

Pallidotomy for Parkinson's Disease

The major motor disturbances in [Parkinson's disease](#) are thought to be caused by overactivity of the GABAergic internal segment of the [globus pallidus](#) (GPi), which acts as a “brake” on the motor [thalamus](#) and the cortical motor system to produce the slowness, rigidity, and poverty of movement characteristic of parkinsonian states. The goal of [pallidotomy](#) is to reduce this excessive inhibition of the motor system in patients with Parkinson's disease who continue to be significantly disabled despite pharmacotherapy. GPi can be identified with a high degree of precision through [microelectrode](#) recording and stimulation. Micro- and macro stimulation can be used to map the position of the optic tract and the [internal capsule](#), two structures that are at risk with pallidotomy. Although the optimal lesion size and location within the pallidum are yet to be determined, unilateral lesions in the sensorimotor portion of GPi are associated with striking improvements in drug-induced involuntary movements, [bradykinesia](#), [tremor](#), and [rigidity](#) and to a lesser extent on [gait](#) and postural disturbances ¹⁾.

Guidelines

[Parkinson's Disease treatment Guidelines](#)

¹⁾

Lozano AM, Lang AE. Pallidotomy for Parkinson's disease. Neurosurg Clin N Am. 1998 Apr;9(2):325-36. PMID: 9495895.

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