

Prenatal pet exposure, delivery mode, race are key factors in early allergy risk

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Prenatal pet exposure, a mother's delivery mode and race are influential factors in a child's risk of developing allergies by age 2, according to a Henry Ford Hospital study.

In a study believed to be the first of its kind, Henry Ford researchers found that babies who have indoor prenatal pet exposure have a pattern of lower levels of the antibody Immunoglobulin E, or IgE, between birth and age 2. IgE is linked to the development of allergies and asthma.

Key findings:

- IgE levels were 28 percent lower during [infancy](#) in babies who had indoor prenatal pet exposure compared to babies from pet-free homes.
- IgE levels were 16 percent lower in infants who had indoor prenatal pet exposure and were born vaginally compared to 43 percent in infants who had indoor prenatal pet exposure and were born by cesarean section.
- IgE levels were 33 percent lower in infants who had indoor prenatal pet exposure and were either European, Asian or Middle Eastern descent compared to compared to 10 percent lower in infants who had indoor prenatal pet exposure and were African-American.

The findings are published online today at the [Journal of Allergy and Clinical Immunology](#).

"We believe having a broad, diverse exposure to a wide array of microbacteria at home and during the birthing process influences the development of a child's immune system" says Christine Cole Johnson, Ph.D., MPH, chair of Henry Ford's Department of Public Health Sciences and senior author of the study.

Dr. Johnson says the findings support the so-called [hygiene hypothesis](#), which theorizes that [early childhood](#) exposure to infectious agents affects the immune system's development and onset of allergies and asthma.

Prior published research by Henry Ford's Department of Public Health Sciences has shown that pet exposure has a protective effect against early [allergy](#) development. She theorizes that babies born through the [birth canal](#) are exposed to a higher and more diverse burden of [bacteria](#), further boosting the immune system's protection against allergies.

"Our findings may provide insight into the biological mechanisms that increase the risk for allergic disorders," Dr. Johnson says. She theorizes that "genetic variants" may explain the higher levels of IgE levels in African American newborns.

Henry Ford researchers followed 1,187 newborns August 2003 and November 2007 and collected blood samples for measuring IgE levels at birth, six months, one year and two years.

Of the birth mothers, 62 percent were African American and 33 percent were European Americans. Of the babies born, 751 were delivered vaginally and 436 were delivered cesarean. There was at least one indoor pet in the homes of 420 mothers.

More information: www.jacionline.org/inpress

Provided by Henry Ford Health System

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