

High blood pressure during pregnancy linked to an increased risk of dementia



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BY [ALZHEIMER'S RESEARCH UK](#)

Research presented today (Wednesday 3 August) at the 2022 Alzheimer's Association International Conference (AAIC) in San Diego finds a link between women who experience high blood pressure during pregnancy and a greater risk of developing dementia. These headlines are revealed across three presentations.

Previous research has shown that high blood pressure and preeclampsia – a condition that can develop after 20 weeks of pregnancy, characterised by high blood pressure and proteins in urine – are linked to developing heart disease in later life.

Very few studies have looked at whether high blood pressure and preeclampsia are linked to brain changes or dementia risk.

Speaking about these new findings, Dr Rosa Sancho, Head of Research from Alzheimer's Research UK, said:

“This series of findings highlights how important it is that pregnant women are offered regular monitoring and treatment of high blood pressure during their pregnancy. “Women are at a higher risk of dementia than men, even when women's longer lives are taken into account. Researchers have proposed different theories to explain women's elevated risk of dementia, but there's more work to do to find conclusive answers including research into the factors that can particularly affect women's cognitive health. “High blood pressure is a risk factor for poor heart health, which has a knock-on effect on our brain health. This new research highlights the impact that high blood pressure and related disorders during pregnancy can have on women's risk of

developing dementia later in life.”

In one study, researchers in the US looked at data from 59,668 women who have been pregnant and looked at their risk of going on to develop dementia.

They found that women who had a high blood pressure related condition during pregnancy had an increased risk of dementia compared to those without, even after accounting for age at childbirth and socioeconomic factors.

The greatest increase in risk associated with high blood pressure and preeclampsia was found for vascular dementia, but not Alzheimer’s disease. The researchers did not explore the reason for any link.

Brain changes found in women who had high blood pressure during pregnancy 15 years later

In a second study presented at the conference, researchers from the Netherlands looked for markers of brain changes related to blood and heart health in 538 women 15 years after pregnancy.

Participants either had a normal blood pressure range during pregnancy (83%) or high blood pressure (17%).

Individuals were followed up 15 years after pregnancy and had scans to look for structural and blood vessel changes to their brains. Women who had high blood pressure disorders during pregnancy had more changes in their brain scans related to blood vessel damage compared to women with normal blood pressure. The researchers did not look at whether these women developed dementia.

Dr Rosa Sancho, Head of Research at Alzheimer’s Research UK, said:

“Changes in the brain that cause dementia can begin up to 20 years before symptoms show. Risk factors that affect our heart and blood vessels can also influence how our brains work and increase our risk of dementia. Our blood vessels supply our brain cells with the oxygen and nutrients they need

to survive, and when this supply is affected, we see damage in brain scans. “This study looked at brain scan data from women with and without high blood pressure during pregnancy. It found those with high blood pressure conditions had brain changes in an area called the white matter which is vulnerable to blood flow changes. “While more research will need to happen with a larger group of women to unpick this relationship, it is important to remember dementia risk is complex and made up of several factors including our age and genetics as well as our lifestyle choices. If you are worried about your blood pressure or risk of heart conditions it is best to contact your doctor who can give advice.”

This study looked at 40 women with a normal blood pressure range and 40 with high blood pressure during their pregnancies – with seven from the latter group having severe preeclampsia.

Women who had a history of severe preeclampsia had higher levels of markers associated with inflammation and blood vessel damage in the brain, as well as higher levels of the protein amyloid in their blood.

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