

Infants of overweight mothers grow more slowly

August 6 2012

Pregnant women who are overweight or obese can encounter a host of health complications. The added weight also appears to affect how their children grow and develop, at least initially.

In a new study published in the [Journal of Pediatrics](#), a team led by a University of Iowa researcher compared the weight and height of babies born to [overweight](#) and [obese mothers](#) with those born to normal-weight mothers.

Contrary to expectations, babies of overweight/obese mothers gained less weight and grew less in length than babies of normal-weight women from just after birth to three months. The overweight/obese mother babies also gained less fat mass than those born to normal-weight mothers. Fat mass in infants is widely considered to be crucial to [brain growth](#) and development. (That may explain why humans have the fattest [newborns](#) of any mammal.)

"We've found these children are not growing normally," says Katie Larson Ode, assistant clinical professor in pediatric endocrinology and diabetes at the UI. "If what we have found is true, it implies that the [obesity epidemic](#) is harming children while they are still in utero and increases the importance of addressing the risk of obesity before females enter the child-bearing years, where the negative effects can affect the next generation."

Six in ten U.S. women of childbearing age are overweight or obese,

according to a 2010 study published in the [Journal of the American Medical Association](#).

Children of overweight or obese mothers, in general, catch up to their normal-weight-mother peers at some point, according to studies; unfortunately, they also have a higher risk of continuing to rapidly gain weight in adolescence and becoming fat themselves, triggering health problems throughout their lifetimes.

"A message from this study is, 'Don't panic,'" Larson Ode says. "Pediatricians see a lack of (initial) growth, and they assume the child is not getting enough nutrition. But we believe the baby is in fact getting plenty."

After combing the literature for an explanation, Larson Ode and researchers at the University of Minnesota who assisted in the study think there are two reasons why babies of overweight or obese women lag initially in their physical development. The first deals with inflammation: fat cells that normally help suppress a person's immune system flare up when an adult is overweight, studies have shown. The researchers believes this state of warfare being waged in an overweight/obese pregnant mother's immune system may also inflame the fetus's developing [immune system](#), diverting energy that otherwise would go to the baby's development.

"These (fat tissue-derived) hormones and inflammatory factors tend to have appetite/satiety regulating effects early on, and may exert their negative effects on growth both during gestation and through passage into the breast milk during postnatal development as well," says Ellen Demerath, Larson Ode's advisor at Minnesota and senior author on the paper.

The second cause has to do with how babies grow in the womb. One is

through free fatty acids delivered by the mother via a growth hormone called IGF-1. The other is through a growth hormone secreted by the pituitary gland in the baby's brain. The researchers think the cosseted baby is getting so many free fatty acid-derived growth hormones from its overweight mother that the other growth generator—the pituitary gland—slows its production.

So, when the baby is born and is cut off from the mother's growth line, the pituitary gland is not developed enough to pick up the slack, the researchers think. "It's just not mature yet," says Larson Ode, whose clinical appointment is in the Carver College of Medicine.

The study included 97 mothers, of which 38 were overweight or obese. None was diabetic. The researchers found babies of overweight/obese mothers gained 11 ounces less than those born to normal-weight mothers from two weeks to three months. They also put on 0.3 ounces less [fat mass](#) and grew nearly a half-inch less.

Larson Ode noted the sample size was small and cautioned the findings need to be confirmed with a larger population, as well as the possible reasons. The study is titled, "Decelerated early growth in infants of overweight and obese [mothers](#)" and was published online last month.

Provided by University of Iowa

Citation: Infants of overweight mothers grow more slowly (2012, August 6) retrieved 18 April 2024 from <https://medicalxpress.com/news/2012-08-infants-overweight-mothers-slowly.html>

<p>This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.</p>
--