



# ECHO

Environmental influences  
on Child Health Outcomes

A program supported by the NIH

## Study Summary

### ***Does severe bronchiolitis during infancy affect a child's risk of developing asthma?***

*Authors: Kohei Hasegawa, et al.*

#### Who sponsored this study?

The Environmental influences on Child Health Outcomes (ECHO) Program, Office of the Director, National Institutes of Health supported this research.

#### What were the study results?

Bronchiolitis is a wheezing illness usually caused by a lung infection such as Respiratory Syncytial Virus (RSV). During this study, researchers found that the hospitalized infants with bronchiolitis were more likely to develop asthma by the age of 12 years when compared to hospitalized infant without bronchiolitis. The researchers also saw that this effect was stronger for non-Hispanic White and non-Hispanic Black infants, compared with Hispanic infants.

#### What was the study's impact?

This is the first nationwide investigation that demonstrates the role of severe bronchiolitis during infancy on influencing long-term childhood asthma risk and identifies subgroups of children who are most at risk for developing asthma following bronchiolitis during infancy. These results could help future investigations to identify what factors may influence the association between severe bronchiolitis and childhood asthma risk across different demographic groups, which could advance the development of targeted prevention strategies for childhood asthma.

#### Why was this study needed?

Severe bronchiolitis is the most common reason for hospitalization in U.S. infants younger than 2 years old. Many studies have shown that severe bronchiolitis, requiring hospitalization during infancy, is a risk factor for developing childhood asthma. However, these studies have been too narrow to evaluate how severe bronchiolitis during infancy affects childhood asthma risk in various demographic subgroups.

#### Who was involved?

The researchers analyzed data from 11,762 infants enrolled in 53 ECHO research sites across the United States. All of these infants were hospitalized at age 12 months or younger between 2001-2021. Of these infants, 10% were hospitalized with bronchiolitis. One of the participating ECHO cohorts selectively enrolled children with a parental history of asthma.

### What happened during the study?

The researchers collected data from participating infants under 12 months old on caregiver-reported hospitalization for bronchiolitis. The researchers then used data on caregiver-reported asthma diagnosis prior to age 12 to evaluate the relationship between severe bronchiolitis and childhood asthma to determine how this relationship may be affected by major demographic and clinical factors.

Footnote: Results reported here are for a single study. Other or future studies may provide new information or different results. You should not make changes to your health without first consulting your healthcare professional.

### What happens next?

Future studies are needed to investigate the reasons underlying the links among infant bronchiolitis, demographic and clinical factors, and the development of asthma. These findings not only provide an evidence base for early identification of children who are at high risk for asthma but also offer opportunities for early preventive interventions in this large, high-risk population.

### Where can I learn more?

Access the full journal article, titled “Association of Severe Bronchiolitis during Infancy with Childhood Asthma Development: An Analysis of the ECHO Consortium,” in [Biomedicines](#).

*The content is the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.*