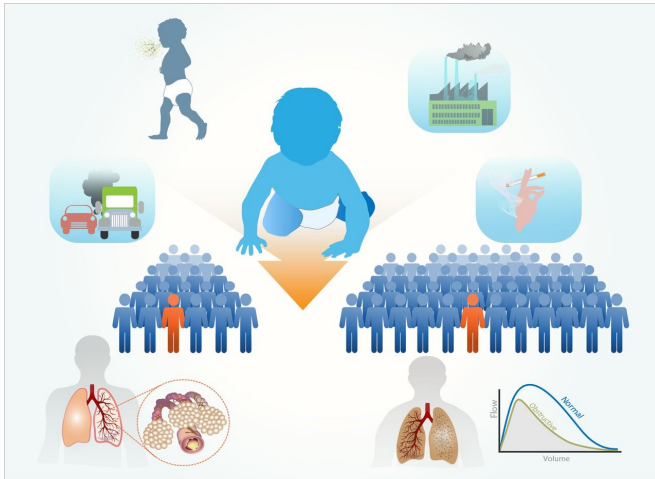


Early-life events linked to lung health in young adulthood

12 November 2020, by Anne Maria Hammarskjöld



Chronic bronchitis was found in 1 in 20 young adults in the BAMSE study, while irreversible airflow limitation was seen in 1 in 50. Childhood exposure to air pollutants as well as a history of asthma were associated with both conditions. Active tobacco smoking was linked to chronic bronchitis. Credit: Fuad Bahram

Early-life events, such as the exposure to air pollutants, increase the risk of chronic lung disease in young adulthood, according to new results by researchers at Karolinska Institutet, Sweden, published in the *European Respiratory Journal* and *Thorax*. The studies add to the growing evidence that chronic lung disease in adulthood can be traced back to childhood.

Chronic bronchitis and [chronic obstructive pulmonary disease](#) (COPD), with the hallmark features of phlegm and irreversible airflow limitation, respectively, are lung diseases known to affect adults with a history of long-term smoking.

"To our surprise, we found the prevalence of [chronic bronchitis](#) and irreversible airflow limitation to be rather high (5.5% and 2.0%, respectively), considering the young age of the study

participants," says senior author Erik Melen, professor and pediatrician, Department of Clinical Science and Education, Karolinska Institutet, Sodersjukhuset.

"Those diseases are usually diagnosed in patients older than 50 years of age," says co-author Anders Linden, professor and pulmonologist, Institute of Environmental Medicine.

In the present studies, the researchers used data from birth up to age 24 years from the follow-up of the Swedish population-based birth cohort BAMSE (Swedish abbreviation for Child (Barn), Allergy, Milieu, Stockholm, Epidemiological), which includes 4,089 participants from the Stockholm area recruited 1994 to 1996.

Analyses performed by Ph.D. student Gang Wang showed that smoking as well as early-life air pollution exposures and childhood asthma are risk factors for chronic bronchitis, whereas breast feeding was identified as a protective factor.

In addition, the early-life [risk factors](#) for development of irreversible airflow limitation were recurrent lung infections, asthma, and exposure to air pollution.

"The levels of air pollutants in the current study mainly reflect local emissions from [road traffic](#), which implies that this preventable risk factor may play an important role in the development of [chronic lung disease](#) in young adults," says professor Erik Melen.

Given that air pollution levels in Stockholm are comparatively low by international standards, the current findings are important in a global context. And despite the age of the young participants, active smoking was linked to chronic bronchitis, which underlines the [negative health effects](#) from even a limited period of exposure to tobacco smoke.

"In conclusion, our two novel studies demonstrate that chronic bronchitis and irreversible airflow limitation do exist in young adults and emphasize the importance of early-life events for maintaining lung health during adulthood. The take home-message is: If you want to prevent [disease](#), early prevention is the key to success."

More information: Assessment of chronic bronchitis and risk factors in young adults: results from BAMSE, *European Respiratory Journal*, 12 November 2020, [DOI: 10.1183/13993003.02120-2020](#).

Early-life risk factors for reversible and irreversible airflow limitation in young adults: Findings from the BAMSE birth cohort, *Thorax*, November 12 2020, [DOI: 10.1136/thoraxjnl-2020-215884](#).

Provided by Karolinska Institutet

APA citation: Early-life events linked to lung health in young adulthood (2020, November 12) retrieved 15 September 2022 from <https://medicalxpress.com/news/2020-11-early-life-events-linked-lung-health.html>

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