

Obesity-related hormone is higher in children with Down syndrome

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Children with Down syndrome are more likely than their unaffected siblings to have higher levels of a hormone associated with obesity, according to pediatric researchers. The hormone, leptin, may contribute to the known higher risk of obesity among children and adults with Down syndrome.

A research team from The Children's Hospital of Philadelphia and the University of Pennsylvania School of Medicine published their study online today in the *Journal of Pediatrics*.

The researchers studied 35 children with Down syndrome and 33 of their siblings. All of the children were between the ages of four and 10, and were from the Philadelphia area. The researchers intentionally did not include severely obese children in the study, in order to focus on risk factors for obesity before obesity occurred.

The children with Down syndrome had significantly higher body mass index, a higher percentage of body fat, and higher levels of leptin compared to their siblings. The higher leptin levels persisted even when the researchers adjusted for the effect of percentages of body fat, suggesting that differences in body composition did not account for the difference in leptin levels.

"The normal role of leptin is to suppress appetite and regulate body weight," said senior author Nicolas Stettler, M.D., MSCE, a pediatric nutrition specialist at The Children's Hospital of Philadelphia. "In general, obese people have higher levels of leptin, which suggests that they have some leptin resistance—their bodies do not respond to the hormone properly. Because Down syndrome is a chromosome disorder, children with Down syndrome may have a genetic predisposition to more severe leptin resistance."

Sheela N. Magge, M.D., M.S.C.E., a pediatric endocrinologist at Children's Hospital, the first author of the study, stressed that more research

remains to be done on this question, as the reasons are yet uncertain why patients with Down syndrome are at higher risk of obesity. "Although the study had an advantage in including siblings as a control group, because this decreases the influence of different environments on children with or without Down syndrome, the sample size was limited, so larger studies are necessary. However, our findings may point to a useful approach to understanding why obesity often occurs in Down syndrome."

Source: Children's Hospital of Philadelphia

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