

EYE CANCER

By Al Lens, COMT

Cancer. Can't live with it... cancer is when a cell is altered and multiplies out of control. In most cases, this results in a tumour (but not all tumours are cancerous). Some tumours grow rapidly, others are slow to progress. If the malignant cells enter the lymphatic system or blood vessels, the cancer will metastasize (spread to other parts of the body).

The eyes are not immune to falling victim to cancer. It can start in the eye, or the eye can be a secondary victim to cancer that started elsewhere in the body. In addition to the eyeball itself, cancer can develop within the bony orbit or in the skin surrounding the eye.

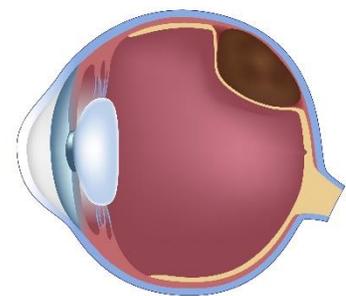
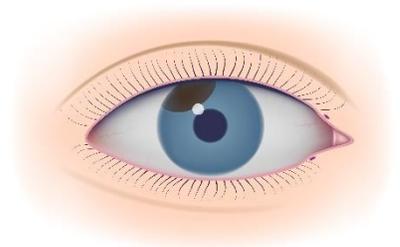
Stages of eye cancer:

- Stage 1: the tumour is less than 3 mm; it has not spread to other parts of the eye or body.
- Stage 2: the tumour is 3-5 mm and has unlikely spread to other parts of the eye or body.
- Stage 3: the tumour size is large and involves other parts of the eye.
- Stage 4: the cancer has metastasized.

The most common type of cancer within the eye is **uveal melanoma**. The uvea consists of the pigmented layers of the eye: iris, ciliary body, and the choroid. The iris is the part of the eye that gives us that glorious colour of the eye. The ciliary body is located behind the iris and is responsible for accommodation (changing the focus of the eye) and producing aqueous humor (fluid to provide nutrients to parts of the eye with no blood vessels). The choroid is the pigmented layer between the retina and the sclera (white of the eye) and provides the blood supply for the retina.

In some cases, uveal melanoma does not offer any symptoms and is found during a routine eye exam. Symptoms will vary according to where the melanoma is located. If it is in the choroid, the symptoms are similar to a retinal detachment – flashing lights, floaters, and/or a dark area in the visual field. If

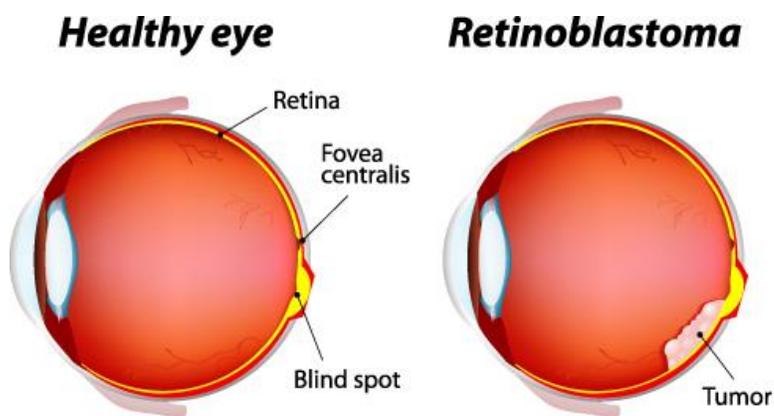
the melanoma is in the iris, it will appear as a dark spot (easier to see in light coloured eyes than dark brown eyes) and/or a change in pupil shape. A melanoma in the ciliary body typically does not cause symptoms, but could cause increased eye pressure.



Uveal Melanoma

Uveal melanoma may be treated with laser, radiation, or traditional surgery to remove the lesion or the eye. The prognosis is not great for people with uveal melanoma if the tumour goes undetected for too long (unless it is in the iris – they are usually slow growing and do not tend to spread elsewhere in the body). If the cancer metastasizes, life expectancy can be a matter of months. As with most cancer, early detection is the key to survival.

Retinoblastoma is a cancer that occurs in children. As the name implies, it occurs in the retina. It usually occurs by the age of 5 years, with most cases presenting before the age of 2 years. Some retinoblastoma has a hereditary factor, so children with a family history of retinoblastoma should have regular eye exams, even when no symptoms are present. Children with inherited retinoblastoma are more likely to have a recurrence of tumours, or cancer developing elsewhere. The inherited form of retinoblastoma also tends to appear earlier in life and is more likely to be in both eyes than the non-inherited form.



