



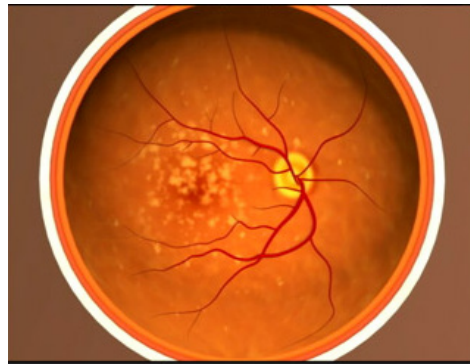
Our Eyes Matter: Age-related Macular Degeneration (AMD)

What is AMD?

AMD, or age-related macular degeneration, is a leading cause of vision loss for Americans age 50 and older. It affects central vision, where sharpest vision occurs, causing difficulty conducting daily tasks such as driving, reading, and recognizing faces.

For more information,
visit us on the web at:
preventblindness.org

225 West Wacker Drive
Suite 400
Chicago, Illinois 60606
800.331.2020
PreventBlindness.org



Dry AMD



Wet AMD

Photo credit: National Eye Institute

What causes AMD?

AMD affects part of the back of the eye called the macula, the central part of the retina (the “film” lining the inside the eye). When AMD damages the macula, the center part of a person’s vision may become blurred or wavy, and a blind spot may develop. AMD can cause vision loss quickly or slowly, and can make it very hard to do things that require sharp vision, such as reading, sewing, cooking or driving; it can also make it difficult to see in dim light. The good news

is that AMD almost never causes total blindness, since it usually does not hurt side (peripheral) vision.

What are the types of AMD?

Dry and wet. The most common form of AMD is “dry” AMD. This is caused by the appearance of small yellow deposits called drusen, which form under the retina. These are accumulated waste products of the retina, which can grow in size and stop the flow of nutrients to the retina. This will cause the retinal cells in the macula that

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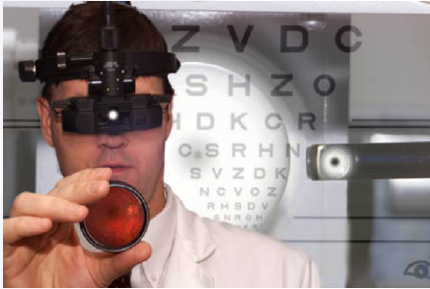


Photo credit: National Eye Institute

process light to die, causing vision to become blurred. This form of the disease usually worsens slowly. “Wet” AMD generally causes more rapid and more serious vision loss. In this form of the disease, tiny new blood vessels grow under and into the retina. These blood vessels are fragile and often break and leak, causing a loss of vision.

What increases risk for AMD?

- . Family history of AMD
- . Aging – those over 60 years old
- . Race – Caucasians have a higher rate of AMD
- . Sex – females have a higher rate of AMD may be because they live longer
- . Light colored eyes
- . Smoking
- . Heart disease
- . High blood pressure (hypertension)
- . High cholesterol
- . Obesity
- . High sun exposure
- . Poor diet – with low intake of anti-oxidants

What are the symptoms of AMD?

There may be no symptoms until the disease progresses or affects both eyes.

Vision changes due to AMD are:

- . Difficulty seeing in the center of your vision, which is needed for reading, sewing, cooking, looking at faces, and driving
- . Trouble seeing in dim light
- . Straight lines start to appear wavy, blurry or missing
- . Fading and/or changes in the appearance of colors

If you experience any of these symptoms, see an eye doctor as soon as possible.

How is AMD diagnosed?

The key to slowing or preventing vision loss is regular eye exams. People age 60 or older should get a complete eye exam and follow-up with eye exams every one or two years or as indicated by the eye doctor. It is important to maintain a routine schedule of eye exams even if there are no noticeable vision problems.

During an eye exam, the eye doctor will conduct the following tests:

- . **Visual acuity:** This will determine how well a person can see through his or her central vision and if there is a decrease in visual acuity.
- . **Dilated eye examination:** The eye doctor will dilate (widen) the pupil of the eye, with eye drops to allow a closer look at the back of the eye. The doctor will look for buildup of drusen, new abnormal retinal blood vessels, and a breakdown of pigment and light-sensitive cells in the macula.

