

New merciful treatment method for children with brain tumors

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Children who undergo brain radiation therapy run a significant risk of suffering from permanent neurocognitive adverse effects. These adverse effects are due to the fact that the radiation often encounters healthy tissue. This reduces the formation of new cells, particularly in the hippocampus – the part of the brain involved in memory and learning.

Researchers at the University of Gothenburg's Sahlgrenska Academy have used a model study to test newer radiation therapy techniques which could reduce these harmful adverse effects. The researchers based their study on a number of paediatric patients who had undergone conventional radiation treatment for medulloblastoma, a form of [brain tumour](#) that almost exclusively affects children, and simulated treatment plans using proton therapy techniques and newer photon therapy techniques.

Each treatment plan was personalised by physician Malin Blomstrand, physicist Patrik Brodin and their colleagues. The results show that the risk of neurocognitive adverse effects can be reduced significantly using the new radiation treatment techniques, particularly [proton therapy](#).

"This could mean a better quality of life for children who are forced to undergo [brain radiation](#) therapy," says Malin Blomstrand.

More information: The article "Estimated clinical benefit of protecting neurogenesis in the developing brain during radiation therapy for pediatric medulloblastoma" will be published in the journal *Neuro-*

Oncology.

Provided by University of Gothenburg

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