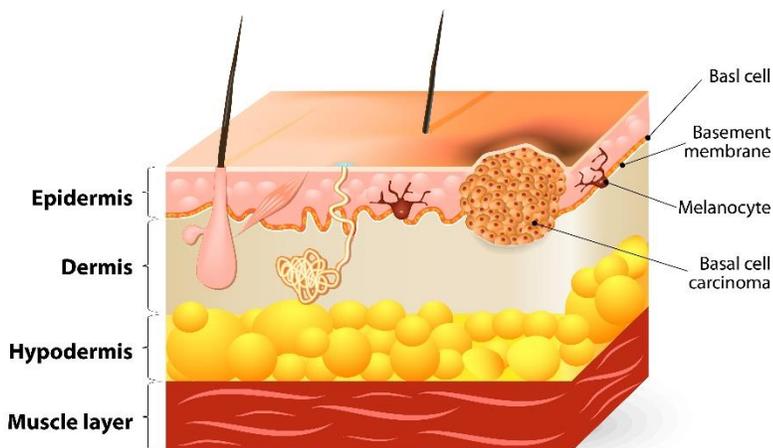
A common way for the tumour to be detected is when a flash photograph is taken of the child and one (or both) eye(s) do not get the traditional red-eye (unfortunately, modern cameras often correct for the red-eye automatically and this sign will go undetected). **Leukocoria** (white pupil) is another way that the tumour is brought to the attention of the casual onlooker.



Leukocoria

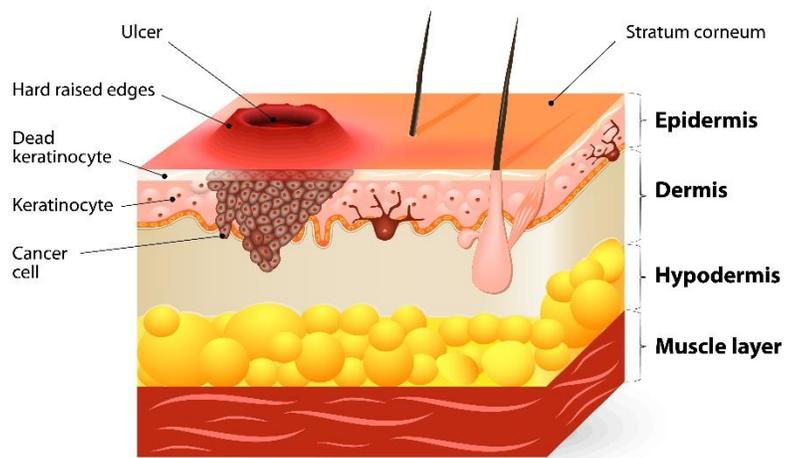
Testing for retinoblastoma includes ophthalmoscopy, ultrasound, MRI, and gene testing. Those with hereditary retinoblastoma are at greater risk of having a simultaneous brain tumour. Treatment of retinoblastoma can consist of radiation, cryotherapy (cold), thermotherapy (heat), chemotherapy, or enucleation (removal of the eye).

BASAL-CELL CARCINOMA



Cancer that affects the eyelids is usually basal cell or squamous cell carcinoma. **Basal cell carcinoma** is the most common form of cancer involving the eyelid, and usually affects the lower lid. While **squamous cell carcinoma** is less common, it is more aggressive than the basal cell type. Treatment for either type of cancer includes surgical removal of the tumour and possibly radiation therapy.

Squamous-cell carcinoma



While it is possible for cancer that starts in/around the eye can spread to other parts of the body, the reverse is also true. The most common cancers that start elsewhere in the body and spread to the eye are breast, prostate, and lung cancer. Unfortunately, these are also among the cancers that cause the most deaths.

Some lifestyle changes are encouraged for people who are recovering from eye cancer: eat well, reduce stress, do not smoke or drink. Exercise has also been shown to help in recovery. In addition to regular medical check-ups, patients may benefit from emotional counselling, nutritional planning, and physical therapy.

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ABOUT AL LENS



Al Lens is a Certified Ophthalmic Medical Technologist (COMT) who began his ophthalmic career in 1986. Al presents/instructs at numerous education events across North America, including conventions for Opticians, Optometric Assistants, Optometrists and Ophthalmic Medical Personnel. Al was also a keynote speaker at King Khaled Eye Specialist Hospital in Saudi Arabia.

Al Lens is an author/co-author of published optical books (SLACK, Inc.), including LASIK for Technicians, Optics, Retinoscopy and Refractometry (1st and 2nd editions), Ocular Anatomy & Physiology (1st and 2nd editions), and Cataracts and Glaucoma. Al is currently employed at three (3) ophthalmology clinics (general practice and Laser refractive surgery) and has developed training programs for large ophthalmology practices.

