

6 Ways Your Brain Transforms During Menopause

By [Aviva Patz](#)



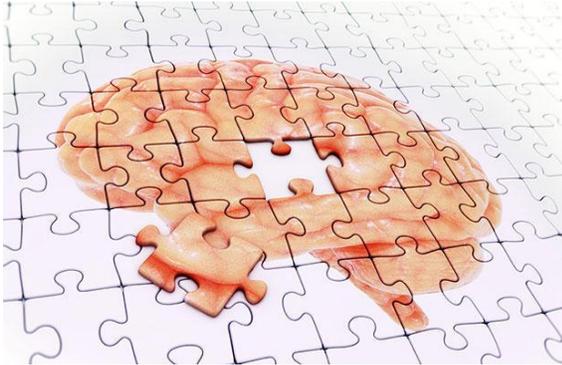
Movies and TV shows have gotten a lot of laughs out of menopause, with its dramatic hot flashes and night sweats. But the midlife transition out of our reproductive years—marked by yo-yoing of hormones, mostly estrogen—is a serious quality-of-life issue for many women, and as we're now learning, may leave permanent marks on our health.

"There is a critical window hypothesis in that what is done to treat the symptoms and risk factors during perimenopause predicts future health and symptoms," explains Diana Bitner, MD, assistant professor at Michigan State University College of Human Medicine and author of *I Want to Age Like That: Healthy Aging Through Midlife and Menopause*. "If women act on the mood changes in perimenopause and get healthy and take estrogen, the symptoms are much better immediately and also lifelong." (Going through menopause and your hormones are out of whack? Then check out [The Hormone Reset Diet](#) to balance your hormones and lose weight.)

For many decades, the mantra has been that the only true menopausal symptoms are hot flashes and vaginal dryness. Certainly they're the easiest signs to spot! But we have estrogen receptors throughout the brain and body, so when estrogen levels change, we experience the repercussions all over—especially when it comes to how we think and feel. Two large studies, including one of the nation's longest longitudinal investigations, have revealed that there's a lot going on in the brain during this transition. "Before it was hard to tease out: How much of this is due to the ovaries aging and how much is due to the whole body aging?" says Pauline Maki, PhD, professor of psychiatry and psychology at the University of Illinois at Chicago and Immediate Past President of the North American Menopause Society (NAMS). "We now have an understanding of what else is happening during the menopausal transition that can't be explained by just getting older."

By observing the same women before, during, and after menopause, scientists have been able to see significant brain change in action. Here's what we now know is happening to the brain during the menopausal transition— primarily from two years before to two years following the last menstrual period.

1. Memory declines.



Specifically, our memory for words, like recalling items on a grocery list (or, you know, trying to tell your coworker about that movie you saw with that actor in it...you know the one?). Consider these findings from a 2013 study that followed more than 2,300 women over 4 years: When the women were premenopausal, they performed well on repeated tests of processing speed, verbal memory, and working memory. When their estrogen dipped during perimenopause, they weren't able to learn as

well. If they supplemented with estrogen before their last period, their scores rose. Scores also rose in all women post-menopause. "The point here is that it's not the leveling off of estrogen during postmenopause that is associated with memory problems but rather the fluctuations during perimenopause," Maki says. (Boost your memory 23% with this easy trick.)

2. Hot flashes might actually cause memory dips.

In another study, women wore an ambulatory monitor, kind of like a heart-rate monitor that runners wear, to measure how many hot flashes they were actually having. (The monitor can tell the difference between sweating from hot flashes and sweating from dashing to the train.) What they found—besides that women under-report their hot flashes by about 40% (and not because they forget they had them, Maki jokes)—was a direct relationship between hot flashes and memory performance. (This is what happens to your body during a hot flash.) "The more hot flashes, the worse their memory," she says. And once hot flashes stop, memory seems to bounce back—maybe because the chaos is over, but maybe because the brain starts producing its own estrogen. "We think women stop having hot flashes because the brain adapts somehow," Maki says. "Brains are plastic, they adapt, they compensate."

3. The structure of your brain changes.

Shocking as it sounds, it's normal as we age to have what Maki describes as "tiny, tiny, tiny little strokes that aren't clinically observable." They're small changes in white matter, which contains myelin—that insulation for neurons that improves our speed of processing. The resulting slowing of thinking, which can be measured on laboratory tests, is usually just one of those delightful aspects of getting older. However, in the study of women who wore monitors, those who registered as having more hot flashes showed more ischemic changes than women who had fewer hot flashes. "When they accumulate, these little strokes do affect our thinking," Maki says, "so the question becomes: If you treat hot flashes, can you avoid these white matter changes?" Scientists believe it might, though the answer is still unclear. (Here are 6 stroke factors every woman should know about.)

