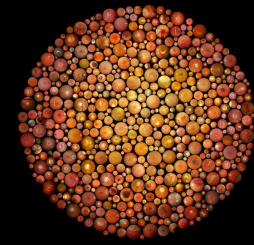


Age-Related Macular Degeneration

Patient Information Leaflet

MEDICAL RETINA



Robert Purbrick

CONSULTANT OPHTHALMOLOGIST

KEY POINTS

- AMD is the leading cause of sight loss in the UK. Early changes are common with age. Around 700,000 people are affected by late stage AMD that causes meaningful vision loss.
- It affects central vision only - peripheral vision is preserved and AMD is painless.
- There are two forms: dry AMD, which progresses slowly and has no treatment, and wet AMD, which can develop rapidly and is treatable.
- Stopping smoking is the single most important thing you can do to reduce your risk.
- Wet AMD requires urgent referral - if you notice a sudden change in vision, contact me or your optometrist promptly.
- If you have both AMD and a cataract, surgery to remove the cataract can meaningfully improve vision quality even when the AMD cannot be treated further.

What Is the Macula?

The macula is a small but critical area at the centre of the retina - the light-sensitive lining at the back of the eye. Although only about 5mm across, it is responsible for your central vision, most of your colour vision, and the fine detail you need for tasks like reading and recognising faces. The rest of the retina handles peripheral (side) vision, which AMD does not affect.

What Is Age-Related Macular Degeneration?

AMD is a condition in which the macula gradually deteriorates, reducing central vision. It usually affects people over 50 and becomes more common with age. Late AMD that causes meaningful vision loss affects around 1 in 20 people over 65, rising to 1 in 8 over 80 and 1 in 5 by 90. There are two distinct forms:

Dry AMD

The most common form. Retinal cells in the macula break down gradually over months or years, causing slow progressive central vision loss. There is currently no treatment for dry AMD, though nutrition and lifestyle measures may help slow progression. Around 10-15% of people with dry AMD go on to develop wet AMD.

Wet AMD

Abnormal new blood vessels grow beneath the macula and leak blood or fluid, causing rapid scarring and central vision loss. Wet AMD can develop very suddenly - over days or weeks. It is treatable, and early treatment produces the best outcomes. Fast referral to a retinal specialist is essential if wet AMD is suspected.

Symptoms

AMD affects people differently depending on which form they have and how advanced it is. Common symptoms include:

- A blurred, dark, or missing patch in the centre of your vision, especially noticeable first thing in the morning
- Straight lines - door frames, lampposts, tiles - appearing wavy or distorted
- Words disappearing or jumping when reading
- Objects appearing to change shape, size or colour
- Colours appearing faded or washed out
- Difficulty adapting when moving between dark and bright environments

In the early stages, particularly if only one eye is affected, you may notice very little. This is why regular eye tests and self-monitoring are important.

ACT URGENTLY IF YOU NOTICE:

A sudden deterioration in central vision, new distortion of straight lines, or a dark patch in your vision. These may indicate the onset of wet AMD or a change in existing disease. Contact my secretary on **01273 782500**, your optometrist, or seek an urgent eye appointment. Do not wait for a routine appointment.

Causes and Risk Factors

The exact cause of AMD is not fully understood, but several factors are associated with increased risk:

- **Age** - the primary risk factor. Cell regeneration slows with age, increasing vulnerability.
- **Smoking** - smokers are up to four times more likely to develop AMD than non-smokers. If you also carry a common AMD-associated gene variant, the risk increases twentyfold. Stopping smoking even after diagnosis can help slow progression.
- **Family history** - a first-degree relative with AMD significantly increases your own risk.
- **High blood pressure** - people with raised blood pressure are around one and a half times more likely to develop AMD.
- **Diet** - a diet low in fruit, vegetables, and antioxidants is associated with higher risk. Obesity also increases risk.

AMD affects men and women equally, though more women are diagnosed simply because women tend to live longer.

Investigations

Your optometrist may detect early signs of AMD at a routine sight test, sometimes using OCT scanning. If wet AMD is suspected, you should be referred urgently to a retinal specialist - not via your GP, as this causes unnecessary delay.

I will examine the retina with dilating drops and arrange an OCT scan at every visit. If more detailed information is needed I may also arrange fluorescein angiography (FFA), indocyanine green angiography (ICG), or OCT-angiography (OCT-A).

Treatment

Dry AMD

There is currently no proven treatment to reverse dry AMD. Management focuses on monitoring for conversion to wet AMD and on the lifestyle and nutritional measures described below. Low vision support and rehabilitation services can help you make the most of remaining vision.

Wet AMD

Wet AMD is treated with anti-VEGF injections - medication injected into the eye to block the abnormal blood vessel growth and leakage. Treatment aims to stabilise or improve vision, and the earlier it is started the better the outcome. Most patients require a course of injections over a period of years, with regular monitoring in between. Please see the separate Anti-VEGF injection treatment leaflet for full details of what the procedure involves.

A small number of patients do not respond adequately to anti-VEGF injections. Alternative options including photodynamic therapy (PDT) may be considered in selected cases.

Nutrition and Supplements

A Mediterranean-style diet rich in green vegetables (broccoli, spinach, and curly kale are particularly good sources), oily fish, and colourful fruit and vegetables is associated with a reduced risk of AMD progression. Two important nutrients for macular health are lutein and zeaxanthin, found in green vegetables, eggs, and orange and yellow produce. Aim for at least 10mg of lutein per day if possible.

