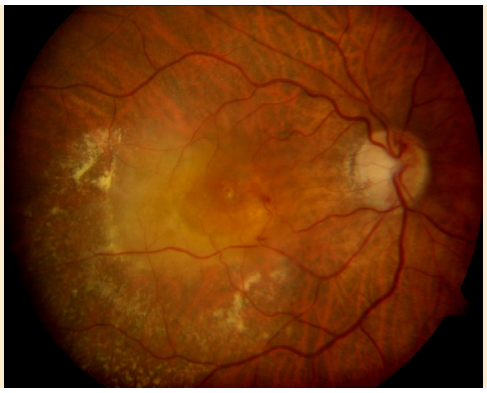
Neovascular (Wet) AMD

Age-related macular degeneration (AMD) is a condition that affects the central retina (macula), which is most important for reading vision and daily tasks. Neovascular (also called “wet” because of the presence of abnormal fluid or blood) AMD is an advanced form of the disease and can cause rapid and severe loss of central vision in one or both eyes. A diagnosis of wet AMD used to mean unavoidable loss of vision, but current treatments allow retina specialists to control the disease in the vast majority of cases.

What causes Wet AMD?

The onset of age-related macular degeneration is determined largely by genetics, environmental factors and age. Only a small fraction of individuals with AMD go on to develop the advanced wet form, and this progression cannot currently be accurately predicted by genetics. Smoking greatly increases the risk of developing wet AMD.

In the wet form of AMD, abnormal blood vessels grow under the retina. These blood vessels can leak or break, resulting in blood or fluid collections. If this occurs behind the central retina, vision can drop dramatically. If treatment is delayed, blood or fluid can be toxic to the retina, resulting in permanent damage which cannot be fully treated.



How is Wet AMD diagnosed?

Because several different diseases can produce blood or fluid in the central retina, your retina specialist will usually order tests to confirm the diagnosis of wet AMD and also document a starting point for treatment in order to measure progress over time.

Optical coherence tomography (OCT) is a fast, non-invasive scan of the retina which measures and locates fluid in and behind the retina. *Fundus photography* is the use of high resolution photographs to document the tissue appearance. *Fluorescein angiography (FA)* identifies the source of leakage of fluid under and within the retina with a series of timed photographs taken after intravenous injection of fluorescein dye.

Your BARA doctor will use these diagnostic tests to monitor the response of disease to treatment over time. OCT is used to monitor changes most frequently, while the other tests are repeated less often.

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Treatment of wet AMD

The primary treatment for wet AMD is injection of medication into the back part of the eye, known as the vitreous. The leakage of blood and fluid in wet AMD is caused by a hormone called VEGF (vascular endothelial growth factor). The medicines injected into the eye block this hormone (anti-VEGF medicines). There are four medicines currently injected into the eye as treatment for wet AMD:

AVASTIN. Avastin (bevacizumab) has been used for treatment of wet AMD since 2005, and millions of injections have been given since then. Avastin was initially developed for intravenous use in patients with colon cancer and was FDA-approved for that purpose, before retina specialists began using it off-label for treatment of retinal disease. A large randomized clinical trial (the CATT Study) conducted by the National Institutes of Health (NIH) directly compared Lucentis and Avastin, and in 2012, the study showed that over two years of treatment, Avastin was approximately equivalent to Lucentis in efficacy.

LUCENTIS. Lucentis (ranibizumab) was developed for use in wet AMD and was FDA-approved for this purpose in 2006. The medicine costs approximately $2,000 per injection. At a molecular level, Lucentis is very similar to Avastin. Lucentis has been studied extensively in large randomized clinical trials, providing the highest quality evidence for its effectiveness and safety.

EYLEA. Eylea (aflibercept) was FDA-approved for treatment of wet AMD in 2011. This medicine costs almost the same as Lucentis; while it is also an anti-VEGF class medication, its binding to the target molecule works differently. A large randomized study showed that Eylea is effective when compared to Lucentis and may be used at less frequent treatment intervals in some patients.

BEOVU. Beovu (brolucizumab) was FDA approved for treatment of wet AMD in 2019 after clinical trials demonstrated non-inferiority to Eylea over a year of treatment. In 2020, the FDA approved an update to the label for Beovu to include safety information related to retinal vasculitis and retinal vascular occlusion as possible complications of treatment with this medication.

Anti-VEGF injections do not cure wet AMD. The injections reduce bleeding and fluid leakage behind the retina but ongoing injections are usually needed to control the disease regardless of which medication is injected. Your retina specialist will talk to you about what to expect over the course of treatment.

Photodynamic therapy (PDT) is an additional treatment sometimes used for treatment of wet AMD. PDT by itself is not as effective as anti-VEGF medicines, but in selected cases, PDT combined with anti-VEGF therapy can provide good results and reduce the number of injections needed to control the disease. PDT consists of intravenous injection of a medicine called Verteporfin, followed by a laser treatment that activates the drug in the area of leaking blood vessels behind the retina.

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