



THE UNIVERSITY  
of ADELAIDE

# Does your mother's body size and illnesses during pregnancy influence your metabolism during childhood?

**Did you know that children started participating in the Generation 1 study before they were born? Mothers joined the study early in pregnancy and were asked questions about their health and lifestyle. This means that we can now investigate whether circumstances before birth can influence your health in later life.**

Some of the Generation 1 children consented to a fasting blood test when they were 9-10 years old. A finger prick blood sample was analysed in a laboratory to determine the levels of glucose and insulin in their blood. These levels were used to calculate each child's insulin resistance – a measure of how well cells in the body respond to insulin and process glucose.

Insulin resistance in childhood is important as we know that children with relatively high resistance tend to remain that way as they grow into adults. This factor makes them more susceptible to health problems such as high blood pressure and Type 2 Diabetes in later life (although there are a lot of steps that can be taken to avoid these outcomes, such as not smoking and maintaining a healthy body weight).

We found that children born to mothers who had larger body size before pregnancy, or had been diagnosed with gestational diabetes during pregnancy, had relatively high insulin resistance when they were 9-10 years old. Their elevated insulin resistance wasn't due to the child's own birth weight or body size at the time of the blood test.



Our findings contribute to the fairly recent understanding that a woman's body weight before pregnancy is important for the health of her (future) children. They reinforce the public health message to maintain a healthy weight throughout life. But we do know that is hard in our society! In other research we have explored reasons why it is difficult and what could be done to help people achieve it.

This study was published in 2014 in an academic journal called Diabetic Medicine.