

# Symptoms of depression in obese children linked to elevated cortisol

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A new study connects abnormalities of the "stress" hormone cortisol with symptoms of depression in obese children, and confirms that obesity and depression often occur together, even in children.

"There is evidence in adults that abnormal regulation of cortisol plays a role in both obesity and depression," said the study's lead author, Panagiota Pervanidou, MD, of Athens University Medical School in Athens, Greece. "Our study indicates that cortisol abnormalities may underlie obesity and depression starting in childhood."

Cortisol is a steroid hormone that helps the body respond to stress but also has other functions, including converting fat, protein and carbohydrates into energy. Normally, levels of this hormone peak in the early morning, start to drop in late morning and reach their low point at night.

However, depressed adults have slightly elevated cortisol levels at night—"the endocrine equivalent of chronic stress," Pervanidou said. This chronic elevation of cortisol contributes to development of the metabolic syndrome, which includes abdominal obesity and other risk factors for diabetes and cardiovascular disease.

In this new study, Pervanidou and colleagues measured cortisol five times a day in the saliva of 50 obese children and teenagers as well as in their blood in the morning. The 20 boys and 30 girls, ages 8 to 15 years, were patients in the Athens University pediatric obesity clinic and did

not have a prior diagnosis of depression. All subjects completed the Children's Depression Inventory (CDI), a questionnaire that assesses self-reported symptoms of depression.

Cortisol levels in the saliva in the afternoon and evening correlated positively with symptoms of depression, the authors reported. The more depressive symptoms that subjects reported, the higher the cortisol levels at those times.

This finding indicates that obesity and depression may not only be related to behavior but also may have a hormonal link, according to Pervanidou. Because obesity and depression often co-occur, she said that prevention and screening should focus on both disorders and should start in childhood.

"We recommend that [obese children](#) be screened for depression and anxiety, especially female adolescents, who have the highest risk," she said. "In addition, children with a diagnosis of [depression](#) should be evaluated for disordered eating, because these patients frequently develop obesity or anorexia."

Source: The Endocrine Society ([news](#) : [web](#))

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