

# Dorsomedial Prefrontal Cortex (dmPFC)

The dorsomedial prefrontal cortex (dmPFC) is a region of the [prefrontal cortex](#) involved in high-order cognitive and emotional processing. It plays a central role in self-referential thought, social cognition, and behavioral regulation.

## Anatomical Overview

Located in the medial frontal lobe, dorsal to the anterior cingulate cortex (ACC) and superior to the corpus callosum.

Part of the default mode network (DMN) and reciprocally connected with both limbic and associative cortical areas.

Often considered a hub region for integration between internal cognitive states and externally driven behavior.

## Functional Roles

The dmPFC is implicated in:

Emotion regulation

Social decision-making and moral reasoning

Conflict monitoring and error detection

Mentalization (understanding others' mental states)

Its dysfunction has been linked to several neuropsychiatric disorders, including [obsessive-compulsive disorder](#), [depression](#), and [schizophrenia](#).

## Role in Deep Brain Stimulation and OCD

The dmPFC receives projections from the [superolateral\\_medial\\_forebrain\\_bundle](#) (slMFB) and is modulated indirectly by DBS.

In the 2025 study by Coenen et al. (Mol Psychiatry), the dmPFC emerged as a convergent cortical projection site for multiple OCD-related sub-networks engaged by stimulation of both the [anteromedial\\_subthalamic\\_nucleus](#) and the slMFB.

It may act as a cortical integration node, mediating downstream behavioral and symptomatic changes in patients undergoing DBS for [treatment-resistant\\_obsessive-compulsive\\_disorder](#).

## Research and Imaging Notes

Functional MRI and tractography studies often use the dmPFC as a region of interest in evaluating treatment response.

Its activity levels have been correlated with treatment outcomes across pharmacological, behavioral, and neuromodulatory interventions.

From:

<https://neurosurgerywiki.com/wiki/> - **Neurosurgery Wiki**

Permanent link:

[https://neurosurgerywiki.com/wiki/doku.php?id=dorsomedial\\_prefrontal\\_cortex](https://neurosurgerywiki.com/wiki/doku.php?id=dorsomedial_prefrontal_cortex)

Last update: **2025/04/07 09:32**

