

# Hair Analysis May Help Detect Eating Disorders

## Analyzing two key proteins spots anorexia and bulimia, researchers say

By Steven Reinberg, HealthDay Reporter



MONDAY, Oct. 16 (HealthDay News) -- Eating disorders can be difficult to diagnose, often because patients don't realize they have a problem or they try to hide it.

But researchers at Brigham Young University (BYU) say they've developed a new test that analyzes the carbon and nitrogen found in hair that can determine whether someone is struggling with conditions such as anorexia nervosa and bulimia.

"Your body records your eating habits in the hair. So, we can use that to tell the nutritional health of an individual," said lead researcher Kent Hatch, an assistant professor of integrative biology at BYU.

As hair grows, new proteins are added to the base of each strand, pushing the strand up and out of the hair follicle. These proteins are influenced by what you eat. And the nutritional state of each individual is affected by his or her eating patterns. So, each strand of hair is a chemical "diary" that is a record of day-by-day nutrition, the researchers said.

The new test analyzes two of these proteins, carbon and nitrogen. Based on the makeup of these proteins, the researchers said they've been able to diagnose eating disorders.

"By taking some hairs from an individual and analyzing it for carbon and nitrogen, we can tell with 80 percent accuracy whether someone has anorexia or bulimia," Hatch said. "The test provides an objective way of discerning whether they have an eating disorder."

The goal of the study was to see if protein patterns differed between people with eating disorders and those with normal eating behaviors. The test was so powerful that it required only five strands of hair, Hatch said.

"With further work, we hope to not only use the test as a diagnostic tool but be able to use it to help monitor a person's recovery," he said.

Hatch noted that the test needs to be refined before it could be used in a medical setting. Right now, the test also picks up people who don't have an eating disorder but eat a vegetarian diet, he said.

A report on the study was published in the October issue of *Rapid Communications in Mass Spectrometry*.

One expert thinks the test could be used to confirm a diagnosis of an eating disorder but not as the sole method of diagnosis.

"This test might be an auxiliary test, because right now we don't have good biological markers of anorexia nervosa," said Cynthia M. Bulik, the William and Jeanne Jordan Distinguished Professor of Eating Disorders and director of the eating disorders program at the University of North Carolina School of Medicine.

The test might be able to give a history of an eating disorder, Bulik said, but it needs further refinement. "As a stand-alone diagnostic tool, we are not there yet," she said.

According to the U.S. National Institutes of Health, more than 90 percent of people with eating disorders are women between the ages of 12 and 25. But research shows that increasing numbers of older women and men have these disorders, too. Without proper treatment, eating disorders can lead to malnutrition, heart problems and other potentially fatal complications.

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SOURCES: Kent Hatch, Ph.D., assistant professor, integrative biology, Brigham Young University, Provo, Utah; Cynthia M. Bulik, Ph.D., William and Jeanne Jordan Distinguished Professor of Eating Disorders, and director, eating disorders program, University of North Carolina at Chapel Hill; Oct. 16, 2006, *Rapid Communications in Mass Spectrometry*  
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