

ABSTRACT

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Clinical implications of the 2021 edition of the WHO classification of central nervous system tumours.

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A new edition of the WHO classification of tumours of the CNS was published in 2021. Although the previous edition of this classification was published just 5 years earlier, in 2016, rapid advances in our understanding of the molecular underpinnings of CNS tumours, including the diversity of clinically relevant molecular types and subtypes, necessitated a new classification system. Compared with the 2016 scheme, the new classification incorporates even more molecular alterations into the diagnosis of many tumours and reorganizes gliomas into adult-type diffuse gliomas, paediatric-type diffuse low-grade and high-grade gliomas, circumscribed astrocytic gliomas, and ependymal tumours. A number of new entities are incorporated into the 2021 classification, especially tumours that preferentially or exclusively arise in the paediatric population. Such a substantial revision of the WHO scheme will have major implications for the diagnosis and treatment of patients with CNS tumours. In this Perspective, we summarize the main changes in the classification of diffuse and circumscribed gliomas, ependymomas, embryonal tumours and meningiomas, and discuss how each change will influence post-surgical treatment, clinical trial enrolment and cooperative studies. Although the 2021 WHO classification of CNS tumours is a major conceptual advance, its implementation on a routine clinical basis presents some challenges that will require innovative solutions.

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