

Information for Patients

Treatment of Age Related Macular Degeneration (AMD) by Intravitreal Injection

What is age related macular degeneration (AMD)?

Age related macular degeneration (AMD) is an eye condition that causes problems with central vision but does not lead to a total loss of sight. There are two types of AMD, dry and wet.

In the 'dry' form of AMD, atrophy (or the wearing out) of the fine cells in the macula (the centre of the retina) occurs. No treatment has yet been proven to prevent or cure dry AMD, but research in this field continues. Currently low visual aids can be used to support vision.

In the 'wet' form of AMD, abnormal blood vessels grow under the macula and affect the centre of the vision. Often such vessels leak blood or fluid and cause blurred or distorted vision. Without treatment, central vision loss can rapidly get worse. Treatment of AMD cannot undo most of the changes already present in the eye, so often the goal of treatment is to prevent further loss of vision.

How is the diagnosis of AMD confirmed?

AMD is confirmed by:

- **Optical Coherence Tomography (OCT)** This is a camera scan that uses light to make a map of the retina at the back of the eye to show up any damaged areas. It is undertaken at every visit.
- **Optical Coherence Tomography Angiography (OCTA)** This is similar to an OCT but gives even more information about the blood vessels at the back of the eye. This may be done at your first visit to help aid in diagnosis.
- **Fluorescein Angiography (FFA)** This is a diagnostic photographic test that uses a special dye called fluorescein which will be injected into a vein in your arm or hand. This gives a detailed view of the back of your eye and is usually only done once to

confirm the diagnosis before starting treatment but can be repeated later on if required.

How is AMD treated?

Currently the most effective treatments for wet AMD are injections administered into the eye. The most commonly used drugs are Aflibercept (Eylea), Ranibizumab (Lucentis), and Bevacizumab (Avastin) and Brolucizumab (Beovu). These are given by injection into the eye and act to slow or stop the growth of the abnormal blood vessels and leakage that cause AMD.

These drugs act broadly speaking in similar ways, by blocking the effects of the chemical vascular endothelial growth factor (VEGF), which cause these blood vessels to form and grow.

What are the differences between the drugs?

Lucentis and Eylea are currently licensed for eye treatment. Both have been approved by the National Institute for Health and Care Excellence (NICE) as treatment options for wet AMD. Your Ophthalmologist (eye doctor) will discuss with you the advantages and disadvantages of each treatment. Both require you to commence monthly treatment. Each drug might then be used according to slightly different treatment regimens once your eye is stable. The most appropriate will be chosen for your treatment plan.

In some cases, you might be offered a treatment called Avastin. This is a licensed drug for other conditions, but it is not licensed for the treatment of eye disease. However, doctors do use it to treat eye disease as there is ample medical evidence to suggest its benefits. Avastin is widely used by eye doctors throughout the world, and the available information suggests positive benefits for a number of eye diseases, including AMD.

How is the treatment given?

The injections are carried out in a separate sterile area to reduce the risk of infection. The injection procedure will be carried out by a qualified doctor or nurse. All our staff who inject have undergone a rigorous training process to ensure that you receive the best care possible. You will be awake for the procedure which lasts about five minutes. Anaesthetic drops will be put in to numb the surface of your eye. The surface and the skin around your eye are washed with an antibacterial solution to reduce the risk of infection. The cleaning solution used is iodine which can sting a little. However, it is the best cleaning agent to reduce your chances of a severe infection. If it stings too much whilst your eye is being cleaned, you can ask for additional anaesthetic drops.

A small clip is then inserted to help keep your eyes open. You will be asked to look in a particular direction and you will not see the needle coming towards you. The needle itself

is very small and its size and length have been chosen to ensure it does not cause damage to the eye.

The drug is injected into the vitreous humour (the jelly like substance inside the back of your eye). You might feel slight pressure on the eye when this is done, but you should not experience significant pain. After the injection you might experience a gritty feeling in your eye, and occasionally you may notice a slight bleed over the white of your eye. You should not worry about this; it will resolve with time. You might also see floaters; these will become smaller and disappear over a couple of weeks.

How often do I need the injections?

Injections are given at repeated intervals, based on what is necessary for your eye. Your eye doctor will tell you how often you will receive the injection, and over what length of time. When you discuss the treatment options you can discuss which type of injection might be better for you. Some injections can have a longer period of time between them. However, it is often necessary to attend for eye examinations and/or injections on a monthly basis and perhaps for several years.

There is no limit to the number of injections we can give. If the doctor feels you will benefit from injections, you can continue to receive them. During follow up visits or phone calls, you will be checked for possible side effects and your progress and results will be discussed with you.

What other treatment options are available?

Other forms of treatment are available for some types of wet AMD. There are certain types of wet macular degeneration which do not respond well to injections alone. If this is the case, you may have to have a specialised dye test to see if you have something called polyps. If you do have polyps, you could be offered photodynamic therapy (PDT). This is a type of 'cold' laser, which also uses a drug called Verteporfin. Some other injections or treatments are sometimes used and at Manchester Royal Eye Hospital you might be offered new treatments as part of a clinical trial. Your eye doctor or nurse will explain these options to you.

You do not have to receive treatment for your condition. However, without treatment, your central vision could continue to get worse over a short period of time and reach the point where treatment can no longer help. Although AMD hardly ever causes complete blindness, it can reduce the central vision to the point where it is only possible to see outlines (known as peripheral vision) or movement, but no fine detail because of the loss of central vision.

What are the risks of treatment?

The potential risks are outlined below and will be discussed with you by your eye doctor. Not everyone who takes the drug will experience side effects; however, as with any medicine side effects are possible with these drugs.

