

# Ocular oncologist on the importance of regular eye exams

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Ocular (eye) oncologist Renelle Lim, MD, recommends annual eye exams with an ophthalmologist. Credit: Robert A. Lisak

As an an ocular oncologist treating cancers of the eye, Renelle Lim, MD, sometimes fields questions about how to keep eyes safe from the sun. Doing so is important, but eye cancer is not the same as skin cancer, and any link between sunlight and eye melanoma has not been proven, says Dr. Lim, who is the only full-time ocular (eye) oncologist in Connecticut

affiliated with a major academic center.

Before joining Yale Medicine Ophthalmology, Dr. Lim trained at Will's Eye Hospital in Philadelphia, specializing in ocular oncology and plastic surgery for the eye. At Yale, she often works with other specialists, including otolaryngologists and neurosurgeons, to surgically remove tumors precisely, in order to protect nearby delicate structures that could affect a patient's sight.

Eye cancer is rare, with the American Cancer Society predicting 3,500 new diagnoses in 2018. It can develop at any age, although risk increases as people get older. Many eye cancers are highly treatable when caught early. The problem is that there are often no symptoms, so people with [eye cancer](#) often don't have any idea something is wrong. For that reason, Dr. Lim says that the best thing anyone can do to detect eye cancer early is to have a dilated [eye exam](#) once a year with an ophthalmologist.

Dr. Lim answered our questions about eye cancer, and its diagnosis and treatment.

## **Eye cancer is so rare. Are people surprised to learn they have it?**

Yes, it can be surprising because many types of eye cancer may be asymptomatic. Sometimes, there may be flashes of light, blurry vision or a shower of black floaters. Sometimes, it can be painful. But if the cancer is small and in a location that's not near the vital structures of the eye, there may be no symptoms at all.

## **What types of eye cancer are there?**

Well, cancer can exist near the eye, on the surface of the eye or inside it. Cancers of the eyelid are actually skin cancers that are close to the eye. So, you can get a basal cell carcinoma on your arm or your back, or you can get one on the eyelid. Cancers can also occur behind the eyeball, or orbit. These cancers can spread from other parts of the body.

Cancers that exist inside the eye are different than skin cancer. Uveal (or eye) melanoma is the most common primary tumor in the eye. It occurs in the uvea or middle layer of the eyeball, and it can happen when a genetic mutation develops in pigmented cells of the eye. It's unclear why it develops, though there are genetic predisposition syndromes that may be responsible for it.

People often don't realize that cancers can spread from other parts of the body, like the lung or the breast, and affect the eye. In fact, the most common cancer of the eye isn't primary—it's a metastasis, or cancer that started in another part of the body and has spread to the eye. Ophthalmologists will look for this if there is a history of cancer elsewhere in the body, and new eye symptoms like loss of vision or flashing lights occur.

## **Who is most at risk for these cancers?**

Eye melanoma can affect anyone, but it tends to occur more in people with lighter hair and eye color. Some studies suggest that welders have a slightly increased risk of uveal melanoma, which some think is due to ultraviolet radiation from welding tools or other environmental causes. There is no strong scientific evidence to support the claim that sun exposure is linked to uveal melanoma. Beyond that, we really don't know what causes the mutations that lead to eye cancers.

## **When you suspect eye cancer, how do you diagnose it?**

I perform a complete eye exam using a slit lamp and an indirect ophthalmoscope. This gives me a full picture of what's occurring inside the eye. It's enough to identify a mass, which can be dome-shaped or have a mushroom configuration; it can also be elevated or small and flat. I use multiple imaging modalities to get as much information about the tumor qualities as possible. I use an ultrasound to determine the density of the mass and to look at its features and precisely measure the thickness. I also use optical coherence tomography to shed light on the retinal layers and assess the presence of subtle fluid, a sign of tumor activity. I even use magnetic resonance imaging when needed.

Sometimes, I will do a fine needle biopsy to take a small sample of the tumor cells, which I then provide to a cytopathologist (a pathologist who analyzes cells). He or she will let me know if it is aggressive and can confirm the diagnosis within a few days.

## **How do you calm people's fears of biopsies and other eye procedures?**

I know people are scared of having something performed on their eye. But it sounds much worse than it is. It's important to make the patients feel comfortable about the procedure by answering all their questions and letting them know exactly what to expect. As it turns out, patients actually tolerate eye surgery very well.

## **How do you treat eye cancer?**

Tumors on the surface of the eye can be managed by topical chemotherapy, targeted therapy, radiation or surgical excision. Tumors inside the eye are managed differently. The typical treatment is radiation in the form of brachytherapy. It's most commonly used for uveal melanoma, but it can be used for other eye cancers, too. The procedure

uses a plaque made out of gold (about the size of a quarter) with radioactive seeds on the surface. Radiation oncologists and physicists configure the seeds based on the location and size of the tumor. Once the plaque is custom-designed for the patient, I surgically apply the plaque onto the surface of the eye, where it emits radiation directly over the tumor.

The eye is patched, and then the patient can go home. Once adequate radiation is applied (based on the tumor thickness), I will surgically remove the plaque. We try to give the smallest amount of radiation dosing so that we can protect vital structures, like the optic nerve, which transmits visual information from the retina to the brain. The goal is to maximally treat the tumor but keep other areas in the eye safe.

## **How well does this work in saving a person's vision?**

Our success depends on the type of eye cancer and its stage of development. There is a 95 to 98 percent success rate in achieving local control of the tumor. To ensure that the plaque is placed in the ideal location, I use transillumination, where I shine a bright light into the eye, so that the tumor will cast a shadow. The tumor shadow is outlined and the radioactive device is placed directly over the [tumor](#).

Ophthalmoscopy or direct visualization is used to double check that the margins are accurate.

## **Cancer treatments are evolving rapidly. Is that changing your role?**

I work with medical oncologists daily to help patients who are being treated with immunotherapy for other types of cancer. These powerful agents that stimulate the immune response in the body have really changed the treatment paradigm for skin and other types of cancer,

including some patients with uveal melanoma. But these treatments can have ophthalmic side effects that affect any part of the eye. Sometimes, the side effects are mild dry eye. Other times, however, the side effects can be severe and lead to vision loss with corneal thinning and other forms of ocular inflammation. Luckily, these side effects are rare and treatable when detected early.

## **What can you do if you're concerned about eye cancer?**

We recommend annual eye exams with an ophthalmologist, especially if there is a family history of [skin cancer](#).

## **Is there anything you can do to prevent it?**

I recommend using sunglasses and sunscreen. The sun isn't directly linked to uveal melanoma, but we know UV exposure can affect eye structures and predisposition patients to cataracts and eyelid cancers. In general, maintaining a good immune system helps prevent [cancer](#)—so, don't smoke, eat right, exercise, and take care of yourself!

Provided by Yale University

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