4. Hormone replacement might preserve cognitive function.



"One hypothesis is that there's a critical window of opportunity for treatment with estrogen," Bitner says, adding that "the long-term results are also critically affected by risk factors for chronic disease such as diabetes and heart disease." We know from a study in the journal *Neurology*, for example, that women who develop diabetes, smoke, are overweight or have early heart disease have a 50% greater chance of early onset dementia. Studies are underway to see if treating perimenopausal women with oral contraceptives

will reduce hot flashes and minimize cognitive decline. (While there are some excellent clinical trials that tested whether supplementing with estrogen was good for memory, they all used women who were already post-menopausal. The women to test, Maki says, are the ones in the thick of the transition.)

5. Brain changes affect every dang thing.



Menopause is known to trigger mood swings, temper tantrums, and depression. Some women say they feel like they're going crazy. "A very common complaint among women is that they don't feel like themselves," Bitner says. "One woman said she was surprised her family didn't divorce her." Perimenopause, with its fluctuating estrogen, is like a perfect storm: One front is low estrogen levels, which directly tinker with the functioning of brain serotonin as well as cognitive

function and other systems including insulin metabolism and cholesterol levels. Another front is estrogen's effect on sleep, hot flashes, night sweats, and vaginal dryness, all of which make it generally tough to cope. "Because of this perfect storm, many women experience irritability often described as overreacting, being intolerant of even small mistakes by others, oversteering about job performance, worrying about things they never used to worry about, and being easily overwhelmed by social situations with many people, like when shopping at Costco or during the holidays," Bitner says. She adds that many of her patients stop enjoying their favorite activities and feel less motivated to do things like make healthy dinners and exercise, especially if they're not sleeping, and that less exercise can lead to depression.

The bottom line is that the fluctuating estrogen of menopause can have a domino-like effect across the brain and body: "If your mood is low, it could cause you to not sleep well," Maki says. "Memory problems can cause anxiety, which can exacerbate mental fog." And maybe if your sleep problems are also due to high stress, you might reach for a second glass of wine, which will make you sleep even more poorly, which could feed into your stress and exhaustion and further dampen your memory and mood. It's key to remember that these psychological symptoms are

completely normal. "You're not going crazy and you're not getting Alzheimer's," Maki says, noting that it's extremely rare to get Alzheimer's in your 40s or 50s.

Tackling the symptoms of menopause may seem overwhelming and nearly impossible—because there are so many different factors involved and because everyone's experience is different—but research is pointing to the idea that it's not something to simply endure. "I've had patients tell me they wouldn't have divorced if they'd understood their symptoms at 50," Bitner says, "and others who said that estrogen treatment and education saved their jobs and their marriages."

A 3-pronged approach may minimize the havoc that menopause wreaks on your brain and body. There are coping skills to use in the moment, lifestyle changes to make, and medicine to consider taking.

- In the moment of feeling unstable, Bitner recommends taking a deep breath, looking away, and thinking of 3 things for which you are very, tear-jerkingly grateful. "This exercise helps slow the feelings of flight or flight that can drive us to react poorly and say things we normally would not say," she says. "Self-care and understanding our situation is crucial for day-to-day mental health and coping."
- Healthy lifestyle changes not only help you cope better but can literally diminish symptoms. Bitner advocates what she calls the SEEDS—the Seven Essential Elements of Daily Success to track. The list includes good sleep, water intake, fiber, exercise (including steps or minutes of aerobic activity), strength training, and stretching, nutrition (including servings of healthy carbs, protein and fat, vitamins including Vitamin D, calcium, and a multivitamin), and moments of gratitude and measured breathing. New findings presented at the 2015 North American Menopause Society annual meeting underscore the ability of regular exercise to minimize menopausal symptoms, especially the dip in cognitive function. "My first advice now is to advocate that women exercise," Maki says. "The data, supported by randomized trials, is quite compelling."
- Treating hot flashes, night sweats, anxiety, and depression with or without estrogen can make all the difference. The best evidence-based treatment is estrogen, according to Bitner, but if it's not a choice or a safe option for you, certain anti-depressants (SSRIs), acupuncture, and equol-a soy isolate can help. Read more about the latest hormonal and non-hormonal medications that can help you take charge of your menopausal symptoms.