



Age-Related Macular Degeneration (AMD)

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.

AMD falls into two categories, referred to as "wet" and "dry". This is not a description of what the eye feels like but what the ophthalmologist can see when looking at the macula.

- ▶ "Dry" AMD is the most common form of the condition. This develops very slowly causing gradual loss of central vision. The vision cells simply stop working like the colours fading as they would 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.

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.

What causes AMD?

At the moment the exact cause for AMD is not known although the following risk factors have been identified:

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| 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. |

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What causes AMD?

- Smoking** Smoking has been linked by a number of studies to the development of AMD. Stopping smoking can reduce the risk of AMD developing.
- Sunlight** Some research suggests that lifetime exposure to sunlight may affect the retina. Therefore wear sunglasses to protect the eyes.
- Nutrition** Research suggests some vitamins and minerals can help protect against AMD.

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.

Treatments

"Wet" AMD - Photodynamic therapy (PDT)

In some cases this can be treated by photodynamic therapy (PDT) which involves infusing a light sensitive drug through the blood stream. 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.

Other treatments

New treatments for "wet" macular degeneration are being developed all the time and therapies are becoming available on the NHS. These involve regular injections into the eye under sterile conditions and studies have shown that these therapies improve vision significantly.

"Dry" AMD

There aren't any medical treatments for "dry" AMD at the moment. Some research suggests that vitamin supplements can help slow down the progression of "dry" AMD so may have a preventative role to play.