What is ‘menopause brain’? Imaging shows dramatic structural changes in midlife that can impact behavior

For decades, some doctors have told women that the brain fog, insomnia and mood swings they experience in midlife are “all in their heads.” Now, emerging brain research shows they’re right — but not because women are imagining it.

Brain imaging studies of women — conducted before, during and after menopause — reveal dramatic physical changes in structure, connectivity and energy metabolism. These changes are not only visible on the scans, but many women can also feel them, said Lisa Mosconi, a neuroscientist and author of the book “The Menopause Brain.”

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Mosconi and her colleagues have been imaging women’s brains and have found that gray matter volume is reduced in areas of the brain involved in attention, concentration, language and memory. There also are changes in connectivity, meaning some areas involved in reproductive functions become less connected, while other regions become more connected. And there are declines in brain energy levels, meaning the brain pulls glucose from the bloodstream and does not burn it as fast or, perhaps, as efficiently as it used to, Mosconi said.

It is not known whether there is a way to prevent, stop or reverse the changes that occur in the brain during menopause, but at least some of them appear to be temporary. When Mosconi and her colleagues followed up with participants two years later, they found that metabolic activity tends to stabilize in some regions of the brain and that gray matter volume can rebound for some — but not all — women after menopause.

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