

HEALTH

Menopause linked to brain changes similar to those in Alzheimer's

Study shows that hormone replacement therapy use did not appear to prevent the grey matter loss

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BBC

Menopause is linked to changes in the brain similar to those seen in Alzheimer's, according to a large United Kingdom study. The loss of grey matter in areas involved with memory and emotion might partly explain why women are generally at greater risk of dementia than men, researchers speculate. The findings come from nearly 125,000 women, of whom 11,000 had

MRI brain scans. In the study, published in the journal *Psychological Medicine*, hormone replacement therapy (HRT) use did not appear to prevent the grey matter loss. Prof. Barbara Sahakian, senior author and from Cambridge University, said: "The brain regions where we saw these differences are ones that tend to be affected by Alzheimer's disease. Menopause could make these women vulnerable further down the line. While not the whole story, it may help explain why we see almost twice as many cases of dementia in women than in men."

The brain changes occurred in: the hippocampus, an area which has a major role in learning and memory; the entorhinal cortex, which is essential for forming memories and spatial navigation; and the anterior cingulate cortex, which helps with attention and regulating emotions.

White matter and grey matter are both essential parts of the brain and spinal cord.

Grey matter consists of neuronal cell bodies and their dendrites—short protrusions that communicate with neurons nearby. White matter consists of



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long axons of neurons that transmit impulses to more distant regions of the brain and spinal cord. According to guidelines for the National Health Service, HRT can be considered for menopausal symptoms such as sleep problems and hot flushes. There is limited understanding of the effects of menopause and HRT use on the brain, memory and mood, say the researchers. The study found women on HRT were more likely to suffer poor mental health. But many of those already had poorer mental health before being prescribed the medication. Co-researcher Dr Chris-

THE SCIENCE

The brain changes that were noted in menopausal women occurred in: the hippocampus, an area which has a major role in learning and memory; the entorhinal cortex, which is essential for forming memories and spatial navigation; and the anterior cingulate cortex, which helps with attention and regulating emotions.

telle Langley said it was important to recognise the variety of struggles that can come with menopause.

"We all need to be more sensitive to not only the physical, but also the mental health of women during menopause. There should be no embarrassment in letting others know what you're going through and asking for help," she said.

Prof Channa Jayasena, an expert in hormones and from Imperial College London, said: "The effect of HRT on brain health in menopause continues to be a topic of debate, and old clinical trials like the Women's Health Initiative have failed to answer this question. Either way, this is an important complication that millions of women experience in the UK, so it deserves close attention in the future."

Michelle Dyson from the Alzheimer's Society said women account for around two-thirds of people living with Alzheimer's disease in the UK.

"And while we still don't fully understand why they are more susceptible than men, it is thought that hormones may play a role," she said.