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# Wet macular degeneration

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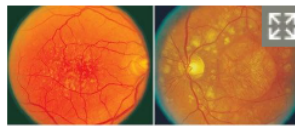
Doctors & departments

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## Diagnosis

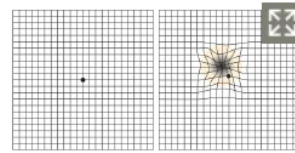
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Your doctor will review your medical and family history and conduct a complete eye exam. To confirm a diagnosis of macular degeneration, he or she may do several other tests, including:



Drusen

- Examination of the back of your eye.** Your eye doctor will put drops in your eyes to dilate them and use a special instrument to examine the back of your eye. He or she will look for fluid or blood or a mottled appearance that's caused by drusen. People with macular degeneration often have many drusen — yellow deposits that form under the retina.



Amsler grid

- Test for defects in the center of your vision.** During an eye exam, your eye doctor may use an Amsler grid to test for defects in your central vision. If you have macular degeneration, some of the straight lines in the grid will look faded, broken or distorted.
- Fluorescein angiography.** During this test, your doctor injects a colored dye into a vein in your arm. The dye travels to and highlights the blood vessels in your eye. A special camera takes pictures as the dye travels through the blood vessels. The images will show if you have leaking abnormal blood vessels or retinal changes.
- Indocyanine green angiography.** Like fluorescein angiography, this test uses an injected dye. It may be used to confirm the findings of a

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fluorescein angiography or to identify abnormal blood vessels deeper in the retina.

- **Optical coherence tomography.** This noninvasive imaging test displays detailed cross sections of the retina. It identifies areas of thinning, thickening or swelling. This test is also used to help monitor how the retina responds to macular degeneration treatments.
- **Optical coherence tomography (OCT) angiography.** This is a newer, noninvasive test that, in certain cases, allows your doctor to visualize unwanted blood vessels in the macula. Though still used primarily as a research tool, it's gaining in popularity in clinics.

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## Care at Mayo Clinic

[Our caring team of Mayo Clinic experts can help you with your wet macular degeneration-related health concerns](#)

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### More Information

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## Treatment

Treatments are available that may help slow disease progression, preserve existing vision and, if started early enough, recover some lost vision.

## Medications

Medications may help stop the growth of new blood vessels by blocking the effects of growth signals the body sends to generate new blood vessels. These drugs are considered the first line treatment for all stages of wet macular degeneration.

Medications used to treat wet macular degeneration include:

- Bevacizumab (Avastin)

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Wet AMD. **Ask a  
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Prescribing Informati



- Ranibizumab (Lucentis)
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- Brolucizumab (Beovu)

Your doctor injects these medications into the affected eye. You may need injections every four to six weeks to maintain the beneficial effect of the medication. In some instances, you may partially recover vision as the blood vessels shrink and the fluid under the retina absorbs, allowing some vision gain.

Possible risks of eye injections include conjunctival hemorrhage, increased eye pressure, infection, retinal detachment and eye inflammation.

## Therapies

- **Photodynamic therapy.** This procedure is very occasionally used to treat abnormal blood vessels at the center of your macula. During photodynamic therapy, your doctor injects a drug called verteporfin (Visudyne) into a vein in your arm, which travels to blood vessels in your eye. Your doctor shines a focused light from a special laser to the abnormal blood vessels in your eye. This activates the drug, causing the abnormal blood vessels to close, which stops the leakage.

Photodynamic therapy may improve your vision and reduce the rate of vision loss. You may need repeated treatments over time, as the treated blood vessels may reopen.

After photodynamic therapy, you'll need to avoid direct sunlight and bright lights until the drug has cleared your body, which may take a few days.

- **Photocoagulation.** During photocoagulation therapy, your doctor uses a high-energy laser beam to seal abnormal blood vessels under the macula. The laser causes scarring that can create a blind spot, but the procedure is used to stop the vessels from bleeding with the aim of minimizing further damage to the macula. Even with this treatment, blood vessels may regrow, requiring further treatment.

Few people who have wet macular degeneration are candidates for this treatment. It generally isn't an option if you have abnormal blood vessels directly under the center of the macula. Also, the more damaged your macula is, the lower the likelihood of success.

- **Low vision rehabilitation.** Age-related macular degeneration doesn't affect your side (peripheral) vision and usually doesn't cause total blindness. But it can reduce or eliminate your central vision — which is necessary for driving, reading and recognizing people's faces. It may

be beneficial for you to work with a low vision rehabilitation specialist, an occupational therapist, your eye doctor and others trained in low vision rehabilitation. They can help you find ways to adapt to your changing vision.

### More Information

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[Treatments for wet macular degeneration](#)

[Photodynamic therapy](#)



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## Clinical trials

[Explore Mayo Clinic studies](#) testing new treatments, interventions and tests as a means to prevent, detect, treat or manage this condition.

## Lifestyle and home remedies

Even after receiving a diagnosis of wet macular degeneration, you can take steps that may help slow vision loss.

- **Don't smoke.** If you smoke, ask your doctor for help to quit.
- **Choose a healthy diet.** The antioxidant vitamins in fruits and vegetables contribute to eye health. Kale, spinach, broccoli, squash and other vegetables have high levels of antioxidants, including lutein and zeaxanthin, which may benefit people with macular degeneration. Foods containing high levels of zinc also may be of particular value in patients with macular degeneration. These include high-protein foods, such as beef, pork and lamb. Nonmeat sources include milk, cheese, yogurt, whole-grain cereals and whole-wheat bread.

Another good choice is healthy unsaturated fats, such as olive oil. And research studies have shown that a diet high in omega-3 fatty acids, such as those found in salmon, tuna and walnuts, may lower the risk of advanced macular degeneration. But the same benefit is not shown from taking omega-3 supplements, such as fish oil pills.

- **Manage your other medical conditions.** If you have cardiovascular disease or high blood pressure, for example, take your medication and follow your doctor's instructions for controlling the condition.
- **Maintain a healthy weight and exercise regularly.** If you need to lose weight, reduce the number of calories you eat and increase the amount of exercise you get each day.
- **Have routine eye exams.** Ask your eye doctor about the recommended schedule for follow-up exams. In between checkups, you can do a self-assessment of your vision using an Amsler grid.

## Vitamin supplements

For people with intermediate or advanced disease, taking a high-dose formulation of antioxidant vitamins and minerals may help reduce the risk of vision loss. Research from the AREDS2 (Age-Related Eye Disease Study 2) shows benefit in a formulation that includes:

- 500 milligrams (mg) of vitamin C
- 400 international units (IU) of vitamin E
- 10 mg of lutein
- 2 mg of zeaxanthin
- 80 mg of zinc (as zinc oxide)
- 2 mg of copper (as cupric oxide)

Taking supplements may be helpful, but there also are possible health risks. Ask your doctor if taking supplements is right for you.

### More Information

[Wet macular degeneration care at Mayo Clinic](#)

[Living better with vision loss](#)

## Coping and support

Vision loss from macular degeneration can affect your ability to do things such as read, recognize faces and drive. These tips may help you cope with your changing vision:

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