

Scientists discover why a mother's high-fat diet contributes to obesity in her children

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New research published online in *The FASEB Journal* suggests that pregnant women should think twice about high-fat foods. In a study from the University of Cincinnati and the Medical College of Georgia, scientists found that female mice fed high fat diets were more likely to have oversized offspring (a risk factor for overweight and obesity) because fat causes the placenta to go into "overdrive" by providing too many nutrients to the fetus. This information also suggests that the reverse may be true as well—high fat diets may help prevent undersized babies.

"Our model may one day lead to dietary recommendations for mothers who are entering pregnancy overweight or obese," said Helen N. Jones, Ph.D., first author of the study. "We hope this research will ultimately help reduce the number of babies suffering from birth injuries, decrease C-section rates, and lower the risk of babies becoming overweight or obese later in life."

To reach their conclusion, the researchers fed one group of mice a normal diet and another group a higher fat diet for eight weeks. Then the mice were mated. At the end of each mouse's pregnancy the offspring were delivered by c-section and weighed along with their placentas. The scientists then took blood from the mothers and measured the ability of the placenta to transport nutrients to the babies.

"It's no secret that big women tend to have big babies," said Gerald Weissmann, M.D., Editor-in-Chief of *The FASEB Journal*, "but now we

know that there's more at play than genetics. Cutting back on fatty foods during pregnancy might decrease the chance of having a baby that becomes overweight in the future."

According to the U.S. Centers for Disease Control and Prevention, about one-third of adult men and women, and 16.3 percent of children and youth in the United States are obese. Obesity increases the risk of many diseases and health conditions, including: hypertension, osteoarthritis (breakdown of cartilage and its underlying bone in a joint), dyslipidemia (high total cholesterol, high levels of triglycerides), type 2 diabetes, coronary heart disease, stroke, gallbladder disease, sleep apnea and respiratory problems, and some cancers.

Journal: <http://www.fasebj.org>

Source: Federation of American Societies for Experimental Biology

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