Eye Cancer - Diagnosis [1]

This section has been reviewed and approved by the Cancer.Net Editorial Board [2], 08/2015

ON THIS PAGE: You will find a list of the common tests, procedures, and scans that doctors can use to find out what?s wrong and identify the cause of the problem. To see other pages, use the menu on the side of your screen.

Doctors use many tests to diagnose cancer and find out if it has spread to another part of the body, called metastasis. Some tests may also determine which treatments may be the most effective. For most types of cancer, a biopsy is the only way to make a definitive diagnosis of cancer. However, for eye melanoma, a diagnosis can often be made without a biopsy. Imaging tests may be used to find out whether the cancer has spread.

The doctor may also suggest other tests that will help make a diagnosis. Not all tests listed will be used for every person. Your doctor may consider these factors when choosing a diagnostic test:

- Age and medical condition
- Type of cancer suspected
- Signs and symptoms
- Previous test results

In addition to a physical examination, the following tests may be used to diagnose eye cancer:

- **Eye examination.** Most cases of melanoma are found during a regular eye examination. The doctor will examine the eye with a lighted instrument called an ophthalmoscope and a slit lamp, which is a microscope with a light attached to it.
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Ultrasound [3]**.** An ultrasound uses sound waves to create a picture of the eye.

- **Fluorescein angiography.** This procedure takes a picture of the blood vessels in the eye. A fluorescent dye called fluorescein is injected into the patient?s arm. The dye moves through the body and into the blood vessels in the back of the eye. The doctor then takes several, quick pictures of the eye. Fluorescein angiography may be used to rule out eye problems other than cancer. Indocyanine green angiography is a similar test that uses a different dye, called indocyanine green.

- **Fine needle biopsy.** This procedure removes tumor cells from the eye with a needle. This allows the doctor to look at the cells under a microscope. Because doctors can correctly diagnose more than 95% of intraocular melanoma without a biopsy, this procedure is not needed for most people. Furthermore, patients who receive radiation treatment (see the Treatment Options [4] section) will not be able to have a biopsy in the future.

- **Cytogenetics and gene expression profiling.** Your doctor may recommend this type of test to help gather more information about your prognosis (chance of recovery) and treatment options. Cytogenetics or gene expression profiling tests are done using a tissue sample removed during either a biopsy [5] or surgery. Or, in some situations, on an older tissue sample that was previously removed and preserved.

  Sometimes eye tumors are categorized by ?class 1? or ?class 2? tumors. Depending on the chromosomes in the genes, this can help determine the risk of the cancer spreading.

  Cytogenetics is the analysis of a cell?s chromosomes (strands of DNA), including the number, size, shape, and arrangement of the chromosomes. Gene expression profiling is a test that identifies specific genes, proteins, and other factors unique to the tumor. Results of these tests may affect your treatment options. Talk with your doctor about the risks and benefits of having one of these tests and what the results could mean for your care. Additional information about these tests can be found in the Stages and Grades [6] section.

- **Tests for metastases and risk of metastases.** A tumor that starts in the eye can spread through the blood to other parts of the body, most commonly the liver. The doctor may see if the tumor has spread to the liver by testing the levels of liver enzymes in the person?s blood or through a computed tomography (CT or CAT) [7] scan or an ultrasound of the liver.

- **Computed tomography (CT or CAT) scan** [7]**.** A CT scan creates a three-dimensional picture of the inside of the body with an x-ray machine. A computer then combines these images into a detailed, cross-sectional view that shows any abnormalities or tumors. A CT scan can also be used to measure the tumor?s size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient?s vein or given as a pill to swallow.

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Magnetic resonance imaging (MRI) [8]**.** Another test used for metastasis is the magnetic resonance imaging (MRI)**.** An MRI uses magnetic fields, not x-rays, to produce detailed images of the body. MRI can also be used to measure the tumor?s size. A special dye called a contrast medium is given before the scan to create a clearer picture. This dye can be injected into a patient?s vein or given as a pill to swallow.

- **Positron emission tomography (PET) scan** [9]**.** The doctor may also order a positron emission tomography (PET) scan. A PET scan is a way to create pictures of organs and tissues inside the body. A small amount of a radioactive sugar substance is injected into a patient?s body. This sugar substance is taken up by cells that use the most energy. Because cancer tends to use energy actively, it absorbs more of the radioactive substance. A scanner then detects this substance to produce images of the inside of the body. The doctor may also recommend a chest x-ray to check if the cancer has spread to the lung

After diagnostic tests are done, your doctor will review all of the results with you. If the diagnosis is cancer, these results also help the doctor describe the cancer. This is called staging.

The next section in this guide is Stages and Grades [6]*, and it explains the system doctors use to describe the extent of the disease. Or, use the menu on the side of your screen to choose another section to continue reading this guide.*

Links:
[1] http://www.cancer.net/cancer-types/eye-cancer/diagnosis
[2] http://www.cancer.net/about-us
[3] http://www.cancer.net/node/24714
[4] http://www.cancer.net/node/18818
[5] http://www.cancer.net/node/24406
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