Reduce risk of childhood obesity through good nutrition before and during pregnancy, say scientists

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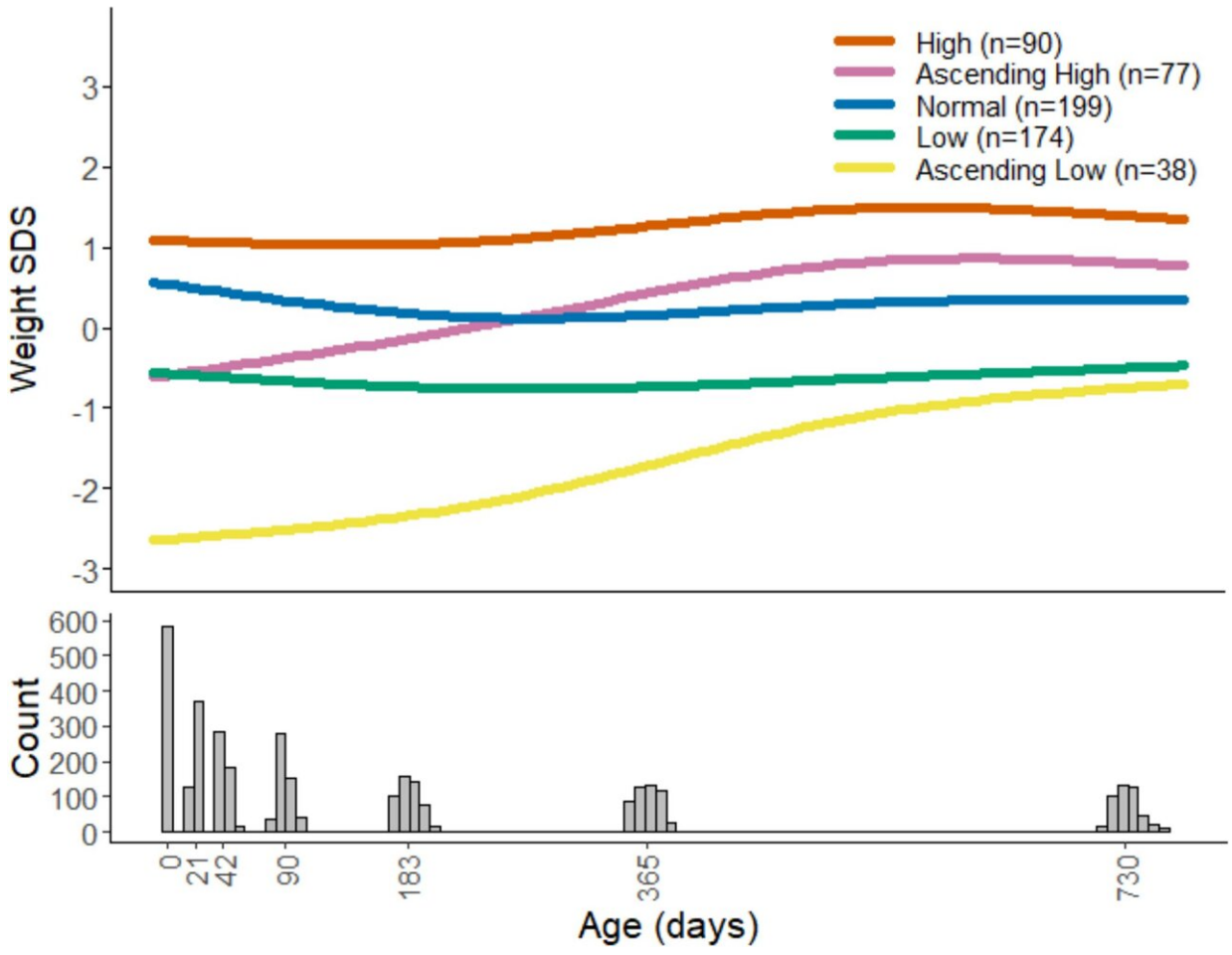

Predicted latent class growth analysis weight standard deviation score (SDS) trajectories. Credit: *BMC Medicine* (2024). DOI: 10.1186/s12916-024-03246-w

A study involving 500 mothers investigated the use of an enriched nutritional supplement to examine if it would make a difference to a child's weight in the first years of life.

It was found that the children of moms who took the supplement before birth, which included vitamins B2, B6, B12, D, with probiotics and myoinositol, were half as likely to be obese by the age of 2.

The research was part of the international NiPPeR study involving scientists from the University of Southampton, University of Auckland's Liggins Institute, the National University of Singapore and the Agency for Science, Technology and Research (A*STAR) in Singapore.

Chief investigator Professor Keith Godfrey, from the University of Southampton and NIHR Southampton Biomedical Research Center, said rates of childhood obesity are continuing to rise in many countries, particularly in less advantaged groups.

He added, "Preventing obesity is one of the most important things we can do, as treating obesity is much more difficult.

"These findings suggest the period before and during pregnancy may provide a special opportunity—a time when supporting better nutritional status for mothers could have lasting benefits for her child."

The study, published in *BMC Medicine*, saw the 500 women randomly allocated to two groups—one cohort received the enriched supplement while other took a standard pregnancy supplement alone.

The researchers checked in on the children at age 2 years and found half as many obese children in the cohort whose mothers were in the enriched group—9% versus 18%.

Their analysis also showed these children were almost 25% less likely to have experienced rapid weight gain after birth.

Professor of Pediatric Endocrinology Wayne Cutfield, of the Liggins Institute in Auckland, is one of the leaders of the research. He said, "Our data suggests supplementing moms before and during pregnancy can have benefits way beyond the pregnancy and for the women involved. It can impact their baby into childhood and potentially beyond."

The NiPPeR team will continue to study the children between 6 and 8 years of age.

Paper co-author Associate Professor Shiao Yng Chan, from the National University of Singapore, said the effects of a mother's nutrition during pregnancy might not show in the baby right away.

She added, "As the child grows, the things that happened in the baby's body while in the womb become apparent. These early events, sometimes called fetal programming, can influence how the child reacts to an unhealthy lifestyle, like eating lots of fatty foods and not getting enough exercise. This can make some children more likely to become overweight."

More information: Jaz Lyons-Reid et al, Impact of preconception and antenatal supplementation with myo-inositol, probiotics, and micronutrients on offspring BMI and weight gain over the first 2 years, *BMC Medicine* (2024). DOI: 10.1186/s12916-024-03246-w

Provided by University of Southampton

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