

Overview

The macula is an area at the back of your eye that you use for seeing colour and fine detail such as reading a book.

Macular degeneration (MD) covers a number of conditions which affect the macula.

One of the most common symptoms of MD is noticing that straight lines appear wavy or that there are patches missing from your vision. You may not notice this if it happens in just one eye as your other eye will compensate. This means it is important to regularly check your vision in each eye separately. You can do this by looking with each eye separately at the straight lines around a door, or at a window frame or blind. Macular degeneration (MD) happens when the macula at the back of your eye becomes damaged. This can make it harder to see fine detail, such as recognising faces, or to read or watch television. However, this does not normally affect your ability to walk around as your side vision should not be affected. If you notice the lines are distorted or there are missing patches, you should see your optometrist straight away.

Does MD cause blindness?

MD is the leading cause of sight loss in the UK. However, most people with MD still have their peripheral (side) vision and so can see well enough to get around. However, they may not be able to see well enough to read without strong magnification.

Does MD happen more as you get older?

The most common forms of MD happen more as you get older and are known as age-related macular degeneration (AMD). Around one in 10 people aged 65 or over show some signs of AMD. Some younger people may have MD that is caused by a genetic condition, but this is less common than AMD.

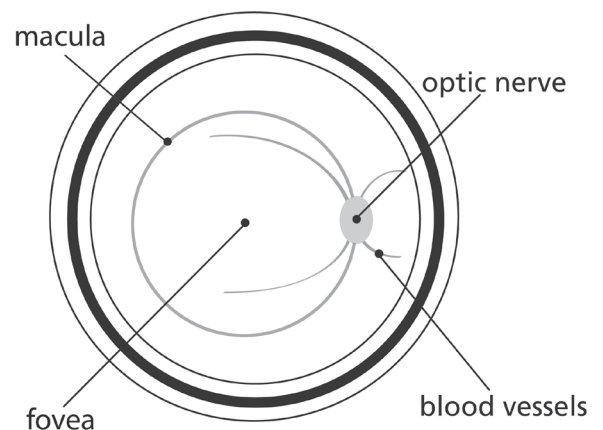
What are the symptoms of AMD?

You may notice that things appear blurry or you may have difficulty reading, even with your normal reading glasses. You may also notice that you have a smudge in your central vision which does not go away, or notice that straight lines appear distorted or wavy.

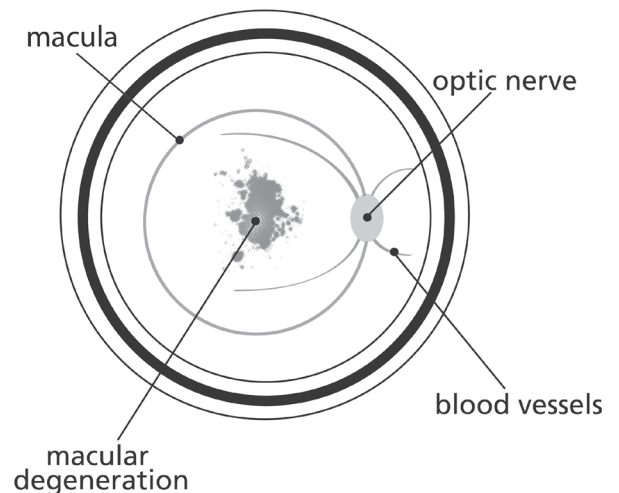
If you have AMD, you may notice your eyes becoming sensitive to bright light, or find it difficult to adapt when going from a dark to a light environment. You may also notice that colours seem to fade.

These symptoms are more noticeable if you look for them with each eye separately. This happens because if you have both eyes open, your better eye may

Healthy eye



Eye affected by macular degeneration



compensate for the other one. We recommend you regularly check your vision in each eye separately by looking at a book or magazine while covering each eye in turn. This will help you notice any changes in your vision early.

You can find more information, including a video showing how AMD may affect your vision, on our website at lookafteryoureyes.org/age-related-macular-degeneration.

I have heard that AMD can be 'wet' or 'dry' – is this right?

AMD can be described as being dry or wet. Dry AMD is the most common type of AMD and develops with age. It is the gradual deterioration (degeneration) of the retinal cells at the back of the eye leading to deposits (called drusen) on the retina. Dry AMD usually develops slowly and people may not notice any change for many years. Most people with dry AMD have near normal vision. Currently, there is no treatment for dry AMD. However, there are some steps you can take that may help reduce the risk of the condition getting worse.

Wet AMD is much less common and develops when abnormal blood vessels grow into the retina and leak. Wet AMD can cause sudden and rapid loss of central vision.

