

Age-related Macular Degeneration

The retina is the layer of light-sensitive tissue that lines the back of the eye. It converts light into signals that are sent via the optic nerve to the brain, where they are recognized as images. The macula is the small, central area of the retina that allows sharp, detailed vision, such as that necessary for reading. In age-related macular degeneration (AMD), the macula deteriorates. AMD is the leading cause of severe visual loss in people over 50 years of age. There are 2 main types of AMD, dry and wet.

Dry Macular Degeneration

Most (80% to 90%) of people with AMD have the dry (also called atrophic) form. It causes some visual loss, but the loss usually is not severe. Some people with dry AMD will develop the wet form, which is more likely to cause severe visual loss.

Wet Macular Degeneration

About 10% to 20% of people with AMD have the wet (also called exudative or neovascular) form. Although it is less common, the wet form accounts for 80% to 90% of cases of severe visual loss due to AMD. It is called wet because new, abnormal blood vessels grow beneath the macula and leak blood or fluid.

Causes of AMD

The cause of AMD is not completely understood. Factors that increase the risk of developing AMD include age,

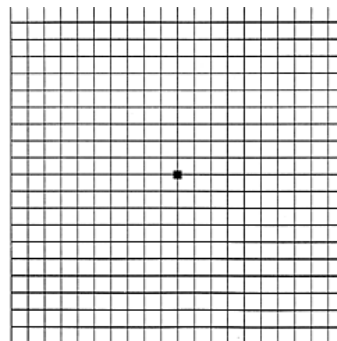
family history of AMD, smoking, sunlight exposure, and diet. The risk of having AMD increases with age, from 10% at age 50 to about 30% at age 75.

Symptoms

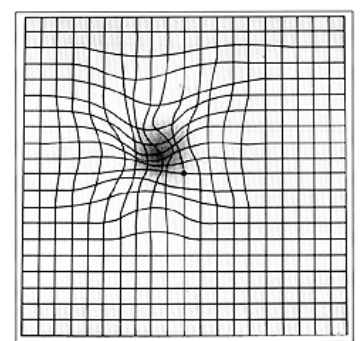
Especially with the dry form, symptoms may develop gradually. Also, if only one eye is affected, a person may not notice changes in vision until the disease gets worse or the other eye becomes affected.

Symptoms may include blurring of vision, a dark area or "blind spot," or a distorted appearance of straight lines or other objects. In wet AMD, symptoms may be sudden, with a severe and rapid loss of central vision.

Because worsening of AMD can be indicated by a change in symptoms, it is important for people with AMD to monitor their vision closely and to call their eye doctors when there is a change in vision. One way to monitor vision is with an Amsler grid, which may appear to have missing, dark, or distorted areas as AMD affects the macula.



Amsler grid as seen with normal eye



Amsler grid as seen with eye with wet AMD

Diagnosis of AMD

Visual acuity testing. This test uses an eye chart to determine how well a person can see at various distances.

Ophthalmoscopy. The changes caused by AMD may be seen by examination of the retina with an instrument called an ophthalmoscope.

Fluorescein angiography (FA). This is a test procedure in which a dye (fluorescein) that is injected into a vein in the arm travels to the retinal blood vessels. Special photographs allow the physician to see the vessels and identify abnormalities.

Indocyanine green angiography (ICG). This is like FA, but a different dye (indocyanine green) is used to show changes that may not be visible with FA.

Optical coherence tomography (OCT). OCT uses a thin beam of light and the reflection of that light off the retinal layers to show the anatomy of the retina.

Treatment of AMD

The risk of worsening AMD may be reduced by reducing risk factors through maintaining a healthy life style, for example, quitting smoking, eating lots of fruits and vegetables, and exercising regularly.

Dry AMD. The Age-Related Eye Disease Study (AREDS) showed that high-dose

anti-oxidant vitamins can reduce the risk of progression of dry AMD in some patients. Your doctor can tell you whether these vitamins are appropriate for you.

Wet AMD. Many patients with wet AMD can be treated with drugs, such as Lucentis or Avastin, that are injected directly into the eye to prevent the growth of new blood vessels. Some patients are treated with laser therapy. With laser photocoagulation, a beam of light is used to seal the abnormal blood vessels and prevent leaking. With photodynamic therapy (PDT), a low-energy laser is used to activate a light-sensitive drug that is injected into a vein and travels to abnormal blood vessels in the macula. The light-activated drug then destroys the abnormal vessels.

Your doctor can determine which, if any, treatment is appropriate for you. In some cases, a combination of treatments may be used.

Research

Retina Associates of Cleveland is actively involved in many clinical research studies to evaluate treatments for both types of AMD, with the hope of preserving vision in people with this disease.

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