

Lifestyle more likely to affect a child's BMI than the weight of their mother

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Researchers from the University of Bristol and Imperial College London have found that a high Body Mass Index (BMI) of a mother before and during pregnancy is not a major cause of high BMI in their

offspring—indicating that childhood and teen obesity is more likely to be a result of lifestyle factors.

The study was published today in *BMC Medicine* used data from two [longitudinal studies](#)—Children of the 90s (also known as the Avon Longitudinal Study of Parents and Children) based at the University of Bristol, and Born in Bradford based in Bradford Teaching Hospitals NHS Foundation Trust.

It is known that greater maternal BMI before or during pregnancy is associated with a higher BMI in [children](#), however the extent to which the mother's weight causes [obesity](#) in childhood, or whether this is caused by environmental and lifestyle factors post conception and birth is unclear.

The research team from the University of Bristol used a method called Mendelian randomisation, which measures variation in genes to determine the effect of an exposure on an outcome. They looked at birthweight and BMI at age 1 and 4 years in both Children of the 90s and Born in Bradford participants, and then also BMI at age 10 and 15 years in just the Children of the 90s participants. They found that there was a moderate causal effect between maternal BMI and the birth weight of children, however in most older age groups they did not find a strong causal effect.

Lead author Dr. Tom Bond, Senior Research Associate at the University of Bristol explained: "We found that if women are heavier at the start of pregnancy this isn't a strong cause of their children being heavier as teenagers. This is important to know. Supporting women and men at all ages to keep a healthy weight will be needed to prevent obesity. It isn't enough to just focus on women entering pregnancy. Despite this, there is good evidence that maternal obesity causes other health problems for mothers and babies (aside from offspring obesity). So prospective

mothers should still be encouraged and supported to maintain a healthy weight. It will be important to broaden this work to investigate other characteristics of mothers and fathers during [pregnancy](#) and a child's [early life](#) that might affect children's [weight](#), and also to look at the offspring when they are in adulthood and are old enough to begin showing early signs of heart disease risk."

More information: Exploring the causal effect of maternal pregnancy adiposity on offspring adiposity: Mendelian randomization using polygenic risk scores, *BMC Medicine* (2022). [DOI: 10.1186/s12916-021-02216-w](#)

Provided by University of Bristol

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