

Eye Cancer

Information for people with cancer

This information should not be used to diagnose yourself or in place of a doctor's care.

People with cancers of the eye and cancer in the tissues around the eye are treated through Vancouver General Hospital's Eye Care Centre: ophthalmology.med.ubc.ca

Eye cancer is rare in adults and children.

Eyes are the organs of vision. They are complex and have many parts.

Image of the eye: visualsonline.cancer.gov/retrieve.cfm?imageid=7161&dpi=72&fileformat=jpg

Layers of your eyeball:

- **Sclera:** the white outer part of your eye.
- **Middle layer:** which contains the iris, the choroid and the ciliary body.
- **Retina:** the inner part of your eye.

Diagnosis and Staging

What are the signs and symptoms of eye cancer?

Sometimes there are no early symptoms for eye cancer. Eye cancers may be found during a routine eye exam.

Eye cancer symptoms can include:

- Crossed eyes, especially in a child.
- A change in your vision:
 - Seeing sparks, flashes, black spots or floaters, especially if this starts suddenly.
 - Your vision gets worse, slowly or suddenly.
 - Blurry vision.
 - Double vision.

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- Physical changes in your eye:
 - Bulging out (proptosis) of your eyeball.
 - Change of position in the eye socket.
 - A white area in the centre of the pupil that was not there before. The pupil is the black round opening in the centre of the eye.
 - Changes in the eyelid: drooping, swelling, thickening, a dark spot, a lump or elevation (part or all of the eyelid is higher than usual).
 - A sore or infection on the eyelid that does not heal.
 - Inflamed (red and swollen) eyes or glaucoma (high pressure behind the eye). This is rare.

If you have any signs or symptoms that you are worried about, please talk to your family doctor or nurse practitioner.

How is eye cancer diagnosed?

Tests that may help diagnose eye cancer include:

- **Eye exam:** full eye exam using special instruments that allow the doctor to see all parts of your eyeball.
- **CT (computed tomography) scan:** to see tumour and if cancer has spread. Very useful for orbital tumours.
- **Ultrasound, including Ophthalmic A and B ultrasound:** to see tumour and if cancer has spread. Especially useful for ocular melanomas and some orbital tumours.
- **Ocular fundus colour photography:** a special camera, called a fundus camera, takes colour images of the inside of your eye.

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- **Fluorescein angiography:** a dye is injected into your blood stream. A doctor uses a special camera to take pictures of your eye. The dye allows the doctor to see the blood vessels in your eye or in the tumour.
- **Magnetic Resonance Imaging (MRI):** to see tumour and if cancer has spread. Most useful for orbital or adnexal tumours.
- **Biopsy:** a surgeon removes a small piece of tissue and the tissue is examined under a microscope by a specialty doctor (pathologist).
- **Fine Needle Aspiration Biopsy (FNAB):** a small hollow needle is used to remove tissue from your eye.

For more information on tests used to diagnose cancer, see our Recommended Websites - Screening and Diagnosis section: bccancer.bc.ca/our-services/services/library/recommended-websites/screening-and-diagnosis-websites

What are the types of eye cancer?

Cancers of the eye have different names depending on where they start:

- **Ocular or intraocular cancer:** starts in the eyeball.
- **Orbital cancer:** starts in the orbit (eye socket). Includes cancers that start in the soft tissues, muscles or the bone around the eyeball.
- **Adnexal cancer:** starts in the adnexal parts of the eye, including the muscles, eyebrows, eyelids, conjunctiva, lacrimal gland, lacrimal sac and drainage system, nerves, fat, blood vessels and the optic nerve.

Two most common types of eye cancer:

- **Melanoma:** the most common intraocular cancer in adults.
- **Retinoblastoma:** the most common intraocular cancer in children.

There are many other types of eye cancer that are less common.

What are the stages of eye cancer?

Staging describes the cancer. Staging is based on how much cancer is in the body, where it was first diagnosed, if the cancer has spread and where it has spread to.

The stage of the cancer can help your health care team plan your treatment. It can also tell them how your cancer might respond to treatment and the chance that your cancer may come back (recur).

