

## **Age-Related Macular Degeneration**

### **What is age-related macular degeneration?**

Age-related macular degeneration (AMD) is a disease that damages the macula in the eye. The macula is in the center of the retina. The retina is the lining at the back of the eye that senses light coming into the eye. The macula allows you to see fine details in the center of your field of vision. AMD can make it hard to read, drive, or recognize faces.

There are two forms of AMD:

- The dry form of AMD causes a slow breakdown of light-sensitive cells in the retina, and may not greatly affect the vision.
- The wet form happens when abnormal blood vessels grow under the retina. These vessels leak blood and fluid and cause scarring. Vision loss from this damage can happen quickly.

AMD is a common problem for many people as they get older. AMD is the leading cause of severe vision loss in people over 50 in the United States. It usually affects both eyes, but one eye may be affected before the other.

Loss of vision caused by AMD is permanent. This is why AMD needs to be diagnosed and treated early to stop further damage to the optic nerve.

### **What is the cause?**

The cause of AMD is not known. Smoking may contribute to the problem. You may also be at greater risk if you are obese, have high blood pressure, have high cholesterol, or have family members with AMD. Vision loss from AMD is more common in white people.

### **What are the symptoms?**

AMD does not cause pain. Most people with AMD in an early to intermediate stage do not have any symptoms and have normal vision. Only people with advanced AMD, wet AMD, or a very severe form of dry AMD have symptoms. These symptoms may include:

- blurred vision
- wavy appearance of straight lines (for example, a telephone pole may appear to be bent)
- a dark patch in the middle of words as you read
- a worsening of color vision

If just one eye is affected, you may not notice the loss of vision when you are using both eyes. Your side (peripheral) vision is not affected by AMD.

### **How is it diagnosed?**

Your eye care provider can diagnose this disease by dilating your pupils and examining your retina. This is usually done as part of a complete eye exam.

You may have a test called fluorescein angiography. In this test a dye is injected into a vein in your arm. The dye travels through the blood vessels in your retina and can be seen with photographs. The pictures can show where the leaking blood vessels are and help determine the best treatment.

You may also have a special test called optical coherence tomography. This test forms images by reflecting light to measure the thickness of the retina. It helps your eye care provider decide if treatment is needed.

## How is it treated?

AMD in its early stage does not need treatment. A healthy lifestyle may improve the chances of keeping good vision. If you are at high risk for AMD, your healthcare provider may suggest nutritional supplements that may help decrease your chance of vision loss.

There is currently no treatment to reverse vision loss from dry AMD, but a certain combination of vitamins and minerals can slow the progress of dry AMD in some cases.

Wet AMD can be treated with medicine or laser surgery.

- Medicines that block the growth of blood vessels or that shrink the abnormal blood vessels are available. The medicines are injected into the eyeball. The shots need to be repeated every 4 to 6 weeks. The injections can maintain vision in most patients and improve vision in many patients.
- Sometimes injections are not effective or do not last long enough. If the abnormal blood vessels under the retina are not under the very center of the macula, laser treatment can be done. For this treatment, a laser is used to seal the blood vessels. This helps decrease the chance of further vision loss.
- - The **hot laser treatment** seals the abnormal leaking blood vessels in the retina and discourages their growth. However, it can also destroy the nearby tissue as well as blood vessels. This can cause a small blind spot in your vision, which most people learn to ignore.
  - The **cold laser** may be able to destroy the new, leaky vessels without hurting the nearby normal tissue. If your blood vessels are growing near or under the center of your macula, you may have cold laser treatment.
  - **Intravitreal Injection** of medications

## How can I take care of myself?

If you have advanced AMD, low vision aids may help you with your daily activities. Low vision aids include:

- magnifying glasses and telescopes
- CCTV systems that use video cameras and large TV screens to enlarge reading material, medicine bottles, or pictures
- clocks and phones with large numbers and reading material printed in large type

Ask your healthcare provider for help in finding vision aids that will help you.

Your provider may give you a chart, called an Amsler grid, which you can use at home to test your eyes for a change in central vision. Never ignore blurred vision, straight lines that appear wavy, blind spots, or loss of color vision. Tell your provider if your vision changes in any way.

## How can I help prevent AMD?

A healthy lifestyle may improve the chances of keeping good vision. This includes:

- not smoking
- eating a healthy diet
- good control of blood pressure and cholesterol

A vitamin and mineral supplement containing beta carotene (vitamin A), vitamins C and E, zinc, and copper (AREDS 2 formula) may help you decrease your chance of vision loss if:

- You have an advanced form of AMD in at least 1 eye, or

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- Your eye care provider has determined that you have a high risk for AMD. High doses of beta carotene and zinc have possible health risks. Ask your provider if this vitamin and mineral supplement is a good idea for you before you start taking it. Smokers may need to take different supplements than nonsmokers.