

Importance of early-life factors identified in new lung health study

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New insights into the importance of early-life factors on lung health have been unveiled in the most comprehensive study of its kind, led by the Universities of Bristol and Essex.

The researchers hope the findings, published today (March 2) in the *European Respiratory Journal*, will pave the way to developing predictive tools for [respiratory health](#) and reduce health care inequality by targeting early-life interventions for people at higher risk.

The study analyzed data collected from 7,545 participants of Bristol's Children of the 90s study (also known as the Avon Longitudinal Study of Parents and Children, ALSPAC), a world-leading [longitudinal study](#) which has followed [pregnant women](#) and their offspring since 1991.

The researchers looked at 33 key factors covering the lifespan from birth to age 24 years—when lung function is at its peak and a robust indicator of respiratory health in later life.

"Compared to previous studies on lung health, our work stands out as being the most comprehensive of its kind, to date, as it considers the underlying relationships between these 33 factors, offering reliable findings on their importance on adulthood lung health," explained lead researcher Dr. Osama Mahmoud, Lecturer in data science and statistics from the Department of Mathematical Sciences at the University of Essex, and formerly at Bristol.

The 33 factors investigated, which could have an impact on lung function, included sociodemographic, environmental, lifestyle and physiological characteristics.

The key factors negatively affecting lung health identified in the study were:

- Women with higher BMI ([body mass index](#)) during pregnancy
- Women smoking while pregnant
- Low birth weight
- Children with higher fat mass at primary school

- Children with lower lean mass at primary school
- Early-onset asthma

Dr. Mahmoud concluded, "The results clearly show that out of 33 key factors, the ones which individually most influence the lung function of young adults are: their mother's weight during pregnancy, if their mother smoked during pregnancy, their birthweight and their body composition at primary school.

"With early-onset asthma being another factor affecting [lung function](#), we think this should highlight the need to give these conditions more attention, especially when it comes to primary prevention."

More information: Osama Mahmoud et al, Early-life and health behaviour influences on lung function in early-adulthood, *European Respiratory Journal* (2022). [DOI: 10.1183/13993003.01316-2020](https://doi.org/10.1183/13993003.01316-2020)

Provided by University of Bristol

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