



# *Childhood Cancer*

Information for parents



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## What is Cancer ?

The term cancer refers to diseases in which abnormal cells divide without control and are able to invade other tissues. Cancer cells, through the blood and lymph system, may spread to other parts of the body.

The body is composed of many types of cells. All cancers begin at cell's stage, which are the basic unit of life in the body. These cells, that keep the body healthy, grow and divide controllably. When cells become old or damaged, they die, and new cells replace them.

Sometimes this orderly process goes wrong. When a cell's genetic material (DNA) is damaged or changed, a process called mutation occurs, which affects the normal cell growth and division. Sometimes (not always) when this happens, the cells do not die, and instead lead to new cells, which the body does not need. These extra cells can form a tissue mass, which is called a tumor. However, not all tumors are cancerous, tumors can be benign or malignant.

**Benign tumors:** These tumors are not cancerous, can often be removed from the body and, in most cases, they do not come back again. Cells in benign tumors do not spread to other parts of the body.

**Malignant tumors:** These tumors are cancerous, and cells from these tumors can invade nearby tissues and can spread to other parts of the body. The process by which cancer invades and spreads to the other parts of body is called metastasis. Cancer may occur in bone marrow (known as blood cancer/leukemia) or it may involve organs like liver, eye, kidney and lymph nodes.

- It is possible to treat childhood cancer.
- After treatment it is possible to lead a normal life.
- Cancer is not a contagious disease.
- Our hospital has all facilities to treat cancer.
- Assistance from Government & Non Government organizations are available for treatment.
- Do take treatment for the girl child diagnosed with cancer.



## Various Types of Childhood Cancers

### Leukemia (Blood cancer)

This is the commonest childhood cancer. Leukemia is a cancer of Bone marrow. There are two main forms of blood cancer: Acute lymphoblastic leukemia and Acute myeloid leukemia.

- **Acute Lymphoblastic Leukemia (ALL):** This is the commonest type of childhood cancer. ALL accounts for 75% of the childhood leukemia. The affected cells reside inside the bones, and are usually lymphoid. Lymphoid cells are a part of body's immune system.
- **Acute Myelogenous Leukemia (AML):** This is also called as Acute non-lymphoblastic leukemia or acute myeloid leukemia. This is a cancer of myeloid cells within bone that enable the body to fight bacterial infections.

### Lymphomas

Lymphomas are tumors of lymph tissues which are a part of immune system of the body. Types of lymphomas are:

- **Hodgkin lymphoma:** It affects the lymph nodes present on upper surface of the body such as nodes present on neck, arm and pelvis area.
- **Non-Hodgkin lymphoma:** It affects the lymph nodes present deep inside the body. There are many types of non-Hodgkins lymphomas such as Burkitt's, anaplastic and lymphoblastic lymphoma.

### Neuroblastoma

This is a cancer of sympathetic nervous system, which typically arises from adrenal glands, present above the kidneys.

### Retinoblastoma

This is a malignant tumor of retina (membrane present at back of the eye).

### Sarcoma

Sarcomas include the cancer of soft tissues and bones.

#### Sarcoma of Bones

- ✓ **Osteosarcoma:** These are the most common type of bone cancers and are usually present at the edge of the long bones, near joints.
- ✓ **Ewings Sarcoma:** This usually occurs in the middle of the bones, such as thighs, hip bones, upper arm and ribs.

#### Soft Tissue Sarcoma

**Rhabdomyosarcoma:** Sarcoma of soft tissue arises from muscles. It generally affects head, neck, kidneys, bladder, hands and feet.

### Liver Cancers

Liver cancer emerges as unusual growth (tumor) of liver. The most common liver cancers in children are:

- ✓ **Hepatoblastoma**
- ✓ **Hepatocellular carcinoma**

### Cancers of the Kidney

- ✓ **Wilms tumor** : It is also called as Nephroblastoma.
- ✓ **Clear Cell Sarcoma**

### Cancer of Central Nervous System (CNS)

Brain Tumors- There are many types of brain tumors among which gliomas are the commonest brain tumors .

