



## PROJECT:

"Promoting Early Diagnosis of Childhood Cancer by Training Primary and Secondary Health Care Professionals in Punjab, Pakistan."

## CARE



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**" Promoting Early Diagnosis of Childhood Cancer  
by Training Primary and Secondary Health Care professionals  
in Punjab, Pakistan."**

**CARE.**

***CHILDHOOD CANCER IS CURABLE.***

**C**

**C- Childhood Cancer Awareness by Training  
Primary and Secondary Health Care  
Professionals.**

**A**

**A- Assessment Skills of On Time Early  
Diagnosis of Cancer in Children.**

**R**

**R- Rapid Referrals to seek Medical Help.**

**E**

**E- Enhanced Capacity of Health Care  
Providers for Early Diagnosis  
and Timely Referral From  
Primary Care Level to  
Tertiary Care Level.**

# مہم برائے کینسر آگاہی: بچوں اور نوجوانوں میں کینسر کی ابتدائی علامات۔ (بچوں کا کینسر قابل علاج ہے) "سلامتی"



## م- مسلسل درد

مسلسل علامات کی صورت میں فوراً طبی مدد حاصل کریں۔ مسلسل جسم میں درد محسوس ہونا اور ہڈیوں کا آسانی سے ٹوٹ جانا۔



## س- سوجن / گٹھلی

پیٹ اور کمر، سر اور گردن، بازو اور ٹانگوں، خصبیوں اور غدود میں سوجن یا گٹھلی۔



## ت- توازن اور عصبی علامات

توازن، چلنے یا بولنے میں تبدیلیاں، پچھلی صلاحیتوں میں کمی، ایک ہفتے سے زیادہ سر درد (الٹی کے ساتھ یا بغیر)، سر کا بڑا ہونا۔



## ل- لمبے عرصے سے بخار

لمبے عرصے (دو ہفتوں سے زیادہ) تک بخار رہنا، وزن میں کمی، چوٹ کے بغیر جسم پر نیل پڑ جانا۔



## ی - یرقان کی تبدیلیاں

یرقان اور جگر میں رسولی کا ظاہر ہونا، جلد کا پیلا پڑ جانا، تھکن اور کمزوری محسوس ہونا۔



## ا - آنکھ کی تبدیلیاں

آنکھوں میں تبدیلی کا نظر آنا۔ آنکھ میں سفید دھبہ، نیا ٹیڑھا پن، بینائی کی کمی، آنکھ کا ابھرنا۔



# ASSESS

## Medical history and physical examination

Assess the presence of one or more sign or symptoms. Immediately refer to pediatric ER or nearest health facility.

RED

Assess the presence of one or more sign or symptoms. Refer to hospital with a pediatric hematology-oncology unit within **48 to 72 hours.**

YELLOW

Assess the presence of one or more sign or symptoms. Conduct tests as necessary and refer to pediatric hematology-oncology

GREEN

Extracted from PAHO HANDBOOK



## CLASSIFY BY FINDING

### IMMEDIATE CARE:

Intense headache at night.  
New onset seizures.  
Loss of strength.  
Unexplained petechiae or uncontrollable bleeding.

### PRIORITY CARE:

Painless, Hard, Enlarged lymph nodes.  
Night sweats, Fever, weight loss.  
Leukocoria.  
Persistent or recurrent vomiting.  
Changes in behavior and school performance deterioration.

### SCHEDULED CARE:

Generalized lymphadenopathy/ swelling.  
Limping or joint pain/ bone pain.  
Unexplained abdominal pain and  
Persistent constipation, Fatigue and pallor.  
Unexplained fever more than 10 days and recurrent infections.

- **Types of childhood and adolescent cancers :**

- **Acute Lymphoblastic Leukemia (ALL).**

- **Lymphomas.**

- **Ewing Sarcoma / Osteosarcoma.**

- **Nephroblastoma / Wilm's Tumor.**

- **Retinoblastoma.**

- **Brain and Spinal Cord Tumors.**

- **Liver Cancer .**

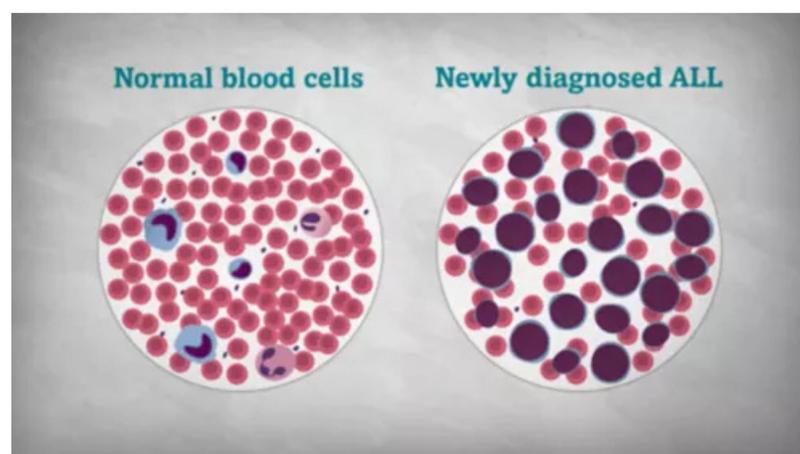
- **Germ Cell Tumors (Ovaries and Testicles)**

- **Other Tumors.**

**Acute lymphoblastic leukemia (ALL) is a cancer of the blood and bone marrow. It is the most common form of childhood cancer. ALL occurs most often in children ages 2–5. It is also found in older children and teens.**

- **Symptoms of ALL :**

- Unexplained Fever.
- Constant Fatigue.
- Pallor skin.



- Pain or fullness below the ribs (enlarged liver and/or spleen).
- Lumps in the neck, underarm, stomach, or groin.
- Easy bruising and bleeding that is hard to stop and frequent infections.
- Bone or joint pain.
- Tiny, flat, dark red skin spots (petechiae).
- Loss of appetite.
- **Diagnosis :** Blood tests (cbc) , Bone marrow test.

