Medical Xpress

Weight-loss surgery can break a family's cycle of obesity

September 2 2009

Adolescent and young children of obese mothers who underwent weight-loss surgery prior to pregnancy have been found to have a lower prevalence of obesity and significantly improved cardio-metabolic markers when compared to siblings born before the same obese mothers had weight-loss surgery. This new study has been accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology & Metabolism* (JCEM).

Obesity can lead to insulin resistance, cardiovascular disease and pregnancy complications and is a major contributor to causes of death in industrialized nations. Previous studies of obese pregnant women have shown that obesity and its co-morbidities can be transmitted to their children, which indicates that the intrauterine environment may determine whether a child at birth is already destined to become obese.

"Our study confirms previous research showing that the intrauterine environment may be more important than genes and the post-natal environment when it comes to the association between maternal obesity and childhood obesity," said John Kral, MD, PhD, of SUNY Downstate Medical Center in Brooklyn, N.Y. and co-author of the study. "Any medical or surgical treatment to reduce obesity and existing metabolic disorders before pregnancy can be an investment in the life of future offspring."

Weight-loss surgery limits the amount of food a person can consume. Some of these operations also restrict the amount of food that can be

digested. This particular study focused on women who had undergone biliopancreatic diversion (BPD) prior to becoming pregnant. BPD changes the normal process of digestion by making the stomach smaller and directing food to bypass part of the small intestine resulting in fewer calorie absorption.

Specifically, researchers studied 49 mothers who had undergone BPD surgery and their
111 children (between the ages of 2.5 and 25 years). All mothers in this study had children born before and then after their weight-loss surgery. The research found that children who were born after their mother underwent weight-loss surgery had reduced birth weight and waist circumference and were three times less likely to become severely obese. Furthermore, children born after their mother's weight-loss surgery had improved cardiovascular markers including reduced insulin resistance and lower cholesterol.

"To our knowledge, our paper is the first to demonstrate that dramatic maternal weight loss causes metabolic improvements in their children," said Kral. "Our findings show that obese women should be encouraged to lose weight before becoming pregnant, and then, once pregnant, should limit their weight gain. For those women interested in both surgical treatment and having children, we believe surgery should come first. Preventing obesity and treating it effectively in young women could prevent further transmission to future generations."

More information: The article, "Effects of maternal surgical weight loss on intergenerational transmission of obesity," will appear in the November 2009 issue of *JCEM*.

Source: The Endocrine Society (news : web)