

Kids from disadvantaged communities may die sooner from cancerous brain tumors

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Children with inoperable brain tumors may die sooner if they live in areas with lower average income and education levels, a Michigan Medicine-led study finds.

The study covered nearly 100 patients seen for diffuse midline glioma and diffuse intrinsic pontine glioma, known respectively as DMG and DIPG, between 2000 and 2022.

The two tumors are incurable and can only be treated with radiation therapy as a palliative measure.

Patients from higher income census tracts, meaning over half of families have an annual household income over \$50,000, had a [median survival time](#) of nearly 16 months—more than twice as long as patients from lower income tracts.

Families of [children](#) from higher income areas, as well as those from census tracts with higher levels of education, also traveled further to receive treatment.

The results are [published](#) in the *Journal of Neurosurgery*.

"Children with these inoperable gliomas require access to specialized centers of care and [clinical trials](#) in the hopes of extending their lives, yet we are seeing that [socioeconomic factors](#) are linked to worsening survival," said first author John H. Lee, M.D., incoming neurosurgery resident at University of Michigan Health.

"It's critical that we understand the reasons for this disparity, so that we can ensure all patients have opportunities for life-prolonging care."

The findings are in line with other studies suggesting that factors linked to socioeconomic status are associated with [health outcomes](#), particularly in [brain tumors](#).

Income and [educational attainment](#), the researchers suggest, may affect the landscape of diagnosis and treatment of brain tumors.

Families with fewer financial resources may be less equipped to travel to specialized centers where they could receive second opinions, different treatment options or be enrolled in clinical trials, Lee says.

"Additionally, patients whose families have lower levels of education may have less knowledge about the signs and symptoms of a condition, early screening programs and [treatment options](#)," said Karin M. Muraszko, M.D., senior author and professor of neurosurgery at University of Michigan Medical School.

"However, our research uncovered disparities in survival despite no significant differences in rates of clinical trial enrollment or time until initiation of treatment between patients from different census tracts. Future studies should aim to understand the exact mechanism through which this gap is created."

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More information: John H. Lee et al, Influence of socioeconomic status on clinical outcomes of diffuse midline glioma and diffuse intrinsic pontine glioma, *Journal of Neurosurgery: Pediatrics* (2024). [DOI: 10.3171/2023.10.PEDS23118](https://doi.org/10.3171/2023.10.PEDS23118)

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