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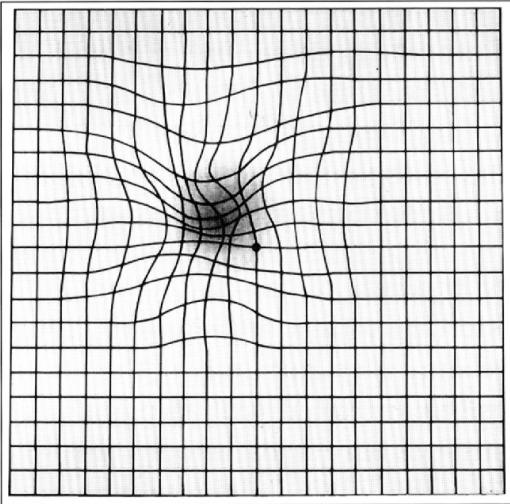


Photo credit: National Eye Institute

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- **Amsler grid:** This will test for problems in the macula. An Amsler Grid is made of straight horizontal and vertical lines. AMD may make the straight lines in the grid to appear faded, broken or wavy.

If the eye doctor suspects AMD, then the following tests may be conducted:

- **Optical coherence tomography (OCT):** The OCT examination provides a cross sectional image of the eye, which can show if the macula is thickened and/or if fluid is leaking.
- **Fluorescein angiography:** During this test, a dye is injected into the arm that “lights up” the blood vessels in the eye while multiple photos are taken of the back of the eye. These images will show if there are new blood vessels in macula and /or there is leaking of dye to determine if an individual has wet AMD.

How is AMD treated?

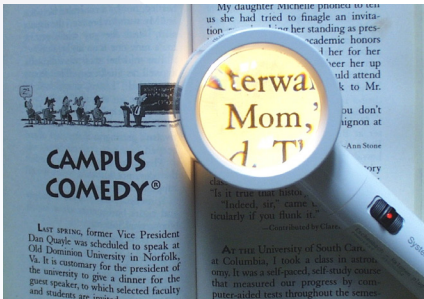
Currently, the only treatment for dry AMD, which in many people show no symptoms or loss of vision, is dietary vitamin and other

supplements. A study has found that a certain combination of vitamins (vitamins C and E, lutein, zeaxanthin, and zinc), known as AREDS (Age Related Eye Disease Study) vitamins, can slow the progression of dry AMD in people with a moderate level of disease. However, these vitamins do not cure AMD. Only an eye doctor can tell if these will be of benefit.

The eye doctor may recommend a comprehensive dilated eye exam at least once a year. The exam will help determine if the condition is worsening. The treatment of wet AMD has changed rapidly over the past few years, and new research and treatments continue to be developed and tested. These mainly work by stopping the growth of new blood vessels and decreasing the leakage of these abnormal blood vessels.

- **Anti-vascular endothelial growth factor (anti-VEGF) drugs:** The current standard treatment, these drugs block the development of new blood vessels and limit the leakage from the abnormal blood vessels in the eye. They are delivered through an injection into the eye, administered by an ophthalmologist, usually a retinal specialist. While some pressure will be felt during the injection, the eye is first numbed to minimize any discomfort. Several injections over time are needed in this treatment (frequency of injections varied based on the drug

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Courtesy of the American Academy of Ophthalmology

selected and the eye doctor's judgment).

- **Photodynamic therapy (PDT):** Only used occasionally, PDT uses a laser beam with a light-sensitive dye to destroy unhealthy new blood vessels in or under the retina. Multiple treatments may be needed, as directed by the eye doctor.
- **Laser photocoagulation:** Only used occasionally, photocoagulation uses a stronger laser to destroy the new blood vessels. The treatment itself leaves permanent blind spots in a person's vision. It helps to slow or stop the growth of new blood vessels that could damage vision even more and to preserve the vision that remains.
- **Oraya Therapy:** This treatment is not available or well-studied in the US, but is currently available and may be used in select European countries. It is a one-time non-invasive treatment used along with anti-VEGF therapy. It delivers highly targeted, low-energy x-rays to the diseased area of the eye with the purpose of reducing the number of anti-VEGF injections required for treatment.
- **Healthy Lifestyle:** Healthy habits can lead to healthy eyes – quit smoking, eat healthy foods, and stay active. Talk to a doctor before starting an exercise program.

Prevent Blindness strongly recommends that individuals consult with their eye doctor to determine the best treatment options for them.

Living with Low Vision

If you or someone you know has lost some sight to AMD, low vision aids can help you stay independent. Special training, called vision rehabilitation, can provide skills for living with low vision. A low vision specialist will help determine the right combination of aids for your needs. Ask your eye doctor about the possibility of seeing a low vision specialist.

Low vision aids include:

- Magnifying glasses, screens and stands
- Telescopic lenses
- High-intensity reading lamps
- Large-print newspapers, magazines and books
- Close-circuit TVs that magnify a printed page on screen
- Computers and tablets

Living Well with Low Vision

- Living Well with Low Vision is an online resource to educate those with loss of vision on how maintain their independence and quality of life. Learn more at lowvision.preventblindness.org.