

Retinoblastoma

This material will help you understand retinoblastoma, its causes, and how it may be treated.

What is retinoblastoma?

Retinoblastoma is cancer that begins in the eye's retina. The retina is the layer in the back of the eye that acts like the film of the eye. It captures images and sends them to the brain. If retinoblastoma is not found early, there is a chance that it will spread beyond the eye to other parts of the body, especially the brain, spinal cord, and bone marrow.

Retinoblastoma usually affects children under 5 years old, but it can occur at any age.

What causes retinoblastoma?

Retinoblastoma is caused by a genetic mutation, or change, in the cells of the retina. This mutation causes the cells to grow and multiply, forming a tumor. It is usually not known what causes this mutation. It may be passed down in families. Children who inherit the disease from their parents often develop it at an earlier age and usually have it in both eyes.

If a history of retinoblastoma runs in your family, you should have all your children examined and tested as early as possible to find out if they may have or may develop this disease.

What are the symptoms of retinoblastoma?

Symptoms for retinoblastoma vary from person to person. Common symptoms include:

- Cat's eye reflex (leukocoria): Pupil appears white when light shines on the eye (such as with flash photography)
- Strabismus: Eyes appear to be looking in different directions
- Redness or swelling of the eye
- Blurred vision

Having these symptoms does not mean that your child has retinoblastoma. But if you notice anything concerning about your child's eyes, you should call your doctor right away.

How is retinoblastoma diagnosed?

If your eye doctor thinks that your child has retinoblastoma, s/he will conduct a thorough eye exam. This usually involves putting the child to sleep (under anesthesia). Tests include imaging studies of the fundus (back of the eye), fluorescein angiography, and an ultrasound of the eye. Your child may have an MRI of the brain, and his/her bone marrow and spinal fluid may also be tested.

A team of professions will aid in the management of retinoblastoma. This team consists of ophthalmologists (eye doctors), a pediatric oncologist (cancer doctor), an interventional radiologist (radiology doctor who specializes in minimally invasive procedures) and a genetic counselor. Patients with retinoblastoma will need lifelong follow-up due to the risk of the cancer spreading to other parts of the body. There is also risk of passing the cancer on to future children.

How is retinoblastoma treated?

Treatment for retinoblastoma depends on multiple factors. These factors include the size and location of the tumor, if one or both eyes are involved, and

whether or not it has spread to other parts of the eye/body. Treatment options include:

- **Chemotherapy:** the use of special drugs to kill the cancer cells. These drugs can be given through the vein (IV), by placing a special catheter into the vessel that feeds the eye, or injecting it inside the eye.
- **Surgery (Enucleation):** If the tumor has grown too much to be treated with other means, the eyeball may need to be removed.
- **Laser Therapy:** the use of laser light to destroy the blood cells. This may be used on some small tumors.
- **Cryotherapy:** the use of extreme cold to destroy cancer cells. This may be used on some small tumors.
- **Radiation Therapy:** the use of high energy beams to kill cancer cells and shrink tumors. The radiation may come from a machine outside the body (external radiation therapy). It may also be given by placing radioactive material near the tumor (internal plaque radiation therapy). External radiation therapy is not often used, due to the risk of secondary cancer.

You and your eye doctor will discuss the treatment that will be best for your child. Treatment aims to both cure the cancer and save vision.

For more information, scan these codes with your smartphone or visit the websites listed.



<http://www.kellogg.umich.edu/patientcare/conditions/retinoblastoma.html>



<http://www.geteyesmart.org/eyesmart/diseases/retinoblastoma.cfm>

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