

Berger-Sanai classification

- [Safety and Efficacy in the Transcortical and Transsylvian Approach in Insular High-Grade Gliomas: A Comparative Series of 58 Patients](#)
- [Predicting Extent of Resection and Neurological Outcome for Insular Gliomas: An Analysis of Two Available Classifications](#)
- [The Transtemporal Isthmus Approach for Insular Glioma Surgery](#)
- [The transfrontal isthmus approach for insular glioma surgery](#)
- [Resection of Insular Glioma Through the Transfrontal Limiting Sulcus Approach](#)
- [Anatomical aspects of the insula, opercula and peri-insular white matter for a transcortical approach to insular glioma resection](#)
- [Transsylvian Insular Glioma Surgery: New Classification System, Clinical Outcome in a Consecutive Series of 79 Cases](#)
- [Transcortical approach for insular gliomas: a series of 253 patients](#)

Divides the insula into four quadrants using:

- **Horizontal axis:** The Sylvian fissure
- **Vertical axis:** The foramen of Monro
- **Zone I:** Anterior-superior quadrant
- **Zone II:** Posterior-superior quadrant
- **Zone III:** Posterior-inferior quadrant
- **Zone IV:** Anterior-inferior quadrant

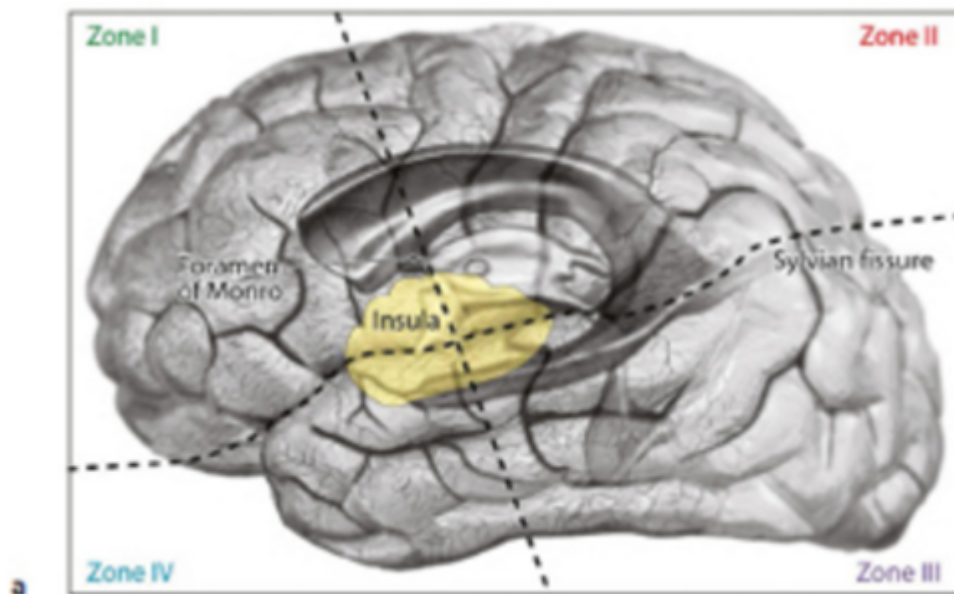
Advantages:

- Simple and reproducible using preoperative MRI
- Correlates well with surgical corridors
- Helps anticipate surgical risks (e.g., Zone II → higher risk of injury to lenticulostriate arteries)

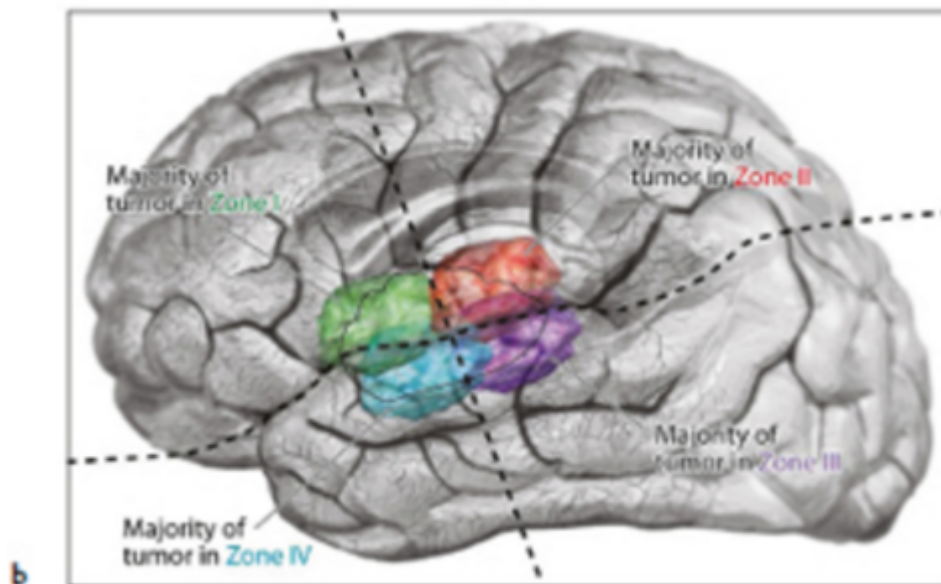
Based on resectability and functional outcomes for [insular gliomas](#), and it may be used to predict PFS and OS ¹⁾.

