

SAN ANSELMO OPTOMETRY

WHAT IS MACULAR DEGENERATION?

Age-Related Macular Degeneration (AMD) occurs when the cells in the macula break down causing loss of sight in the central part of the field of vision. The macula is the sighting center of the retina which is only an area of about a pinhead on the retina. The macula allows you to read fine print and make out a person's face and the details. Most often, AMD is a slow, progressive, painless disease which often affects both eyes, usually one after the other.

Once you are diagnosed with AMD, as many as ten years may pass before you have any noticeable loss of vision. Even though breakdown of macular cells may not begin until age 50 or 60 long, long-term awareness and preventive measures should begin much earlier in life.

SYMPTOMS

Signs of AMD can be:

Blurry vision

Distorted vision

Straight lines appear wavy

Objects may appear as the wrong shape or size

The loss of clear, correct colors

Difficulty reading

Type appears blurry

Lighted digital numbers (on a clock or digital microwave) seem dim or unreadable

A dark or empty spot may block the center of your vision.

THERE ARE TWO MAIN TYPES OF MACULAR DEGENERATION

"Dry" AMD, which accounts for 90 percent of cases, occurs when small yellowish deposits called drusen start to accumulate beneath the macula. These deposits gradually break down the light-sensing cells in the macula, normally causing distorted vision in one eye then the other. Dry AMD does not usually cause total loss of reading vision. It is important to monitor the progression of dry AMD closely, as it can often progress to the more severe wet form.

"Wet" AMD accounts for the other 10 percent of AMD cases. It occurs when tiny, new, abnormal blood vessels begin to grow from under the retina into the macula. The new fragile blood vessels often leak blood and fluid that damage the macula and can cause rapid and severe vision loss. Wet AMD almost always occurs in people who already have dry AMD.

HOW DOES AMD AFFECT YOUR VISION?

As the cells in the macula deteriorate, the ability to see will begin to change. Objects directly in front appear to change shape, size, or color, and may seem to move or disappear. Vision may become blurry, lines may become distorted, or dark spots may appear in the center field of vision.

Eventually, AMD results in a circular area of blindness which, at normal reading distance, may block out several words. However, most people with AMD retain a reasonable amount of peripheral vision and can learn to make the most of their remaining vision.

AMD is a highly frustrating condition, which greatly affects everyday living by making it difficult to read, write, drive, and recognize faces. The exact cause of AMD is not yet known, and currently there is no permanent effective treatment or cure for the condition. Macular degeneration develops differently in each person. Because it will affect regions of the macula differently from person to person, the symptoms tend to vary. Macular degeneration causes a progressive loss of central vision. However, it does not cause total blindness. Peripheral vision is unaffected, allowing a certain amount of mobility in normal surroundings. If left untreated, the wet type of macular degeneration may progress rapidly

TREATMENT

Currently, there is no known cure for macular degeneration. There are, however, new therapies emerging. For individuals with macular degeneration, it is highly recommended that a regular schedule of eye examinations be maintained. During these examinations, detailed documentation with photographs and fluorescein angiography may be performed. With this information, your eye doctor is better able to monitor the condition, note any changes that may occur, and determine the most appropriate therapy.

Treatment for 'Dry' Macular Degeneration

Supplementation with specific anti-oxidant vitamins and minerals has been shown to significantly slow the progression of Dry AMD. For details on the dosage and side-effects, please see the list below.

Treatment for 'Wet' Macular Degeneration

The newest treatment for wet AMD is Lucentis, a drug that was approved by the FDA in 2006. This drug inhibits the growth and leakage of abnormal blood vessels and it is the first treatment that has been shown to improve vision in some eyes rather than simply slowing the rate of vision loss. Lucentis is delivered through tiny injections in the eye, once a month for three months, with additional, less frequent injections, as needed, for one year or more. A similar drug, Avastin, is also commonly used for the treatment of wet AMD.

Other treatments include laser treatments and photodynamic therapy. These treatments are designed to seal the leaking blood vessels, halting the damage they can inflict upon the retina. These treatments are effective in slowing the progression of wet macular degeneration and are sometimes used in combination with Lucentis or Avastin. Research is underway to find new and more effective treatments for this condition.