### Others

Germ cell tumors: It emerges from testis, ovaries, at the lower end of the spinal cord, brain, chest or mid abdomen.

## Common Symptoms

- Unexplained/prolonged fever without localization
- Lymph node abnormalities (in size, number, site, consistency)
- White reflex in eye, squint
- Unexplained Weight loss
- Progressive pallor
- Need for blood transfusion
- Swelling /lump in body

## Why Early Detection is Important ?

- Better results on treatment outcome
- Less intensive treatment
- Less toxicity of drugs
- Better chances of survival
- May avoid radiation & surgery
- Less cost
- Improved quality of life
- Less late effects




## Important Investigations for Cancer Diagnosis

Cancer	Important investigations for diagnosis
<b>Leukemia</b>	<ul style="list-style-type: none"> <li>➤ Hemogram</li> <li>➤ Peripheral Smear (PS)</li> <li>➤ Bone marrow (aspiration &amp; biopsy) <ul style="list-style-type: none"> <li>▪ Morphology &amp; immunohistochemistry</li> <li>▪ Flow cytometry</li> <li>▪ Cytogenetics</li> </ul> </li> </ul>
<b>Lymphomas</b>	<ul style="list-style-type: none"> <li>➤ Hodgkin's Lymphoma <ul style="list-style-type: none"> <li>▪ Biopsy</li> <li>▪ CT Scan</li> <li>▪ PET CT</li> <li>▪ Bone marrow ±</li> </ul> </li> <li>➤ Non - Hodgkin lymphoma <ul style="list-style-type: none"> <li>▪ Biopsy</li> <li>▪ CT Scan</li> <li>▪ Bone marrow</li> <li>▪ PET CT</li> </ul> </li> </ul>
<b>LCH</b>	<ul style="list-style-type: none"> <li>▪ Hemogram</li> <li>▪ Liver function test (LFT)</li> <li>▪ FNAC /Biopsy</li> <li>▪ Skeletal survey</li> <li>▪ CT Scan / Ultrasound abdomen</li> <li>▪ PET CT</li> <li>▪ Bone marrow ±</li> </ul>
<b>Retinoblastoma</b>	<ul style="list-style-type: none"> <li>▪ Ultrasound</li> <li>▪ MRI</li> <li>▪ Examination Under Anesthesia (EUA)</li> <li>▪ Biopsy (enucleation)±</li> </ul>
<b>Neuroblastoma</b>	<ul style="list-style-type: none"> <li>▪ Ultrasound</li> <li>▪ Biopsy</li> <li>▪ CT Scan</li> <li>▪ Bone Scan</li> <li>▪ MIBG</li> <li>▪ Skeletal survey</li> <li>▪ Urine VMA</li> <li>▪ Bone marrow</li> <li>▪ PET Scan</li> </ul>

<b>JMML</b>	<ul style="list-style-type: none"> <li>▪ Hemogram</li> <li>▪ Peripheral Smear (PS)</li> <li>▪ Bone Marrow aspiration</li> <li>▪ Cytogenetics</li> </ul>
<b>RMS</b>	<ul style="list-style-type: none"> <li>▪ Biopsy</li> <li>▪ CT Scan /PET CT</li> <li>▪ MRI</li> <li>▪ Bone marrow</li> </ul>
<b>PNET /Ewing's Sarcoma</b>	<ul style="list-style-type: none"> <li>▪ CT /MRI</li> <li>▪ Biopsy</li> <li>▪ Bone Marrow</li> <li>▪ PET CT</li> </ul>
<b>Wilms tumor &amp; Hepatoblastoma</b>	<ul style="list-style-type: none"> <li>▪ Ultrasound</li> <li>▪ CT Scan</li> <li>▪ Chest X-Ray</li> <li>▪ Coagulation profile</li> </ul>

