



# Patient Information

## Focus on Macular Degeneration

**M**acular degeneration is a disease affecting your sharp, central vision—that is, the part of your vision you use to perform tasks (such as reading or driving) that require you to focus on something straight ahead. It affects the *macula* (**mack**-you-la), which is the small area on your eyeball's *retina* (**ret**-in-uh), or back wall, that allows you to see fine detail. The disease is most commonly called age-related macular degeneration, or AMD, because it occurs later in life. AMD is the leading cause of vision loss in Americans aged 60 and older.

### How do I know if I'm at risk?

Your chances of developing AMD increase as you get older. Your risk is also higher if you smoke; eat a high fat or high cholesterol diet; are obese; have high blood pressure, heart disease, or a family member who had AMD; or if your eyes have had extensive exposure to sunlight over long periods of time. If you are white, female, or if you have light-colored eyes, you are more likely to develop AMD than if you are non-white, male, or have dark-colored eyes.

### What are the warning signs?

AMD can affect one or both eyes. Symptoms vary depending on whether a person has the dry or wet type of the disease.

The more common dry type is the result of a slow breakdown of light-sensitive cells in the macula. In the early stages of dry

AMD, you may have no symptoms at all. But as increasing numbers of cells break down, you may notice that you need more light to read or do detailed work. Colors may appear less bright. You may have difficulty recognizing faces. Your overall vision may appear hazy, or you may see a blurred spot in the center of your vision. As the disease progresses, the blurred spot can get bigger and darker.

Wet AMD, which progresses more rapidly than the dry type, occurs when abnormal blood vessels begin to grow beneath the macula. These vessels tend to be weak and to leak fluid, causing a buildup that raises the macula from its normal position. If you have wet AMD, you might notice a central blurry spot in your field of vision. Straight lines may appear wavy or crooked. Objects may appear smaller or farther away than they should. If you have any of these symptoms, see a medical eye doctor, or *ophthalmologist* (ahf-thal-**mal**-uh-jist).

### What tests do I need?

To determine if you have either type of AMD, your ophthalmologist will perform several tests, including one that shows how well you see at various distances. Your ophthalmologist may put *dilating* (**dye-late**-ing) drops in your eyes to widen the dark centers (called pupils) and use an *ophthalmoscope* (ahf-**thal**-muh-skope)—an instrument that shines light into the back of your eye—to examine your retina.

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If your ophthalmologist suspects wet AMD, he or she may ask you to look at a grid that resembles a checkerboard and point out any lines that seem faded, broken, or distorted. To evaluate the extent of damage from wet AMD, your ophthalmologist may perform *fluorescein angiography* (floor-**es**-ee-en an-jee-**ahg**-ruh-fee), which involves injecting a special dye into a vein in your arm and taking pictures of the back of your eye as the dye passes through the blood vessels in your retina.

### How can I avoid the problem?

Many of the risks for AMD—age, eye color, gender, and race—can't be avoided. There are, however, several things you can do to reduce your chances of developing the disease. Eating a balanced diet that includes plenty of green leafy vegetables, fruit, and fish promotes good retinal health, and exercising can help keep your blood pressure under control. If you smoke, ask your doctor to help you stop. Wear sunglasses that block ultraviolet, or UV, light. (Look for a pair that filters out UVA and UVB rays.)

Also, have your eyes checked regularly by your ophthalmologist. If you have no signs of AMD, you should see your ophthalmologist every two to four years between the ages of 40 and 64 and then every year or two after age 65. If anyone in your family has had AMD, you may need more frequent examinations. Ask your ophthalmologist for a recommendation.

### How is it treated?

There is no treatment for dry AMD once it reaches an advanced stage of vision loss. But because this type of the disease pro-

gresses more slowly, you can live a relatively normal life for many years, especially if only one eye is affected.

The treatment you receive for wet AMD depends on the location and the number of abnormal blood vessels that have developed. If the blood vessels aren't too close to the center of the macula, a type of laser therapy, called *photocoagulation* (fote-oh-ko-ag-yuh-**lay**-shun), may be an option. This procedure uses a laser beam to destroy the leaky blood vessels. If the abnormal blood vessels are located directly at the center of the macula, *photodynamic* (fote-oh-dye-**nam**-ick) therapy may be used. This treatment combines a cold laser and a drug that, when injected into your bloodstream, becomes concentrated under your macula. Then, when your macula is exposed to light, the drug releases substances that destroy the abnormal blood vessels. There is also a new drug that targets the protein that triggers the abnormal blood vessel growth and leakage that causes wet AMD. It's injected directly into the eye at six-week intervals for about a year.

For those with advanced dry AMD or vision loss in one eye from wet AMD, research suggests that a supplement containing vitamin C, vitamin E, beta-carotene, zinc, and copper may reduce further vision loss by 25%. This supplement, however, is not recommended for patients who have ever smoked since high doses of beta-carotene can increase the risk of developing lung cancer. For more information on this supplement, visit the Age-Related Eye Disease Study results page on the National Eye Institute's web site ([www.nei.nih.gov/amd](http://www.nei.nih.gov/amd)). ●