- **Lymphoma is a cancer of the lymphatic system.**  
**The lymphatic system is a part of the immune system**

**There are two types of lymphoma:**

**1- Hodgkin lymphoma**

**2-Non-Hodgkin lymphoma**

## **Hodgkin lymphoma Early Symptoms**

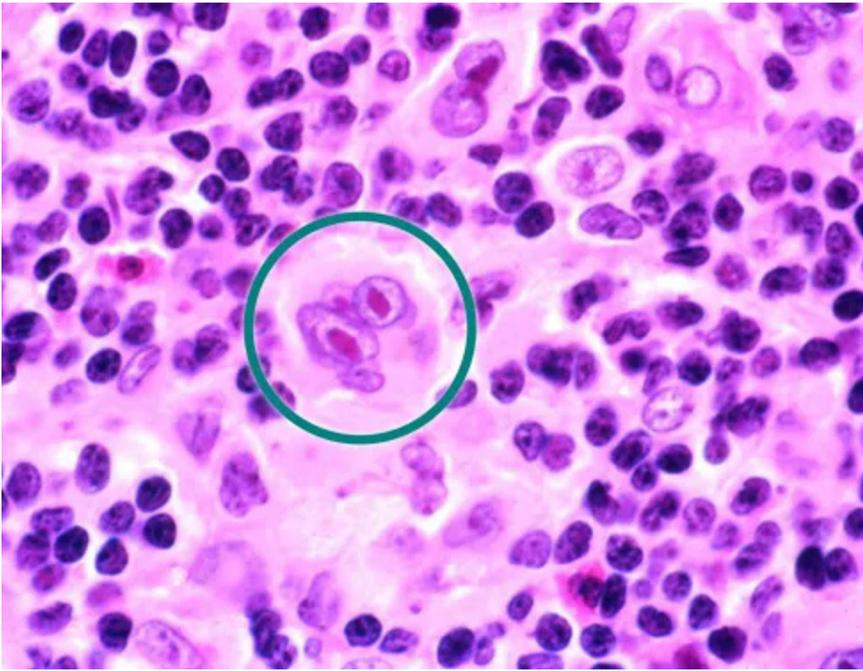
- The most common symptom is swelling in the lymph nodes (neck, chest, armpit, or groin). It is not painful.
- Drenching night sweats.
- Fevers over 100.4°F (38°C) for 3 or more days.
- Unexplained cough or shortness of breath.
- Unexplained weight loss.

## **Non-Hodgkin lymphoma Early Symptoms**

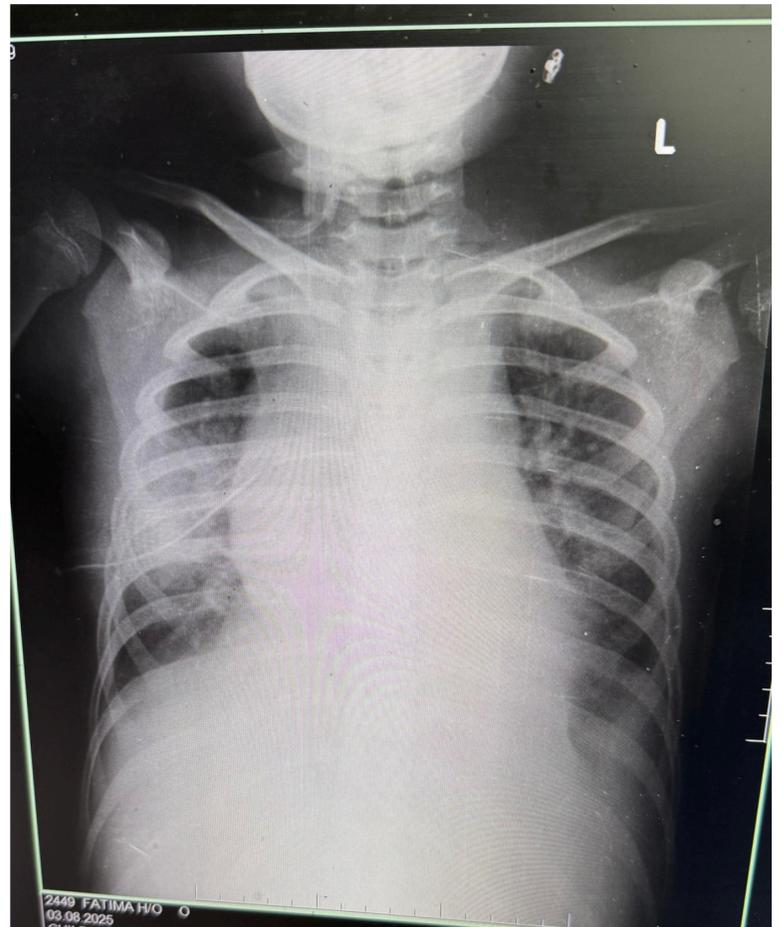
- Swollen lymph nodes in the neck, underarm, and groin
- Fever
- Night sweats
- Weight loss
- Fatigue
- Coughing, Trouble breathing
- Swelling of the abdomen
- Stomach pain
- Loss of appetite
- Nausea
- Vomiting
- Pale skin
- Bone pain
- Rash with raised red bumps.

## Hodgkin lymphoma

## Non-Hodgkin lymphoma



*Reed-Sternberg cells are distinctive because they have two nuclei, which some say have the appearance of "owl eyes." The presence of Reed-Sternberg cell classifies the lymphoma as Hodgkin lymphoma.*



