

# Childhood Cancer

## Background

Cancer happens when abnormal cells grow and divide uncontrollably in the body. Cancer can develop anywhere in the body and is named for the part of the body where it began. The spread of cancer to a new part of the body is called metastasis. The two main types of cancer include:

- Hematologic (blood) cancers such as leukemia, lymphoma, and multiple myeloma; and
- Solid tumor cancers affecting an organ or tissue.

Cancer treatment options will vary based on the type of cancer and its location and progression. Common treatment options include surgery, chemotherapy, radiation therapy, immunotherapy, and stem cell transplant.

Children face unique challenges due to both the effects of the cancer and the contributing or worsening effects of the cancer treatment. Studies have also shown that adolescent cancer patients report a higher symptom burden than older adults. General signs and symptoms the child may be experiencing include:

- Pain
- Fatigue, sleep problems
- Nausea, vomiting
- Muscle weakness, decreased stamina
- Flu-like symptoms
- Mood swings
- Diarrhea
- Constipation
- Hearing and visual changes
- Deficits in gross and fine motor skills

Late effects of pediatric cancer can affect any organ system, but the brain is particularly vulnerable. The younger a child is at time of diagnosis increases the risk factor for negative effects on neurocognitive development. Neurocognitive impact may be persistent in cancer survivors. Brain-related effects including challenges in cognition and difficulties with academic performance are common.

Children may also miss school for hospitalization or outpatient treatment. They may not be feeling well or are unable to physically participate in their educational setting.



The parents/caregiver, health care provider, and school team must work together to share an understanding of the illness and how it impacts the child at school. Plans that involve the student in decision-making and opportunities to educate their peers about their treatment and/or survivorship should be considered. Educational topics should be developmentally appropriate and could include cancer overview, medical treatment, change in appearance, child experience and emotions, and suggestions for how other students can support the child. It is very important for children diagnosed with cancer to be able to safely return to school and resume a sense of childhood normalcy.

## Top Takeaways for School

The younger a child is when diagnosed with cancer, the more significant the impact on brain development.

Cancer treatments often cause fatigue. Students may benefit from scheduling adjustments (e.g., gradual return to school, adjusted school day, flexibility, blended learning).

The most common cognitive impact seen in students is effects on processing speed, attention regulation and executive functioning.

Consider that students may be able to attend school during treatment but will likely have numerous appointments and missed school time.

## Considerations for the Individualized Healthcare Plan (IHP)

- Nursing diagnoses: Risk for infection, pain (acute/chronic) and fatigue
- Nutrition interventions and equipment (consider brand/size of feeding tube, tube replacement, water flushes, fluid intake goal and supplements); note school district policy on tube replacement and consider keeping backup feeding tube kit at school if applicable
- Assessment of implanted medical device (consider location, date of surgical placement, and device-specific information)
- Consider communicable disease and outbreak plan that may impact student's risk of infection
- Temperature regulation considerations in school setting and transportation
- Use of specialized equipment, adaptive equipment, and orthotics
- Activity, positioning, transferring (consider precautions and/or restrictions)
- Skin check, pressure relief techniques
- Equipment troubleshooting (consider equipment/device user manual, battery, charger)
- Consider emergency action plans (EAPs) and emergency evacuation plans (EEPs) related to special health care needs, including staff education/training

## Discussion Starters for the Educational Team

1. Would the student benefit from evaluations or assessments in any of the following areas: physical therapy, occupational therapy, speech and language therapy, assistive technology, adapted physical education, functional behavior, psychology, hearing and vision?
2. Would the student benefit from additional academic support and/or modified education (e.g., copies of notes, extra time, reduced workload, simplified instructions, alternative formats for presentation of material, 504/IEP)?
3. Can strategies be implemented to assist the student with executive function (e.g., plan, prompts, organizers, agendas)?
4. Would schedule flexibility support the student?
5. Can rest breaks, safe spaces or reduced stimulation times be built into the student's schedule?

## Resources

Kennedy Krieger Institute: The Oncology Clinic at the Department of Neuropsychology  
[kennedykrieger.org/patient-care/centers-and-programs/center-for-neuropsychological-and-psychological-assessment-outpatient-clinics/the-oncology-clinic-at-the-department-of-neuropsychology](https://kennedykrieger.org/patient-care/centers-and-programs/center-for-neuropsychological-and-psychological-assessment-outpatient-clinics/the-oncology-clinic-at-the-department-of-neuropsychology)

Your Child's Brain Podcast: Cancer Treatment in Children  
[kennedykrieger.org/stories/your-childs-brain-podcast/march-2023-cancer-treatment-children](https://kennedykrieger.org/stories/your-childs-brain-podcast/march-2023-cancer-treatment-children)

Stony Brook Children's– School Intervention and Re-Entry Plan  
[stonybrookchildrens.org/school-reentry](https://stonybrookchildrens.org/school-reentry)



For more information, please scan the QR code or visit: [KennedyKrieger.org/SHNIC](https://KennedyKrieger.org/SHNIC)

