Based on results of three randomized clinical trials (RCT), radiotherapy (RT) may be deferred in patients with low risk low grade glioma (defined as age <40 years and having undergone a complete resection), although combined chemoradiotherapy has never been prospectively evaluated in the low-risk population. The recent RTOG 9802 RCT established a new standard of care in high-risk patients (defined as age >40 years or incomplete resection) by demonstrating a nearly twofold improvement in overall survival with the addition of PCV (procarbazine, CCNU, vincristine) chemotherapy following RT as compared to RT alone. Chemotherapy alone as a treatment of LGG may result in less toxicity than RT; however, this has only been prospectively studied once (EORTC 22033) in high-risk patients. A challenge remains to define when an aggressive treatment improves survival without impacting quality of life (QoL) or neurocognitive function and when an effective treatment can be delayed in order to preserve QoL without impacting survival. Current WHO histopathological classification is poorly predictive of outcome in patients with LGG. The integration of molecular biomarkers with histology will lead to an improved classification that more accurately reflects underlying tumor biology, prognosis, and hopefully best therapy [1)].

1)
Le Rhun E, Taillibert S, Chamberlain MC. Current Management of Adult Diffuse Infiltrative Low Grade Gliomas. Curr Neurol Neurosci Rep. 2016 Feb;16(2):15. doi: 10.1007/s11910-015-0615-4. PubMed PMID: 26750130.