## Treatment Modalities

Chemotherapy	Radiotherapy	Surgery	Others
<p>Given by oral /IV/IM/Intrathecal route</p> <p>Discuss about the side effects with your treating doctor</p>	<p>Given at different sites (neck, chest, abdomen, brain etc)</p> <p>Discuss about the side effects with your treating doctor</p>	<p>Surgery is done by Pediatric Surgeon/ Orthopedic Surgeon / Ophthalmologist when required in organ tumors.</p> 	<p>✓ BMT (Bone marrow transplant)</p> <p>✓ Targeted therapy</p>



## Common Side Effects of Cancer Treatment

The two most common types of cancer treatment: Chemotherapy and radiation, work by destroying not only the fast-growing cancer cells but also other types of fast-growing healthy cells causing adverse reactions or side effects.

**Nausea and vomiting :** To cope with this, you can

- Eat and drink slowly
- Try having small meals
- Avoid foods with strong odours
- Eating foods cold or at room temperature can help

**Change in taste & smell:**

- Serve food at room temperature
- Don't cook foods with strong odours
- Try foods or drinks that are different from ones your child usually eats
- Keep your child's mouth clean by regular rinsing and brushing, which can help foods taste better.

**Immunosuppression:** This is because the chemotherapy affects the bone marrow leading to decrease of white blood cells, red blood cells, and platelets. Patients should

- Wash their hands properly
- Avoid sick people
- Eat home cooked, well cooked meal

**Pain:** Some chemo drugs are known to cause headaches, muscle pains, stomach pains, or even temporary nerve damage, which can result in burning, numbness, or tingling in the hands and feet.

**Bowel disturbances:** To cope with, you can

- Have less milk products
- Eat fibrous/whole grain food

**Fatigue (tiredness):** May be because of the treatment or the emotional aspects of coping with cancer and cancer pain and anemia. You can

- Take several short naps
- Take short walks or do light exercise
- Ask your family or friends to help you with tasks you find difficult or tiring
- Save your energy for things you find most important
- Talk to your doctor

**INFECTION!!**

**Most important side effect of chemotherapy is secondary to low blood counts**

## Common Side Effects of Cancer Treatment

**Skin/Nail Changes:** Chemotherapy commonly causes rashes/redness/blisters/peeling and skin irritation— especially if the child has had radiation prior to the chemo ("radiation recall"). You can

- Wearing loose, soft cotton clothing to ease discomfort
- Use of creams, ointments & sunscreen may help

**Hair loss :** Occurs from chemotherapy & radiation

- Assure your child that the hair will grow back—though it might be a slightly different color or texture
- **Problems with sexual & reproductive function:** Talk to your doctor

**Mouth sores (mucositis):** It is a serious problem as it can cause pain and infections/ difficulty in eating, drinking, & swallowing. You can

- Maintain oral health
- Take good care of your mouth and keep it clean
- Visit your dentist if required
- Choose a soft bristle brush for brushing
- Mouth gargles with a solution made up of 1 quart plain water, ½ teaspoon table salt, and ½ teaspoon baking soda also helps.
- Drink plenty of fluids
- Soothing agents as ice cubes, oral gel, analgesics
- Rule out fungal/herpetic infection

**Anemia:** Generalized weakness & pallor could be anemia. You can

- Eat green leafy vegetables/lentils/red colored vegetables and fruits
- Dry fruits
- Milk products

**Thrombocytopenia:** Bleeding from any site and fresh red/brown spots on skin

- You must consult your doctor immediately

**Radiotherapy side effects :** Usually limited to the area that is being treated and depends on

- The dose of radiation given
- Location on the body
- Type (internal or external radiation)
- Tiredness, skin changes
- Bowel disturbances
- Hair loss
- Affects reproductive functions

**INFECTION!!**

**Most important side effect of chemotherapy is secondary to low blood counts**

## Things to Keep in Mind Before Starting Treatment

- ✓ You should know about the disease of your child.
- ✓ You should understand about the treatment and care of your child.
- ✓ You have to arrange funds for treatment and your stay in Delhi while treatment is going on.
- ✓ Child should be saved from infections. You doctor/nurse will tell you how to take care of that.
- ✓ Clean hands, clean water, clean & well cooked food and clean surroundings are very important.
- ✓ Once the treatment has started and you've arranged for the place to stay, it is advisable that only one family member stays with the child. Others can go back and resume their work.
- ✓ You may need to arrange blood for transfusion.

