



## Eye Info

### Understanding age-related macular degeneration (AMD)

**Summary:** Designed to help you understand more about your eye condition, this guide has been written by our experienced eye health team.

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#### What is the macula?

The eye is shaped like a ball. The pupil, close to the front, is the opening, which allows light to enter the eye. Just behind the pupil is the lens, which focuses the light on the retina at the back of the eye. The retina is a delicate tissue, which converts the light into images, and sends them to the brain. The macula is a small area at the very centre of the retina.

The macula is very important and is responsible for what we see straight in front of us, allowing us to see fine detail for activities such as reading and writing, as well as our ability to see colour.

#### What is macular degeneration?

Sometimes the delicate cells of the macula become damaged and stop working, and there are many different conditions which can cause this. If it occurs later in life, it is called "age-related macular degeneration", also often known as AMD.

Broadly speaking, there are two types of macular degeneration or AMD, usually referred to as "wet" and "dry". This is not a description of what the eye feels like but what the ophthalmologist (eye specialist) can see when looking at the macula.

"Dry" AMD is the most common form of the condition. It develops very slowly causing gradual loss of central vision. Many people find that vision slowly deteriorates by gradual central blurring, and that the colours fade away like the colours fading in an old photograph. There is no medical treatment for this type. However, aids such as magnifiers can be helpful with reading and other small detailed tasks.

"Wet" AMD results in new blood vessels growing behind the retina, this causes bleeding and scarring, which can lead to sight loss. "Wet" AMD can develop quickly and sometimes responds

to treatment in the early stages. It accounts for about 10 per cent of all people with AMD.

Both “wet” and “dry” AMD usually involve both eyes, although one may be affected long before the other. This sometimes makes the condition difficult to notice at first because the sight in the “good” eye is compensating for the loss of sight in the affected eye. You cannot wear out your sight, so do not be afraid to continue to use the “good” eye as normal.

### **And now the good news**

AMD is not painful, and almost never leads to total blindness. It is the most common cause of poor sight in people over 60 but very rarely leads to complete sight loss because only the central vision is affected. This means that almost everyone with AMD will have enough side (or peripheral) vision to get around and keep his or her independence.

### **What causes AMD?**

At the moment the exact cause for AMD is not known. However there are a number of risk factors which have been identified.

**Age** – AMD is an age related condition so growing older makes the condition more likely.

**Gender** – Women seem more likely to develop macular degeneration than men.

**Genetics** – There appear to be a number of genes which can be passed through families which may have an impact on whether someone develops AMD or not.

**Smoking** – Smoking has been linked by a number of studies to the development of AMD. It has also been shown that stopping smoking can reduce the risk of AMD developing.

**Sunlight** – Some research suggests that lifetime exposure to sunlight may affect the retina. It is a good idea to wear sunglasses to protect the eyes.

**Nutrition** – Research suggests some vitamins and minerals can help protect against AMD.

Although nothing can be done about age, gender and the genes we inherit, it is possible to control the other more environmental factors that seem to be linked to AMD. Protecting your eyes from the sun, eating a well balanced diet with plenty of fresh fruits and vegetables and stopping smoking may all help to delay the progress of AMD.

### **What are the symptoms?**

In the early stages your central vision may be blurred or distorted, with objects looking an unusual size or shape and straight lines appearing wavy or fuzzy. This may happen quickly or develop over several months. You may be very sensitive to light or actually see lights, shapes and colours that are not there. This may cause occasional discomfort. AMD is not painful.

Because AMD affects the centre of the retina, people with the advanced condition will often notice a blank patch or dark spot in the centre of their sight. This makes reading, writing and recognising small objects or faces very difficult.

### **What should I do if I think I have macular degeneration?**

If you suspect that you may have AMD but there are no sudden symptoms, you should see your optometrist (optician) or family doctor (GP) who will refer you to an eye specialist. If there is a rapid change in vision, you should consult your doctor or hospital's Accident and Emergency department immediately.

If you have AMD in one eye, and you start getting sudden symptoms in your other eye, then you should go to your hospital or ask your GP to arrange an emergency appointment, as soon as possible. This will ensure that you get treatment within a few days.

### **What does an eye examination involve?**

First, there will be an assessment of your vision in both eyes. Then you will be given eye drops, which enlarge your pupil so that the eye specialist can look into your eye. The drops take about 30 minutes to work although their effect may last for several hours. Your vision will become blurred for a while and your eyes will become sensitive to light, but this is nothing to worry about. Many patients with AMD do not meet the visual requirements for driving and it is certainly preferable that you do not drive to the hospital for this examination. It would be helpful if someone can come with you to help you home.

### **What is fluorescein angiography?**

In some cases your eye specialist may decide that a fluorescein angiogram will also be needed. This involves taking a rapid series of photographs of your retina with bright flashes of blue light. These photographs give an accurate map of the changes occurring in the macula and help your eye specialist to decide what is the best treatment for you.

For the angiogram you will be given a small injection of special dye in your arm which then travels through your blood stream to your eye. This is not painful but you may feel a bit sick. There are few side effects, although some people find that they are dazzled for a while afterwards.

You may also notice that the injection has left your skin with a faint yellow tinge from the fluorescein dye but this soon passes into your urine. The angiogram helps the ophthalmologist decide what type of AMD is affecting your sight and what can be done to help.

### **Can macular degeneration be treated?**

#### **Photodynamic therapy**

If you have "wet" AMD affecting the middle of the macula, in some cases, [photodynamic therapy \(PDT\)](#) is possible. This treatment involves infusing a light sensitive drug through your blood stream similar to a fluorescein angiogram. This drug is able to identify the new blood vessels, growing in the wrong place behind the retina, that form with "wet" AMD.

