Some types of macular disease can be treated. Treatment must be given quickly before permanent damage is done. This leaflet is available on audio CD.

No one need face macular degeneration alone. For information and support call 0300 3030 111.
Age-related macular degeneration (AMD) is the most common cause of sight loss in developed countries.

Over 600,000 people in the UK are affected by AMD. The number is increasing as the population ages.

The macula is the most sensitive part of the retina. It gives us our central vision and the fine detail of what we see. When the macula is damaged people may not be able to drive and they find it hard to read, watch TV and recognise faces.

Dry AMD is a slow deterioration of the cells of the macula, often over many years. There is no medical treatment for dry AMD but research is going on around the world.

Wet AMD is another form of the condition. Tiny abnormal blood vessels grow into the retina which leak and cause scarring of the macula.

A person with wet AMD can lose much of their central vision in a few weeks. There are now treatments for wet AMD which slow the progress of the condition in most people.
Treatment has to be given quickly, before there is permanent damage to the macula.

**Current treatments for wet AMD**

There are a range of treatments and options available for people with wet AMD. These include drug treatments, laser treatment, dietary advice and supplements. As well as a new treatment of combined drug and radiation, there are also telescopic lens implants. Not all of these are available on the NHS.

**Drug treatments**

Several drugs are used to treat wet AMD.

They are known as ‘anti-VEGF’ drugs.

VEGF is short for vascular endothelial growth factor. It is the substance in the body which is responsible for the development of healthy blood vessels. In wet AMD too much VEGF is produced in the eye, causing the growth of unwanted, unhealthy blood vessels.

Anti-VEGF drugs block the production of VEGF and stop the development of abnormal blood vessels. All the anti-VEGF drugs are given as an injection into the eye. Don’t be alarmed – the injections are much less frightening than they sound!
Lucentis® (medical name ranibizumab) was the first anti-VEGF to be licensed for wet AMD.

All patients receive a standard ‘loading dosage’ at the start of their treatment: normally three or more consecutive monthly injections.

After this initial phase there are a number of treatment regimens that an ophthalmologist can choose. Each regimen has a subtle difference in the frequency of appointments. They also vary as to whether or not you have an injection at every appointment. The ophthalmologist will tailor treatment to individual patients and how their disease is responding to Lucentis®.

We recommend that patients ask their eye doctor, after their original loading dose, what treatment regimen they are on. From this patients will be better able to understand the timescale between injections and feel confident that they are not being overlooked in the clinic appointment system or missing any treatment.

Eylea® (medical name aflibercept) is given as three injections each a month apart and then every eight weeks for the first year. Your hospital
doctor will then decide how often treatment is needed. Medical trials suggest that Eylea’s effects last longer than those of Lucentis® and so people may need fewer injections over time.

A third drug, Avastin® (bevacizumab), may be used. But Avastin® is an anti-VEGF drug used to treat cancer and is not licensed for treatment in the eye so is used in rare circumstances.

**Injections**

All the drugs currently used to treat wet AMD have to be injected into the eye. Patients are treated at a hospital in a designated injection room. The eye is examined first to check that an injection is needed. If it is, the procedure may take place on the same day or the person may have to return.

When the injection is given the patient reclines on a couch. The eye to be treated is held open with a device called a speculum and anaesthetic drops are used to numb it. The patient looks to one side and the injection is given in the opposite corner of the eye. The patient does not see the needle and the injection only takes a few seconds.
Some people say the injections are uncomfortable and occasionally painful. Others experience discomfort or even pain for a while afterwards. Very occasionally there are more severe reactions. However, most people have no problems. It’s very rare, in our experience, for people to refuse the treatment because it is too painful.

Injections do not work if there is already long-standing damage to the macula. About 10% of people with wet AMD do not respond to Lucentis® or Eylea®.

The Royal College of Ophthalmologists recommends that people with suspected wet AMD should be ideally referred to a retinal specialist immediately and seen within a week. If treatment is needed it should be ideally given within a week of the first appointment with the specialist.

