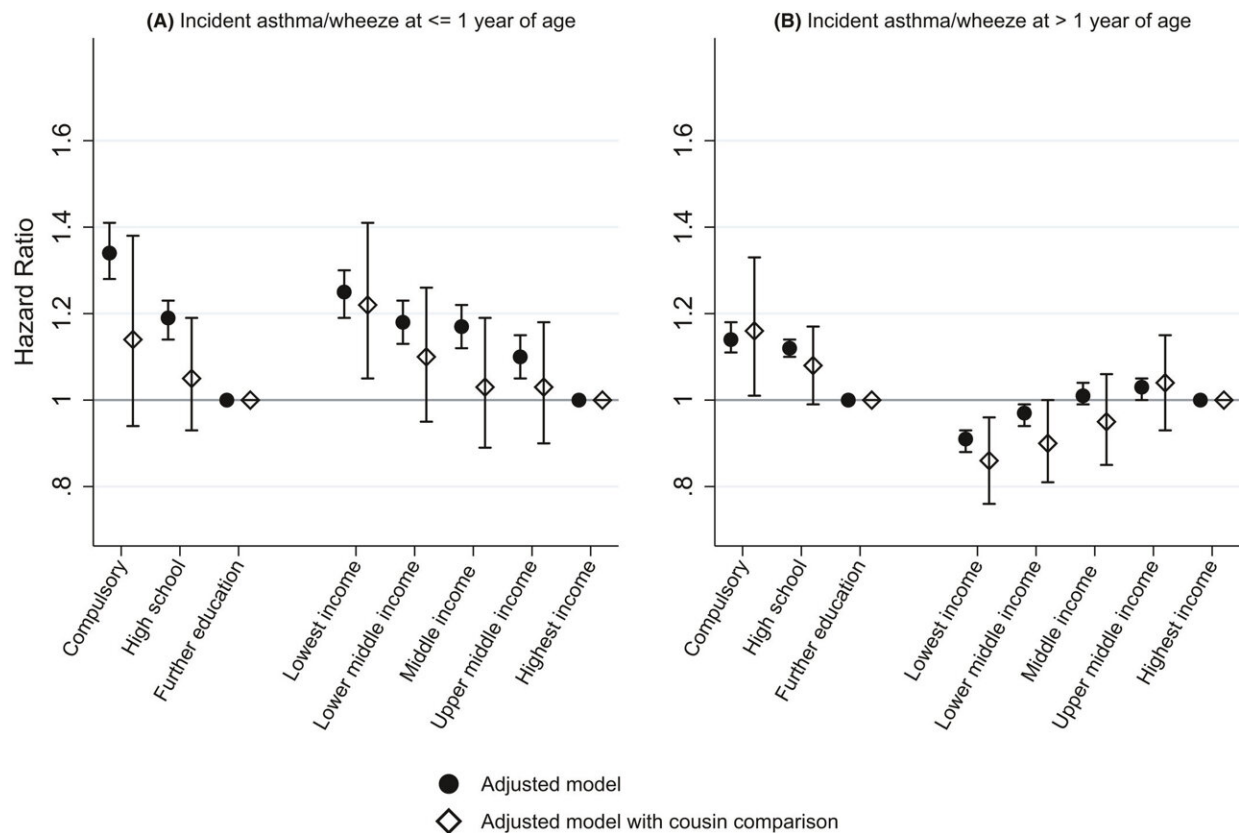


Appeasing the wheezing: Determinants and outcomes of respiratory disease in childhood

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Hazard ratio (HR) and 95% confidence interval (CI) of incident asthma/wheeze by father's socioeconomic status. Credit: *Clinical & Experimental Allergy* (2021). DOI: 10.1111/cea.14037

Asthma and cystic fibrosis are diseases that affect the lungs of children

and adults. Previous research has shown that genetic and environmental factors during pregnancy and early childhood can contribute to the way children and young adults are affected by these lung diseases.

In her thesis, Emma Caffrey Osvald, Ph.D. student at the Department of Medical Epidemiology and Biostatistics of Karolinska Institutet, has looked for new factors that may influence the development and outcomes of [asthma](#) and [cystic fibrosis](#).

In the four included studies, Emma used data from a clinical cohort and [national health](#) and demographic registers and a quality register on individuals born in Sweden to shed light on potential factors that impact the course of asthma and cystic fibrosis. Her findings should be useful when creating clinical guidelines and policies for the prevention and management of respiratory disease in children and young adults.

What are the most important results in your thesis?

In my first study, we show that mothers with asthma have an increased likelihood of having a child with asthma and that higher lung function in pregnancy is associated with a decreased likelihood of having a child with asthma. However, asthma or lung function in the mother does not impact childhood growth.

In our second study, we see that parental [social standing](#) ([socioeconomic status](#), measured as parents education and income) is associated with the onset of asthma in childhood.

By comparing the social standing and onset of asthma among first cousins, we see that parental education may be directly linked to the onset of asthma. In our third study, we also show that there is a connection between having asthma in childhood or young adulthood and death between 1 and 25 years of age.

The likelihood of death between 1 and 25 years of age is higher if the person also has a life-limiting disease, but is not altered by the parents' social standing at the child's birth.

In our final study, we see some association between low parental social standing and [severe disease](#) and lung function decline among persons with cystic fibrosis, however low parental social standing does not impact growth. So we found that there are factors in the parents (including during the pregnancy and social standing) that impact the onset of asthma.

Asthma increases the risk of mortality between 1 and 25 years, and low parental social standing is shown to be associated with severe disease and lung function decline in persons with cystic fibrosis.

Why did you become interested in this topic?

I have wanted to learn more about epidemiology ever since my ex-job project as a [medical student](#), and these Ph.D. projects have allowed me, as a pediatric pulmonologist, to explore the factors that influence onset and outcomes for children and [young adults](#) with respiratory disease.

Asthma and CF are two [chronic diseases](#) that we meet as part of our routine clinical practice, and for me it has been really interesting to avail [myself] of both clinical data and national register data and a variety of statistical methods to further our understanding of these diseases.

What do you think should be done in future research?

Areas that will interest me in my future research continue to be the determinants and outcomes of respiratory disease in childhood. For me, the future of register-based research lies in the combining of clinical

data with register data.

There is more to explore in regards to risk factors for acute respiratory disease such as severe pneumonia and empyema, but also the outcomes for persons with asthma and CF, such as presence of comorbidity or educational attainment.

More information: Appeasing the wheezing : determinants and outcomes of respiratory disease in childhood.

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Provided by Karolinska Institutet

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