The Berger-Sanai insular glioma classification system ²⁾.

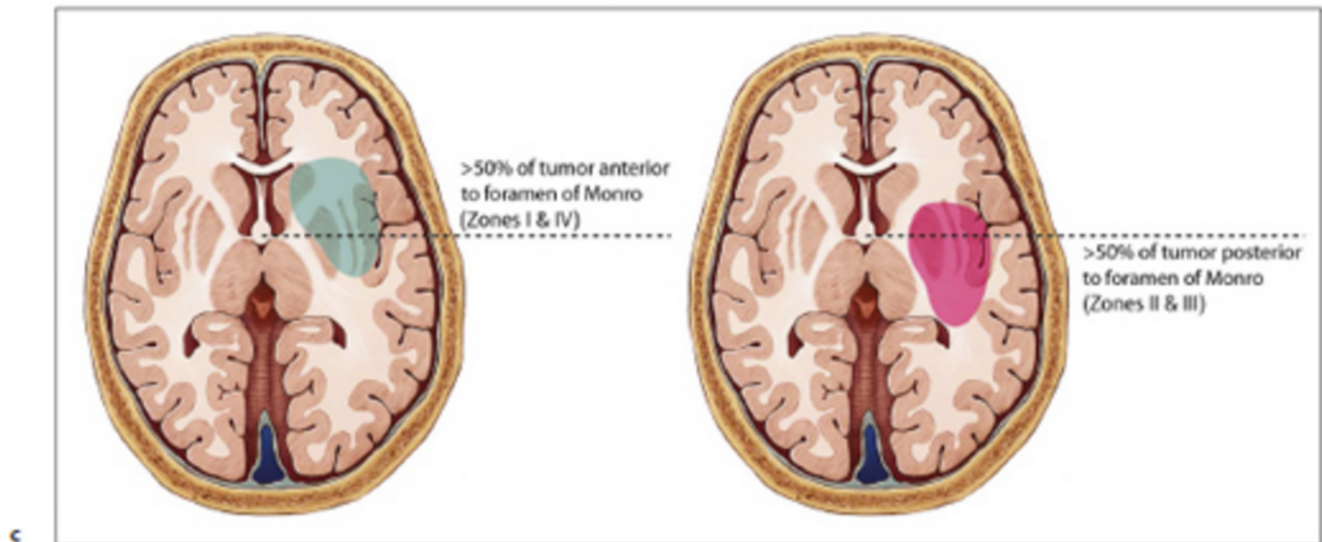
A. Zones I to IV are divided along the line of the sylvian fissure and a perpendicular plane crossing the foramen of Monro.



B. The tumor's location is determined according to the location of the majority of the tumor mass.



C. Axial illustrations of zones I and IV, located anterior to the foramen of Monro, and zones II and III, located behind the foramen of Monro



Orientation lines

Horizontal plane in sagittal view, bisection line along the sylvian fissure

Perpendicular plane intersected at the level of the foramen of Monro

Zones (existing of the resulting quadrants)

Zone I: anterior-superior

Zone II: posterior-superior

Zone III: posterior-inferior

Zone IV: anterior-inferior

Combinations

for tumors occupying > 1 zone, write e.g. "Zone I + II"

tumors occupying all 4 zones are defined as "giant" ³⁾.

¹⁾

Sanai N, Polley M-Y, Berger MS: Insular glioma resection: assessment of patient morbidity, survival, and tumor progression. Clinical article. J Neurosurg 112:1-9, 2010

²⁾

Sanai N, Polley M-Y, Berger MS: Insular glioma resection: Assessment of patient morbidity, survival, and tumor progression. J Neurosurg 112(1): 1-9, 2010. Reprinted by permission.

³⁾

Sanai N, Polley M-Y, Berger MS. Insular glioma resection: assessment of patient morbidity, survival, and tumor progression. J Neurosurg 2010; 112:1-9.

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