A small number of people with dry AMD can progress to wet AMD. The most common form of late AMD is the wet form. This happens when abnormal blood vessels begin to grow behind the macula and leak fluid. This pushes the macula away from its blood supply at the back of your eye and causes a rapid loss of vision. It is usually associated with you noticing distorted vision.



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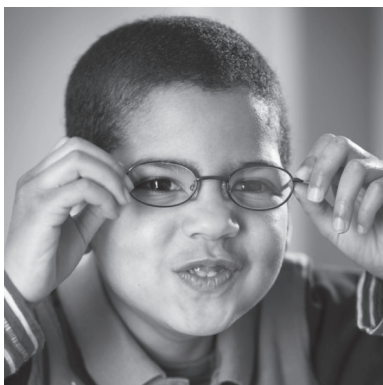
This is where straight lines appear wavy, or you have a blank spot or smudge in the centre of your vision.

You can check this yourself by looking at straight lines such as door and window frames or Venetian blinds. Or, you can look at a grid of squares printed on paper, called an Amsler chart (see later).

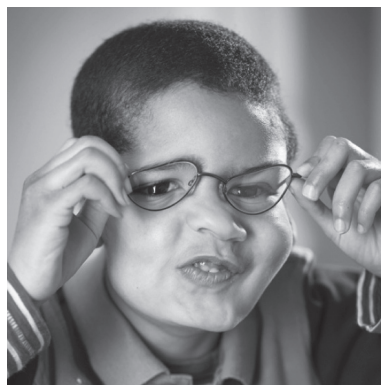
Your optometrist will be able to give you advice on checking your vision. It is important to do this with each eye separately and while wearing your glasses (if you have glasses). Wet AMD can be treated, so if you notice these symptoms you need to see your optometrist straight away. Late dry AMD is called geographic atrophy and is rarer than late wet AMD. This is where you lose vision because the retina at your macula thins but there are no leaking blood vessels. There is no treatment for geographic atrophy.

Can I do anything to protect myself from getting AMD?

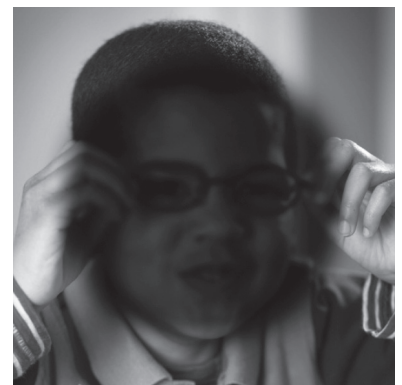
Smoking is a major risk factor for developing AMD, so if you smoke try to stop. You can find more information about stopping smoking in the Live Well section of the **NHS.uk** website.



Normal vision



Early stages of AMD



Advanced stages of AMD

Some things that have been associated with AMD include:

- being overweight or obese
- having a diet that is high in fat, or
- having high blood pressure.

You should try to maintain a healthy weight, eat a healthy diet, and keep your blood pressure under control.

Some studies show that having a diet that is rich in colourful fruit and vegetables (for example, kale, spinach, celery and broccoli) may reduce your risk of developing AMD. There are lots of dietary supplements on the market which claim to be beneficial for eye health. Two large trials (AREDS 1 and 2) in the USA showed that some people with AMD may experience a delay in the rate at which the condition progresses if they take certain nutritional supplements. It is not clear whether this is the case in the wider population. The National Institute of Health and Care Excellence (NICE) feels there is not enough clinical evidence to make any strong recommendations on changing your diet or taking nutritional supplements for AMD. Ask your optometrist whether nutritional supplements may be helpful for you. If you smoke or have been exposed to asbestos, you should not take beta carotene because it could be harmful to you.

It is possible that prolonged exposure to ultraviolet (UV) light may be linked to AMD. We recommend that you wear UV-absorbing glasses when you are going to be outside for long periods.

Are there any other risk factors?

You are more at risk of developing AMD if you have a family history of the condition or already have it in one eye. The exact cause of AMD is not yet known, so you may develop it even if you don't have any of these risk factors.

Is there any treatment for AMD?

It is important to spot any changes early by checking your vision in each eye separately and contacting your optometrist immediately if your vision suddenly becomes distorted or you have a blank spot in your vision.



Smoking is a major risk factor for developing late AMD, so if you smoke try to stop.

Wet AMD can often be treated if it is caught early enough. This is normally done by injecting a drug into the gel inside your eye. This shrinks the new blood vessels that are pushing the macula away from the back of your eye. You may need to have this repeated every few weeks for a few months. This treatment will be provided on the NHS. If your optometrist suspects you have wet AMD, they will refer you to a specialist eye doctor, known as an ophthalmologist. They will decide if you need treatment by taking some scans of the back of your eye to show the thickness of the retina. They may also inject some special dye into your arm to see how this travels through the back of your eye. While this happens, they also take a series of flash photographs of the inside of your eye.