*X-ray of pediatric non-Hodgkin lymphoma with evidence of disease.*

## Burkitt lymphoma:

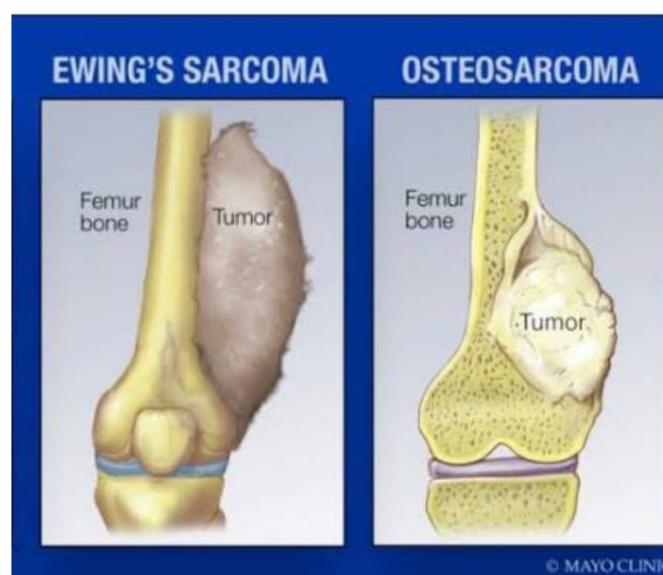
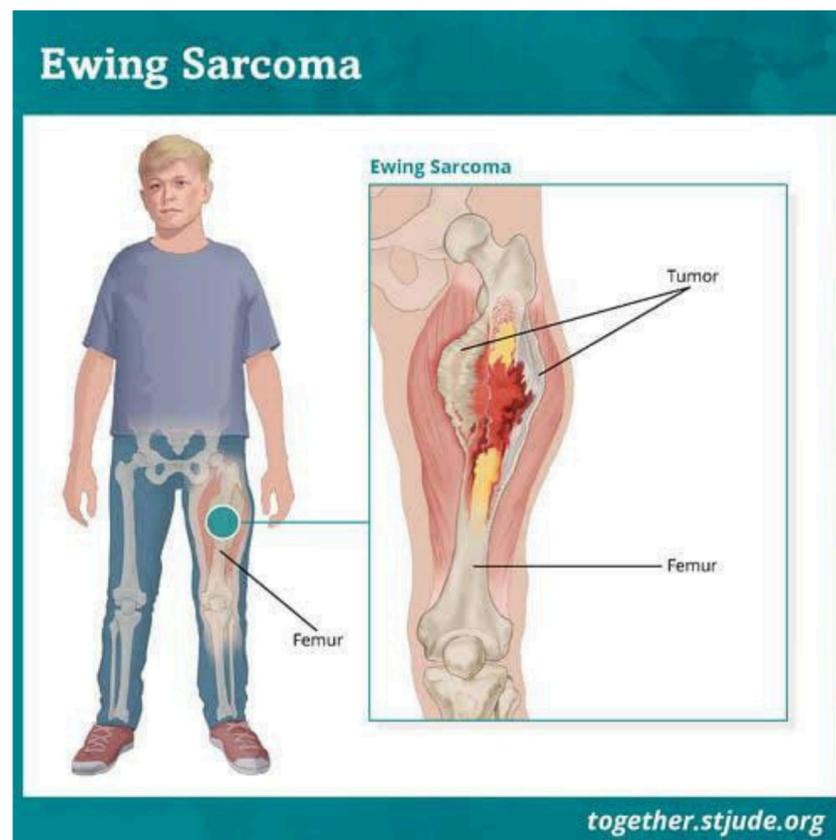
Burkitt lymphoma is an aggressive non-Hodgkin B-cell lymphoma characterized by rapid tumor growth, frequently affecting the jaw, abdomen, or central nervous system. Burkitt lymphoma is the most common type of non-Hodgkin lymphoma in children. It often grows first in the lymph tissue of the head and neck, including the tonsils, or in the abdomen. It grows rapidly, so symptoms often progress very quickly and children can become quite sick within a few days to weeks.

## Sign and Symptoms:

Rapid onset of abdominal pain and swelling, which can be severe. Other signs can include nausea, vomiting, constipation or other bowel movement changes, a poor appetite, and feeling full quickly.



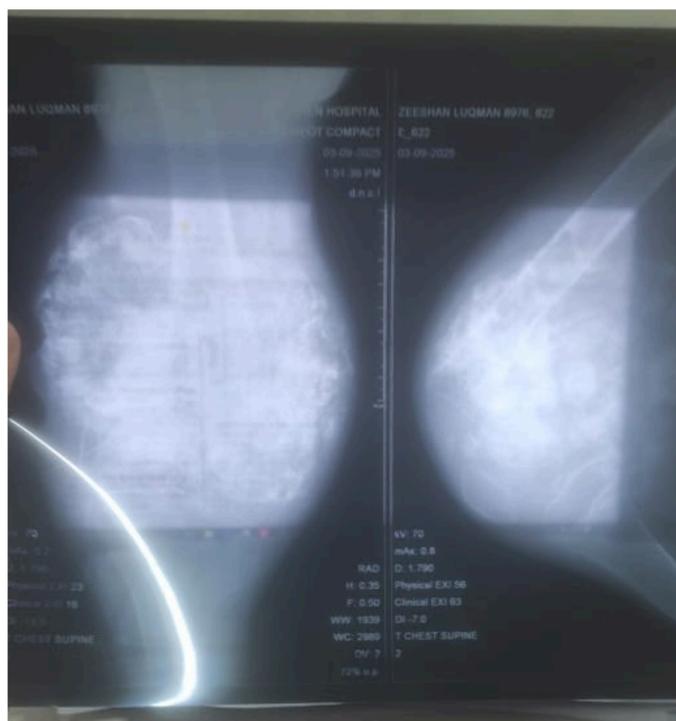
- Ewing sarcoma is a type of cancer that grows in bones or in the soft tissue around bones. It often occurs in the leg, pelvis, ribs, or arm.
- Ewing sarcoma is the second most common type of pediatric bone tumor.
- Ewing sarcoma is more common in older (more than 5 years old) children and teens.



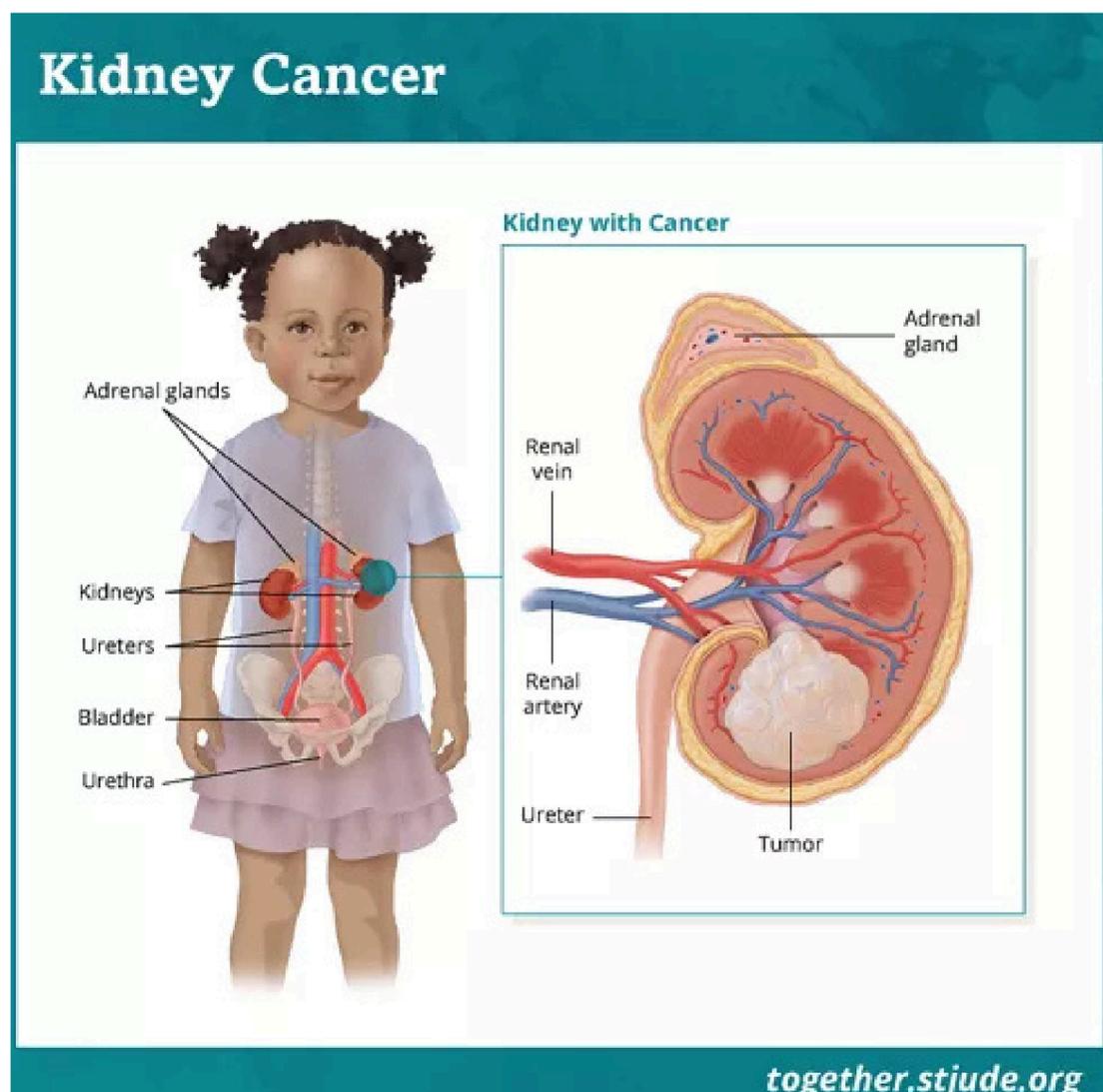
## Symptoms of Ewing sarcoma :

