

Maternal insulin sensitivity linked to fetal brain activity

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(HealthDay)—Maternal insulin sensitivity is associated with fetal brain responses, according to a study published in the online March 25 in *Diabetologia*.

Katarzyna Linder, from the University Hospital Tübingen in Germany, and colleagues examined whether maternal metabolic changes during the oral glucose tolerance test influence [fetal brain](#) activity in a study of 13 healthy pregnant women. Glucose and insulin measurements were taken at 0, 60, and 120 minutes to assess [insulin sensitivity](#). Fetal auditory evoked fields were recorded at each time point and response latencies were determined.

The researchers observed an increase in mean maternal insulin from a fasting level of 67 ± 25 to 918 ± 492 pmol/l at 60 minutes after ingestion

of glucose. Glucose levels increased from 4.4 ± 0.3 to 7.4 ± 1.1 mmol/l. Fetal response latencies decreased over the same period, from 297 ± 99 to 235 ± 84 ms ($P = 0.01$), and were stable until 120 minutes (251 ± 91 ms; $P = 0.39$). Sixty minutes after [glucose](#) ingestion, a negative correlation was seen between maternal insulin sensitivity and fetal response latencies ($P = 0.02$). On categorization of the group according to maternal insulin sensitivity, a slower response to auditory stimuli was seen for fetuses of insulin-resistant mothers (283 ± 79 ms) compared with insulin-sensitive mothers (178 ± 46 ms; $P = 0.03$).

"These findings provide the first evidence of a direct effect of maternal metabolism on fetal brain activity and suggest that central [insulin resistance](#) may be programmed during [fetal development](#)," the authors write.

More information: [Abstract](#)
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