

Risk factors involved in the early onset and severity of childhood obesity

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A family history of obesity, high blood pressure, high blood lipid levels, type 2 diabetes and coronary heart disease should all be considered high risk factors for the early onset and severity of obesity in children, reveals a new study.

The research, which assessed these risk factors together from [children's](#) parents, siblings and grandparents, also finds the youngest children to be the most severely obese. Furthermore, children suffering from severe obesity show signs of [insulin resistance](#), which can lead to the development of type 2 diabetes. Published in open-access journal *Frontiers in Endocrinology*, the study hopes to increase the awareness of how strong an influence a [family history](#) of obesity and associated diseases can have on [childhood obesity](#)—one of the major public health issues worldwide.

"Our research suggests a link between childhood obesity and a family history of obesity and cardiovascular and [metabolic diseases](#), which includes [high blood pressure](#), high [blood lipid levels](#), type 2 diabetes and [coronary heart disease](#)," says lead author [Dr. Domenico Corica](#), based at the University of Messina, Italy.

"We also show that the problem of childhood obesity is not simply related to an increase in the number of diagnoses, but also the severity of obesity in younger children. If this obesity persists over time, these children will have a higher risk of developing cardiovascular and metabolic complications in young adulthood."

For this study, more than 250 overweight and [obese children](#), aged between two and 17-years old, were referred by their family pediatricians to the Pediatric Endocrinology Outpatient Clinic at the University of Messina for a medical assessment. This involved measurements of height and weight, blood samples to show glucose and lipid profiles, as well as information on the parent's, sibling's and even grandparent's history of obesity and a variety of cardiovascular and metabolic diseases.

"These assessments were made after the first referral by their family pediatrician, which allowed us to determine if there was the presence of metabolic complications, such as insulin resistance, in an obese child at first assessment," explains Corica.

In agreement with previous studies, the researchers showed that a family history of obesity increases the risk of childhood obesity—but the extra detail of their research revealed more.

If parents, siblings and grandparents suffered cardiovascular and metabolic diseases, it increased the likelihood of the early onset and severity of obesity in the children. Splitting the children up into 3 different age ranges, the researchers also found the children under 8-years old were the most severely obese. As childhood obesity is associated with an increased risk of severe long-term health complications, this is of grave concern for the children's future health if this condition were to continue into adulthood.

Corica adds, "I would like to highlight that we found the most severely obese children, even those who were very young, were showing insulin resistance. This is a very important finding that underlines the need for early intervention care programs involving health providers, schools and other government institutions, primarily to modify the lifestyle—i.e. eating habits, physical activity, screen time—of obese children and their

families."

Although the study involved many children, across a wide range of ages, the patients were all based in southern Italy, so Corica hopes to expand this research to other areas.

"We look forward to increasing the number of children and expanding the geographic area, as well as evaluating other aspects that may influence the onset and severity of childhood [obesity](#)," he concludes.

More information: Domenico Corica et al, Does Family History of Obesity, Cardiovascular, and Metabolic Diseases Influence Onset and Severity of Childhood Obesity?, *Frontiers in Endocrinology* (2018). [DOI: 10.3389/fendo.2018.00187](#)

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