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# MACULAR DEGENERATION: WHAT, WHY, AND HOW TO COPE

Of the buzzwords associated with the eye and vision, few have the same impact as the condition age related macular degeneration or ARMD. What is this condition, why does it happen, and what can be done about it?

First, let's review the eyes anatomy. The eye is like a spherical shell of white scleral material. Inside that shell, and lining the back of the eye is a carpet of blood vessels which lie in random patterns—kind of how a pot of drained boiled spaghetti pasta looks. This is called the **choroid**, and it is a key player in the nutrition of the retina.

Overlying the choroid is the **retinal pigment epithelium**, a slurry of pigment cells which separates the choroid from the retina. It serves to help transfer nutrients from the choroid forward into the retina, and transfers waste substances from the retina back into the choroid.

Overlying the choroid is the **retina** itself. It is analogous to the film of a camera (remember film?) and contains millions of rods and cones, the receptors which perceive light and transmit signals to your brain. The **macula** is at the visual center of the retina, and provides the high definition vision you need to see fine detail, like in reading.

In normal operation, the very busy macula receives quick replenishment of oxygen and clearance of waste products via the choroid.

**ARMD** produces decreased retinal function, and consequently poorer vision by one of two general ways:

One, **"dry" ARMD** results from a thinning or similar deterioration of the retinal pigment epithelium. With this decreased capacity to transfer nutrients and waste products, the demanding retina starts to lose normal health. Over time, vision starts to blur as the retinal structure suffers from poor nutrition and/or accumulation of waste products.

The other type is **"wet" ARMD**. In that, the choroid starts to grow abnormal vessels which penetrate the retinal pigment epithelium. These abnormal vessels are weak and tend to break or spontaneously leak. This produces accumulation of improper fluids, such as whole blood or blood plasma in the retina. The leaky vessels might break and scar, producing traction on the retina and distortion of it. Vision becomes blurry as the rods and cones and related structures start to degrade with the poor environment.

## WHAT ARE THE RISKS?

First, according to the American Academy of Ophthalmology, only about 2% of those in their 50's develop macular degeneration; but by age 75 about 30% of patients do. Hence, the abbreviation ARMD stands for age related macular degeneration.

Age is a factor, but lifestyle is an important consideration. Remember mom's advice about eating your vegetables? She was right on, but maybe she didn't completely know why. A proper diet, rich in dark leafy green vegetables, brightly colored fruits and vegetables, and sensible avoidance of excess fats and cholesterol can help. I think that anything that is heart healthy is probably eye healthy. Exercise is a real help in this, as we all know.

Other risks: smoking, obesity, high blood pressure, and heredity can also play major roles in this disease.

## HOW IS ARMD DETECTED?

Although blurring of things you are looking directly at is a prime symptom, unfortunately that symptom can escape detection for a number of years while damage is ongoing. Eye exams can detect the presence of drusen—little specks of waste material in the retina which can herald future damage. I always recommend dilated eye exams in the senior population—I know it's a pain but the sharp visualization of interior eye structures afforded the doctor is a big hedge against many eye diseases, including and beyond ARMD. Ongoing macular degeneration produces distortion of the vision in some cases, so an "Amsler Grid" a small card which resembles graph paper—can be used to look for this distortion.

## TREATMENTS

Treatments of ARMD vary with the type of problem. There is no medicine for the dry form, but vitamin therapy can at least stay the course and prevent further damage in 30% of cases of moderate ARMD. There are several types of eye vitamins and other supplements, and I recommend that you speak with your eye doctor for specific recommendations. I do not recommend high potency products as the Ocuvite Preservision family unless there is a genuine need.

Many cases of the wet form can be treated with in-the-eye injections of a substance which suppresses the growth of the choroidal vessels we discussed earlier. Or, various types of laser treatments or other therapies might be recommended. Those types of treatments are generally the province of the retinal specialist. In Southern Oregon, we are most fortunate to have several such specialists.

If worst comes to worst and the ARMD is not treatable, workarounds like magnifiers, adaptive aids, e-readers with large print available, etc, can make a difference in a person's life and for the motivated person prolong independence and fulfilling last years.

## RESOURCES

Useful web sites: [shoplowvision.com](http://shoplowvision.com) for many adaptive aids and consumer magnifiers.

[Aao.com](http://Aao.com), the web site of the American Academy of Ophthalmology.

[Aoa.com](http://Aoa.com) the web site of the American Optometric Association.