



School Services Department

$$a^2 + b^2 = c^2$$

A School Guide for Students with Osteosarcoma

What is osteosarcoma?

Osteosarcoma is the most common bone cancer affecting children and adolescents. It is most common in teenagers and affects boys more often than girls. This cancer usually develops in the bone tissue as tumors on the ends of long bones which are used to support the leg or arm. The tumors are most often found in the leg near the knee, but can occur in the shoulder, pelvis or skull and spread to other areas of the body.

Treatment Received

The standard treatment involves both surgery and chemotherapy. The surgery will depend on the location of the tumor and if it has spread. This treatment may take a year or more to complete. The chemotherapy is given at minimum on a weekly basis in the clinic for the first 6-10 months then is given once a month for the rest of treatment. In addition to the chemotherapy given in the clinic, these children are often on chemotherapy medications given by mouth at home. In more serious cases the child is admitted to the hospital for most of their treatment and return to school after completion of therapy.

Sometimes the amputation of an arm or leg is necessary if the tumor is large and has not responded to chemotherapy. An amputation is a surgery to remove the affected limb to help prevent the spread of the cancer. After surgery, an artificial limb may be used to help patients become more independent. Using an artificial limb may take some practice and the child may need therapy to improve strength and coordination.

For all children with osteosarcoma there will be follow up visits with their doctor every two to three months for up to five years after initial treatment.

How can osteosarcoma affect school performance?

Children with osteosarcoma report missing 10-20 weeks of school a year. This puts them at a greater risk for school failure, becoming school avoidant or dropping out. The following are some school problems these students may have:

- difficulty with fine motor skills (problems with writing quickly or accurately)
- repeated absences from school and peers
- possible decline in grades (A's to C's)
- difficulty with memory, planning, and organization
- academic delays - difficulties in reading comprehension, spelling, and math
- slow processing speed and trouble keeping up with new material
- visual-memory problems for things that are new
- possible speech and language delays
- signs of ADHD (such as distractibility, impulsivity, concentration, tendency to "space out")
- difficulty with fine motor skills (problems with writing quickly or accurately)
- emotional implications such as: low self-esteem; poor body image; depression; feelings of loneliness and isolation; irritability or easily frustrated
- withdrawn behavior; fear of trying new things; difficulty with peer relationships; loss of independence

Factors that increase the risk for learning problems include:

- May have diagnosis at a very young age
- treatment involving the central nervous system (spinal cord and brain)
- Radiation to the total body or to the head
- Female gender – Girls may be more at risk for cognitive late effects

How can schools assist students with osteosarcoma?

Academic

- Start academic interventions right away under one of two laws: IDEA (Other Health Impairment) or Section 504
- Provide assessment to determine specific academic needs and provide appropriate accommodations and modifications necessary (including speech, OT, PT evaluations; Vision Impairment or Auditory impairment services, if needed)

- Provide homebound services, when necessary, to help with instruction
- Assign a moderate workload that overall emphasizes quality vs. quantity
- Provide extended school year (during winter, spring and/or summer) to allow more time to complete assignments and to stay at peer grade level
- Provide extra time for class work, homework, quizzes, and tests.
- To assist with fine motor delays, provide the student with a computer for note taking and assignments.
- Provide the student with assistive technology as needed in the event of an amputation
- Assign shorter tasks or allow for oral response when dealing with lengthy handwriting activities.
- Provide the student with an organizational checklist for routine activities, materials needed, and steps to follow
- To assist with limited memory, use multiple modalities (auditory, visual, and tactile) when presenting information.
- Record information on tape and provide activities that practice recall skills.
- To assist with reading comprehension, teach the student to use context clues to identify the meanings of words and phrases. Also pre-record material, and highlight important points before reading.
- Develop a list of spelling rules and require student to refer to the rules when writing.
- Review any abstract concepts which have been previously introduced (such as math skills).
- Frequent parent/teacher conferences due to changes in learning and for open communication concerning student

Social/Emotional

- Allow student to wear hat or scarf due to hair loss
- Provide counseling and guidance to address emotional/social effects
- Reduce the emphasis on competition. Competitive activities may cause undue stress when consistent failures occur.
- Provide the student with various opportunities to achieve academic and social success, making adjustments, if necessary.
- Provide an opportunity for peers to participate in a sensitivity training addressing potential changes in appearance following treatment.
- Provide two sets of books – 1 for home, 1 for school (due to fatigue)
- Allow student to carry water bottle (to prevent dehydration)
- Allow bathroom and clinic passes, as needed
- Provide an alternative to physical education activities that involve contact sports, strenuous exercises, and long distance running

Physical

- Allow student to leave class 5 min. early to get to next class
- Allow student to have a mid-morning and afternoon snack, if needed.
- Provide a shortened work day or rest period, if needed
- Give the student a locker close to his/her classes, or 2 lockers if necessary.
- Provide the student a parking space close to the school entrance.
- Provide elevator access, when necessary.
- May have difficulty with gross motor skills as a result of amputation
- May have physical complications such as: mouth or throat sores; diarrhea and constipation; nausea and vomiting
Provide a wheelchair, walker, crutches, if needed
- May have problems with eyesight or hearing
- Experience fatigue, anemia, decreased energy, motor weakness

For more information:

Please contact
 School Services Department
 Children's Medical Center of Dallas
 1935 Medical District Drive
 Dallas, Texas 75235
 214-456-7733 – Dallas
 469-488-7733 – Legacy campus

Resources

*IU Simon Cancer Center: Osteosarcoma Online; Cancer.iu.edu/osteosarcoma/osfacts/
 Children with Cancer: Effects and Educational Implications; by Sarah McDougal, Indiana University
 Learning & Living with Cancer: Advocating for your child's educational needs; by The Leukemia and Lymphoma Society
 Cancer Talk: The resource guide for teachers; Cancertalk.org
 Children Diagnosed with Cancer: Returning to School; American Cancer Society*

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