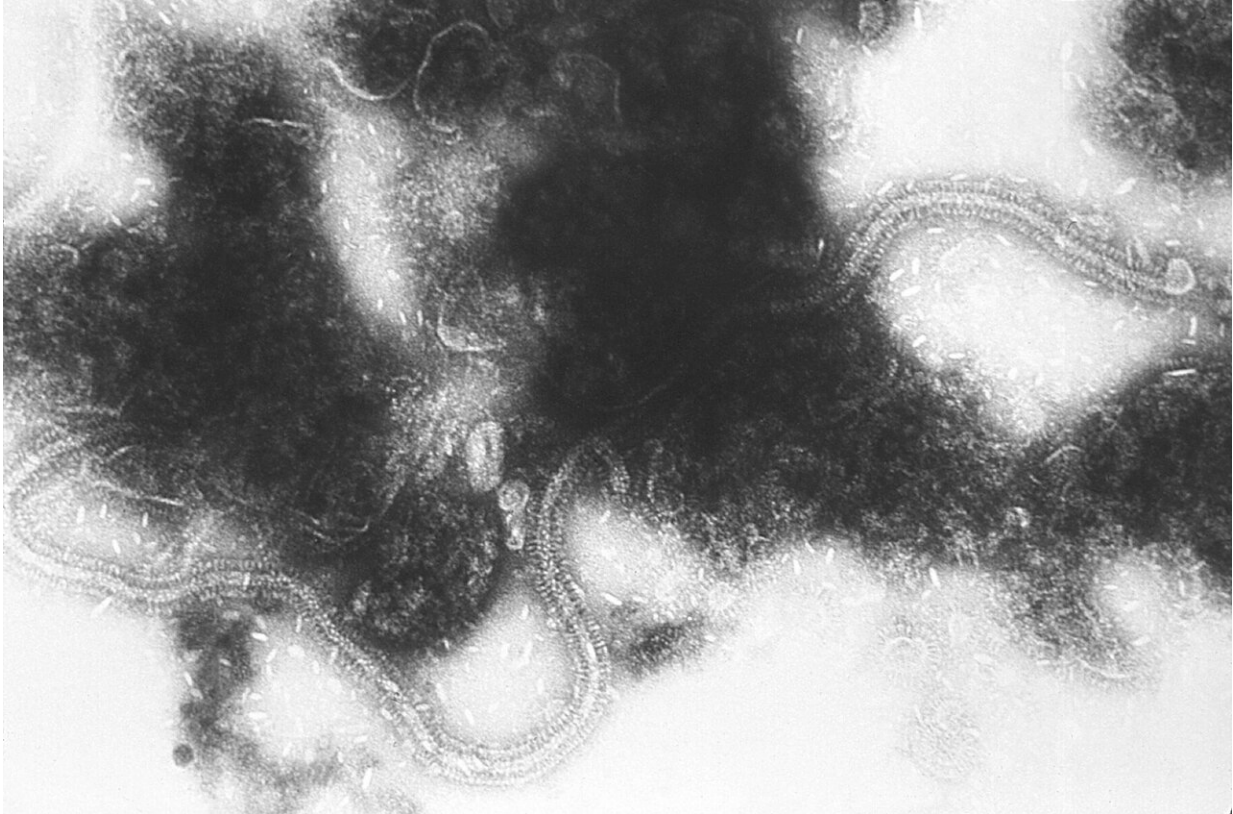


Study links infant RSV to childhood asthma

April 26 2023, by Justin Jackson



Transmission electron micrograph of RSV. Credit: CDC/ Dr. Erskine Palmer / Public Domain

Research led by Vanderbilt University Medical Center has sought a connection between the respiratory virus RSV in infants and asthma in 5-year-olds. The paper, "Respiratory syncytial virus infection during infancy and asthma during childhood in the U.S. (INSPIRE): a

population-based, prospective birth cohort study," is published in *The Lancet*. A Commentary by Marie-Noëlle Billard and Louis J Bont has been published in the same journal issue.

According to the study, staying RSV-free in the first year of life was associated with a substantially reduced risk of developing [childhood asthma](#).

Of 1,741 children enrolled in the study, 944 (54%) had RSV infection during infancy. The proportion of children with asthma at age 5 (91/587, 16%) was lower among those without RSV infection during infancy than those with RSV infection during infancy (139/670, 21%).

In their analysis, being infected with RSV during the first year was associated with a 26% higher risk of having asthma at age 5 than being infected later in childhood. The estimated proportion of 5-year-old asthma cases that the researchers suggest could be prevented by avoiding RSV infection during infancy is 15%.

The findings show an age-dependent association between reported RSV infection during infancy and later presentation of childhood asthma. The authors state that to definitively establish causality, the effect of interventions that prevent, delay, or decrease the severity of the initial RSV infection on childhood asthma will need to be studied.

While the study outcomes make a case for RSV to be potentially causative in association with childhood asthma, it could just as easily have suggested that RSV infections are more serious (less likely to be asymptomatic) in asthma-prone infants resulting in higher levels of health care interactions for respiratory infections. However, the researchers prevented this dual interpretation by not relying on health care interactions alone in their cohorts, instead using [blood samples](#) at age 1 to determine previous RSV contraction. This way, a more specific

population is measured, not simply severe cases compared to RSV-free and asymptomatic cases.

The study also found intriguing severity-dependent associations between RSV infection during [infancy](#) across the entire disease severity spectrum and [childhood](#) asthma risk, which could support a dose-response association. Additionally, there were age-dependent associations between RSV infection and [asthma](#) risk.

As always, correlation does not imply causation, but it is an excellent place to start looking. Future research informed by this work can investigate the potential mechanisms, causative or correlative, to the outcomes of this study.

More information: Christian Rosas-Salazar et al, Respiratory syncytial virus infection during infancy and asthma during childhood in the USA (INSPIRE): a population-based, prospective birth cohort study, *The Lancet* (2023). [DOI: 10.1016/S0140-6736\(23\)00811-5](https://doi.org/10.1016/S0140-6736(23)00811-5)

Marie-Noëlle Billard et al, The link between respiratory syncytial virus infection during infancy and asthma during childhood, *The Lancet* (2023). [DOI: 10.1016/S0140-6736\(23\)00672-4](https://doi.org/10.1016/S0140-6736(23)00672-4)

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