It depends on where the tumor is located.

- Swelling or a lump around the tumor site.
- Fever
- Bone pain.
- Limping or problems walking.
- Bone that breaks without a reason.
- Extreme fatigue.

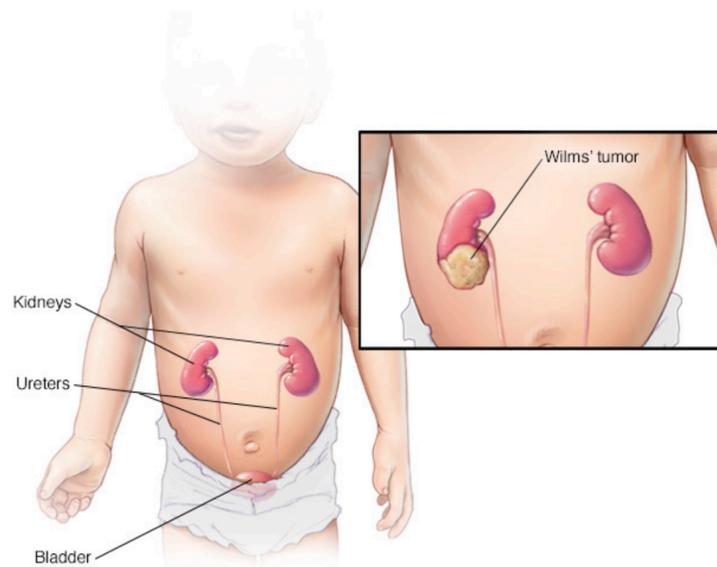


- Wilms tumor , also called nephroblastoma, is the most common type of kidney cancer in children of less than 5 years age.
- Wilms tumor may affect one or both kidneys. Children with Wilms tumor are usually diagnosed around ages 2–3 if both kidneys are affected (bilateral) , or ages 3–4 if one kidney is affected (unilateral).

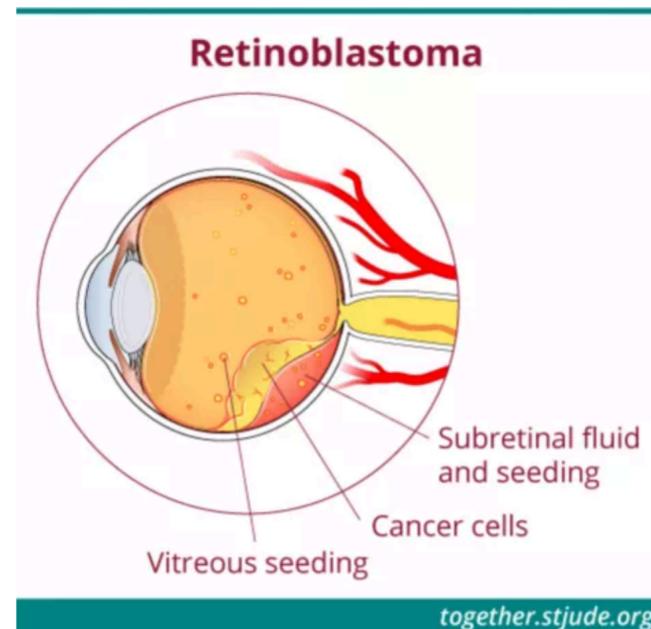
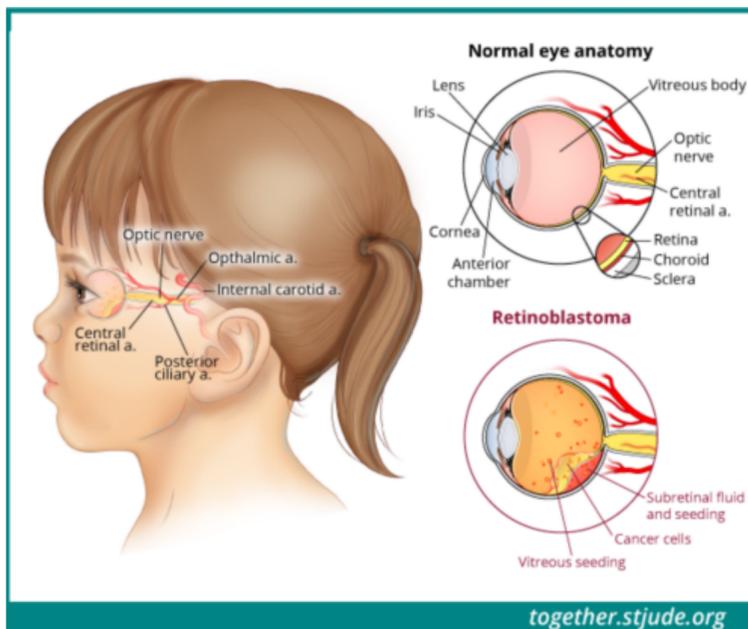


## • Symptoms Of Wilms Tumor :

- Lump or swelling in the belly.
- Blood in the urine.
- Belly pain.
- High blood pressure.
- Fever.
- Loss of appetite.
- Weight loss.
- Constipation.
- Fatigue.
- Excessive thirst.
- Vomiting.



