

Macular Degeneration

Macular degeneration is the leading cause of blindness in people over age 60. It is a disease in which the central retina (the macula) wastes away and leads to central vision loss. The macula is the part of the eye that allows you to see fine detail. The disease does not affect peripheral, or side, vision. Although people rarely go totally blind from macular degeneration, it can make it difficult to read, write, drive, or perform other normal daily tasks. The most common form is related to aging and is referred to as Age-Related Macular Degeneration (AMD). AMD changes in the retina have a wide spectrum, and most patients with these changes have little or no vision impairment. However, AMD is a potentially blinding disease, and care must be taken to catch problems early to prevent severe vision loss.

AMD can start out without symptoms, and it never causes pain.

There are some symptoms of the disease:

- *blurred or distorted vision
- *need for more light when reading
- *difficulty recognizing faces from a distance
- *straight lines may appear wavy
- *blank spot in the center of vision
- *longer time to adapt from dark to light or vice versa

There are other risk factors besides age that can lead to macular degeneration. Caucasians tend to get the disease more often than other races. Having blood relatives with macular degeneration also increases the likelihood of getting the disease. Your risk of getting AMD more than doubles if you smoke or if you have smoked in the past 15 years. Obesity, heart disease, and hypertension are other risk factors.

There are two kinds of AMD: dry and wet. In the wet form, new blood vessels grow up underneath the retina like weeds through a crack in the sidewalk. These blood vessels can cause severe and rapid vision loss by leaking blood and fluid under the macula, or by forming scar tissue. While wet AMD affects only 10% of AMD patients, it is responsible for 90% of the severe vision loss from the disease. The dry form tends to be slower and milder. Dry AMD can convert to wet

AMD at any time, and all of the preventative measures and follow-up visits that the doctor recommends are aimed at timely discovery of wet AMD. If wet AMD is discovered quickly enough, there are treatments that can eradicate the new blood vessels and preserve vision. Time is of the essence, though. There is no cure for dry AMD.

If the doctor determines that you have AMD, there are some things that you can do to lessen your risk of having severe vision loss from the disease. Protecting your eyes from UV light, not smoking, and taking a multivitamin are all recommended. You may be asked to use an Amsler grid to monitor your central vision at home. The Amsler grid is a square of graph paper with a dot in the center. By looking at the center dot and paying attention to any changes in what is missing, distorted, or wavy on the grid (cover up one eye at a time and view the grid with each eye separately), you can catch changes in your vision. If any changes in the appearance of the Amsler grid are noted, call the doctor.

There are a lot of vitamins marketed to people with macular degeneration. There are trends in the research that suggest that various antioxidants, lutein, and zeaxanthin are helpful. However, nothing has been proved. The only solid scientific study of vitamins and AMD is the AREDS (Age Related Eye Disease Study). It had two conclusions: 1) people with high risk AMD (wet AMD, or severe dry AMD) benefited from AREDS formula vitamins (high-dose Vit A, C, E, Zinc, and Copper) and had 25% less vision loss and progression of AMD 2) people with AMD that were not in the high risk group had no benefit from taking the vitamins. However, because of the positive trends and incompleteness of the vitamin research, I recommend that all patients with AMD take a multivitamin such as Centrum. Unless you are in the high-risk AMD group, I do not recommend taking a special eye vitamin (they are expensive and limited in scope, and the AREDS study said they are of no benefit). If you smoke, you should not take the AREDS vitamins, as the Vit A in it may be harmful to you.

If wet AMD develops, there are several treatments available. Photodynamic therapy involves injecting a light-activated drug into the bloodstream, where it travels to and collects in the abnormal

blood vessels. A laser is used to activate the drug, which produces a reaction that closes the abnormal vessels without damaging the overlying retina. Transpupillary thermal therapy (TTT) uses low intensity thermal laser to close the vessels with minimal damage to the retina. Anti-angiogenesis therapy uses drugs to inhibit the growth of abnormal blood vessels. Submacular surgery, macular translocation surgery, feeder vessel therapy, and laser photocoagulation are other treatments. Within the last several years, treatments for wet AMD have hugely improved. Smokers have a much less favorable response to the treatments.