

Maternal age at childbirth may affect glucose metabolism in their adult male children

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A mother's age at childbirth may affect her male baby's birth weight as well as his adult glucose metabolism, new research shows. The results will be presented Friday, March 6, at ENDO 2015, the annual meeting of the Endocrine Society in San Diego.

"Our findings indicate that women giving birth at a very young (under 25 years) or older (over 34 years) [age](#) might result in less favorable sugar handling and thus possibly higher risk for developing type 2 diabetes in their sons," said Charlotte Verroken, MD, of the Department of Endocrinology of Ghent University Hospital in Ghent, Belgium.

Maternal age at childbirth tends to be increasing worldwide, but studies investigating the effects of this trend on the metabolic health of the offspring are scarce. Whether or not and how this affects children is relatively unknown, but current thinking is that part of the association between maternal age and [insulin resistance](#) may be related to the tendency of birth weight to increase as maternal age rises.

"We found that in a group of healthy men between 25 and 45 years old, sugar handling was related to their mother's age at childbirth," said Verroken. "Specifically, sons of mothers under 30 and over 34 years old at childbirth were more insulin resistant than were sons of mothers between 30 and 34 years old. Moreover, sons of mothers who were younger than 25 years old at childbirth had higher fasting blood sugar levels than sons of older mothers."

As part of a population-based sibling pair study in healthy men aged 25 to 45 years old, Verroken and her co-authors studied 689 healthy brothers between 25 and 45 years of age whose mean age was 33.9 years. The researchers had information on their birth weight, maternal and paternal age at childbirth, adult weight, height, body composition and blood pressure as well as on fasting cholesterol, glucose and [insulin levels](#).

At childbirth, the mothers ranged in age from 15 to 48 years with an average age of 27 years. The mothers were divided into 4 groups according to maternal age at birth: under 25 years, 25 through 29 years, 30 through 34 years and 35 years and over.

The researchers determined the men's total cholesterol, glucose and insulin levels in fasting serum samples and they evaluated insulin resistance. After adjusting for adult age and body mass index, they found that, as the mother's age increased, the baby's birth weight increased and his fasting glucose levels and insulin resistance values decreased.

The sons of mothers aged 30 to 34 at [childbirth](#) had significantly lower fasting insulin levels and insulin resistance values compared to sons of mothers in the other age groups, while sons of mothers aged under 25 years of age had higher fasting glucose levels compared to sons of mothers aged 30 through 34, and sons of [mothers](#) aged 35 and above. These associations were independent of adult age, [birth weight](#) and [body mass index](#). No associations were found between [maternal age](#) and body composition, blood pressure or cholesterol levels.

The authors called for further research before these conclusions can be generalized.

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