

Age Related Macular Degeneration (AMD)

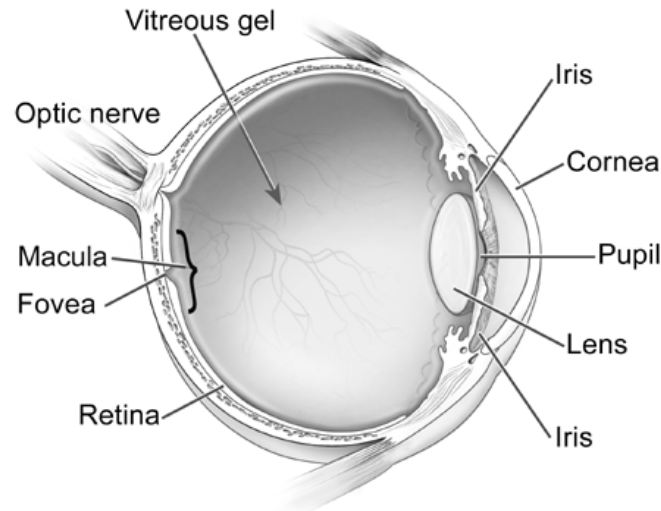


Diagram showing the different structures of the eye

The Macula

The macula is a circular area 4-5 mm in diameter and is located at the back of the eye at the centre of the retina – the innermost layer of the eye. It is responsible for our central vision allowing us to discriminate fine detail, for example reading, writing and other detailed tasks and also enables us to recognise faces and see colour.

Different types of AMD

There are two types of Age-related Macula Degeneration (AMD), 'dry' and 'wet': This is not a description of what the eye feels like but what the ophthalmologist (eye doctor) can see when looking at the macula.

As the name suggests, Age-related Macula Degeneration occurs in older people although there are macular

diseases which occur in younger people – Juvenile macular disease. This article however, refers to Age-related Macula Degeneration.

Dry Macular Degeneration

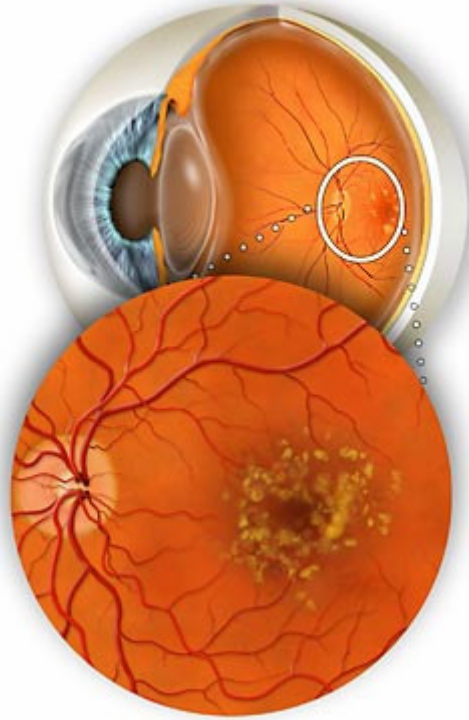


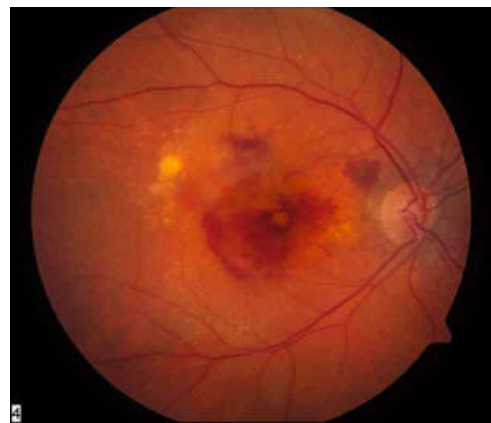
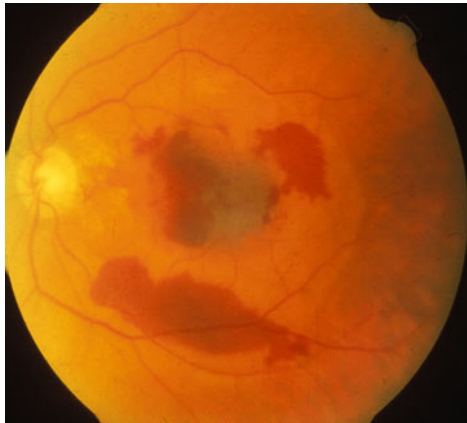
Diagram showing macular degeneration and the position in the eye where it will be located.

Dry AMD, also known as atrophic is the commonest form of the condition and accounts for about 90% of cases. For those that do develop the condition, the cells in the retina start to fail as they age leaving them unable to utilise vital nutrients efficiently.

Dry AMD runs a slow, progressive course causing gradual deterioration of central vision.

Unfortunately there is still no treatment for this type of AMD. However, not smoking and eating a healthy diet may help to slow the rate of deterioration.

Wet Macular Degeneration



Macular haemorrhage – In patients with wet ARMD

Wet AMD, also known as neovascularisation is a complication of dry AMD and accounts for the other 10% of cases and can cause a more sudden deterioration in vision.