- Retinoblastoma is a cancer of the eye. It occurs most often in young children, usually before age 3.
- Retinoblastoma forms in the retina, a thin layer of nerve tissue in the back of the eye.



## Retinoblastoma What to Look For



Wandering Eyes



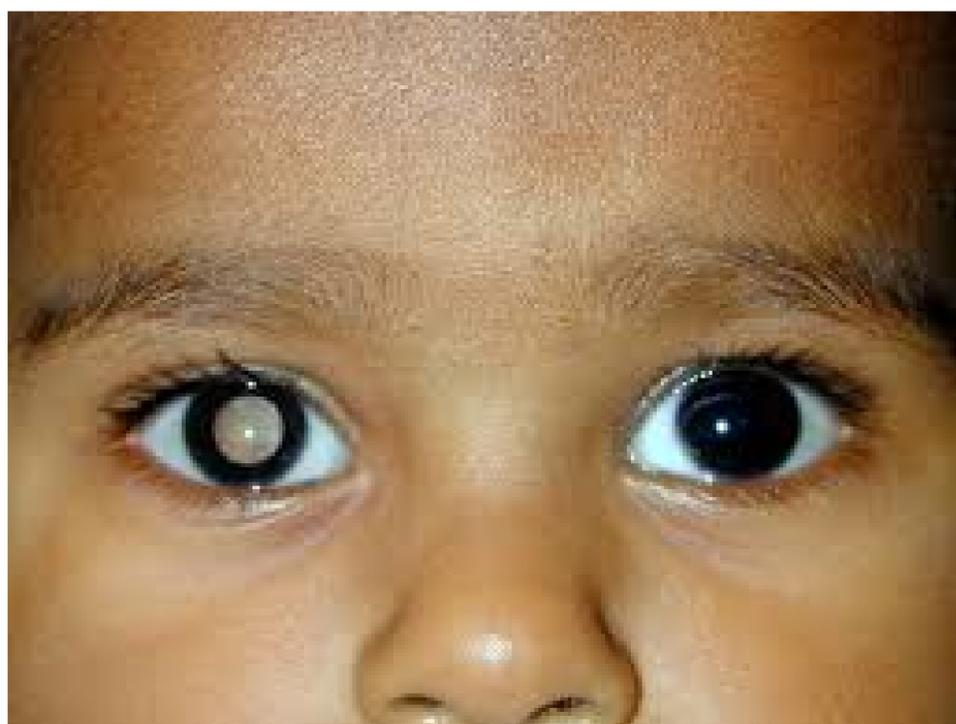
White Pupil



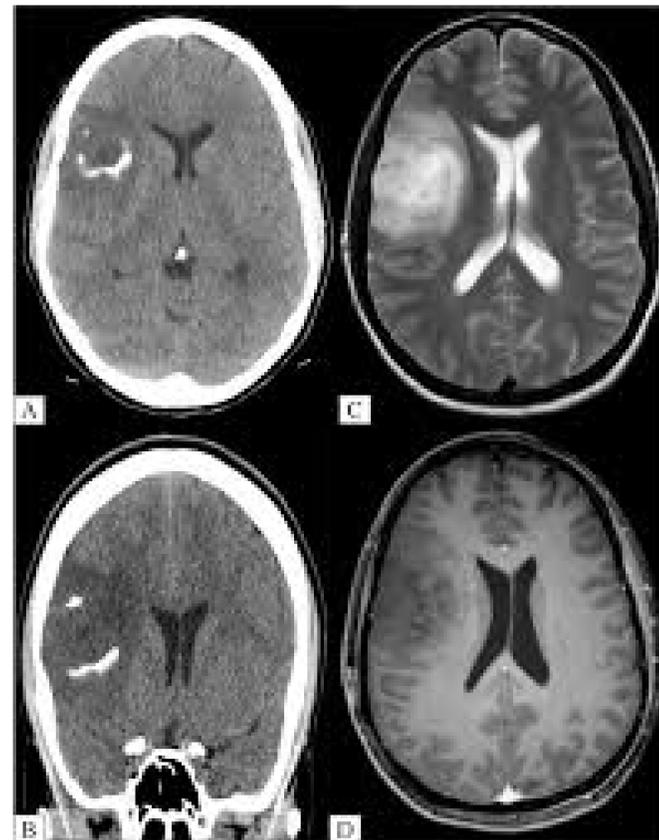
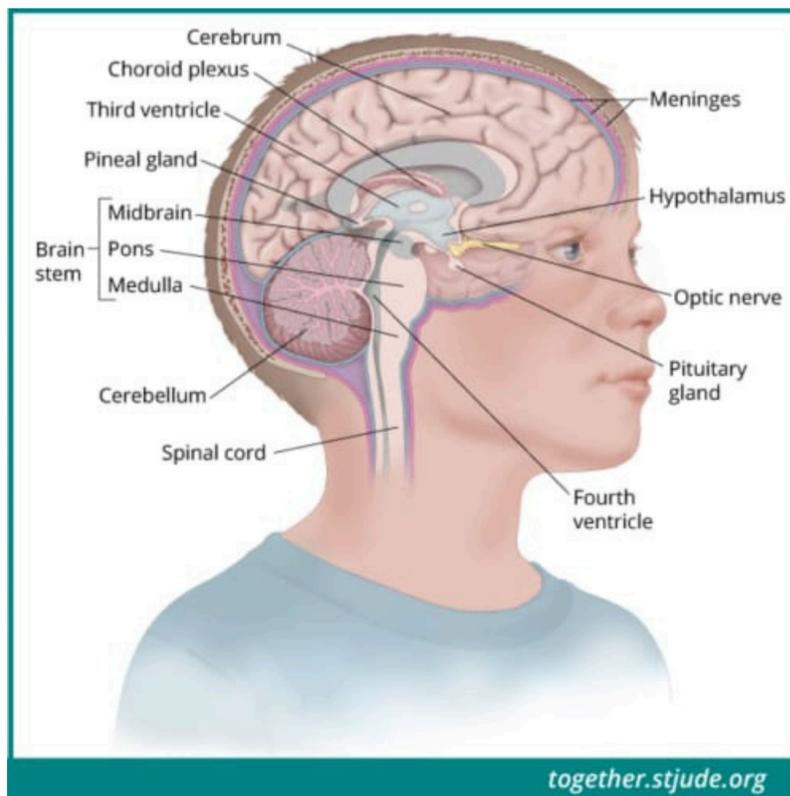
Bulging Eye

## Symptoms :

- A **white glow in the pupil**: This may be easier to see in a photo. The pupil is the black center part of the eye. In a child with retinoblastoma, a camera flash can cause a white pupil reflex (cat's eye) instead of a red reflex (red eye). This is known as leukocoria. It is the most common sign of retinoblastoma.
- A **"lazy eye"**: 1 eye may turn outward or inward when the child looks straight ahead. This is known as **strabismus**. It is the second most common sign of retinoblastoma.
- Vision problems.
- Red or irritated eyes.
- Eye pain: Added pressure may cause eye pain as the tumor grows. This may also cause nausea and vomiting.



