

# Estrogen may reduce disordered eating in female athletes with irregular periods

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Giving one year of estrogen replacement to female athletes with exercise-induced menstrual irregularities improves drive for thinness, body dissatisfaction and uncontrolled eating, a new study finds. The research results will be presented Saturday, March 17, at ENDO 2018, the annual scientific meeting of the Endocrine Society, in Chicago, Ill.

"Female athletes with exercise-induced menstrual dysfunction (associated with [low estrogen levels](#)) often have disordered eating behavior, which may impact their reproductive and bone health," said lead researcher Madhusmita Misra, M.D., M.P.H., professor of pediatrics at Harvard Medical School and a pediatric endocrinologist at Massachusetts General Hospital in Boston, Mass.

"Our findings underscore the relationship between [estrogen](#) and disordered eating behavior, and the potential of estrogen replacement as a treatment target, not just in athletes, but potentially also in other conditions characterized by abnormal eating behavior and frequent menstrual dysfunction, such as anorexia nervosa," she said.

Her study found that [female athletes](#) with exercise-induced irregular menstrual periods report more disordered eating behavior than athletes and non-athletes getting regular periods. "In particular, female athletes tend to restrain their eating, display a stronger desire to become or stay thin, and have a higher level of dissatisfaction with their bodies compared to athletes and non-athletes with normal menstrual cycles," she said.

Misra compared 109 female athletes with exercise-induced menstrual irregularities with 50 female athletes with normal menstrual cycles and 39 female non-athletes. All of the study subjects were 14-25 years old and were in a normal weight range. The young women's eating behavior and mental health was evaluated with self-report assessments and questionnaires.

Athletes with irregular periods reported a higher drive for thinness and more mental control over their food intake compared with athletes with regular periods and non-athletes. They also had higher mean [body](#) dissatisfaction scores than athletes with regular periods.

Athletes who had irregular menstrual periods were randomly assigned to receive either estrogen replacement through a patch, at a dose that resulted in estrogen levels seen with normal menstrual cycles; a commonly used combined oral contraceptive pill containing estrogen; or no estrogen for 12 months. Athletes randomized to estrogen replacement as a patch also received cyclic progesterone.

Over one year, the groups that received estrogen showed reductions in drive for thinness, body dissatisfaction and uncontrolled eating, compared with those who didn't receive estrogen. The patch was the most effective, leading to significant decreases in [body dissatisfaction](#) and uncontrolled eating.

"These results highlight the importance of normalizing [estrogen levels](#) in female athletes with irregular menstrual periods," Misra said. "This not only improves their bone health (as we have previously reported), but may also improve their eating [behavior](#). More studies are necessary to confirm these findings."

Provided by The Endocrine Society

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