Neovascularisation is the growth of new blood vessels which develop beneath the retina but they are very fragile causing leakage of blood or fluid which if left untreated results in scarring.

Early diagnosis is vitally important if there is to be any chance for treatment to be successful. Changes in vision need to be reported promptly, therefore if you experience a sudden change in your vision it's possible that the wet type may be developing and it is essential that you visit your optician who will be able to fast track you to the eye clinic if necessary.

Diagnosis

At the eye clinic, if there is any suspicion of wet AMD then a Fluorescein Angiogram (FFA) will be performed to confirm the presence of any 'active' disease.

This involves a dye being injected into a vein in the arm which courses through the blood vessels and as it reaches the eye, photos are taken of the retina to establish the pattern and extent of leakage that has occurred. It is the result of this procedure which establishes if any treatment will be of benefit.

Current Treatments for Macular Degeneration

Vascular Endothelial Growth Factor

Vascular Endothelial Growth Factor (VEGF) is a chemical in the body which signals cells to produce abnormal blood vessels. Vision can be impaired by these new blood vessels growing in front or behind the retina. Most of the drugs being developed for wet AMD are designed to target VEGF to block this abnormal growth and reduce leakage and bleeding – they are known as anti - VEGF.

The new treatments available are anti VEGF drugs called Avastin and Lucentis. They are injected into the eye and have shown very encouraging results in stabilising and in some instances even improving sight loss. However, it must be recognised that not everyone with wet AMD will benefit from these drugs and early diagnosis is very important if hope of arresting sight loss is to be achieved.

Combination Therapy

For some people it is sometimes necessary to use laser treatment in addition to the injections. Photodynamic therapy (also known as PDT) uses a cold laser to seal leaking blood vessels. This involves injecting a drug that reaches and coats the abnormal blood vessels via the

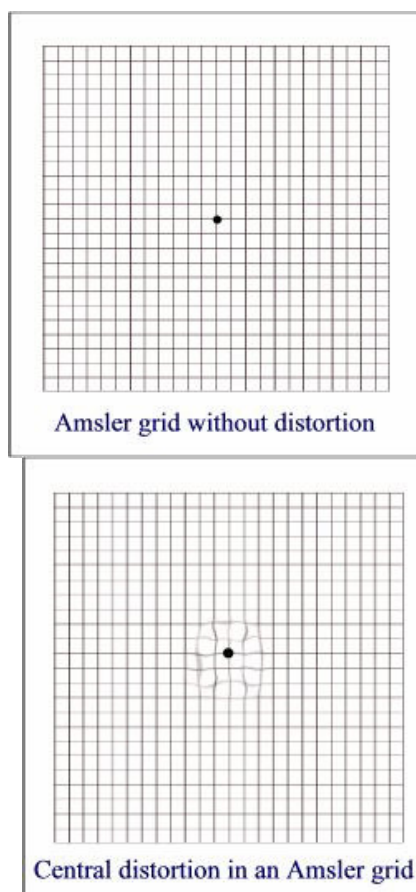
blood stream. The drug is then activated by shining a light at the coated blood vessels which destroys them.

Unfortunately, people with long term loss of vision due to wet AMD will not be helped by these treatments. Scar tissue will have formed which cannot be reversed.

Early detection is vital. If you are uncertain or concerned in any way please seek advice from your optician or GP.

Signs and Symptoms of AMD

In the early stages central vision may be blurred or distorted and straight lines may appear wavy. This may happen quickly or develop over several months.



Amsler Grid: Used to help identify any areas of distortion. Each eye is tested individually

Because AMD affects the central 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.

Even with advanced AMD, peripheral vision (side vision) is usually always maintained allowing for safe navigation. Sometimes friends and families may think that the 'wool is being pulled over their eyes' because the person with AMD complains that they can't see to read, write or cook etc but they can see something on the floor over the other side of a room.

The reality is that they are using their peripheral retina to see in the distance. When they cross the room to pick it up, central vision is used to see near to and therefore the object 'disappears' from view again causing great upset and frustration.

Causes of AMD

The exact cause for AMD is not known although 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 – although this could also be due to the fact that women tend to live longer than men.

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

Smoking - The strongest and most consistent evidence is that smoking is the principal known preventable exposure associated with AMD doubling the risk as opposed to non-smokers.



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 - The cause of AMD in individuals is not known but it is suspected that the retina breaks down due to the chemical interaction of free radicals which are a by-product of the body's natural processes.

Medical literature contains a growing body of information on the role of anti-oxidants possibly preventing or delaying the onset of AMD by 'mopping up' the free radicals.

The antioxidants found to be of particular benefit are Lutein (pronounced *loo teen*) and Zeaxanthin (pronounced *zee a zan thin*) and are found in dark green, leafy vegetables and coloured fruits, e.g. raw spinach, broccoli, green peas and beans, sprouts, tomatoes and carrots.



Specialists agree that a well balanced diet is essential although some specialists and organisations go further and recommend the use of supplements to achieve optimum intake of these nutrients. However, despite research the evidence on supplements is not conclusive and therefore left up to individual choice.

Visual Hallucinations

Many people with AMD suffer visual hallucinations – please see **Charles Bonnet Syndrome**

Further Support or Information:

The Macular Disease Society can provide further information at: <http://www.maculardisease.org/>