Optometrists who suspect someone has wet AMD should refer the person directly to a retinal specialist. People should not be referred back to their GP by the examining optometrist. This is unnecessary and causes delay.
Treatment for macular conditions

**Other macular conditions**

Anti-VEGF injections are effective in a number of other retinal conditions which often affect the macula.

**Diabetic macular oedema (DMO)**
Oedema is swelling of the macula caused by leaky blood vessels. DMO is a complication of diabetic retinopathy and results in a condition similar to wet AMD. Lucentis® is now approved for use in the NHS to treat some, but not all, people with DMO. Eylea® is also approved to treat eligible patients with DMO.

**Retinal vein occlusion (RVO)**
Lucentis® and Eylea® are now approved to treat some, but not all, people with RVO.

**Myopic maculopathy**
This is a complication of severe short sightedness and results in a condition similar to wet AMD. Lucentis® is approved for the treatment of this condition.

In some areas of the country it is possible to get anti-VEGF treatment on the NHS for other rare forms of macular disease which cause bleeding under the
retina. These include Pseudoxanthoma Elasticum (PXE) and Best’s Dystrophy.

**Other treatment options**

**Laser**
A few people may be offered laser treatment. A light-sensitive drug is injected into the arm. The drug travels to the eye where it is activated by a laser beam, shutting down the abnormal blood vessels. Most people need two to five treatments. The treatment is only suitable for people with particular patterns of damage to the retina.

**Diet**
Many experts recommend a diet high in antioxidants or, sometimes, a dietary supplement. There are many supplements on the market for eye health but large trials on their effectiveness are mostly lacking at the moment.

A large study, the Age-Related Eye Disease Study (AREDS) in the USA suggested that a certain formula of vitamins A, C and E plus zinc could slow the progress of AMD in some people.

A second AREDS trial looked at the effect of adding the antioxidants lutein and zeaxanthin.
It found that this further slowed the progress of AMD in some people, particularly those who had lower levels of lutein and zeaxanthin in their diets.

The AREDS investigators recommended the exclusion of vitamin A (also called beta-carotene) as it appears to increase the risk of lung cancer in people who smoke or have smoked.

Lutein and zeaxanthin are plant dyes which are found particularly in green, leafy vegetables such as kale and spinach.

The macula has high concentrations of lutein and zeaxanthin and they are thought to protect the eye. AREDS formula supplements are available in the UK. However, they are not suitable for everyone and your ophthalmologist can advise.

Anyone taking a supplement should speak to a doctor first, especially if taking other medication.

For further information about a healthy diet please request our leaflet Nutrition and eye health.
**New treatments**

Some new treatments for AMD are becoming available in the private sector.

Oraya therapy is a combination of Lucentis® injections plus a single, tiny dose of radiotherapy. Trials suggest that the radiation may reduce the number of injections for some people.

Ellex is a laser used to improve the function of the retina before sight loss develops. It is available privately for DMO and as a trial treatment for AMD. It is not a proven treatment in AMD yet.

Telescopes are available which are implanted into the eye. There are several types and there have been mixed reports of their success. Telescopes are not currently available on the NHS.

The CentraSight lens is an example. It is implanted into one eye and magnifies images by three, projecting the bigger image onto a healthier part of the retina.

The lens is not suitable for the majority of people. Strict screening is necessary to identify those who are most likely to benefit from it.
Implanted lenses cost from £5,000 to £20,000.

**Low vision aids**

Anyone with AMD requires good lighting and magnification to aid their vision. There are many devices that can help make everyday life easier. For further information see our leaflets *Lighting* and *Low vision aids*. Also, ask at your clinic or GP surgery for a low vision assessment.

For references visit www.macularsociety.org/references

**NHS treatment**

If you have difficulty obtaining NHS treatment which your eye specialist says would help you, contact us for advice and support.

Our advocacy service can help you prepare letters or other documents to support your case for treatment.

**Contact our helpline:**

0300 3030 111
Monday – Friday
9am – 5pm

help@macularsociety.org
Macular conditions cause more than half of all blindness in Britain. We urgently need to find a cure and you can help today. We are the only UK charity dedicated to funding research into macular disease.

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