

Researchers find that blood pressure medications impact brain function

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Published in *Science*, University of Minnesota Medical School researchers found that blood pressure medications have an unanticipated effect on the brain.

The research team discovered that drugs used to treat [blood pressure](#) unexpectedly increase the effect of opioids that the [brain](#) naturally produces. This can fine-tune the function of a specific brain circuit and counteract the addictive properties of opiates like fentanyl, which are used to treat pain.

"Our findings suggest a new strategy to boost opioid signaling in the brain in a way that is protective and beneficial, with a very low risk of dependence or addiction," said Patrick Rothwell, Ph.D., an assistant professor of neuroscience at the U of M Medical School and Medical Discovery Team on Addiction.

The study focused on angiotensin-converting enzyme (ACE), which has long been known to regulate blood pressure. However, little is known about the function of ACE in the brain.

Based on the study findings, Rothwell recommends further research on ACE inhibitors, a safe class of drugs used to control blood pressure. ACE inhibitors have the potential to be redesigned to treat brain conditions.

The project was led by Brian Trieu, an MD/Ph.D. candidate working in the Rothwell lab. In collaboration with Dr. Swati More from the Center for Drug Design in the College of Pharmacy, Rothwell and University researchers are creating new ACE inhibitors in order to optimize their effect on [brain function](#).

More information: Brian H. Trieu et al, Angiotensin-converting enzyme gates brain circuit-specific plasticity via an endogenous opioid, *Science* (2022). [DOI: 10.1126/science.abl5130](https://doi.org/10.1126/science.abl5130).
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