

# Firstborn women more likely to be overweight / obese as adults than second-born sisters

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This is an image of a weight scale. Credit: CDC/Deborah Cartagena

Firstborn women are more likely to be overweight/obese as adults than their second-born sisters, finds the largest study of its kind in women, and published online in the *Journal of Epidemiology & Community Health*.

The findings back up similar research on the impact of male birth order, and prompt the researchers to ponder whether shrinking [family size](#) might not be contributing to the observed rise in adult body mass index (BMI) around the globe.

The researchers wanted to find out if [birth order](#) affected adult women's height and weight as it appears to among adult men.

They therefore drew on data from the Swedish Birth Register, which was started in 1973, and which contains information dating back to the first antenatal visit on virtually all (99%) births in Sweden.

They focused on the time period 1991-2009 for women who were at least 18 years old at the time of their first pregnancy, and who had been born to a mother who was similarly at least 18 years old at the time. Twins were not included in the study.

Weight and height were measured and information collected on current health, lifestyle, and [family](#) history at the first antenatal visit.

In all, 303,301 girls were born between 1973 and 1988, who gave birth between 1991 and 2009, 206,510 of whom were first or second born.

Of these, complete data were available for 13, 406 sister pairs (just under 29,000 participants in total). The researchers wanted to look at sisters to try and take account of shared genetic and environmental influences in early life.

At birth, firstborns were very slightly lighter than their second born sisters, but as [adults](#) during their first three months of pregnancy, their BMI was marginally higher (2.4%) than that of their second born sisters.

They were also 29% more likely to be overweight and 40% more likely to be obese than their second born sisters. And they were marginally taller (1.2 mm).

The number of children in a family was not associated with BMI or the odds of being overweight/obese, but having more siblings was associated with shorter height and lower odds of being tall, possibly attributable to the 'resource dilution hypothesis' which holds that there's less to go around as a family grows in size, suggest the researchers.

This is an observational study so no definitive

conclusions can be drawn about cause and effect, and only young women were included in the study. But the findings back up similar research in adult male firstborns, say the researchers.

And they point to mounting evidence which suggests that firstborns may be more at risk of health problems, such as diabetes and high blood pressure, in later life than their siblings, although the potential underlying triggers for these differences are far from clear, they say.

"Our study corroborates other large studies on men, as we showed that firstborn women have greater BMI and are more likely to be overweight or obese than their second born [sisters](#)," they write.

And they conclude: "The steady reduction in family size may be a contributing factor to the observed increase in adult BMI worldwide, not only among men, but also among [women](#)."

**More information:** Firstborns have greater BMI and are more likely to be overweight or obese: a study of sibling pairs among 26,812 Swedish women, [DOI: 10.1136/jech-2014-205368](https://doi.org/10.1136/jech-2014-205368)

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