

## Women's Eye Health Task Force



# *Age-related Macular Degeneration*

*(AMD)*

## What is AMD?

Age-related macular degeneration is a common disease of the eye's retina. This condition is associated with aging, and gradually destroys the sharp, central vision that is needed for seeing objects clearly and for common daily tasks such as reading and driving. The disease progresses faster in some people than in others, and may lead to a loss of vision in one or both eyes. AMD is the leading cause of legal blindness in America. It is estimated that about ten million people in this country have some form of AMD, over 1.6 million of them afflicted with the late, vision-destroying stages of the disease.

The retina is the paper-thin tissue that lines the back of the eye and sends visual signals to the brain. In the middle of the retina is a small area (about a fifth of an inch in diameter) called the macula. It is made up of millions of close-packed, light-sensing cells that produce central vision. In AMD there is a slow breakdown of the cells in and behind the macula, accompanied by a gradual loss of central vision. In many patients AMD does not progress beyond its early stages (changes in how the retina looks).

Late-stage AMD occurs in two forms, dry (or atrophic) and wet (or exudative). Ninety percent of all people with late AMD have the dry type; its basic cause is not yet known and is a topic of much scientific investigation. The wet form, although only ten percent of all people with late AMD have it, accounts for ninety percent of legal blindness from the disease. As AMD worsens, new blood vessels may begin to grow. Because these new vessels tend to be very fragile, they will often leak blood and fluid under the macula, resulting in wet AMD. This causes rapid damage to the macula that can lead to the loss of central vision in a short period of time.

## Who is at risk for AMD?

The greatest risk factor is older age; people over age 60 are at much greater risk than other age groups: although the chance of having AMD is only one percent at age 55-64, this prevalence rises to four percent for those over 65, and 30% of the American population over age 75. The US population over 65 is expected to double in the next 30 years, so AMD will become even more of a problem as the baby-boomer generation ages.

Because women live, on average, several years longer than men, women are twice as likely as men to develop the condition. The lifetime risk for getting AMD is 6% for females and only 3% for males. Therefore, women need to be more aware of AMD, and older women should be sure to visit an ophthalmologist or optometrist at least every other year.

After increasing age, smoking is the strongest predictor of who will get AMD; this habit can double the risk of the disease. Family history is also important: people whose immediate family members (including grandparents) had AMD are at higher risk of developing the disease. Scientists are trying to find out which genes are responsible for this hereditary component.

## What are the symptoms of AMD?

Neither dry nor wet AMD causes any pain. The most common early sign of dry AMD is blurred central vision, even when wearing your glasses or contact lenses. When fewer cells in the macula are able to function, patients will see details in front of them, such as faces or words in a book, less clearly. Often this blurred vision will, at first, go away in brighter light. If the loss of these light-sensing cells becomes great, people may see a small, but growing, dark or empty area in the middle of their field of vision.

The classic early symptom of wet AMD is that straight lines appear curved or distorted. This results when fluid from the leaking blood vessels gathers and lifts the macula, distorting vision. Your eye-care professional may suspect AMD if you are over age 60 and have had recent changes in your central vision. To look for signs of the disease, he or she will use eye drops to dilate, or enlarge, your pupils, allowing the doctor to view the back of the eye clearly. You may also be asked to view an Amsler grid, a pattern that looks like a checkerboard. Early changes in your central vision will cause the grid to appear distorted, a sign of AMD.

As the loss of central vision progresses, the decrease in ability to drive, read, and see faces can result in loss of independence. Because of poor eyesight, there is an increased risk of falling, which can result in hip fracture, especially in women (because osteoporosis is much more common than in men).

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## **What can be done to help prevent or limit AMD?**

There is no way to prevent getting older or to change your genes. However, you can protect yourself in other ways. Most important, this is one more reason to stop smoking.

There is strong evidence that a diet rich in fruits and dark green vegetable lowers the risk of AMD. However, it is not yet clear which of the many compounds in food are important for prevention, so the best advice is to eat healthily. The carotenoids, lutein and zeaxanthin, may be two of the protective compounds. A new study showed that supplement with an antioxidant combination (vitamins C and E, beta-carotene, and zinc with copper) may retard the progression in some people who already have moderate AMD; however, these food supplements appear to have no effect in preventing the disease in otherwise healthy individuals.

Bright light may be involved in the process that starts AMD, so it is prudent for you and your children to wear hats and sunglasses to protect your eyes in bright sunlight.

Because of the genetic component to AMD, if a close relative had the disease there is more reason to monitor your vision closely and to have frequent eye examinations.

It is recommended that everyone over age 60 should be examined at least every two years by an ophthalmologist or optometrist. One reason is to detect AMD early, as there is no pain or other symptoms in early stages. In this way, the disease can be followed and can be arrested before a disastrous retinal hemorrhage occurs. In addition, it is very important to detect another eye disease striking older people, glaucoma, early and to begin treatment for it before there is damage to optic nerve; if glaucoma is left untreated, blindness is likely.

If you already have wet AMD in one eye, this disease usually will eventually affect the other. You need to see your eye-care professional often and check an Amsler grid at home.

## **What treatment is available for AMD?**

Unfortunately, no effective treatment now exists for the dry form of AMD. However, it is crucial that patients who progress to wet AMD and need laser surgery have it before the disease destroys central vision. For this reason, if you have early AMD you should have your eyes examined through dilated pupils at least once a year.

Laser therapies to seal off leaking blood vessels can help reduce the risk of advancing vision loss in about half of wet AMD cases. This treatment involves aiming a strong light beam onto the new blood vessels to destroy them. Photodynamic therapy (PDT) is a recent improvement in laser surgery. In this modification, a drug (usually Visudyne) is injected into the arm and travels to the abnormal vessels in eye. The laser beam is then aimed at the eye to activate the drug, which works to stop or slow the blood leakage. Several repeated treatments are usually required, and the disease process is just slowed, not stopped. Any lost vision cannot be restored.

Research is progressing on possible new treatments for wet AMD, such as drugs that prevent new vessels from forming in the first place, but these will not be available for some time.

Many people with central-vision loss retain very usable peripheral vision. This can be used to good advantage with low-vision aids, such as video magnifiers, which are available for patients even after medical treatment is no longer possible. These devices can be customized for each patient.

## Where can I get more information?

**The National Eye Institute (NEI)**, a branch of the National Institutes of Health, has lots of reliable, easily understood information available on its website:

[Search the National Eye Institute](#)

[Age Related Macular Degeneration, National Eye Institute of the National Institutes of Health](#)

For example, you can see what the world looks like to AMD patients, try out an Amsler grid, and learn how to obtain low-vision aids and advice.

Free and low-cost eye screenings by eye-care professionals in your area are available; see the NEI site <http://www.nei.nih.gov/health/financialaid.htm>. If an older person has already been diagnosed with AMD (even in the very early stage), Medicare will pay for future visits.

All of the NEI information is available, free, by writing to: **National Eye Health Education Program, 2020 Vision Place, Bethesda, MD 20892-3655.**

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