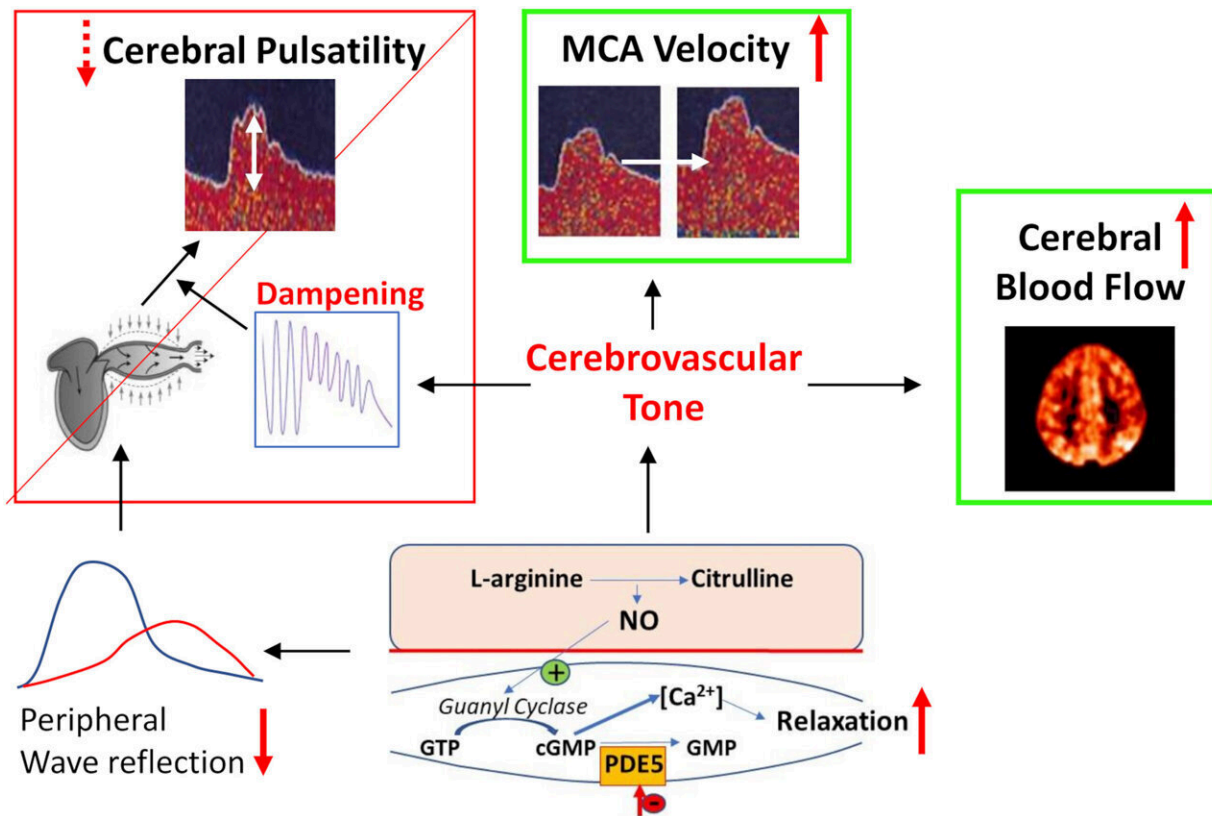


New study reveals Viagra improves brain blood flow and could help prevent dementia

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Graphical abstract. Credit: *Circulation Research* (2024). DOI: 10.1161/CIRCRESAHA.124.324327

A new trial conducted by the University of Oxford reveals that sildenafil, commonly known as Viagra, enhances blood flow to the brain

and improves the function of brain blood vessels in patients at a heightened risk of vascular dementia.

This study, [published](#) in *Circulation Research*, marks a potentially pivotal step in the fight against this debilitating condition.

Dr. Alastair Webb, as Associate Professor at the Wolfson Center for Prevention of Stroke and Dementia at Oxford University said, "This is the first trial to show that [sildenafil](#) gets into the blood vessels in the brain in people with this condition, improving [blood flow](#) and how responsive these blood vessels are.

"These two key factors are associated with chronic damage to the small blood vessels in the brain, which is the commonest cause of vascular dementia. This demonstrates the potential of this well-tolerated, widely-available drug to prevent dementia, which needs testing in larger trials."

The significance of this research lies in its potential to transform the treatment and prevention of vascular dementia, which currently lacks specific therapies.

Chronic damage to the small blood vessels in the brain is not only the leading cause of vascular dementia but also contributes to 30% of strokes and 80% of brain bleeds. High blood pressure, reduced blood flow to the brain, and impaired blood vessel function exacerbate these conditions, making the findings of this trial particularly crucial.

The OxHARP trial was a meticulously designed double-blind, placebo-controlled study involving 75 participants who had experienced a [minor stroke](#) and showed signs of mild to moderate small vessel disease. Each participant received sildenafil, a placebo, and cilostazol (a similar drug) over three-week periods in a randomized order. The study employed cardiovascular physiology tests, ultrasound, and functional MRI scans to

evaluate the drugs' effects.

Key findings include:

- Sildenafil increased blood flow in both large and small brain vessels as measured by ultrasound and MRI scans.
- Sildenafil enhanced the blood flow response to [carbon dioxide](#), indicating improved cerebrovascular function.
- Both sildenafil and cilostazol lowered blood vessel resistance in the brain.
- Sildenafil caused fewer side effects compared to cilostazol, particularly with less incidence of diarrhea.

Looking ahead, the next steps involve larger-scale trials to confirm these findings and explore sildenafil's potential in preventing vascular dementia on a broader scale.

Professor Peter Rothwell, Founding Director of the Wolfson Center for Prevention of Stroke and Dementia said, "Professor Webb's findings are very encouraging and highlight the potential for preventing vascular [dementia](#) using existing drugs that target the underlying reduction in flow in the [small blood vessels](#) in the brain."

More information: Alastair J.S. Webb et al, Cerebrovascular Effects of Sildenafil in Small Vessel Disease: The OxHARP Trial, *Circulation Research* (2024). [DOI: 10.1161/CIRCRESAHA.124.324327](https://doi.org/10.1161/CIRCRESAHA.124.324327)

Provided by University of Oxford

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