



## School Services

# School Guide for Students with Leukemia

### What is Leukemia?

The most common childhood cancer is leukemia. Leukemia develops in the bone marrow which is the soft, spongy center of the long bones. The bone marrow produces the three major blood cells: white blood cells to fight infection; red blood cells that carry oxygen; and platelets that help blood clot and stop bleeding. Leukemia is a disease in which too many abnormal infection-fighting white blood cells (referred to as blasts), are found in the blood and bone marrow. These abnormal cells crowd out the normal cells and sometimes can be found in the brain, spinal cord, and/or other organs of the body.

There are two main types of leukemia: acute lymphoblastic leukemia (ALL) and acute myeloblastic leukemia (AML). Both involve a rapid growth of abnormal blood cells in the bone marrow, which prevents it from producing normal blood cells. ALL is the most common type and occurs in the lymphoblasts, which is a type of blood cells. AML is less common, and targets the white blood cells that are myeloblasts, producing symptoms similar to the symptoms of ALL.

### Treatment Received

For children with ALL, most receive chemotherapy for 2 ½ to 3 ½ years. The chemotherapy is given at least weekly in the clinic for the first 6- 10 months then is given once a month for the rest of treatment. Since ALL likes to hide in the spinal fluid around the brain, children with ALL receive frequent spinal taps with chemotherapy administered into the spinal fluid. Some children also require radiation to their brain to treat the leukemia in their spinal fluid. In addition to the chemotherapy given in the clinic, these children are often on multiple chemotherapy agents given by mouth at home.

For children with AML, the treatment consists of aggressive chemotherapy given for approximately six months or a bone marrow transplant. They are usually admitted to the hospital for most of their treatment and return to school after completion of therapy. A Bone Marrow Transplant (BMT) consists of high doses of chemotherapy and sometimes radiation to kill existing bone marrow. Patient's then receive an infusion of the replacement bone marrow from a donor

### How can Leukemia affect School Performance?

Most children with cancer will attend school at least some of the time during and after treatment. Children may experience side effects of treatment both in the short and long term that can affect his or her education. The possibility of such school problems should be kept in mind for ANY child with leukemia during and after treatment.

- 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
  - difficulty in fine motor skills (problems with writing quickly or accurately)
  - possible speech and language delays
  - signs of ADHD (such as distractibility, impulsivity, concentration, tendency to "space out")
  - 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
  - physical complications such as: mouth or throat sores; diarrhea and constipation; nausea and vomiting; hair loss
  - physical disfigurement - the need for a wheelchair or artificial arm or leg
  - problems with eyesight or hearing
  - fatigue, anemia, decreased energy, motor weakness
- Factors that increase the risk for learning problems include:
- 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 IBD?

Children with leukemia report missing up to 10-20 weeks of school in one year. A child would benefit from returning to school as soon as medically possible, as this normalcy has a significant effect on a child's general adjustment and self-esteem.

### 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 numerous handwriting opportunities and assign shorter tasks, focusing on quality of handwriting.
- Provide the student with an organizational checklist for routine activities, materials needed, and steps to follow, to assist with organization.
- To assist with limited memory, use multiple modalities (auditory, visual, tactile) when presenting information. Also 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. Ask the student to verbally explain how he/she spells words using these rules.
- Review daily those abstract concepts which have been previously introduced (such as math skills). Introduce the new concepts only after the student has a mastery of those previously presented.

### Social/ Emotional

- Allow student to wear hat or scarf
- Provide counseling and guidance to address emotional/ social effects Reduce the emphasis on competition.
- Competitive activities may cause undue stress, then causing the student to hurry and make mistakes. The repetitive failure may cause the student to avoid situations, assignments, or responsibilities.
- Provide the student with various opportunities to achieve academic and social success, make adjustments, if necessary.

### Physical

- 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.
- 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.

In the years following a child's Leukemia diagnosis, it is important to make sure that the parent/guardian and school are communicating well. Frequent parent-teacher conferences can be helpful to assess any changes in learning the child may experience as a result of their condition and/or treatment. When parents and schools know what learning, problems may occur over time, they can better anticipate the needs of the child.

### Resources

*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*

*CancerTalk: The resource guide for teachers;*

*Cancertalk.org*

*Children Diagnosed with Cancer: Returning to School;*  
*American Cancer Society*

### School Services Department

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