Below is staging for three types of intraocular melanoma, the most common type of eye cancer. If you have a less common type of eye cancer, please talk to your doctor about staging.

Staging for intraocular melanoma of the iris

- **Stage 1:** Tumour is only in the iris and is not more than 1/4 (one quarter) the size of the iris.
- **Stage 2A:** Tumour is any of the following:
 - Only in the iris and is more than 1/4 the size of the iris.
 - Only in the iris and is causing glaucoma (high blood pressure behind your eye).
 - Has grown next to, or into, the ciliary body (controls shape of eye lens) without causing glaucoma.
- **Stage 2B:** One of the following:
 - Tumour has grown next to, or into, the choroid (blood vessels that bring oxygen and nutrients to the eye) without causing glaucoma.
 - Tumour has grown next to, or into, the ciliary body, choroid or both. The tumour has also grown into the sclera (the white, outer layer of the eye).
- **Stage 3A:** One of the following:
 - The tumour has grown next to, or into, the ciliary body, choroid or both, and is causing glaucoma.

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- The tumour has grown outside of the sclera and this part of the tumour is not larger than 5 mm across.
- **Stage 3B:** Tumour has grown outside of the sclera and this part of the tumour is more than 5 mm across.
- **Stage 4:** Cancer has spread to lymph nodes nearby or the cancer has spread to other parts of the body (called distant metastasis).

Staging for intraocular melanoma of the ciliary body and choroid

These types of eye cancers are put into a size category from 1 to 4. The size category depends on how thick the tumour is and how wide it is. Category 1 tumours are the smallest and category 4 tumours are the largest.

Talk to your doctor if you want to know the size category of your tumour.

- **Stage 1:** Tumour is size category 1 and is only in the choroid (blood vessels that bring oxygen and nutrients to the eye).
- **Stage 2A:** Tumour is size category 2 and is only in the choroid, or tumour is size category 1 and one of the following:
 - Tumour has grown into the ciliary body.
 - Tumour has grown outside the eyeball and this part of the tumour is not more than 5 mm thick.
 - Tumour has grown into the ciliary body and outside of the eyeball. The part of the tumour outside of the eyeball is not more than 5 mm thick.
- **Stage 2B:** Tumour is one of the following:
 - Size category 2 and has grown into the ciliary body.
 - Size category 2 and is only in the choroid.

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- **Stage 3A:** Tumour is one of the following:
 - Size category 2 and has grown outside of the eyeball. The part of the tumour outside of the eyeball is not more than 5 mm thick.
 - Size category 2 and has grown into the ciliary body. The tumour has also grown outside of the eyeball, and this part of the tumour is not more than 5 mm thick.
 - Size category 3 and has grown into the ciliary body.
 - Size category 3. It has grown outside of the eyeball, and this part of the tumour is not more than 5 mm thick.
 - Size category 4 and only in the choroid.
- **Stage 3B:** Tumour is one of the following:
 - Size category 3 and has grown into the ciliary body. The tumour has also grown outside of the eyeball, and this part of the tumour is not more than 5 mm thick.
 - Size category 4 and has grown into the ciliary body.
 - Size category 4. It has grown outside of the eyeball, and this part of the tumour is not more than 5 mm thick.
- **Stage 3C:** Tumour is one of the following:
 - Size category 4 and has grown into the ciliary body. It has also grown outside of the eyeball, and this part of the tumour is not more than 5 mm thick.
 - Has grown outside of the eyeball, and this part of the tumour is more than 5 mm thick.
- **Stage 4:** Cancer has spread to lymph nodes nearby or the cancer has spread to other parts of the body (called distant metastasis).

For more information on staging, see our About Cancer page:

bccancer.bc.ca/health-info/types-of-cancer/about-cancer

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What are the grades of eye cancer?

The grade of the cancer describes how different the cancer cells look from normal cells and how fast the cancer cells are growing. A pathologist will give the cancer a grade after looking at the cells under a microscope.

Eye cancer is given a grade from 1 to 3 or 0 to 4, depending on the type of cancer. The lower the number, the lower the grade.

