

Underweight babies more likely to develop type 2 diabetes more than a year earlier

September 19 2019



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Previous research has shown that people born weighing 2.7 kg (6 lbs) or less face an increased risk of developing type 2 diabetes (T2D) as adults. New research being presented at this year's European Association for the

Study of Diabetes (EASD) Annual Meeting in Barcelona, Spain (16-20 September) is the first study to show that babies born underweight are more likely to develop type 2 diabetes at a younger age (by more than one year) and have less severe obesity at the time of diabetes diagnosis with higher concentrations of HDL cholesterol (known as good cholesterol).

"Our observational study of more than 48,000 births is important as it shows, for the first time, that irrespective of other clinical factors such as sex, [body-mass index](#), and cholesterol levels at diagnosis, a low birthweight is associated with increased susceptibility to type 2 diabetes at a younger age", says Mr Christian Paulina, a [medical student](#) from the University of Dundee, UK who conducted the research.

"This link between low birthweight and age of onset of diabetes may reflect common genetic factors that both mediate birthweight and diabetes risk, or intrauterine factors such as nutrition or maternal smoking, or the combination of the two."

While the link between low birthweight and risk of developing type 2 diabetes in later life is well established, its association with the phenotype (physical characteristics) of type 2 diabetes once it develops is less clear cut.

In this study, researchers from the University of Dundee linked more than 48,000 individuals enrolled in the Walker Birth Cohort who were born in Dundee, Scotland between 1952 and 1966 to Scotland's national diabetes registry. They then investigated the impact of low birthweight on the phenotype of type 2 diabetes at diagnosis including age at diagnosis, body mass index [BMI], creatinine [a marker of kidney function], serum alanine aminotransferase [ALT; an enzyme that reflects liver function], HDL cholesterol, triglycerides [type of fat in the blood], and [systolic blood pressure](#).

They found that compared with a baby born weighing over 3.6kg (the top 25% of birthweights in the cohort), being born with a low birthweight (

Citation: Underweight babies more likely to develop type 2 diabetes more than a year earlier (2019, September 19) retrieved 6 May 2024 from

<https://medicalxpress.com/news/2019-09-underweight-babies-diabetes-year-earlier.html>

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