- Brain and spinal tumors occur when abnormal cells grow in the tissues of the brain or spinal cord.
- Brain and spinal cord tumors are the 2nd most common type of cancer in children after leukemia.

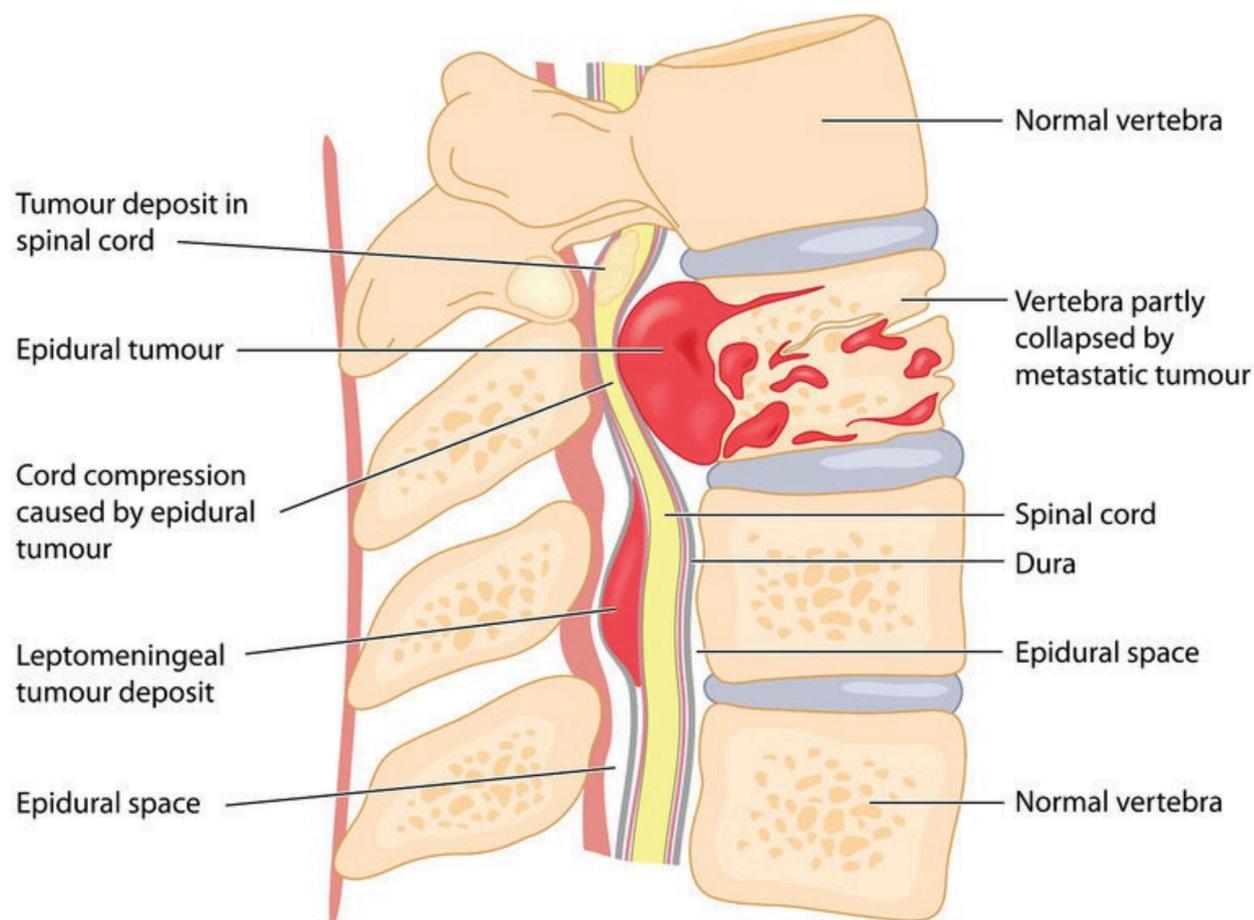


## Brain Tumor Symptoms :

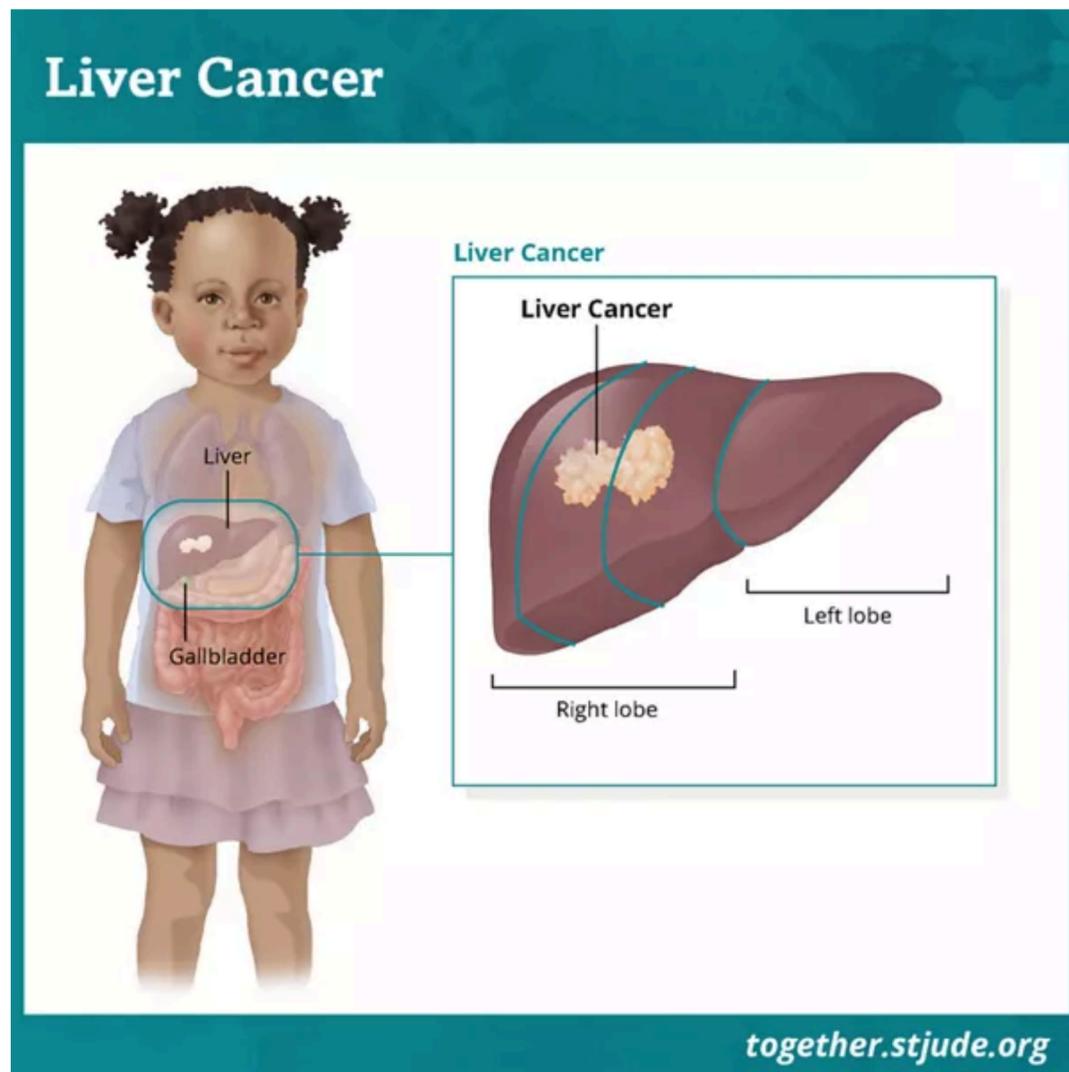
- Headaches, Nausea and vomiting especially in the morning.
- Vision problems., Crossed-eyes (strabismus or squint).
- Problems in speech or hearing.
- Loss of balance, coordination problems, or difficulty in walking.
- Weakness in the arms or legs , feeling tired or changes in activity level.
- Seizures
- Unexplained weight gain or loss., Symptoms related to endocrine problems or changes in hormones such as increased thirst or early puberty
