

# Central nervous system tumor outcome

There are several types of CNS tumors diagnosed in all age groups, and survival rates are different for each. The survival rate for a CNS tumor depends on many factors, including the type of tumor diagnosed and its stage

**Survival** differences were determined utilizing the [National Program of Cancer Registries](#) Survival Analytic file for [primary brain tumor](#) and [Central nervous system tumors](#). **Overall survival** and survival of the 5 most common histopathologies, within specific age groups, were determined. Overall survival was compared for three time periods: 2004-2007, 2008-2012, and 2013-2017. Survival differences were evaluated using Kaplan-Meier and multivariable [Cox proportional hazards models](#). Models were adjusted for sex, race/ethnicity, and treatment. Malignant and non-malignant brain tumors were assessed separately.

Among malignant brain and CNS tumor patients overall, there were notable differences in survival by time period among all age groups. Similar differences were noted in non-malignant brain and CNS tumor patients, except for adults (aged 40-64 years), where no survival changes were observed. Survival differences varied within specific histopathologies across age groups. There were improvements in survival in 2008-2012 and 2013-2017, when compared to 2004-2007, in children, AYA, and older adults with malignant tumors, and among older adults with non-malignant tumors.

**Overall survival** for malignant brain and other CNS tumors improved slightly in [2013-2017](#) for all age groups as compared to 2004-2007. Significant changes were observed for non-malignant brain and other CNS tumors among older adults. Information regarding survival over time can be utilized to identify population level effects of diagnostic and treatment improvements <sup>1)</sup>.

see Yamaguchi F. [Central Nervous System Tumor Neurological Complications in Cancer Patients]. Gan To Kagaku Ryoho. 2021 Jun;48(6):768-769. Japanese. PMID: 34139721.

[Central nervous system tumors](#) account for the highest mortality among pediatric malignancies.

<sup>1)</sup>

Cioffi G, Waite KA, Edelson JL, Kruchko C, Ostrom QT, Barnholtz-Sloan JS. Changes in survival over time for primary brain and other CNS tumors in the United States, 2004-2017. J Neurooncol. 2022 Oct 5. doi: 10.1007/s11060-022-04138-w. Epub ahead of print. PMID: 36198894.

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Last update: **2024/06/07 02:54**

