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## Children's Oncology Group's 2023 blueprint for research: Central nervous system tumors

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## Abstract

Tumors of the central nervous system (CNS) are a leading cause of morbidity and mortality in the pediatric population. Molecular characterization in the last decade has redefined CNS tumor diagnoses and risk stratification; confirmed the unique biology of pediatric tumors as distinct entities from tumors that occur in adulthood; and led to the first novel targeted therapies receiving Food and Drug Administration (FDA) approval for children with CNS tumors. There remain significant challenges to overcome: children with unresectable low-grade glioma may require multiple prolonged courses of therapy affecting quality of life; children with high-grade glioma have a dismal long-term prognosis; children with medulloblastoma may suffer significant short- and long-term morbidity from multimodal cytotoxic therapy, and approaches to improve survival in ependymoma remain elusive. The Children's Oncology Group (COG) is uniquely positioned to conduct the next generation of practice-changing clinical trials through rapid prospective molecular characterization and therapy evaluation in well-defined clinical and molecular groups.

**Keywords:** CNS germ cell tumor; diffuse midline glioma; ependymoma; medulloblastoma; pediatric low-grade glioma.

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