## Available Treatment Facilities

<b>Day Care Facility</b>	<ul style="list-style-type: none"> <li>➤ <b>Procedures</b></li> <li>➤ <b>Chemotherapy</b></li> <li>➤ <b>Blood Investigations</b></li> <li>➤ <b>Intravenous Infusions</b></li> <li>➤ <b>Blood Component Therapy</b></li> <li>➤ <b>You need to get admitted (short admission) for few hours in the day care for the above mentioned investigations and treatments</b></li> </ul>
<b>OPD Facility &amp; Clinics</b>	<b>Children OPD</b> Wednesday & Saturday morning 9:00am
	<b>Pediatric Oncology Clinic</b> Monday morning 9:00 am
	<b>Pediatric Cancer Survivor Clinic (PCSC)</b> Thursday afternoon 2:00pm

### Residential facilities available to cancer patients

Rajagadia  
Dharamshala  
Near AIIMS



Sai Sadan &  
Surekha Sadan  
Dharamshala  
Near AIIMS



St. Jude's  
Dharamshala  
(Noida)



Home Away Home  
Kotla  
Mubarakpur  
(Cankids)



**To Avail residential facilities, get forms  
from your  
treating doctor/social worker**

### Financial (Medical) Assistance

Government and non-government organizations provide help for cancer treatment. For more information and to avail these facilities, please do talk to your social worker and doctor.

### Government Organizations

The AIIMS Hospital Poor Fund

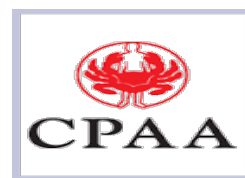
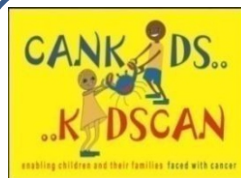
Prime Minister Relief Fund

Rashtriya Arogya Nidhi (RAN)

Rajya Arogya Nidhi (State fund)

AIIMSONIAN Poor Fund

### Non- Government Organizations



**St Jude India ChildCare Centres**

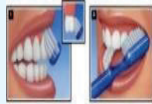




# कैंसर का उपचार ले रहे सभी बच्चों के माता-पिता हेतु निर्देश एवं परामर्श

## क. मुखीय स्वच्छता

1. बच्चे के खाने अथवा पीने के बाद हर बार 2% बीटाडीन से गरारा कराये तथा मुँह साफ करें।
2. रात को सोने से पहले बच्चे को नरम ब्रश से ब्रश कराये।
3. यदि बच्चों में मुखीय अल्सर हो रहा है तो, लोट्रेल/कैंडिड लोशन का प्रयोग करें।



## घ. कमरे की स्वच्छता

1. जिस कमरे में रोगी का उपचार हो रहा हो, उस कमरे में जूते/चप्पल न ले जाएँ, एवं जिस कमरे में बच्चा और आप रहें उस कमरे को भी साफ़ रखें।



## ड. सुरक्षित भोजन एवं पानी

1. केवल भली-भाँति पका हुआ भोजन ही खाये।
2. गली में रेहड़ी पर बेचने वालों से खाना नहीं लेना चाहिए।
3. पीने के लिए उबालकर ठण्डा किया पानी ही प्रयोग करें।



