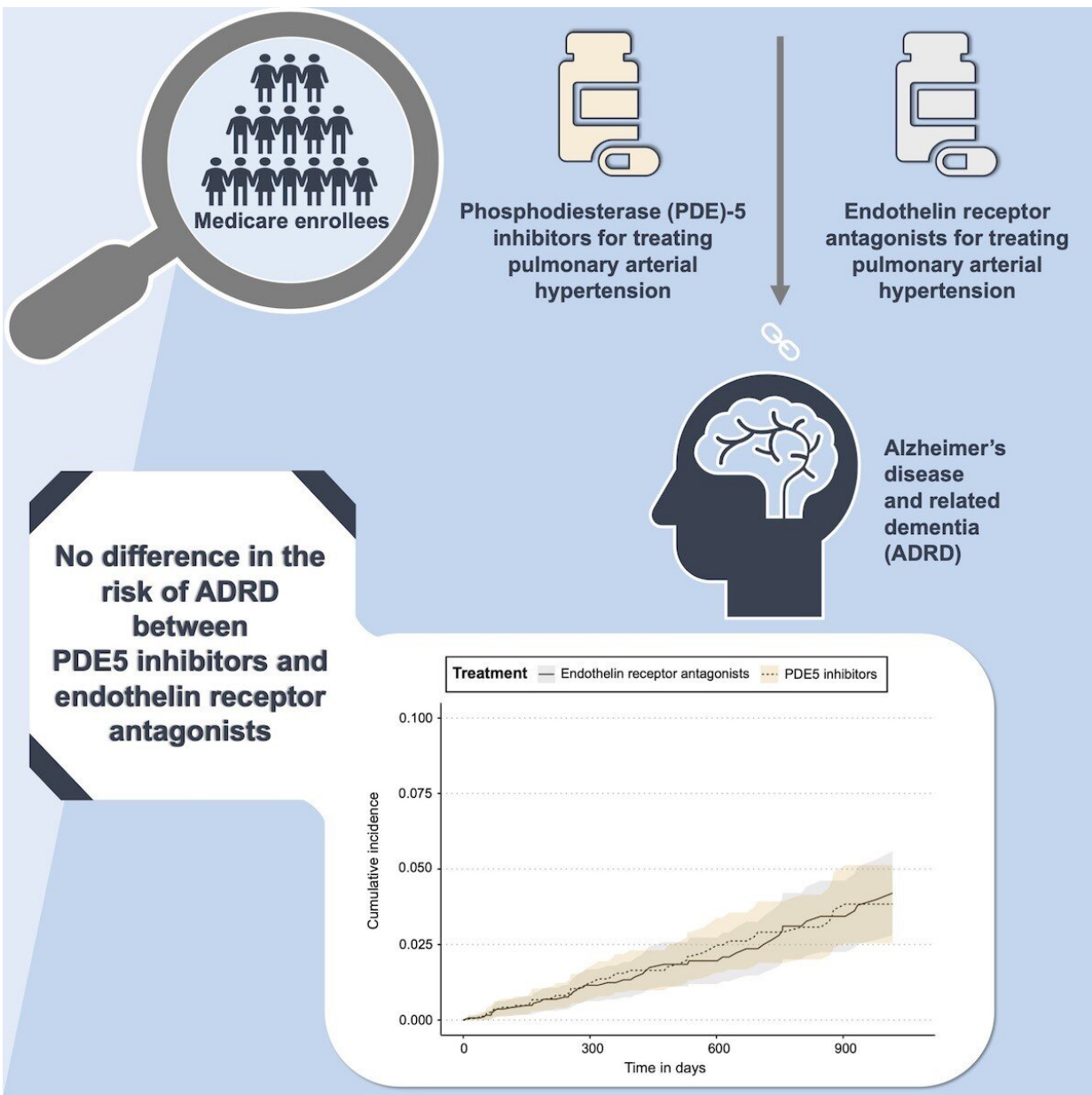


Study finds Viagra and Cialis do not reduce risk of Alzheimer's and related dementias

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Graphical abstract. Credit: *Brain Communications* (2022). DOI: 10.1093/braincomms/fcac247

Results from the National Institutes of Health's Drug Repurposing for Effective Alzheimer's Medicines (DREAM) study show that sildenafil (Viagra) and tadalafil (Cialis) may not be suitable candidates for treating dementia. These findings are contrary to similar, previously reported research from another group.

In this new study, NIH researchers and collaborators used data from Medicare beneficiaries and determined the medications [sildenafil](#) and tadalafil do not reduce the risk of Alzheimer's disease and related dementias. The study results are published in *Brain Communications*. Identifying existing drugs that may also be repurposed for [dementia](#) could potentially get treatments to those in need faster than the traditional drug discovery process.

The NIA scientific team tested a class of drugs called phosphodiesterase-5 (PDE5) inhibitors. PDE5 inhibitors, of which sildenafil and tadalafil are examples, work by relaxing [smooth muscle cells](#). Sildenafil and tadalafil are U.S. Food and Drug Administration-approved treatments for [erectile dysfunction](#) and pulmonary arterial hypertension (PAH), a type of high blood pressure that affects the arteries in the lungs and the right side of the heart.

The scientists examined the risk of Alzheimer's and related dementias using two groups of Medicare beneficiaries with PAH, those who were being treated with sildenafil or tadalafil, and those treated with another class of drugs. They also tested whether sildenafil had effects on cell culture-based models of Alzheimer's. Results showed no reduced risk of Alzheimer's and related dementias in patients treated with PDE5

inhibitors and no evidence that PDE5 inhibitors corrected molecular abnormalities associated with Alzheimer's.

The research is part of the DREAM initiative led by Madhav Thambisetty, M.D., Ph.D., chief of the NIA Clinical and Translational Neuroscience Section (CTNS). The DREAM collaborative, which includes researchers from NIA, Harvard Medical School, Boston; Rutgers University, New Brunswick; and the Johns Hopkins School of Medicine, Baltimore; is a multidisciplinary initiative to identify candidate treatments for Alzheimer's and related dementias by repurposing drugs that are FDA-approved for other indications.

Previous results from the DREAM study showed some arthritis drugs may reduce Alzheimer's and related dementias risk in those with heart disease.

More information: Rishi J Desai et al, No association between initiation of phosphodiesterase-5 inhibitors and risk of incident Alzheimer's disease and related dementia: results from the Drug Repurposing for Effective Alzheimer's Medicines (DREAM) study, *Brain Communications* (2022). [DOI: 10.1093/braincomms/fcac247](https://doi.org/10.1093/braincomms/fcac247)

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