MedicalXpress

Low hormone levels linked to obesity in teens

May 24 2016

Obese teenagers already show signs of hormonal differences from normal-weight peers that may make them prone to weight gain, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism*.

The study found obese teenagers have lower levels of a hormone potentially tied to weight management than normal-weight teens. Studies of adults have found that the hormone, called spexin, is likely involved in regulating the body's fat mass and energy balance.

"Our study is the first to look at levels of spexin in the pediatric population," said one of the study's authors, Seema Kumar, MD, of the Mayo Clinic in Rochester, MN. "Previous research has found reduced levels of this hormone in adults with obesity. Overall, our findings suggest spexin may play a role in weight gain beginning at an early age."

For children and teens, the U.S. Centers for Disease Control and Prevention defines obesity as having a body mass index (BMI) at or above the 95th percentile for children and teens of the same age and sex.

Obesity affects about 17 percent of children in the United States, according to the Society's Endocrine Facts and Figures Report. Childhood obesity is associated with an estimated $14.1 billion in additional prescription drug, emergency room visit and outpatient visit costs each year.

The cross-sectional study analyzed spexin levels in 51 obese and 18

normal-weight teenagers between the ages of 12 and 18. The participants had blood samples taken between 2008 and 2010 as part of a separate clinical trial. Researchers tested the blood samples to measure spexin levels.

Researchers divided the teenagers into four groups based on their spexin levels. Among the participants with the lowest levels of spexin, the odds of having obesity were 5.25 times higher than in the group with the highest levels of the hormone. Unlike what has been noted in adults, there was no association between spexin levels and fasting glucose.

"It is noteworthy that we see such clear differences in spexin levels between obese and lean adolescents," Kumar said. "Since this is a cross-sectional study, more research is needed to explore the physiological significance of spexin, how it may be involved in the development of childhood obesity and whether it can be used to treat or manage the condition."

More information: *Journal of Clinical Endocrinology & Metabolism*, DOI: 10.1210/jc.2016-1177

Provided by The Endocrine Society