Overweight baby girls at increased risk for cardiovascular disease and diabetes in adulthood

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Heavier female babies are more likely to develop diabetes and related metabolic risks when they grow up compared with their male counterparts, according to a recent study accepted for publication in The Endocrine Society's *Journal of Clinical Endocrinology and Metabolism* (*JCEM*).

The incidence of early onset type 2 diabetes has been rising in stride with the epidemic of childhood obesity. Previous studies have shown that cardiovascular risk factors in childhood and adults are associated with birth weight. This study investigated the associations between birth weight and body fat distribution in early childhood with future metabolic risk factors such as obesity, insulin resistance and high blood pressure.

"What happens to a baby in the womb affects future heart disease and diabetes risk when the child grows up," said Rae-Chi Huang, MD, PhD, of The University of Western Australia in Perth and the study's lead author. "We found that female babies are particularly prone to this increased risk and females who are at high risk of obesity and diabetes-related conditions at age 17 are showing increased obesity as early as 12 months of age."

In this study, researchers examined 1,053 17-year-olds from an Australian birth cohort. Follow-up of study participants took place at eight intervals between one and 17 years of age. In addition to birth

weight and BMI, researchers took measurements of blood pressure and levels of insulin, blood glucose, triglycerides and cholesterol. The 17 year old girls with the greater waist circumference, triglycerides, insulin, and lower HDL-cholesterol (good cholesterol) were also heavier from birth with consistently higher BMI thereafter. In contrast, birth weight had no statistical impact on metabolic risk factors in males.

"These findings are significant because in our modern western society, we are seeing increased maternal obesity and gestational diabetes, which means there will also be a rise in female newborns that are born large for their age," said Huang. "Our results can be applied to public health messages targeting both maternal health and measures in early infancy regarding the prevention of childhood obesity and its consequences."

More information: The article, "Sex Dimorphism in the Relation between Early Adiposty and Cardio-Metabolic Risk in Adolescents," appears in the June 2012 issue of *JCEM*.

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