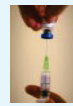
## ख. सामान्य स्वच्छता

1. प्रतिदिन बच्चे को स्नान कराये/यदि बच्चा बीमार है तो तौलिए से साफ कर दें।
2. कपड़े प्रतिदिन बदलें।
3. मास्क पहनें और बच्चे को भी पहनाएँ।
4. रोगी को किसी अन्य व्यक्ति से भेंट नहीं करानी चाहिए, उस व्यक्ति को किसी भी तरह का संक्रमण हो सकता है।
5. बच्चे के परिजन अपने आप को भी साफ़ रखें।



## च. टीका

1. उपचार अवधि के दौरान परिवार में रोगी तथा अन्य भाई-बहनों को मुखयी पोलियो टीका न दें।
2. खसरा तथा एम एम आर (MMR) टीका न लगवाये।
3. चिकित्सक से परामर्श के बाद आप चेचक तथा हेपेटाइटिस बी का टीका लगवा सकते हैं।



## ग. हाथ धोना

1. रोगी को छूने से पहले अपने हाथ साबुन तथा पानी से अच्छी तरह धोने चाहिये।
2. बच्चे को खाना खिलाने से पहले हाथ धोये।
3. शौचालय जाने के बाद साबुन से हाथ धोये।
4. यदि पानी उपलब्ध न हो तो जीवाणुहीन (STEILUM/PUREHAND) से साफ करें।



## छ. सिट्ज़ बाथ

1. बच्चे को सिट्ज़ बाथ जरूर कराये। बच्चे को गुनगुने पानी से भरे साफ़ टब में नियमित रूप से बैठाये।

- ⊙ अपने बच्चे का इलाज सही तरीके से व समय से कराये।
- ⊙ डाक्टर की सलाह पर पूरा ध्यान दें।
- ⊙ बच्चे को यदि बुखार, अधिक खाँसी, उल्टी, मुँह में छाले, साँस में तकलीफ हो, कहीं से खून बहने लगे या बच्चा सुस्त हो जाए या खाना बंद कर दे; तुरन्त अपने डाक्टर से सलाह करें।



कैंसर से पीड़ित बच्चे के इलाज में हम आपके साथ हैं

## आप घबराइये नहीं अपना मनोबल बना कर रखे आशावादी रहें

अपने डॉक्टर से बीमारी के बारे में समझो।

इलाज के खर्च का अनुमान डॉक्टर द्वारा बताया जाता है।

कैंसर के उपचार हेतु अस्पताल / सरकार से मदद मिलती है।

अस्पताल में आपके बच्चे की भर्ती एवं जांच भी मुफ्त कराई जा सकती है।

बाल रोग विभाग के सामाजिक कार्यकर्ता इस प्रक्रिया में आपकी सहायता करेंगे।

### आपके लिए लाभदायक होगा

अन्य माँ बाप / रिश्तेदार, जो बच्चे का इलाज करा रहे हैं उनसे बीमारी के बारे में बातचीत करे। कोशिश करे की एक ही रिश्तेदार बच्चे का पूरा इलाज कराये। ताकि इलाज के बारे में और जरूरी जांच के बारे में पूरी जानकारी हो।

ब्लड डोनेशन अपने डॉक्टर के दिशा निर्देश में ब्लड बैंक में  
अवश्य करे, जो की आपके बच्चे के इलाज में काम आएगा  
एवं परिजनों को भी ब्लड डोनेशन के लिए जागरूक करे।



### एम्स से मिलने वाली सुविधा

अस्पताल में आपको जेनेरिक मेडिसिन विभाग द्वारा अधिकतर दवाइयाँ मुफ्त प्राप्त होती है ।  
रेलवे किराये में रियायत भी मिलती है ।

आपके सुविधा के लिए हमने

सहायता मोबाइल नंबर - 9810590067

ईमेल - c3sambhav@gmail.com/ सहायता समूह है।

डॉक्टर की सलाह अवश्य माने ।

जी हां!! बाल कैंसर का इलाज संभव है, यदि सही समय से एवं सही तरह से किया जाए।