

Pre-pregnancy diet affects the health of future offspring

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Poor maternal diet before conception can result in offspring with reduced birth weights and increased risk of developing type II diabetes and obesity.

Provided by Society for Experimental Biology

This work, which is being presented at the Society for Experimental Biology Annual Conference in Glasgow on Saturday the 2nd of July, used an animal model to illustrate the importance of maternal diet even before pregnancy begins.

During the study mice that were fed a [low protein diet](#) for ten weeks before conception (but had a normal diet during pregnancy) gave birth to offspring that had lower birth weights, showed catch-up growth after weaning and increased [insulin sensitivity](#).

These effects combined can lead to problems later in life. MSc researcher, Ms Anete Dudele, from the University of Aarhus, explains: "[Low birth weight](#) and catch-up growth is associated with enhanced insulin-sensitivity in young adults, this then deteriorates into [insulin resistance](#) and [type II diabetes](#) with increased age. There is also evidence that male offspring are more likely to develop obesity."

Humans and mice respond in the same way to poor diet during pregnancy; their offspring show low birth weights and increased risk of obesity, type II diabetes and cardiovascular disease. "If humans respond in the same way as mice to pre-conception diet as well then women should not only consider what they eat during pregnancy but also before pregnancy if they want to reduce the risk of their future children acquiring lifestyle diseases," says Ms. Dudele.

Cardiovascular disease is often associated with obesity and type II diabetes and future research by the team will determine whether offspring born to mothers who had poor pre-conception diets are predisposed to these types of problems as well.

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