



# Do children have different growth paths and how early can we detect them?

**Each Generation 1 study child had their height and weight measured up to 7 times between birth and 9-10 years. The study team combined all of this data to examine the different ways children grow and whether their growth patterns are influenced by circumstances during pregnancy and infancy.**

**It's well established that the final height of a child can be predicted from 2 years of age. In this piece of work, we looked at whether we could make similar predictions about body weight.**

We identified four different trajectories of growth amongst Generation 1 children, using body mass index (BMI) as a measure of weight relative to height:

1. Children with a consistently low BMI from 3 months to 9-10 years;
2. Children with an intermediate BMI (around that expected for their age) from birth to 9-10 years;
3. Children with a consistently high BMI from birth to 9-10 years; and
4. Children who started life at a similar size to the 'high' group, but then experienced an accelerated growth path until 9-10 years.



Growth trajectories seemed to be established during the first 6 months of infancy.

Compared to children in the intermediate group, we found those in the low group had lower BMI, and the high and accelerating groups had higher BMI at 9-10 years of age.

Children of mothers with a larger body size in early pregnancy were the most likely to be in the group with the accelerating growth trajectory.

Our findings demonstrate the way overweight and obesity happens little-by-little across childhood, but following a path that is evident relatively early in life. It's possible that this reflects differences in appetite or interest in food from a very early point in time. If so, some people will struggle more than others to maintain a healthy weight, especially given the proliferation of food advertising and cues to eating we are surrounded by in our society. We are continuing to explore these matters...

This study was published in 2015 in an academic journal called the International Journal of Obesity.

