

Children with brain tumors undergoing radiation therapy helped by play-based preparation

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Child Life Specialist Amy Kennedy helps a patient prepare for radiation therapy.

New research from St. Jude Children's Research Hospital shows support interventions by child life specialists decrease sedation use and costs

associated with cranial radiation therapy.

Play-based procedural preparation not only helps children cope with the stress and anxiety of [radiation therapy](#), but can also help reduce the amount of sedation used and cut costs, according to a study from the Child Life Program at St. Jude Children's Research Hospital. The study is published in the June issue of the journal *Supportive Care in Cancer*.

"The results demonstrate the value of having child life specialists as part of the health care team," said lead author Shawna Grissom, director of Child Life at St. Jude. "The interventions of certified child life specialists help prepare the children for what's going to happen during their radiation treatments. Sedation is often used to keep the child still during the treatments, but we can work with the children on coping skills during practice sessions, so maybe they won't need sedation every time or not at all once they understand what's happening and expected of them." Grissom added that less sedation for the children means fewer clinical risks, less time in treatment sessions and reduced health care costs that can approach \$80,000 per patient.

In this study, staff conducted a retrospective chart review of radiation procedures for 116 children at St. Jude with central nervous system tumors. The children ranged in age from 5 to 12 years old.

Central nervous system tumors are the most commonly diagnosed solid tumors in childhood, accounting for nearly 20 percent of all pediatric cancers or about 2,500 new cases in the U.S. each year. Although radiation therapy is an effective treatment for this type of tumor, it is particularly stressful for children who must lie still throughout the process to avoid unintended exposure to their developing brains. Sedation is often used to ensure precise positioning. In spite of this precaution, daily sedation in children may be associated with several health risks, including respiratory ailments and cognitive functioning

deficits.

The study's authors examined the total number of radiation treatments the children received, the number of treatments received with and without sedation, and the type and duration of interventions by the certified child life specialists. These interventions consisted of developmentally appropriate play, education, preparation and distraction.

"The child life specialist will set up practice sessions where the patient will have the opportunity to lie on the table to see what it will be like before the actual radiation therapy session," Grissom explained. "The specialist will work with the child to practice lying still and will work with the patient on coping skills. Child life specialists can also help during radiation sessions by reading books to the [children](#), leading them through guided imagery or checking on them during breaks to make sure they are coping well. It's that support piece that really helps the patients get through the radiation sessions."

The researchers found that age and tumor location affected sedation use. Each one-year increase in patient age was associated with significantly higher odds of receiving cranial radiation without any sedation or with partial sedation over full sedation. Partial sedation was defined as the child receiving at least one radiation treatment with sedation and at least four treatments without sedation. After adjusting for age, tumor location and craniospinal radiation where patients were less likely to forego sedation, each additional intervention session with the child life specialist was associated with a 23 percent increase in the odds of receiving cranial [radiation](#) with partial sedation over full sedation.

"Play-based programming implemented by a certified child life specialist can help provide a sense of accomplishment for the patients that they can get through these treatment sessions often with less or no [sedation](#)," Grissom noted. Further research is needed to determine the most

effective play-based procedural preparation and support interventions.

More information: Shawna Grissom et al. Play-based procedural preparation and support intervention for cranial radiation, *Supportive Care in Cancer* (2015). [DOI: 10.1007/s00520-015-3040-y](https://doi.org/10.1007/s00520-015-3040-y)

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