RISK FACTORS

Age:

Age is the main risk factor for developing AMD. In the United States, it is estimated that about 14 percent of people aged 55 to 64 have some form of AMD. This rises to nearly 20 percent of 65 to 75 – year olds, and up to 37 percent of those over 75.

Diet and Nutrition:

The macula's fragile cells are highly susceptible to damage from oxygen-charged molecules called free radicals. Early research has shown that people with a low dietary intake of antioxidants, nutrients in food that fight the damaging effects of free radicals in the body, may be at increased risk of developing

AMD. Alcohol may also deplete the body of antioxidants. High levels of saturated fats and cholesterol harm blood vessels and are also involved in producing free radical reactions that can damage the macula.

Sunlight:

The cells of the macula are highly sensitive to sunlight. Cell damage from the sun can lead over time, to deterioration of the macula. People with light colored eyes may be more prone to damage from the sunlight, as are those who have prolonged exposure to ultraviolet light.

Smoking:

A recent study showed that smoking, which reduces protective antioxidants in the eye, more than doubles the risk of AMD. The study found that AMD is more than twice as common in people who smoke more than one pack of cigarettes a day, compared with people who do not smoke, and the risk remains high even up to 15 years after quitting.

Heredity:

Some studies show that MD may be in part inherited. This means that if you have one of more immediate relatives with AMD, you may be at higher risk to develop the condition.

Heart Disease:

If you have high blood pressure or another form of heart disease, you may also have a greater chance of getting AMD because of poor blood circulation to the eyes.

WHAT CAN NUTRITION DO TO HELP PROTECT AGAINST AMD?

Improving your diet may enhance your overall vision, reduce blurriness, and slow deterioration from AMD. A combination of vitamins C and E, zinc may slow the progression of AMD and decrease visual acuity loss. Perhaps, even more importantly, diet may help prevent onset of the condition.

The AREDS2 study results (May, 2013) suggests to remove beta-carotene from the formulation along with omega-3 as those did not show to improve macular health.

Here is the exact breakdown of their suggested formulation:

Vitamin C (550 mg)

Vitamin E (440 IU)

Lutein (10mg) / Zeaxanthin (2) – (carotenoid group)

Zinc (80 mg zinc oxide)

Copper (2 mg cupric oxide)

And REMOVED both the 15 mg of Beta-Carotene and Omega-3 fatty acids

Several research studies on AMD are focusing on the role of a group of antioxidants called carotenoids (the pigments that give fruits and vegetables their color). Two of these carotenoids, lutein (LOO-TEEN) and zeaxanthin (ZEEAH-ZAN-THIN), are the only pigments found in the macula.

CAROTENOID-RICH VEGETABLES

(Eat 2-4 servings a week of vegetables)

Vegetable	Lutein/Zeaxanthin
Broccoli	1,900
Brussels sprouts	1,300
Collard greens	16,300
Corn	780
Green beans	740
Green peas	1,700
Kale	21,900
Leaf lettuce	1,800
Raw carrot	260
Raw spinach	10,200
Tomatoes	100

Because of their yellow pigment, some scientists believe that lutein and zeaxanthin may protect against AMD by helping to block harmful blue light from reaching and damaging the sensitive back tissue of the retina. A recent study sponsored by the National Institutes of Health found that people who ate the highest amount of foods rich in carotenoids, especially lutein and zeaxanthin, had a 43 percent lower risk of developing AMD than those who ate these foods the least.

PILL SUPPLEMENTS

Lutein and zeaxanthin can be found in almost all fruits and vegetables, (see above), but are most likely to be in dark green, leafy vegetables such as spinach and collard greens. Another study showed that increasing antioxidants can slow the progression of vision loss from dry AMD. Supplements in pill form can be found without a prescription in products like:

- MacuTriton
- ICAPS
- OVUVITE or
- PreserVision.

It's best to avoid taking these on an empty stomach. Adding a multi-vitamin every day may make sure other nutritional needs are met also. If you have hypertension or any other systemic condition, consult your physician before taking any supplements.