

# Childhood abuse may impair weight-regulating hormones

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Childhood abuse or neglect can lead to long-term hormone impairment that raises the risk of developing obesity, diabetes or other metabolic disorders in adulthood, according to a new study published in the Endocrine Society's *Journal of Clinical Endocrinology & Metabolism (JCEM)*.

The study examined levels of the weight-regulating hormones leptin, adiponectin and irisin in the blood of adults who endured physical, emotional or sexual abuse or neglect as children. Leptin is involved in regulating appetite and is linked to body-mass index (BMI) and fat mass. The hormone irisin is involved in energy metabolism. Adiponectin reduces inflammation in the body, and obese people tend to have lower levels of the hormone. The study found dysregulation of these hormones in people who had been abused or neglected as children.

"This study helps illuminate why people who have dealt with childhood adversity face a higher risk of developing excess belly fat and related health conditions," said one of the study's authors, Christos S. Mantzoros, MD, DSc, PhD, of Beth Israel Deaconess Medical Center and the VA Boston Healthcare System, both affiliated with Harvard Medical School in Boston, MA. "The data suggest that childhood adversity places stress on the endocrine system, leading to impairment of important hormones that can contribute to abdominal [obesity](#) well into [adulthood](#)."

The cross-sectional study examined [hormone levels](#) in the blood of 95

adults ages 35 to 65. Using questionnaires and interviews, each participant was assigned a score based on the severity of the abuse or neglect experienced during childhood. Researchers divided the participants into three groups and compared hormone levels in people with the highest adversity scores to the other two-thirds of the participants.

Participants with the highest adversity scores tended to have higher levels of leptin, irisin and the inflammatory marker C-reactive protein in their blood. All of these markers are linked to obesity. In addition, the group of people who suffered the most adversity tended to have lower levels of adiponectin, another risk factor for obesity. Even after researchers adjusted for differences in diet, exercise and demographic variables among the participants, high levels of leptin and irisin continued to be associated with childhood adversity.

"What we are seeing is a direct correlation between [childhood adversity](#) and hormone impairment, over and above the impact abuse or neglect may have on lifestyle factors such as diet and education," Mantzoros said. "Understanding these mechanisms could help health care providers develop new and better interventions to address this population's elevated risk of [abdominal obesity](#) and cardiometabolic risk later in life."

**More information:** The study, "Early Life Adversity is Associated with Elevated Levels of Circulating Leptin, Irisin, and Decreased Levels of Adiponectin in Midlife Adults," will appear in the June issue of *JCEM*.

Provided by The Endocrine Society

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