

Review > [Can J Neurol Sci](#). 2023 Jan;50(1):1-9. doi: 10.1017/cjn.2021.248. Epub 2021 Oct 29.

A Review on the Surgical Management of Insular Gliomas

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PMID: 34711299 DOI: [10.1017/cjn.2021.248](#)

Abstract

The surgical treatment of insular gliomas requires specialized knowledge. Over the last three decades, increased momentum in surgical resection of insular gliomas shifted the focus from one of expectant management to maximal safe resection to establish a diagnosis, characterize tumor genetics, treat preoperative symptoms (i.e., seizures), and delay malignant transformation through tumor cytoreduction. A comprehensive review of the literature was performed regarding insular glioma classification/genetics, insular anatomy, surgical approaches, and patient outcomes. Modern large, published series of insular resections have reported a median 80% resection, 80% improvement in preoperative seizures, and postsurgical permanent neurologic deficits of less than 10%. Major complication avoidance includes recognition and preservation of eloquent cortex for language and respecting the lateral lenticulostriate arteries.

Keywords: Brain tumor; Glioblastoma; Gliomas; High-grade glioma; Insula; Low-grade glioma; Neuroanatomy.

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