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## Childhood allergies and wheezing may be detected in the womb



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A child's chances of developing allergies or wheezing is related to how they grow at vital stages in the womb, according to Medical Research Council (MRC) funded scientists at the University of Southampton.

The new research, also supported by the British Lung Foundation, reveals that fetuses which develop quickly in early pregnancy but later on in pregnancy are likely to go on to develop allergies and asthma as children. Scientists believe this is due to changes in the development of their immune system and lungs.

A fetus that grows too slowly in the womb is also more likely to become an infant who wheezes with common colds, possibly as a result of narrower airways in its lungs.

Professor Keith Godfrey, Professor of Epidemiology and Human Development at the University of Southampton and lead author of the study, said:

*"Childhood allergies and asthma have become an epidemic in developed countries over the last 50 years. This research shows that in order to combat this, we need to understand more about how babies develop in the womb.*

*"We already know that a baby's growth in the womb has an important influence on susceptibility to obesity and heart disease in later life. This research provides some of the most direct evidence yet that changes in how the baby's immune system and lungs develop before birth can predispose them to some of the commonest childhood illnesses."*

The scientists from the MRC Lifecourse Epidemiology Unit and University of Southampton, based at Southampton General Hospital, studied more than 1,500 three year-old children who were taking part in the Southampton Women's Survey, a large study of women and their children.

The team discovered that 27% of children who had developed allergies in early pregnancy but faltered later in pregnancy were sensitive to common allergens (atopy), compared to 4% of children who grew at a normal rate. A combination of allergy and wheezing conditions was much more likely in children with the rapid-slow growth pattern in the womb.

Professor Stephen Holgate, from the Medical Research Council,

*"Unravelling the complex interplay between immunity and disease is the course of a person's life, including before they are even born. This is a core part of the MRC's research strategy. Furthering our understanding of the body's natural resilience is critical to developing new advances in the treatment of infectious diseases, autoimmune diseases and"*

*allergies."*