

# Macular Degeneration- Basics

## **What is the retina?**

The retina is the delicate, light-sensitive tissue that covers the interior wall of the eye. Like the film in a camera, it receives images projected through the lens of the eye. The retina then sends these images to your brain through the optic nerve. When the retina is damaged, your vision may become impaired. Damage to the retina may be caused by injury, illness or as a result of aging.

## **What is macula?**

Macula is the centermost part of retina where the entire light entering the eye is focused to get a sharp image.

Normal macula is paramount for a normal vision.

## **What is the vitreous?**

The vitreous is a gel-like substance that fills the back cavity of the eye and is loosely attached to the retina.

## **What is a Vitreo-Retinal specialist?**

Retinal specialists are eye physicians and surgeons who focus on diseases in the back of the eye such as macular degeneration, diabetic disease, retinal detachment, eye trauma and intraocular infection

## **What is macular degeneration?**

Macular Degeneration is a disease characterized by a breakdown of the macula, the center, most sensitive part of the retina, the area we use to read and carry out our finest visual tasks.

### **What are the two main forms of macular degeneration?**

*Dry macular degeneration* ♦ is associated with degeneration of the pigment cells under the macula and development of drusen. The pigment cells are necessary for normal retinal function so when the cells are lost, the overlying retina stops functioning and blind spots and distortion may occur. Drusen are by-products of retinal metabolism that accumulate under the macula causing distortion and blind spots.

*Wet macular degeneration* ♦ is associated with abnormal blood vessel growth under the macula which can lead to leakage of fluid, bleeding and scar-tissue growth under and within the retina. The onset of vision loss with the wet form of macular degeneration is usually more rapid and severe than in the dry form of macular degeneration. What causes age-related macular degeneration? Studies have found that both genetic and environmental risk factors like smoking play a major role in the development of age-related macular degeneration. Rarer forms of macular degeneration can occur in younger people and can be inherited or associated with trauma, infection or systemic disease.

### **What are the symptoms of macular degeneration?**

- Blurring of central vision
- Blind spots in the central vision
- Difficulty seeing detail ♦ up close and at a distance
- Distortion of lines and shapes
- Diminished color vision

### **Are there special tests to diagnose macular degeneration?**

Yes. Your doctor will examine your eyes with special lenses to view the interior of the eye through the pupil. Other tests for macular degeneration include:

*Acuity Tests:* this test measures the sensitivity of your central vision at specific distances in specific lighting situations.

*Amsler Grid Test* ♦ this test checks for blind spots, loss of sight and distortion. *Fluorescein Angiogram Test:* a dye is injected in the vein of your arm and then photos are taken of the retina and the macula in order to identify new blood vessel

growth and leakage from blood vessels.

*Optical Coherence Tomography (OCT)* ♦ this test takes a cross sectional image of almost microscopic detail of the layers of the retina and underlying structures affected by macular degeneration. It is very helpful in determining if there is fluid leaking in or under the retina, and abnormal blood vessels or scar tissue in the macula.

### **Can macular degeneration lead to total blindness?**

Most people with macular degeneration retain peripheral vision and learn to optimize the use of their remaining vision. Low vision aides can sometimes be helpful too.

### **Can macular degeneration be prevented?**

No, the most important thing to do is to have regular eye exams, which may allow early detection and diagnosis. This is particularly important if a close relative has been diagnosed with macular degeneration.

### **What treatment options are available for dry macular degeneration?**

The progression and severity of dry macular degeneration can be reduced with certain vitamins, minerals and Omega III fatty acids. Controlling high blood pressure and quitting smoking can be helpful.

### **What treatment options are available for wet macular degeneration?**

There is no cure for wet macular degeneration. However, several treatment options are available.

1. *Thermal Laser* was the first treatment used to treat wet macular degeneration and is still occasionally used. A laser beam is focused on the blood vessels to cauterize them.

2. *Photodynamic therapy (PDT)* ♦ uses a low intensity laser to stimulate a light sensitive drug that is injected intravenously to cause shrinking of the abnormal blood vessels in the macula associated with macular degeneration.

Both the above treatments are very rare now a days...the latest treatment options is

3. *Anti-VEGF medication* ♦ is the newest and best treatment for wet macular degeneration. These medications are injected into the eye and decrease leakage from and the progression of the abnormal blood vessels growing under the retina in macular

degeneration. Anti-VEGF medications are not a cure and continued treatment is necessary to minimize the adverse effects of the abnormal blood vessels and maximize the patient's vision.

Treatment for wet macular degeneration can involve combining these types of treatments.

### **What are the risk factors associated with macular degeneration?**

- History of hypertension
- History of cardiovascular disease
- Smoking
- Sun Exposure
- Hyperopia (farsightedness)
- Light skin & eye color
- Lens opacities (cataracts)

### **Is macular degeneration curable?**

No, but treatment can slow or even stop the progression of the disease and in some cases, reverse some of the damage. The earlier the diagnosis is made, in general, the better the outcome.