

Does menopausal hormone therapy maintain the brain?

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Taking menopausal hormone therapy soon after menopause to relieve symptoms may also benefit the brain, according to a study published in the March 21, 2018, online issue of *Neurology*, the medical journal of the American Academy of Neurology.

"We found that one form of [menopausal hormone therapy](#) taken soon after menopause may preserve [brain](#) structure in the portion of the brain responsible for [memory](#) and thinking skills," said study author Kejal Kantarci, MD, MS, of the Mayo Clinic in Rochester, Minn., and a member of the American Academy of Neurology. "It may also reduce the development of amyloid plaques that can build up and lead to [memory loss](#)."

For the study, researchers identified 75 healthy women with an average age of 53 who were between five months to three years past menopause. Of those, 20 women took conjugated equine estrogen in pill form, 22 received estradiol via skin patches and 33 received a placebo of either the pills or patches. In addition, the women taking active hormone were also given progesterone pills for the first 12 days each month. Placebo pills were given to those in the placebo group.

Study participants were given memory and thinking tests as well as MRI scans at the start of the study, at 18 months, at three years and at the end of four years of hormone treatment, and then again three years after therapy ended. Researchers measured overall brain volume and the accumulation of brain lesions and compared scores on thinking and

memory tests. A total of 68 women also had [positron emission tomography](#) (PET) scans to detect plaques in the brain that are related to memory loss and Alzheimer's disease.

Researchers found that participants who took estradiol via skin patches maintained brain volume in the [dorsolateral prefrontal cortex](#), an area of the brain that assists with memory, thinking, planning and reasoning, over the seven years of the study. Women who maintained volume in this area of the brain were also more likely to have a lower amount of the amyloid plaque deposits that are related to memory loss and Alzheimer's disease. This suggests that estradiol therapy may have long-term effects on the brain.

Researchers also found that for those taking estrogen pills, there were greater structural changes in the brain during therapy, but those changes stopped when participants stopped taking the pills.

Scores on thinking and memory tests were similar for women in the hormone therapy groups and those taking placebo.

"More research is needed to determine the biological reasons behind brain changes during menopausal hormone therapy," said Kantarci. "Future research is also need to better define just how the different hormonal products, pills versus [skin patches](#), affect the brain."

A limitation of the study is that the [women](#) were all in good cardiovascular health, so the results may not be similar for those with heart problems, diabetes or other health issues. However, Kantarci noted that not including those with heart issues may have made it easier to observe the effects of hormone [therapy](#) on the brain, since there was no interference from contributing heart problems.

Provided by American Academy of Neurology

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