



Early-life respiratory tract infections and the risk of school-age lower lung function and asthma: a meta-analysis of 150 000 European children

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This meta-analysis of 150 000 children suggests that mostly lower respiratory tract infections are associated with an increased risk of asthma and lower lung function. This is independent from preceding respiratory tract infections or early-life asthma. <https://bit.ly/3weE62l>

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Abstract

Background Early-life respiratory tract infections might affect chronic obstructive respiratory diseases, but conclusive studies from general populations are lacking. Our objective was to examine if children with early-life respiratory tract infections had increased risks of lower lung function and asthma at school age.

Methods We used individual participant data of 150 090 children primarily from the EU Child Cohort Network to examine the associations of upper and lower respiratory tract infections from age 6 months to 5 years with forced expiratory volume in 1 s (FEV₁), forced vital capacity (FVC), FEV₁/FVC, forced expiratory flow at 75% of FVC (FEF_{75%}) and asthma at a median (range) age of 7 (4–15) years.

Results Children with early-life lower, not upper, respiratory tract infections had a lower school-age FEV₁, FEV₁/FVC and FEF_{75%} (z-score range: -0.09 (95% CI -0.14– -0.04) to -0.30 (95% CI -0.36– -0.24)). Children with early-life lower respiratory tract infections had a higher increased risk of school-age asthma than those with upper respiratory tract infections (OR range: 2.10 (95% CI 1.98–2.22) to 6.30 (95% CI 5.64–7.04) and 1.25 (95% CI 1.18–1.32) to 1.55 (95% CI 1.47–1.65), respectively). Adjustment for preceding respiratory tract infections slightly decreased the strength of the effects. Observed associations were similar for those with and without early-life wheezing as a proxy for early-life asthma.

Conclusions Our findings suggest that early-life respiratory tract infections affect development of chronic obstructive respiratory diseases in later life, with the strongest effects for lower respiratory tract infections.