A "cold laser" is then shone into the eye which activates the drug stopping the new blood vessels from growing and helping to prevent them causing too much damage to the macular area. This treatment is available on the NHS and has been shown to be effective for many people with "wet" AMD. It can help stop the "wet" AMD progressing to its worst stages though more than one treatment may be needed. However, PDT does not work in all types of wet AMD. Your specialist will advise you.

#### **Are any other treatments available for "wet" AMD?**

## Anti vascular endothelial growth factor (anti-VEGF) treatment

Anti-VEGF treatment is now available on the NHS for “wet” type macular degeneration. This treatment involves an injection into the vitreous jelly inside the eye. Anti-VEGF treatments stop new blood vessels from growing by acting on a protein which is released as these vessels develop. If given at the right time anti-VEGF treatments can stop sight getting worse and in some cases improve sight that has already been lost.

The drugs are given by injection into the eye over a period of months, usually starting with three injections over 12 weeks. If your ophthalmologist is happy with the effect of the treatment then they may decide to wait for a period of time before giving more. The injection is given in an operating theatre or a clean room. You will be given anesthetic eye drops and an antibiotic drop to help prevent infection. The injection itself shouldn't be painful though your eye may be slightly sore afterwards when the anesthetic wears off. Because the injection enters the jelly of your eye there is a chance that the pressure inside your eye may rise, so the specialist will check to see that this has not occurred shortly after the injection is given. Sight in the eye may be blurry for a while, because your pupil will have been dilated and you may see swirls in your vision for a few days.

The main complications of this treatment have found to be raised eye pressure, retinal detachment and eye infections; however, all these complications occur only in a small number of people and there are treatments available to deal with them. See our page on [anti-VEGF treatment](#).

## What can be done to help with “dry” AMD?

At the moment there aren't any medical treatments for “dry” AMD. There is some research which suggests that vitamin supplements can help slow down the progression of “dry” AMD. They do not restore sight, but they may have a preventative role to play. See our page on [nutrition and the eye](#).

## How will I cope?

A natural reaction to being diagnosed with AMD is to feel upset or worried about the future. Adjusting to any major change in life can feel difficult, so you may need some support especially at first.

If you would like to talk things over with someone outside your circle of friends or family, support is available. You can contact the RNIB Helpline on 0845 766 9999 or email [helpline@rnib.org.uk](mailto:helpline@rnib.org.uk) to ask about emotional support services, or you could talk to someone from your local society for people with sight loss. Your family doctor or social worker may also be able to help you find a counsellor if you feel that would be helpful.

The [Macular Disease Society](#) has local groups and a telephone counselling service. Talking about and sharing experiences can be a good way of learning to cope with feelings and problems that other people with the same condition may also have come across before.

## Can I be helped to see better?

Don't be discouraged – you can be helped to see many of the things you used to by making the best use of your remaining sight. This means learning to use your side (or peripheral) vision.

Low vision services can help you find the best magnifiers for you.

They can also give advice and training on the many ways, often quite simple, in which you can make the most of your remaining sight. Ask your eye specialist, optometrist (optician), GP, social worker or local society for people with sight loss about how to get referred to a low vision service near you.

For more information about how to make the most of your eyesight, see our page [See for yourself - make the most of your sight](#).

## What next?

### Talk to someone

The RNIB Helpline can:

- put you in touch with an RNIB specialist advice service such as welfare benefits and rights, education, employment, legal rights, emotional support, daily living help and residential care
- send you free information and leaflets
- give you details of support groups and services in your area.

Call us Monday to Friday 9.00 am – 5.00 pm on 0845 766 9999 or 020 7388 2525 (some callers may find it cheaper to call a landline, so we have detailed both 08 prefixed numbers and landline equivalents where available).

Unfortunately, RNIB can only answer email enquiries from the UK. But you may find an organisation for people with poor sight in your country through our [agencies database](#).

### Get information

New research finds that the link between smoking and AMD is now as strong as the link between smoking and lung cancer. RNIB's campaign warns about the links between [smoking and sight loss](#).

RNIB's guide to [Adapting to sight loss](#) offers ideas for people with sight problems on making life easier and ways of getting the most out of life.

You may also find the following useful:

- [Find a Low Vision or Hospital Information service near you](#)
- [Learning](#)
- [Employment](#)
- [Friends and Family](#).

### Useful contacts

[Royal National Institute of Blind People](#)

105 Judd Street, London WC1H 9NE

Telephone: 0845 766 9999

Email: [helpline@rnib.org.uk](mailto:helpline@rnib.org.uk)

RNIB Helpline offers information, support and advice for anyone with a sight problem.

[Macular Disease Society](#)

PO Box 1870  
Andover  
SP10 9AD  
Telephone: 0845 241 2041

[Royal College of Ophthalmologists](#)

17 Cornwall Terrace  
London  
NW1 4QW  
Telephone: 020 7935 0702

The Royal College of Ophthalmologists is unable to comment on individual patient care.

[Driver and Vehicle Licensing Agency \(DVLA\)](#)

Drivers Customer Services (DCS)  
Correspondence Team DVLA  
Swansea  
SA6 7JL  
Telephone: 0870 240 0009

Email: [drivers.dvla@gtnet.gov.uk](mailto:drivers.dvla@gtnet.gov.uk)

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Content author: [eyehealth@rnib.org.uk](mailto:eyehealth@rnib.org.uk)

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