

Signs of being prone to adult diabetes are already visible at age 8 years old

June 19 2020



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Early signs of being more susceptible to type 2 diabetes as an adult can be seen in children as young as 8 years old, decades before it is likely to be diagnosed, according to a new study published in *Diabetes Care* today.

The research looked at the effects of a genetic risk score for developing type 2 [diabetes](#) as an adult on metabolism measured from blood samples taken from the participants in the study when they were aged 8, 16, 18, and 25 years.

The study tracked over 4,000 participants in the Children of the 90s—a health study established at the University of Bristol in the early 1990s. Researchers combined [genetic information](#) with an approach called 'metabolomics', which involves measuring many [small molecules](#) in a [blood sample](#), to try and identify patterns that are specific to early stages of type 2 diabetes development.

One of the leading investigators Dr. Joshua Bell explained: "We knew that diabetes doesn't develop overnight. What we didn't know is how early in life the first signs of disease activity become visible and what these early signs look like. We addressed these by looking at the effects of being more genetically prone to type 2 diabetes in adulthood on measures of metabolism taken across [early life](#). This would not have been possible without the Children of the 90s study.

"Diabetes is most common in older age, but we see signs of disease susceptibility very early on—about 50 years before it's usually diagnosed. Knowing what these early signs look like widens our window of opportunity to intervene much earlier and stop diabetes before it becomes harmful."

The study was conducted among [young people](#) who were generally free of type 2 diabetes and other chronic diseases to see how early in life the effects of being more susceptible to adult diabetes become visible. In particular, certain types of HDL cholesterol were reduced at age 8 before other types of cholesterol including LDL were raised; inflammation and amino acids were also elevated by 16 and 18 years old. These differences widened over time.

Dr. Bell continued: "We're talking about the effects of susceptibility rather than of clinical disease itself. This does not mean that young people 'already have adult diabetes'; these are subtle differences in the metabolism of young people who are more prone to developing it later in life.

"These findings help reveal the biology of how diabetes unfolds and what features may be targetable much earlier on to prevent the onset of disease and its complications. This is important because we know that the harmful effects of blood glucose, such as on heart disease, are not exclusive to people with diagnosed diabetes but extend to a smaller degree to much of the population."

More information: *Diabetes Care* (2020).
[care.diabetesjournals.org/cont ... 2020/05/11/dc19-2348](https://care.diabetesjournals.org/cont...2020/05/11/dc19-2348)

Provided by University of Bristol

Citation: Signs of being prone to adult diabetes are already visible at age 8 years old (2020, June 19) retrieved 27 April 2024 from <https://medicalxpress.com/news/2020-06-prone-adult-diabetes-visible-age.html>

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