Low grade: cells are abnormal but look a lot like normal cells. Low grade cancers usually grow slowly and are less likely to spread.

High grade: cells are abnormal and do not look like normal cells. High grade cancers usually grow more quickly and are more likely to spread.

Treatment

What is the treatment for eye cancer?

Cancer treatment may be different for each person. It depends on your particular cancer. Your treatment may be different from what is listed here.

People with cancers of the eye and surrounding tissues are treated through Vancouver General Hospital's Eye Care Centre: ophthalmology.med.ubc.ca

Eye cancers are treated by people who specialize in this type of cancer. People involved in your treatment may include ophthalmologists, ocular oncologists, oculoplastic surgeons, pediatric oncologists (for childhood tumours), and possibly other surgeons.

Sometimes, small tumours are not treated. They are watched closely by your doctor to see how fast they are growing.

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Surgery

Depending your type of cancer and your health, you may have one of these surgeries:

- Surgeon removes the tumour. This is called local excision
- Laser treatment.
- Enucleation: when a surgeon removes your eyeball.

Systemic therapy

- May be used.
- For more information about systemic therapy go to:
[bccancer.bc.ca/our-services/treatments/systemic-therapy-\(chemotherapy\)](http://bccancer.bc.ca/our-services/treatments/systemic-therapy-(chemotherapy))

Radiation therapy (uses high energy x-ray to kill or shrink cancer)

- May be used.
- Brachytherapy (plaque therapy): Small pieces (plaques) of iodine 125 or radioactive gold are put on the outside of the eye (sclera). The plaques give radiation to the tumour. The plaques are taken out 1-2 weeks later.
- Proton therapy: a narrow proton beam of radiation is used to destroy the tumour. This type of treatment is done at TRIUMF at the University of British Columbia:
www.triumf.ca
- For more information about radiation therapy go to:
bccancer.bc.ca/our-services/treatments/radiation-therapy

Cryotherapy

- Extreme cold freezes and destroys the tumour.

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What is the follow-up after treatment?

- Follow-up testing and appointments are based on your type of cancer.
- After treatment, you may return to the care of your family doctor or specialist for regular follow-up. If you do not have a family doctor, please talk to your BC Cancer health care team.
- The BC Cancer Life after Cancer page has information on issues that cancer survivors may face: bccancer.bc.ca/lifeaftercancer

More Information

What causes eye cancer and who gets it?

Eye cancers can develop in people of any age.

These are some of the risk factors for this cancer. Not all of these risk factors may cause this cancer, but they may help the cancer start growing.

- Some eye cancers are hereditary.
- Having a light complexion (skin colour).
- Exposure to sun. Sunscreen and dark sunglasses are important, especially for people with pale eyes and lighter skin.

Statistics on eye cancer

- B.C. statistics: www.bccancer.bc.ca/health-info/disease-system-statistics/statistics-by-cancer-type
- Canada statistics: www.cancer.ca/en/cancer-information/cancer-type/eye/statistics/?region=bc

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Note: Available statistics do not have information about the inclusion of transgender and gender diverse participants. It is unknown how these statistics apply to transgender and gender diverse people. Patients are advised to speak with their primary care provider or specialists about their individual considerations and recommendations.

Can I help prevent eye cancer?

Protect your skin and eyes from sun damage.

Visit the BC Cancer UV/Sun Safety and Cancer Prevention page: www.bccancer.bc.ca/health-info/prevention/sun-safety

Is there screening for eye cancer?

There is no screening program for eye cancer.

Where can I find more information?

- If you have questions about eye cancer, please talk to your health care team.
- Our librarians can help you find the information you need. Visit our Library page: bccancer.bc.ca/our-services/services/library
- BC Cancer Library Recommended Eye Cancer Websites: bccancer.bc.ca/our-services/services/library/recommended-websites/types-of-cancer-websites
- Managing Your Symptoms: www.bccancer.bc.ca/health-info/coping-with-cancer/managing-symptoms-side-effects
- Emotional Support: www.bccancer.bc.ca/health-info/coping-with-cancer/emotional-support