

# What your hair and saliva say about your risk for depression and cognitive shortfalls during menopause

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Stress affects the body and brain in many ways by causing the endocrine system to increase cortisol levels. These spiked levels can be found

throughout the body. A study, presented during the [2023 Annual Meeting of The Menopause Society](#) in Philadelphia September 27–30, suggests that elevated cortisol levels in the hair and saliva may affect cognitive and mental health in late peri/early postmenopausal women.

It's no secret that stress can take a major toll on the body and mind, causing a number of adverse health conditions. Significant research has been done on the long-term effects of stress.

A new study, although small in size (including 43 participants in late perimenopause or early postmenopause), took a different approach to evaluating the impact of stress by determining the degree to which hair and salivary [cortisol levels](#) correlated with depression symptom severity and [cognitive performance](#) on [verbal memory](#), verbal learning, attention, and working memory tests among healthy women in late peri/early postmenopause.

The researchers found that higher levels of hair [cortisol](#) were significantly associated with worse attention and working memory performance. Hair cortisol did not significantly correlate with performance on verbal learning or verbal memory tests. Salivary cortisol did not significantly correlate with verbal memory recall trials, attention, or working memory performance; however, higher salivary cortisol was significantly associated with worse depressive symptom severity.

This work suggests that markers of hypothalamic-pituitary-axis (HPA) activation that capture total cortisol secretion over multiple months, ie, hair cortisol, strongly correlate with cognitive performance on attention and working memory tasks, whereas measures of more acute cortisol, ie, salivary cortisol, may be more strongly associated with depression symptom severity.

The results presented during meeting are part of the presentation

entitled, "Stress in the body, on the brain: hair and salivary cortisol levels linked with depressive symptom severity and cognitive performance among healthy late peri/early [postmenopausal women](#)."

"This work provides initial evidence linking longer-term HPA activation with worse attention and memory during perimenopause. Other research has demonstrated that interventions can decrease HPA activation; my next steps will be to study whether longer-term HPA is a modifiable marker and if by decreasing HPA activation with interventions we can improve executive functioning during the perimenopause," says Dr. Christina Metcalf, Assistant Professor and lead author from the Department of Psychiatry at the University of Colorado Anschutz Medical Campus in Aurora, CO.

"This study, although small in size, provides insight into considering HPA activity when evaluating a patient's cognitive and [mental health](#)," adds Dr. Stephanie Faubion, medical director of The Menopause Society. "This may be helpful in the future to identify patients who may be at higher risk for depression and cognitive decline."

Provided by The North American Menopause Society

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