There is currently no treatment for dry AMD (early or late). Lighting is very important and you may find it easier to read if the lighting is good or if you are sitting near a window. You may also find that text with a high contrast, such as black text on a white background, is easier to read.

If AMD is affecting your ability to see fine details, your optometrist can advise you about special magnifiers which can help you. Organisations such as RNIB, Macular Society or local social services can provide you with equipment that can help you manage your day-to-day tasks. Your optometrist or GP will give you advice on contacting these services.

If you find you are struggling to see because of poor vision, ask your doctor or optometrist for details of your local low vision service. You can ask your optometrist for more information about whether you can be registered as sight impaired (partially sighted) or severely sight impaired (blind).

Charles Bonnet syndrome

Some people with poor vision may experience silent visual hallucinations. These can be quite vivid. They are caused by the brain trying to 'fill in' detail in the blind areas. They are not a sign of mental illness. You can find help and more information at **charlesbonnetsyndrome.uk**. For support in your local area, and more information about AMD, visit the Macular Society website at **macularsociety.org** or phone **0300 3030 111**.

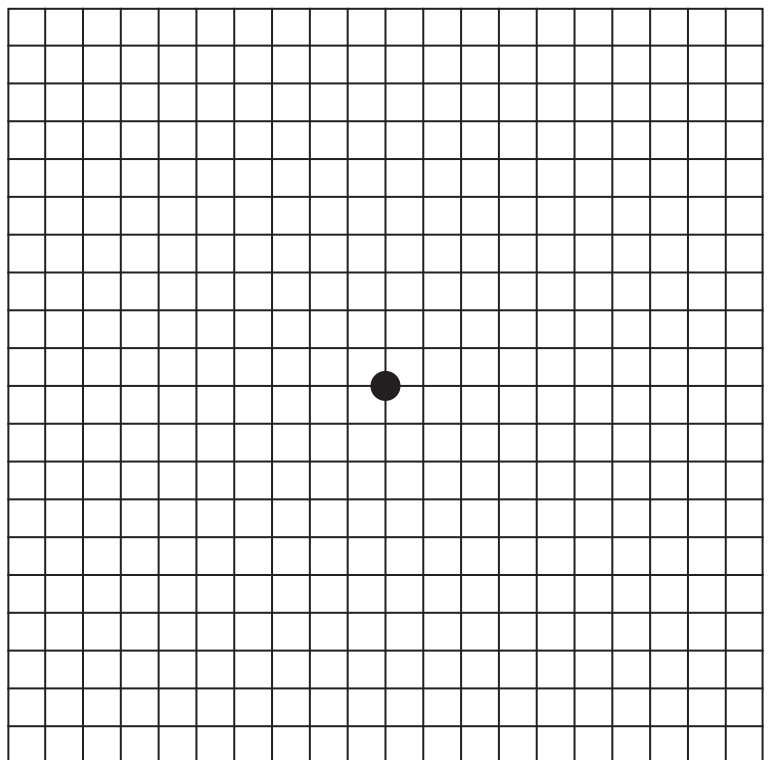


Wet AMD can often be treated if it is caught early enough. There is currently no treatment for dry AMD (early or late).

The Amsler test

You can check for distortion in your vision using the Amsler chart over the page.

- Wear the glasses you usually wear to read (if you use glasses to read).
- Hold the chart about 30cm (12 inches) away from your face.
- Cover each eye in turn. With the other eye, look at the black dot in the middle of the chart. Are all the lines straight? Do you see any distortion, or any broken or wavy lines? Do you see any missing patches?
- If you see anything unusual, you should contact your local optometrist straight away.





If you have any concerns about the health of your eyes, please visit your local optometrist. Optometrists are eye health specialists.

This information should not replace advice that your optometrist or other relevant health professional gives you.

For more information, please talk to your local optometrist.

If you have any concerns about the health of your eyes, please visit your local optometrist. Optometrists are eye health specialists. An eye examination is a vital health check and should be part of everyone's regular health care. Visit **lookafteryoureyes.org** for clear and helpful information on vision and eye health issues and keeping your eyes healthy.

The College of Optometrists is the professional body for optometry. We provide qualifications, guidance and development opportunities for optometrists so that they can maintain and develop the knowledge and skills they need to deliver the highest standards of care. Membership of the College shows your optometrist's commitment to the very highest clinical, ethical and professional standards. Look for the letters MCOptom or FCOptom to see if your optometrist is a member or fellow of the College. Other letters after your optometrist's name mean they have done further training and gained extra qualifications in diagnosing and managing specific eye conditions. The qualifications are available in different subject areas such as low vision, paediatric eye care, glaucoma and macular degeneration.