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**The
Menopause
Society™**

Leading the Conversation

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How Menopause Restructures a Woman's Brain

New study links structural brain changes with cognitive, emotional, and physiological changes during menopause

CLEVELAND, Ohio (Oct 21, 2025)—Many women during menopause complain about brain fog, which includes symptoms like forgetfulness, trouble concentrating, and mental fatigue, often due to fluctuating hormone levels. A literature review was conducted to examine published studies that explore the link between structural brain changes during menopause and cognitive, emotional and physiological outcomes. Findings from this review will be presented at the 2025 Annual Meeting of The Menopause Society in Orlando October 21-25.

Menopause is associated with distinct structural changes in the brain. Multiple studies have documented reductions in gray matter volume in both the frontal and temporal cortices and the hippocampus—regions critical for memory and executive function. These volumetric losses have been linked to declines in cognitive performance, particularly in verbal and visuospatial memory.

Increased white matter hyperintensities have also been documented across multiple studies, especially among women with early menopause or those with frequent hot flashes. White matter hyperintensities are bright spots seen on an MRI scan of the brain's white matter, often indicating damaged tissue typically due to reduced blood flow. These lesions can lead to neurological symptoms like cognitive decline, balance issues, and mood changes and are associated with an increased risk of stroke and dementia.

Some evidence suggests a partial recovery of gray matter volume postmenopause, potentially reflecting compensatory neuroplastic processes. Additionally, elevated estrogen receptor density during the menopause transition may represent an adaptive response to declining hormone levels, although it has also been associated with poorer memory outcomes. Alterations in cerebrovascular reactivity and brain energy metabolism further underscore the impact of menopause on neural integrity and functional resilience.

As part of a project carried out at the BRAVE Lab of the School of Behavioral and Brain Sciences at Ponce Health Sciences University (Puerto Rico), PhD-PSY students Angélica Rodríguez and Andrea Pereira conducted a bibliographical review under the supervision of Dr. Bárbara Barros and Dr. Karla Martínez. Their work analyzed relevant scientific literature on menopause-related brain structural changes and how these alterations may contribute to menopause symptoms. More detailed results will be discussed at the 2025 Annual Meeting of The Menopause Society as part of the poster presentation entitled "Menopause and Brain Structural Changes: A bibliographic revision." Rodríguez, first author, will be presenting the poster at the meeting.

"This type of work highlights the need to continue exploring the relationship between the brain and menopause, particularly their connection with the cognitive, emotional, and behavioral symptoms women

experience during this stage,” says Angélica Rodríguez, PhD student in Psychology at Ponce Health Sciences University in Puerto Rico.

“This study represents the cumulative body of scientific knowledge relative to structural changes that take place in the brain during menopause,” says Dr. Stephanie Faubion, medical director for The Menopause Society. “These data will hopefully lead to a better understanding of the factors underlying some of the cognitive concerns experienced by women during the menopause transition so that we can ultimately identify effective therapies.”

Both Angélica Rodríguez and Dr. Faubion are available for interviews prior to the Annual Meeting.

For more information about menopause and healthy aging, visit menopause.org.

The Menopause Society is dedicated to empowering healthcare professionals and providing them with the tools and resources to improve the health of women during the menopause transition and beyond. As the leading authority on menopause since 1989, the nonprofit, multidisciplinary organization serves as the independent, evidence-based resource for healthcare professionals, researchers, the media, and the public and leads the conversation about improving women’s health and healthcare experiences. To learn more, visit menopause.org.