LGGs are classified into different grades (Grade I and Grade II) based on their cellular characteristics. Grade I tumors are less aggressive than Grade II tumors. Grade II tumors can progress over time. The specific type of LGG (e.g., astrocytoma, oligodendroglioma) also affects the prognosis.

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WHO grade 1 glioma

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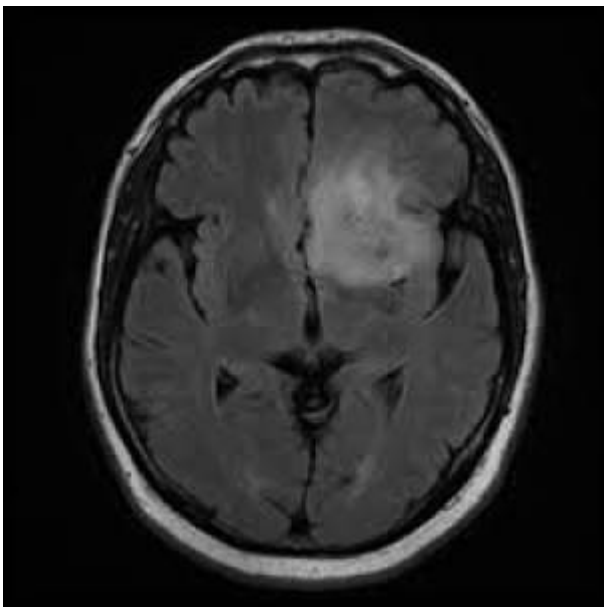
see also WHO grade 2 glioma



see Astrocytoma IDH-mutant

A diffuse astrocytoma with a mutation in either the IDH1 or IDH2 gene. Use of the former term “low-grade glioma” is discouraged.

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Rapidly emerging and evolving molecular glioma classifications have influenced treatment paradigms. Importantly, low-grade gliomas can be classified on the basis of IDH mutation status, whereby low-grade astrocytomas harbor the IDH mutation, while oligodendrogliomas are defined by both IDH mutant status and 1p/19q co-deletion. Given the importance of molecular classification for diagnosis, treatment planning, and prognostication, tissue samples are necessary for proper management. Literature supports improved overall survival and outcomes with increased extent of resection for low-grade glioma. Awake craniotomies and resection of insular low-grade gliomas both have been demonstrated as safe and improve outcomes for patients with lesions located in eloquent areas. Given the younger age at diagnosis of these lesions compared with higher-grade gliomas, fertility, fertility preservation, and potential malignant transformation should be discussed with patients of childbearing age [1].

A study suggests that the stem cell origin of IDH-wildtype and IDH mutant low-grade glioma may be different [2].

1)

Giantini-Larsen AM, Pannullo S, Juthani RG. Challenges in the Diagnosis and Management of Low-

Grade Gliomas. World Neurosurg. 2022 Oct;166:313-320. doi: 10.1016/j.wneu.2022.06.074. PMID: 36192863.
2)

Skjulsvik AJ, Bø HK, Jakola AS, Berntsen EM, Bø LE, Reinertsen I, Myrmel KS, Sjåvik K, Åberg K, Berg T, Dai HY, Kloster R, Torp SH, Solheim O. Is the anatomical distribution of low-grade gliomas linked to regions of gliogenesis? J Neurooncol. 2020 Jan 25. doi: 10.1007/s11060-020-03409-8. [Epub ahead of print] PubMed PMID: 31983026.