

Preterm infants more likely to have elevated insulin levels in early childhood

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Researchers have found that preterm infants are more likely to have elevated insulin levels at birth and in early childhood compared to full-term infants, findings that provide additional evidence that preterm birth may be a risk factor for type 2 diabetes, according to a study in the February 12 issue of *JAMA*.

In the United States, 1 in 9 live births are preterm, and 1 in 5 live births among African Americans are preterm. "There is growing evidence that fetal and early life events may result in permanent metabolic alterations, such as [type 2 diabetes](#) and metabolic syndrome [a combination of risk factors that increase the risk for heart disease, diabetes, and stroke]. Although available studies in children and adults support the hypothesis that [preterm birth](#) may result in adverse metabolic alterations, it is unclear whether the observed association between preterm birth, later [insulin resistance](#), and type 2 diabetes stems from alterations in insulin metabolism during the in utero [in the uterus] period or in [early childhood](#)," according to background information in the article.

Guoying Wang, M.D., Ph.D., of the Johns Hopkins University Bloomberg School of Public Health, Baltimore, and colleagues tested the hypothesis that preterm birth is associated with elevated plasma insulin levels (indirect evidence of insulin resistance) at birth that persist into early childhood. The study included 1,358 children, born between 1998 and 2010, and followed-up from 2005 to 2012. Random plasma insulin levels were measured at birth and in early childhood.

The researchers found that plasma insulin levels were inversely associated with gestational age at birth and in early childhood. Average insulin levels at birth were 9.2 $\mu\text{IU}/\text{mL}$ (micro international units per milliliter) for full term (≥ 39 weeks) and 18.9 $\mu\text{IU}/\text{mL}$ for early preterm (

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