



## NEW REVOLUTIONARY TREATMENTS OFFER HOPE TO PEOPLE WITH AGE-RELATED MACULAR DEGENERATION (AMD)



By: Paula C. Ko, MD

Age-related macular degeneration (AMD) is the most common cause of vision loss in people older than 65 years of age in the United States. It affects millions of Americans and can cause them to lose their central vision.

AMD is a degenerative disease of the macula, a part of the retina, which controls a person's central vision. Symptoms can start with distortion of straight lines or missing parts of letters but can lead to a dark spot in the center of the vision causing complete loss of central vision. Patients will never go completely blind from this disease but they can become "legally blind" from loss of central vision. They can lose the ability to do things like drive, recognize friends' faces, read, and write legibly.

There are two types of AMD, the dry or the wet form. The dry form is characterized by little yellowish

deposits in the macula, called drusen. These are "aging spots" that accumulate from by products of retina metabolism. Usually these metabolites were washed away when patients were younger, but now they accumulate as the patient gets older. The dry form can also have dark pigmentary changes in the macula that can lead to vision loss. For the most part, dry AMD does not cause a large amount of vision loss and if vision loss does occur it usually is slow to happen. About 80% of patients have this type of AMD but they only make up 20% of the vision loss caused by AMD. Dry AMD can convert to the wet form; therefore patients should be monitored closely for conversion. Unfortunately there still is no treatment for the dry AMD.

In contrast, the wet form of AMD is characterized by abnormal blood vessels that grow underneath the retina. Twenty percent of patients have wet AMD but these patients make-up 80% of the people that have significant vision loss. Patients with wet AMD can experience sudden vision loss when these abnormal blood vessels start to leak or bleed. This type of vision loss occurs over days to weeks. It usually presents with patients noticing distortion in their central vision. This inevitably gets worse if not treated.

New revolutionary treatments have been developed

for wet AMD in the last year. Previously we performed "hot" and "cold" laser treatments on patients with wet AMD and we were able to stabilize vision but not improve it. Now we can possibly help improve vision in patients with wet AMD if they have not developed too much scar tissue.

Intraocular **Avastin** injections can be given every 4-6 weeks until all the fluid or blood is gone from the retina. It has been shown to stabilize or improve patients in about 80-90% of patients. Currently this drug is being used off-label which means it was FDA approved for colon cancer, not for use in the eye. As it turns out Avastin has been highly successful in treating colon cancer as well as wet AMD. The drug is incredibly inexpensive, usually costing approximately \$50-\$100 per vial plus the cost of each injection. This drug is manufactured by Genentech.

Interestingly, Genentech also manufactures **Lucentis**, another drug that successfully treats wet AMD. In the last few months, Lucentis was recently FDA approved for treatment of wet AMD. This drug is very similar to Avastin and works in a very similar way by causing abnormal blood vessels to regress. Lucentis is also highly successful in helping either stabilize or improve vision in the majority of patients who

have wet AMD and do not have excessive scar tissue. This drug however is \$1,995 per vial plus the cost of the injection.

Because of the cost difference many retina doctors (who usually treat AMD) are giving the patient the options of Avastin or Lucentis even though using Avastin is considered "off-label." Currently there are no studies that compare Avastin to Lucentis to see which drug is better. Both seem to work equally well.

In summary, Avastin and Lucentis have revolutionized the way wet AMD is treated. It is very important for patients with AMD to be examined to see if they have the wet or the dry form. If a patient is a candidate for these intraocular injections, these can easily be done in an office setting without any pain. There still is no cure for AMD but this is a major advance in the treatment of wet AMD. Unfortunately the dry form of AMD still has no treatment and we usually recommend taking the AREDS formula vitamins on a daily basis, eating green leafy vegetables daily, eating fish 2 to 3 times a week, lowering cholesterol and blood pressure.

Given these exciting advancements in AMD it is very important to get a complete dilated eye exam in patients who have AMD or a family history of this disease.

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**Dr. Ko has an area of special expertise in retinal problems, especially diabetic eye disease, macular degeneration, retinal detachment and CMV retinitis. Dr. Ko has lectured extensively, and has published many papers on these topics. Dr. Ko is active in resident training and is on staff at the University of MD and Temple University, as well as at the Medical Center of DE. Dr. Ko is at the forefront of ophthalmic technology, and utilizes the most advanced procedures, including laser treatment and intraocular injections, in the care of her patients.**

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