

# DOES STRESS IN PREGNANCY BOOST ALLERGY RISK?

**Investigators have long been scrambling to figure out why rates of allergic disease are skyrocketing in young people. Now, researchers out of McMaster University have found a new piece to this puzzle: stress during pregnancy.**

**P**etra C. Arck, MD, and colleagues used data on 1,587 children who participated in the Western Australian Pregnancy Cohort (Raine) Study to calculate whether their odds of developing asthma, eczema, and/or allergic rhinitis at ages 6 or 14 were related to their mother's experience of adverse life events during pregnancy. Dr. Arck, now back in Germany, was a senior investigator in the study while holding the position of Canada Research Chair and a professor of neuroimmunology at McMaster.

"Negative life events surveyed in the study were separation or divorce, marital problems, problems with the children, pregnancy prob-

lems, experience of involuntary job loss, partner's involuntary job loss, money problems, a residential move, death of a close relative, and death of a close friend," explains Dr. Arck. "... Among these life events, the more moderately stressful events, such as a residential move, money problems and pregnancy problems, were among the life events most often experienced, whereas more severe life events, such as death of a relative or friend, were rare."

## **NEGATIVE LIFE EVENTS LINKED WITH ASTHMA AND ECZEMA RISK**

It turned out that every negative life event experienced by the mother during the second

half of her pregnancy was associated with more than double the odds that the child would have asthma and eczema at age 14. Interestingly, the link between negative life events and asthma risk was *stronger* if the mother herself had no history of asthma.

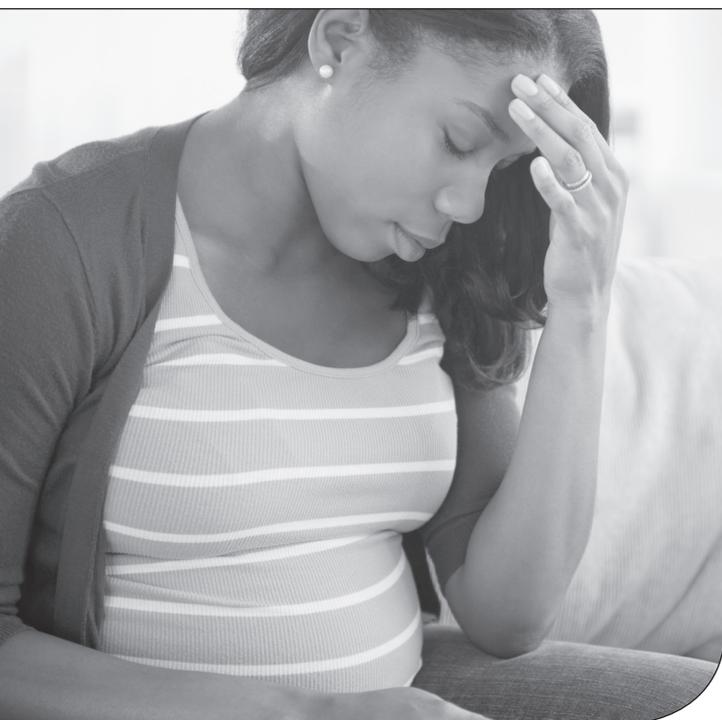
"Immune and lung development occur largely *in utero*, and prenatal environmental stressors may have adverse effects on immune ontogeny and organ development," says Dr. Arck. "This concept is supported by a growing number of studies that newborns to mothers who had experienced high levels of stress during pregnancy demonstrated an altered phenotype of innate and adaptive immune cells in cord blood. Such altered immune status may increase the risk for atopic diseases later in life."

Why was the link weaker among the children of mothers with a history of asthma? The investigators are not sure. "This may be due to the pre-existing high risk due to the high rate of maternal heredity in asthma, which prenatal stress fails to further perpetuate," suggests Dr. Arck.

## **MAKING STRESS REDUCTION A PRIORITY**

Rosalind Wright, MD MPH, of Kravis Children's Hospital, Icahn School of Medicine at Mount Sinai in New York, also studies the effects of stress on disease mechanisms in early life. She says the study findings have implications at both the clinical and policy levels. "A lot of physicians are not counseling pregnant patients around stress and stress reduction and its importance for the child's health as well as the mother's. Physicians talking about this one-on-one during patient encounters will validate for women that this is important because it has long-term implications on the health of their children." From a policy perspective, government programs that help raise families out of poverty can reduce otherwise unavoidable stresses on pregnant women, such as concerns about safety, and access to food, medicine and decent housing. Such measures may help reduce the burden of disease for future generations. 🌱

**BY ALISON PALKHIVALA**



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