

Researchers identify genetic signals for the regulation of infant growth

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Researchers at the University of Bergen in Norway have identified new genetic signals for the regulation of how infants grow. This may be a crucial step in the fight against growth-related diseases.

"A better understanding of the biology of infant growth is important as growth-related diseases such as obesity and malnutrition are global societal challenges," says Professor Pål Rasmus Njølstad, Department of Clinical Science, University of Bergen (UiB) who directed the study.

Different BMI-signals for children and adults

It has been assumed that there are more or less the same genes that control BMI development in children and adults.

"We have now found that such genetic signals actually exist, but that the most important are nevertheless different between children and adults and that they vary considerably during childhood," Njølstad says.

The study is the first large-scale genetics study to investigate age-dependent effects in continuous BMI measurements from birth to eight years. It is also the first large-scale genetics study conducted in the Norwegian Mother, Father, and Children Cohort Study (MoBa), which includes 114,000 [children](#) and their parents.

The results are published in *Nature Communications*.

Potential target for drug intervention

The study shows a previously unknown and dynamic role of common genetic variants in genes involved in the leptin signaling pathway that affect BMI during fetal, newborn, and infant growth says professor Stefan Johansson who co-led the study.

Leptin is a hormone predominantly made by the [adipose tissue](#) regulating the [energy balance](#) by reducing appetite, which in turn diminishes fat storage in adipocytes.

"The study suggests that increased levels of leptin's binding partner, the leptin receptor, in infants have a positive effect on [weight gain](#) without being linked to overweight in adults. This finding provides a potential target for drug intervention to increase weight in [infants](#) who need it," says Pål Rasmus Njølstad.

More information: Øyvind Helgeland et al. Genome-wide association study reveals dynamic role of genetic variation in infant and early childhood growth, *Nature Communications* (2019). [DOI: 10.1038/s41467-019-12308-0](#)

Provided by University of Bergen

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