Two large US studies - the Age-Related Eye Disease Studies (AREDS 1 and 2) - found that a specific combination of nutritional supplements (vitamins C and E, zinc, copper, lutein, and zeaxanthin) can slow progression in people with intermediate or advanced dry AMD in one eye. These supplements are available over the counter in the UK under various brand names. They are not suitable for everyone - in particular, they are not recommended for current smokers in their original formulation. In the UK, MacuShield Gold is a widely available formulation that meets the AREDS2 specification and is easy to remember by name. Please ask me whether supplements are appropriate for you before starting them.

Protecting Your Vision

- Stop smoking - the single most effective step you can take
- Maintain a healthy weight and blood pressure
- Wear good quality sunglasses outdoors to reduce UV and blue light exposure
- Eat a varied diet rich in green vegetables, fish, and colourful produce
- Consider AREDS2 supplements (such as MacuShield Gold) if you have dry AMD - ask me whether they are appropriate for you
- Have regular eye tests so changes can be detected early
- Monitor your own vision regularly - use an Amsler grid (see below)

Cataract Surgery in AMD

What cataract surgery can offer

A cataract clouds the natural lens of the eye, reducing the brightness, contrast, and clarity of vision. In a patient with AMD, this is often adding significantly to the visual difficulty already caused by macular disease. Removing the cataract restores a clear passage for light to reach the back of the eye.

The improvement is not always reflected in how far down the letter chart a patient can read - the macular damage may limit that regardless. But patients commonly notice a meaningful improvement in the quality of their vision: colours appear brighter, contrast is restored, and everyday tasks feel easier even if the measured acuity has not changed. For someone already managing macular disease, this can make a genuine difference to daily life.

When surgery needs careful thought

If the AMD is the dominant cause of vision loss and the cataract is relatively mild, surgery may offer limited benefit, and the small risks of any operation need to be weighed against what can realistically be gained. Equally, a dense cataract can make it technically harder to image the retina clearly with OCT, which can complicate monitoring of wet AMD - in those situations, removing the cataract can actually help manage the eye disease more effectively.

There is also the question of lens choice. Selecting the right implant power is more complex when AMD is present, since the expected visual outcome is harder to predict. Premium lenses designed to reduce glasses dependence - such as multifocal lenses - are generally not recommended when macular disease is present, as they rely on the macula functioning normally to work well.

The benefit of dual expertise

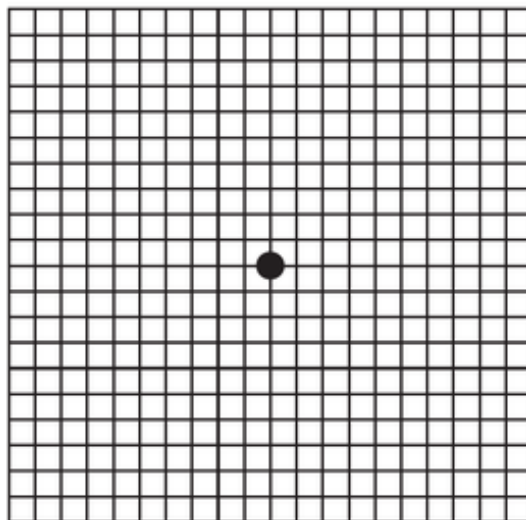
Having your cataract surgery performed by a surgeon with subspecialty training in medical retina means that these decisions are made with a full understanding of both conditions simultaneously. The implications for your ongoing retinal treatment - including any anti-VEGF injection programme - can be planned around the surgery, follow-up after the operation can monitor both the cataract recovery and your macular disease together, and any unexpected findings at the back of the eye are managed in the same clinical relationship.

If you have both a cataract and AMD, I would be very happy to discuss whether surgery is right for you and to carry it out. Please contact my secretary to arrange an appointment.

Monitoring Your Vision at Home - the Amsler Grid

An Amsler grid is a simple tool for detecting changes in your central vision between appointments. Wearing your reading glasses, hold the grid about 30cm from your eye and cover one eye at a time. Look directly at the central black dot. The lines should appear straight, evenly spaced, and complete with no gaps or missing areas. Repeat for the other eye.

If lines appear wavy, distorted, or blurred, or if part of the grid looks missing or different from before - contact me promptly. You can also use any regular grid in daily life such as a window frame, floor tiles, or graph paper as an informal check.



Standard Amsler grid (20x20 squares). Each square subtends 1 degree of visual angle at 30cm.

Charles Bonnet Syndrome

Up to half of all people with AMD experience visual hallucinations at some point - a condition called Charles Bonnet syndrome. These images, which may include people, animals, patterns, or landscapes, can be vivid and surprising. They are not a sign of mental illness but a recognised response of the brain to reduced visual input: as fewer signals reach the brain, the visual processing areas can become overactive and generate images spontaneously.

Hallucinations may occur briefly or continue for months to years. They often reduce over time and are not dangerous, but they can be distressing. Please tell me if you experience them - it is more common than many people realise and you are not alone in it.

Support and Further Information

The Macular Society provides excellent information, support groups, counselling, and a telephone befriending service for people living with macular disease. Their Advice and Information Service can be reached on **0300 3030 111** (Monday to Friday, 9am to 5pm) or at macularsociety.org.

The RNIB (Royal National Institute of Blind People) also offers practical and emotional support: rnib.org.uk or **0303 123 9999**.