

Child obesity '35-40 percent' inherited from parents, study finds

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

Around 35-40 per cent of a child's BMI - how fat or thin they are - is inherited from their parents, a new study has found.

For the most obese children, the proportion rises to 55-60 per cent, suggesting that more than half of their tendency towards [obesity](#) is determined by genetics and [family environment](#).

The study, led by the University of Sussex, used data on the heights and weights of 100,000 children and their parents spanning six [countries](#) worldwide: the UK, USA, China, Indonesia, Spain and Mexico.

The researchers found that the intergenerational transmission of BMI (Body Mass Index) is approximately constant at around 0.2 per parent - i.e. that each child's BMI is, on average, 20 per cent due to the mother and 20 per cent due to the father.

The pattern of results, says lead author Professor Peter Dolton of the University of Sussex, is remarkably consistent across all countries, irrespective of their stage of economic development, degree of industrialisation, or type of economy. Professor Dolton says: "Our evidence comes from trawling data from across the world with very diverse patterns of nutrition and obesity - from one of the most obese populations - USA - to two of the least obese countries in the world - China and Indonesia.

"This gives an important and rare insight into how obesity is transmitted across generations in both developed and developing countries.

"We found that the process of intergenerational transmission is the same across all the different countries."

The findings are published in the journal *Economics and Human Biology*.

The study also shows how the effect of parents' BMI on their children's BMI depends on what the BMI of the child is. Consistently, across all populations studied, they found the 'parental effect' to be lowest for the thinnest children and highest for the most obese children. For the thinnest child their BMI is 10 per cent due to their mother and 10 per cent due to their father. For the fattest child this transmission is closer to 30 per cent due to each parent.

Professor Dolton says: "This shows that the children of obese parents are much more likely to be obese themselves when they grow up - the parental effect is more than double for the most obese children what it is for the thinnest children.

"These findings have far-reaching consequences for the health of the world's children. They should make us rethink the extent to which obesity is the result of family factors, and our genetic inheritance, rather than decisions made by us as individuals."

More information: Peter Dolton et al, The intergenerational transmission of body mass index across countries, *Economics & Human Biology* (2017). [DOI: 10.1016/j.ehb.2016.11.005](https://doi.org/10.1016/j.ehb.2016.11.005)

Provided by University of Sussex

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