- Personality changes.
- Numbness, tingling, or changes in feeling on one side of the body (arm or leg or both)
- Neck or back pain .
- Tilting of the head to one side.
- Increased head size in infants.

## Spinal Cord Tumor Symptoms :

- Scoliosis (curvature of the backbone).
- Neck or back pain.
- Weakness in arms or legs.
- Difficulty walking.
- Problems going to the bathroom.

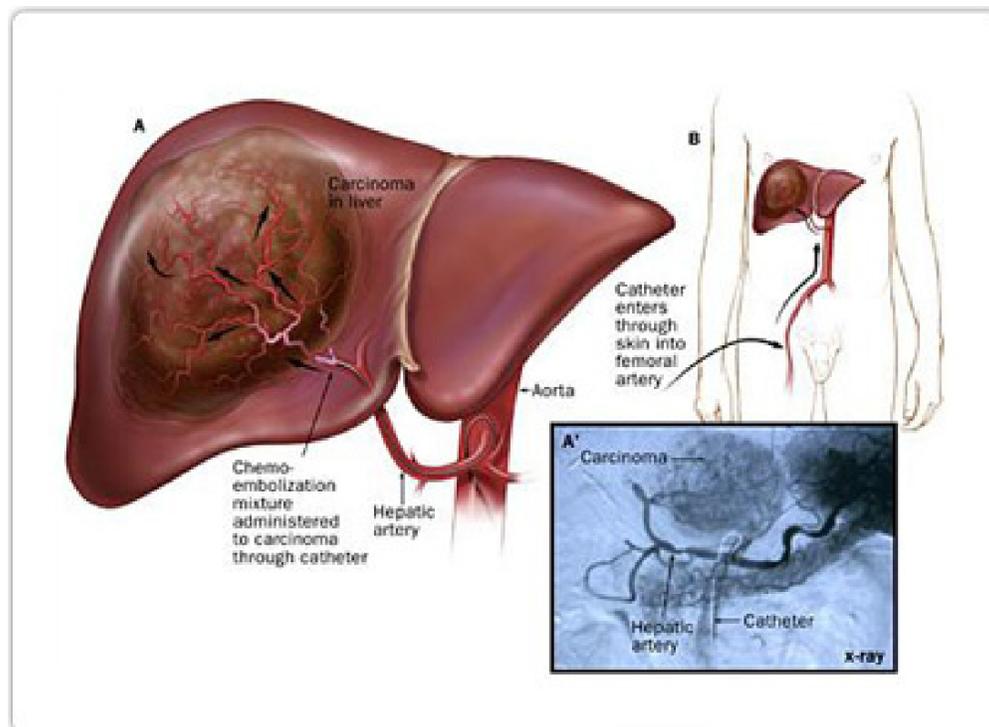


- The liver is a large organ on the top right side of the abdomen. The liver helps clear waste from the blood, makes bile to help digest food, stores energy to fuel the body.
- Liver cancer occurs when cancer cells form tumors in the tissue of the liver.
- Liver cancer is found among 1 to 5 years of age.



