

## Perspective

# Overview of Pediatric Oncology

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## 1. Introduction

Cancer in childhood is uncommon. Out of 10,000 normal children, one will develop cancer during their childhood. The initial diagnosis can be frightening and stressful for child and his/her parents. These emotions are not out of place and quite understandable but they are also compounded by lack of information as well as some misconceptions. In most cases, there is no specific reason or cause for the child to have developed cancer as it is no one's fault, so parents should not feel ashamed or guilty. The good news is that all childhood cancers are treatable and most are curable.

**The cancers can affect any part of the body:** The most common affected are bones, blood, and muscles. The familiar cancers include: blood cancers (leukemia), cancers of the lymphatic system, (lymphomas), cancer of the brain and spinal cord, muscle and bone cancers (sarcomas) and other cancers seen in the very young children (embryonic cancers). As of today, more than 80% of children with cancer get cured, depending upon the type of cancer they are suffering from. Like for some cancers acute lymphoblastic leukemia and wilms tumor, there is 90% cure rate, while that for hodgkin disease and germ cell tumors, it is almost 95%.

## 2. Description

Children are not adults; their needs are different and need to be treated by someone who is trained to look after them. Pediatric oncologists are responsible for treating all malignant conditions among children like leukemia, bone cancers, Wilms tumor, brain and spinal cord tumors among several others. With timely, appropriate and complete treatment, majority of children with cancer get cured and can lead their lives peacefully.

Information and support are important to feel sure about the treatment. The more you know about cancer, the less confused or unprepared you will feel. Regular parent support group meetings should be attended, which will be an opportunity for parents of children with cancer to meet other parents whose children are either being treated or have completed treatment.

### 2.1. Types of Childhood Cancer

While the child could still get cancers that are more common in adults, cancers that are often seen in children include:

- Leukemia
- Brain and spinal cord tumors
- Neuroblastoma
- Wilms tumor
- Lymphoma
- Rhabdomyosarcoma



- Retinoblastoma
- Bone cancer

**Primary cancer and secondary cancer:** The “primary cancer” is where the cancer started. In case some cells break away from the primary cancer site and settle in another part of the body, this cancer is then called as “secondary cancer” or metastases. The cancer cells can spread locally by entering the bloodstream or lymphatic system. However, secondary cancers are made up of same type of cells as primary cancer.

**Leukemia:** Found in the blood and bone marrow, this cancer accounts for one third of all childhood cancers. The common cancers found in children are: Acute Lymphocytic Leukemia (ALL) and Acute Myeloid Leukemia (AML). These cancers can cause fatigue, weight loss, bleeding, joint pain and high fever. As acute leukemia’s have a tendency to grow quickly, they need immediate medical intervention (chemotherapy).

**Brain and spinal cord tumors:** The second most common cancers in children are brain and central nervous system tumors that account for a quarter of all childhood cancers. They commonly occur in lower parts of brain like cerebellum or brain stem. Most common symptoms seen are dizziness, double vision, severe headaches, vomiting, and difficulty in walking or holding things.

**Lymphomas:** They start in lymph nodes and lymph tissues and can also affect bone marrow as well as other organs. The most common symptoms are swollen lymph nodes under neck and armpit, excessive weight loss, and fatigue 2 types of lymphoma that can occur both in children and adults are:

- Hodgkin lymphoma
- Non-Hodgkin lymphoma

**Wilms tumor:** This tumor accounts for 5% of childhood cancers and is commonly found in children aging 3-4 years. It usually starts in one or both kidneys, causing swelling or lump in the abdomen with symptoms like loss of appetite, nausea and fever.

**Neuroblastoma:** This cancer develops in infants and young children. Accounting for about 6% of childhood cancers, neuroblastomas can begin anywhere but starts in the abdomen, and may also cause severe bone pain and fever.

**Bone cancers:** About 3% of childhood cancers are bone cancers that occur in older children and teenagers (though they can develop at any age). Most common types of bone cancers are:

- Osteosarcoma, which occurs in the areas where the development of bone is quick *i.e.* long bones in arms or legs. The pain usually becomes severe at night or while doing activity, causing swelling around bone.
- Ewing sarcoma is most commonly found in young teenagers. It usually begins in the hip bones, ribs or shoulder blades or leg bones.

### 3. Conclusion

The initial diagnosis can be frightening and stressful for child and his/her parents. Regular parent support group meetings should be attended, which will be an opportunity for parents of children with cancer to meet other parents whose children are either being treated or have completed treatment.