

Mothers' high blood sugar in pregnancy is linked to children's reduced insulin sensitivity

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Children of mothers whose blood glucose (sugar) was high during pregnancy are more likely to have low insulin sensitivity—a risk factor for type 2 diabetes—even after taking into consideration the children's body weight, a new study shows. The results will be presented Tuesday at The Endocrine Society's 92nd Annual Meeting in San Diego.

"We know that children born to women with type 2 diabetes or [gestational diabetes](#), or who have [high blood sugar](#) during pregnancy are at risk of becoming diabetic themselves. This study suggests that the children's increased risk appears to be due, at least in part, to their prenatal exposure to relatively high maternal blood glucose," said study co-author Paula Chandler-Laney, PhD, a postdoctoral fellow at the University of Alabama at Birmingham.

Chandler-Laney and her colleagues studied 21 children ages 5 to 10 years and measured the children's sensitivity to insulin, the hormone that regulates sugar in the blood. They also evaluated the pregnancy medical records of the children's mothers to determine maternal blood sugar concentration during the oral glucose tolerance test.

The researchers found an inverse association between maternal blood sugar during pregnancy and the child's [insulin sensitivity](#), meaning that the higher the mother's blood sugar levels during pregnancy, the lower her child's insulin sensitivity. Low insulin sensitivity is a major risk

factor for type 2 diabetes.

Obesity lowers insulin sensitivity, but the children's reduced insulin sensitivity was independent of their amount of body fat, the authors reported.

In addition, children exposed to high blood sugar levels in the womb also were more likely to have exaggerated insulin secretion after a meal, independent of their reduced insulin sensitivity. Relatively high [insulin secretion](#) is also associated with increased risk for later development of type 2 diabetes, Chandler-Laney explained.

None of the children had high blood sugar, but puberty would further lower their insulin sensitivity, she noted.

"High maternal [blood glucose](#) during pregnancy may have lasting effects on children's insulin sensitivity and secretion, potentially raising the risk for [type 2 diabetes](#)," Chandler-Laney said. "Obstetricians, pediatricians, and pregnant women should all be aware of the potential far-reaching consequences that elevated blood sugar during pregnancy can have on children's health."

Provided by The Endocrine Society

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