

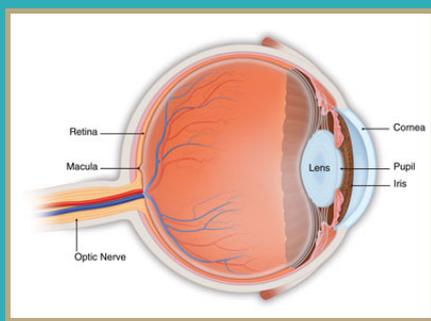
MACULAR DEGENERATION

What is macular degeneration?

The retina is a thin layer of tissue that lines the back of the eye. The macula is a very small area in the centre of the retina where the light rays get focused. It is responsible for central vision, which is important for reading, recognising faces and other fine tasks.

Macular degeneration is age-related damage of the macula. Peripheral vision is not usually affected, but reading or close work can become impossible.

Who is at risk?



Many people develop macular degeneration as part of the aging process. However, certain people do seem to be more at risk:

- Genetic factors - much higher risk if a family member has macular degeneration.
- An overactive immune system with associated inflammation.
- Smoking and high blood pressure have been associated with wet macular degeneration.
- Obesity and high cholesterol levels are also a risk.

Different types of macular degeneration



Dry macular degeneration accounts for 90% of cases and is associated with aging. It is caused by breakdown or thinning of the tissues in the macula.

Wet or exudative macular degeneration. The macula is normally protected by a thin tissue that separates it from very fine blood vessels nourishing the back of the eye. The breakdown of this layer sometimes allows a membrane of scar tissue with fine blood vessels to grow beneath the retina. Sometimes these blood vessels break or leak. This results in bleeding and scarring under the retina. As this happens there is distortion, blurring and loss of central vision.

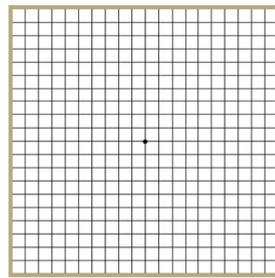
Other types of macular degeneration are inherited, and are not associated with aging. Occasionally injury, infection or inflammation may damage the delicate tissue of the macula.

Symptoms

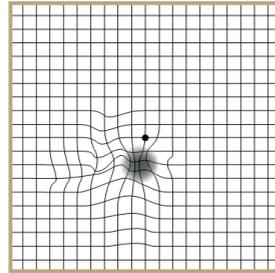
If only one eye is affected, it may not be noticed in the early stages. If both eyes are involved, reading and close work may become very difficult. Side vision is unaffected, but colours may dim.

How is it diagnosed?

An ophthalmologist can diagnose macular degeneration in the early stages if you have regular eye check-ups. The doctor dilates (widens) your pupils by using special eye drops. The retina is then carefully examined. The doctor may use an Amsler grid to check the sight.



While covering one eye, look at the dot in the centre of the grid. If the lines are wavy or distorted you may have a macular problem.



Other helpful investigations are: [fluorescein angiography](#), and [optical coherence tomography](#).

How is it treated?

Only 10% of all patients with macular degeneration have wet macular degeneration, and about 75% of these cases can be treated. People with other forms cannot be treated. Although their central vision will deteriorate, their peripheral or side vision is maintained.

Treating the wet form may involve anti-VEGF treatment, thermal laser treatment or photodynamic therapy. Treatment reduces, but does not eliminate the risk of severe visual loss.

Anti-VEGF injection treatments

Vascular endothelial growth factor (VEGF) is a chemical that is associated with the growth and leakage of abnormal blood vessels under the retina in macular degeneration. Several new drug treatments (called anti-VEGF drugs) have been developed to treat wet macular degeneration. Blocking VEGF reduces the growth of abnormal blood vessels, slows their leakage and helps to slow vision loss. In some cases vision may improve.

The ophthalmologist injects the anti-VEGF drug directly into the eye as an outpatient procedure.

Before the procedure, the eye is cleaned with antiseptic to prevent infection. Local anaesthetic is administered to numb the eye before the injection. Multiple anti-VEGF injections may be needed over the course of many months, or even years. Sometimes anti-VEGF treatment may need to be combined with other therapies.

Thermal laser therapy

Another form of treatment for wet macular degeneration is thermal laser therapy. This is done as an outpatient procedure in the ophthalmologist's office. The laser used in this procedure is a high-energy, focused beam of light that produces a small burn in the retina. This destroys the abnormal blood vessels and prevents further leakage, bleeding and growth.

Photodynamic therapy

In some cases photodynamic therapy, or PDT, may be an option. This therapy uses a light-activated drug called a photosensitizer and a special low-power, or cool, laser to treat wet macular degeneration right at the centre of the macula.

What other forms of therapy are useful?

- Low vision aids can be very helpful. There are many types of magnifying devices which have an added light source. Other techniques and devices include:
 - * Electronic books or audio books.
 - * Large print books, newspapers, magazines and playing cards.
 - * High-contrast and large number telephones, thermostats, watches, and remote controls; talking watches, timers, books, and medical devices.
 - * Bold-tipped markers for easy-to-read shopping and phone number lists.
 - * Computers that can magnify (on screen or on paper) any printed material or picture, or that read aloud what is viewed on screen.
 - * Sitting closer to the television (this will not damage your eyes).
- Good lighting is very helpful. Stronger light bulbs in darkly lit areas can make tasks like cooking, dressing and walking up and down stairs easier.
- Glare control is also useful. Wearing a wide-brimmed hat or tinted wrap-around sunglasses can shield the eyes from annoying overhead lights and the sun.



What about dietary supplements?

Some recent studies have shown that taking anti-oxidant vitamins (vitamin C, vitamin E, beta-carotene), copper and zinc may slow the progression of the disease.

Women benefit from taking folic acid and vitamins B6 and B12.

Eating dark leafy greens, and yellow, orange and other colourful fruits rich in lutein and zeaxanthin may also reduce your risk of developing macular degeneration.

Please note that these are general guidelines. If in doubt, consult your ophthalmologist.