## Symptoms :

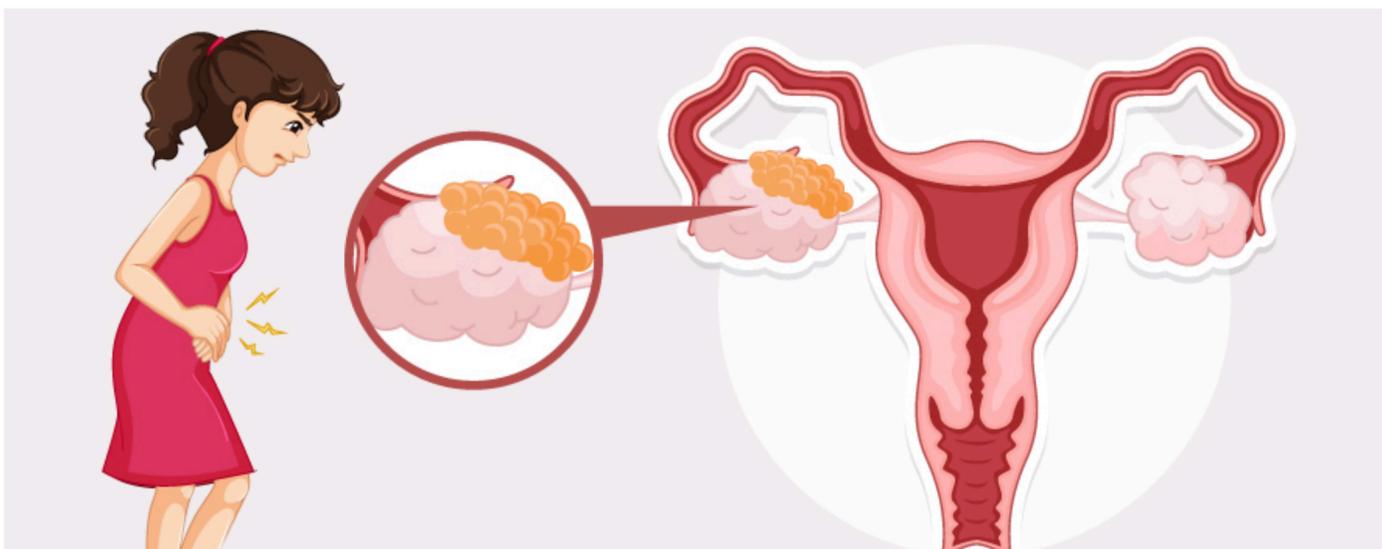
- Symptoms of liver cancer may depend on the size of the tumor and if it has spread beyond the liver.
- Lump or swelling in the abdomen (belly), often without symptoms.
- Pain in the abdomen, shoulder, or back.
- Loss of appetite, Weight loss.
- Itchy skin.
- Yellow color to the eyes and/or skin (jaundice).
- Pale skin and lips (anemia).
- Fever, Nausea and Vomiting
- Signs of early puberty due to hormones produced by the tumor.



**These are solid tumors that originate from germ cells, precursors of the gonads. Because of the embryologic migration of these cells, germ cell tumors (GCTs) can be gonadal or extragonadal. All extragonadal GCTs appear in the midline structures of the body: brain, mediastinum, retroperitoneum, or sacrococcygeal teratoma (the most common tumor in neonates). They usually occur before the age of 4 years or after the age of 15 years**

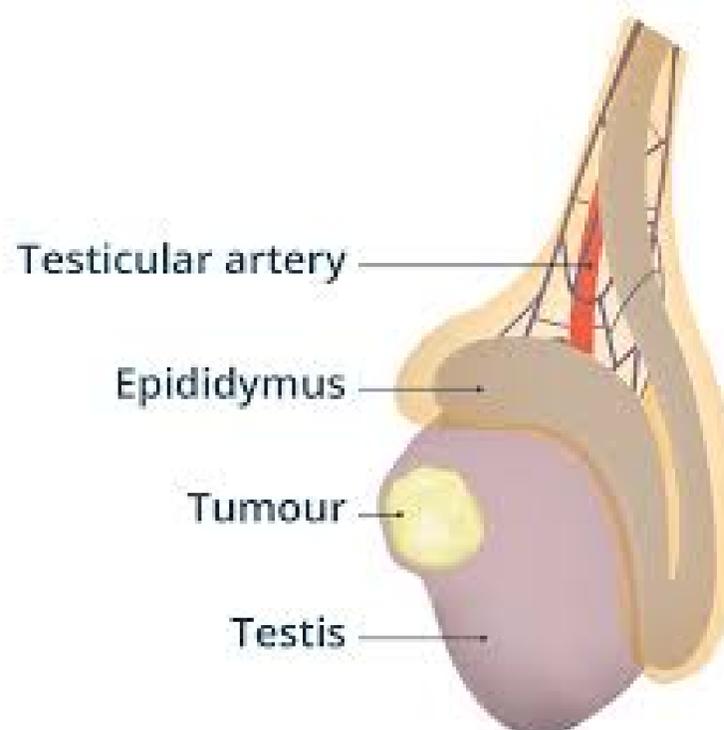
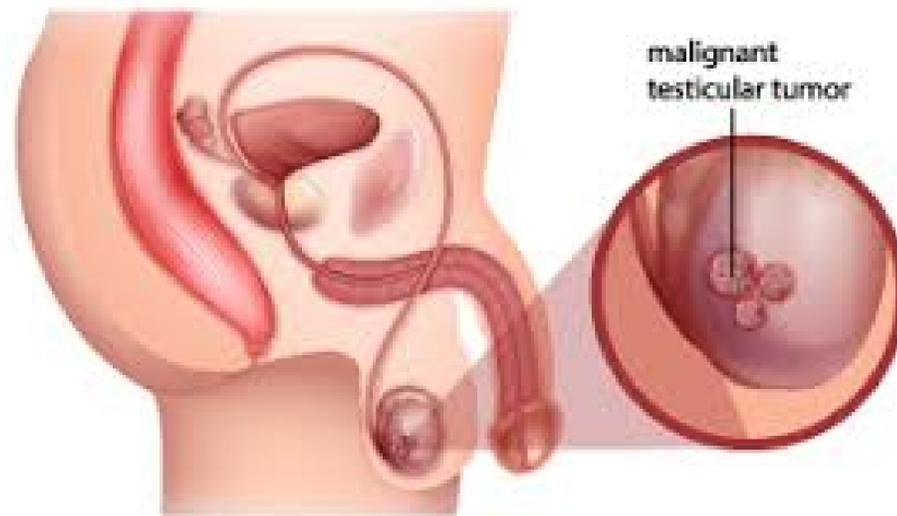
## **Ovaries:**

- Palpable abdominal mass with acute abdominal symptoms.
- anuria or oliguria (suspected ovarian torsion), or without acute abdominal symptoms.
- Unexplained abdominal pain.
- Persistent constipation.
- Bloody vaginal discharge.



## Testicles:

- Progressive testicular enlargement or presence of a hard mass, with no inflammatory signs, and with negative transillumination; not to be confused with epididymitis.
- Scrotal pain.



- **Germ Cell Tumor (Extracranial) :**

Germ cell tumors are formed by germ cells, a type of reproductive cell. They are the cells that become eggs in females or sperm in males.
- **Soft Tissue Sarcoma :**

Soft tissue sarcoma is a type of cancer that grows in the body's soft connective tissue. There are 2 main types: Rhabdomyosarcoma and non-rhabdomyosarcoma soft tissue sarcoma (NRSTS).
- **Melanoma :**

Melanoma is a type of skin cancer most often seen in adults, teens and children.
- **Thyroid Nodules and Cancer .**
- **Atypical Teratoid / Rhabdoid Tumor (AT/RT)**

