Anteromedial Subthalamic Nucleus (amSTN)

The anteromedial subthalamic nucleus (amSTN) is a subregion of the subthalamic_nucleus that plays a key role in limbic and associative circuits of the brain.

Relevance in Deep Brain Stimulation (DBS)

The amSTN has emerged as a target for deep_brain_stimulation in the treatment of various neuropsychiatric disorders, particularly treatment-resistant OCD.

In the context of OCD, stimulation of the amSTN may modulate dysfunctional cortico-striato-thalamo-cortical loops.

It partially overlaps with limbic fibers, including projections to and from the medial_prefrontal_cortex and amygdala.

Comparison with Other Targets

While slMFB stimulation often engages reward-related circuitry directly, the amSTN offers a more nuanced entry point via limbic integration zones.

The amSTN may indirectly access components of the ocd_response_tract (ORT), although clinical response cannot be entirely explained by this overlap.

Research Highlights

Recent studies, including the 2025 article by Coenen et al. in Molecular Psychiatry, suggest that:

DBS targeting the amSTN can achieve significant symptom relief in OCD.

Its anatomical reach may include part of the slMFB, depending on electrode placement and stimulation parameters.

The amSTN may serve as a bridge region between motor, associative, and limbic sub-networks.