

Study identifies brain network connections associated with anosognosia

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Anosognosia is a condition in which a patient is unaware of their neurological deficit or psychiatric condition. Visual anosognosia, also called Anton syndrome, is associated with complete cortical blindness and unawareness of vision loss. Researchers from Brigham and Women's Hospital, a founding member of the Mass General Brigham healthcare

system, sought to identify brain network connections associated with anosognosia.

The investigators analyzed the connectivity patterns of 267 lesion locations associated with either [vision loss](#) (with and without awareness) or weakness (with and without awareness). Researchers used a recently validated technique termed lesion [network](#) mapping to test whether these lesion-induced deficits map to specific brain networks.

They were able to identify distinct network connections associated with visual anosognosia and motor anosognosia as well as a shared network for awareness of these deficits. The visual anosognosia network was defined by connectivity to visual and metacognitive processing regions while the shared network for awareness converged on the [hippocampus](#) and precuneus—brain structures that are associated with memory.

"Despite being described more than 100 years ago, visual anosognosia has had little formal analysis," said corresponding author Isaiah Kletenik, MD, an investigator at Brigham's Division of Cognitive and Behavioral Neurology and the Center for Brain Circuit Therapeutics. "Our results are the first to identify the role of the hippocampus in a systematic analysis of visual anosognosia. Memory-associated structures are necessary to recognize a [deficit](#) by comparing visual inputs to prior information stored in memory while updating [self-knowledge](#) about performance compared to previous abilities."

The paper, "Network Localization of Awareness in Visual and Motor Anosognosia," is published in the journal *Annals of Neurology*.

More information: Isaiah Kletenik et al, Network Localization of Awareness in Visual and Motor Anosognosia, *Annals of Neurology* (2023). [DOI: 10.1002/ana.26709](https://doi.org/10.1002/ana.26709)

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