Wet Age-Related Macular Degeneration

What is wet macular degeneration?
Macular degeneration is a disease of the retina that affects people over the age of 50. The macula is the area of the retina responsible for our clear, central vision. Under the retina is a layer called the retinal pigment epithelial (RPE), which helps move waste material out of the retina. As we age, the retinal pigment epithelial can become damaged and less efficient, causing waste material to build up under the retina. There are two forms of the macular degeneration; wet and dry.

In around 15% of cases, dry age-related macular degeneration progresses to the more vision threatening wet form of the disease. Though Wet AMD accounts for only a small percentage of total AMD cases, nearly 90% of all severe vision loss caused by AMD is attributed to this form.

Wet AMD is characterized by the growth of abnormal blood vessels below the retina called Choroidal Neovascularization, or CNV for short. As the RPE becomes damaged and inflamed during dry AMD, ischemia (not enough blood) occurs. When this happens, cells within the RPE release a chemical called vascular endothelial growth factor (VEGF), which causes new blood vessels to grow. These new vessels are very fragile and tend to leak blood and fluid under the retina, causing further damage and inflammation. Damage to the macula can occur rapidly and vision loss usually progresses much more quickly than dry AMD.
What are the risk factors?
Age-related Macular Degeneration is a disease that affects people over the age of 50, and the prevalence of the disease increases with age. In other words, as you get older, the risk of developing macular degeneration increases. Though what causes macular degeneration is not fully understood, studies have found several risk factors associated with the development of AMD, which include:
1. Confluent soft drusen
2. Having blue or light colored eyes
3. A family history of AMD (research has shown a genetic component)
4. Continuous unprotected exposure to the sun (ultraviolet radiation)
5. Smoking

What are the symptoms?
Patients with wet macular degeneration usually experience one or more of the following symptoms:
1. Straight lines appear distorted or crooked
2. Blurred or blind spots in your vision
3. Rapid onset of vision loss
4. Difficulty adjusting to low light levels
5. Colors don’t look as bright or vivid

How can the doctor determine the extent of the dry macular degeneration?
The doctor will perform a dilated exam with a slit lamp to determine the stage of macular degeneration and how much of the macula has been affected. To check for degeneration of the outer retina, the doctor will use an indirect ophthalmoscope. Since the wet form of macular degeneration can cause damage quickly, the doctor will order several tests so that your condition can be closely monitored.

What tests are performed?
Testing is important because it helps the doctor to precisely document the extent of macular degeneration, check for active leakage, and measure changes that occur. The three types of tests described below are performed in our clinic.

Optical Coherence Tomography (OCT) is a high definition image of the retina taken by a scanning ophthalmoscope with a resolution of 5 microns. These images can determine the extent of degeneration and the presence of any fluid within or under the retina. The doctor will use OCT images to objectively document the progress of the disease throughout the course of your treatment.

Fluorescein Angiography is a test that documents blood circulation in the retina using fluorescein dye which luminesces under blue light. Fluorescein is injected into a vein in your arm and digital fundus pictures are taken afterwards for 10 minutes. The pictures are used to determine whether leakage is present (indicating that the dry form has converted to the wet form) and how much damage has been done to the different layers of the retina. The doctor will explain the pictures to you in more detail.

Indocyanine Green Angiography is a test that documents blood circulation in the choroid (tissue below the retina) using indocyanine green dye which luminesces under infrared light. The dye is injected into a vein in your arm and digital fundus pictures are taken afterwards for 15 minutes. This test is usually done at the same time as fluorescein angiography. The pictures are used to determine the size and activity of the choroidal neovascularization. The doctor will explain the pictures to you in more detail.

What treatments are available for wet macular degeneration?
Actively leaking wet macular degeneration requires treatment, and without treatment, severe vision loss occurs. There are two types of treatments available for wet macular degeneration

Intravitreal injection of avastin and dexamethasone are used to prevent new blood vessels from growing and to decrease the amount of inflammation within the retina. This is the most common treatment.

Photodynamic Therapy (PDT) is used in conjunction with intravitreal injections for choroidal neovascular membranes that are not responsive to injections alone.

Your doctor will discuss with you which treatment option or combination is best for your specific condition.