Risks of the eye injection procedure

Regardless of the drug used, the main potential risks are those related to the injection procedure and not the drug itself. Serious complications of the intravitreal injection procedure include bleeding, deep infection (endophthalmitis), cataract formation and retinal detachment. Any of these serious complications can lead to severe, permanent loss of vision. The overall risk over a long-term course of treatment is estimated at about 1% (1 in 100) or less. The risks will be explained and discussed with you before you agree to treatment.

More common side effects include

- Eye pain and redness
- Conjunctival haemorrhage (bloodshot eye)
- Vitreous floaters (bubbles in vision)
- Inflammation of the eye.

Other complications

Very small quantities of these drugs are injected into the eye, so the amount which can get into the bloodstream and potentially cause side effects elsewhere in the body is minimal. However, in theory there might be a slightly increased risk of experiencing blood clots (which can cause heart attack or stroke). Patients with a history of a stroke could be at greater risk of another stroke. If you have had a stroke, please discuss this with your eye doctor or nurse.

Occasionally an injection in the eye can cause the pressure in your eye to rise which may require additional treatment in the form of drops or a small procedure to release the fluid in the front half of the eye.

Coincidental risks

Whenever a medication is used in a large number of patient's coincidental problems might occur that could have no relationship to the treatment. For example, patients with high blood pressure or smokers are already at increased risk for heart attacks and strokes. If one of these patients being treated for AMD suffers a heart attack or stroke, it could be caused by the high blood pressure and/or smoking and not necessarily due to treatment for AMD.

Will the treatment work for me?

Most patients vision will stabilise after treatment and some patients can regain some of their lost vision. Drug injections might not restore vision that has already been lost and will not always prevent further loss of vision caused by the disease, so it is possible that your condition might not get better or could become worse despite these injections. Any or all of the complications described above can cause decreased vision and/or have a very small possibility of causing blindness. Additional procedures might be needed to treat these complications.

Reducing the risk of infection

Please use eye drops prescribed for you after the injection. If you have an eye infection (sticky eyes) on the day of your planned treatment, the injection might have to be delayed until the infection has resolved. Please inform your eye doctor or nurse if you have a red or sticky eye. Your injection might also not be possible if you have an infection in any other part of the body currently requiring treatment. The doctor who assesses you will advise if this is the case. If you have an infection but are still well enough to attend for your appointment it is better to keep the appointment.

There have been rare reports of infection related to the injection procedure arising from bacteria which are normally present in the mouth. This is the reason why staff in the injection room wear face masks during your procedure. It is also recommended that conversation is kept to a minimum in the injection room. It is therefore important that you keep quiet during your injection, except when necessary.

Patient responsibilities

If you experience any of the following please contact the hospital:

- Pain
- Blurred or reduced vision
- Sensitivity to light
- Redness of your eye (increasing compared to immediately after your injection)
- Sticky discharge from your eye

You should avoid rubbing your eyes or swimming for 3 days following each injection, to reduce the risk of infection.

Please keep all post injection appointments or scheduled telephone calls so that potential complications can be checked for.

Although the likelihood of serious complications affecting other organs of your body is low, you should immediately contact your GP or attend your local Accident and Emergency Department if you experience:

- Abdominal pain
- Abnormal bleeding
- Chest pain
- Severe headache
- Slurred speech
- Sudden limb numbness or weakness

Which hospital do I get my injections?

You can get the injections at the Macular Treatment Centre at Manchester Royal Eye Hospital. However, we also have several other centres in Trafford, Cheetham Hill and Wythenshawe. The same staff work in each facility so your care will be to the same high standard. Some of the outreach centres may be more convenient for you as they may be closer to you.

What if I have issues getting to my appointment and how long will it take?

If you have issues getting to your appointment or find you are running late please ring the centre you are having your injections at to let us know so we can ensure that the team know that you are still coming.

In terms of how long the appointment will take it can vary. We endeavour to run on time, but we would advise you give up to four hours for an appointment. The reason for this is each visit needs lots of different investigations to make sure we have all the information we need to make the right treatment decisions for you. This includes getting your vision checked, dilating drops which can blur your vision for 4-6 hours (you should not drive to your appointment), a scan of the back of the eye, a review with a doctor or specialist optometrist, and if needed an injection on the same day. Furthermore, everything must be cleaned between patients which can add to the delay but is necessary for your health and safety.

What if I change my mind?

If you have any concerns, please discuss these with the doctor. You can change your mind about your treatment at any time. If you require further advice, do not understand anything contained in this leaflet, or are having problems following your injection please contact the Macular Treatment Centre.

Contact details:

1. Macular Treatment Centre (0161) 276 5575

2. Emergency Eye Centre on (0161) 276 5597 open 8.00 am-8.00 pm every day including public holidays.
3. Ward 55 (0161) 276 5512 available for advice overnight.
4. Appointments (0161) 701 2950

Further Information

If you would like further information on AMD there are many sources of advice available. Brochures/posters from many relevant patient support groups are available in the clinics in Manchester Royal Eye Hospital, please ask.

Henshaws Patient Support in the Outpatient Department

Manchester Royal Eye Hospital
Telephone **(0161) 276 5515**

Henshaws Manchester www.henshaws.org.uk (0161) 872 1234

Royal National Institute of Blind People. (RNIB)

Find out more at www.rnib.org.uk or phone the RNIB Helpline on 0303 123 9999.

The Macular Society. Find out more at www.macularsociety.org/ or phone the Macular Society Helpline on 0845 241 2041.

AMD Alliance International provides information on early AMD detection, treatment, rehabilitation and support services, as well as new prevention suggestions. Find out more at www.amdalliance.com