

# Anti-VEGF intravitreal injection treatment

This leaflet is written for patients who might have treatment with anti-angiogenic (anti-VEGF) drugs via an injection into the eye. This treats certain retinal conditions which cause abnormal blood vessels to grow and leak under the retina.

Patients with these retinal conditions can lose central vision when abnormal blood vessels bleed or leak fluid under the retina at the back of the eye. A series of injections of anti-VEGF medicines are given into the back of the eye to stop these blood vessels growing and help control the leakage. This treatment is highly effective in preserving central vision in many people.

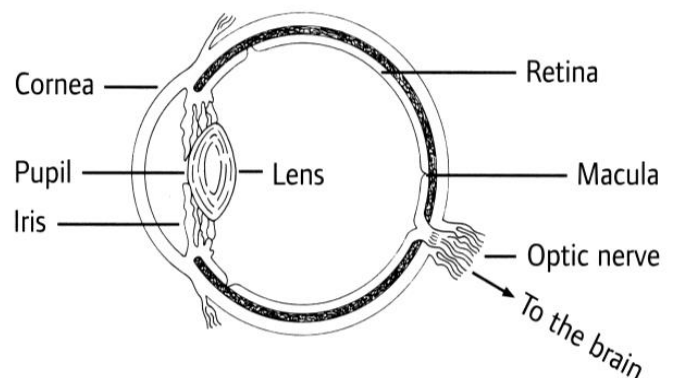
## In which common conditions might this occur?

- Wet age-related macular degeneration.
- Myopic choroidal neovascularization.
- Diabetic macular oedema
- Retinal vein occlusion.

- Any other retinal condition causing fluid to leak under the retina.

## What is age-related macular degeneration (AMD)?

- Age-related macular degeneration (AMD) is the leading cause of vision loss in people aged 50 years or older. It involves damage to the part of the eye called the macula. The macula is a small, but extremely important area located at the centre of the retina, the light-sensing tissue that lines the back of the eye.





### **Sub-retinal bleeding at the macula in wet macular degeneration**

The macula is responsible for seeing fine details clearly. A person with AMD loses the ability to see fine details, both close-up and at a distance. This affects only the central vision, with the side, or peripheral, vision usually remaining normal. For example, when people with AMD look at a clock, they can see the clock's outline but cannot tell what time it is. In a similar way, those with AMD will also lose the ability to recognise people.

### **What is 'wet' AMD?**

There are two types of AMD. Most people (about 75%) have a form called 'early' or 'dry' AMD, which develops when there is a waste build-up under the macula. This is usually seen in those with normal or partially reduced vision. A minority of patients with early AMD can progress to the vision-threatening forms of AMD called late AMD. The most common form of late AMD is 'exudative' or 'wet' AMD. Wet AMD occurs when abnormal blood vessels grow

underneath the retina. These unhealthy vessels leak blood and fluid, which can prevent the retina from working properly.

Severe damage leads to severe permanent loss of central vision, but the eye is not usually at risk of losing all vision (going 'blind') as the ability to see in the periphery (side) remains. There is a less common form of late AMD called geographic atrophy, where vision is lost through the macular tissue becoming completely worn out, with no leaking blood vessels. Unfortunately, anti-angiogenic medicines cannot help this form of late AMD.

### **What is myopic choroidal neovascularization?**

This condition occurs in people who are highly myopic (short-sighted). When someone is highly short-sighted, the retina at the back of the eye is stretched due to the increased size of the eye. This stretching can make the retina thinner and prone to splitting. When this occurs, blood vessels from the choroid (the layer of the eye behind the retina) can grow underneath the retina. These new vessels (neovascularisation) leak blood and fluid, which can prevent the retina from working properly. Severe damage leads to severe permanent loss of central vision.

### **What is diabetic macular oedema (DMO)?**

Diabetic macular oedema is an eye condition occurring in people with both type 1 and type 2 diabetes. Macular

oedema is swelling and thickening of the macula. The macula is a small area in the centre of the retina which contains a rich collection of nerve cells sensitive to light, fine detail, and colour. DMO occurs as a result of changes in retinal blood vessels in people with diabetes. Diabetes is characterised by increased levels of sugar (glucose) in the blood stream. Consistently high blood sugar can damage blood vessels, with the first signs appearing in the smallest vessels, called capillaries. The damaged blood vessels will leak, causing the build-up of excess fluid (oedema) and blood in the macula. It can lead to severe impairment of central vision in the affected eye.

### **What is retinal vein occlusion (RVO)?**

RVO occurs when one of the retinal veins is blocked. The retina is the light sensitive tissue that lines the back of the eye and is responsible for eyesight. RVO usually occurs when: A retinal vein is 'pinched off' through the pressure of an artery lying on top of the vein; or is clogged with a blood clot or atherosclerotic plaque (fatty deposit in the wall of the artery); or is blocked by some inflammatory conditions. The block can occur in the main retinal vein- central retinal vein occlusion (CRVO), or in one of the branches of the main vein-branch retinal vein occlusion (BRVO).

Macular oedema is swelling and thickening of the macula. The macula is a small area in the centre of the

retina that contains a rich collection of nerve cells sensitive to light, fine detail, and colour. The vein block causes the blood pressure to increase in the small retinal blood vessels which causes them to bleed and leak fluid into the retina, forming a macular oedema. The retina may also be affected by poor blood flow and inflammation. All these processes lead to decrease/loss of vision in the affected eye.

### **Can I have treatment with anti-angiogenic (anti-VEGF) drugs if I am pregnant or breast-feeding?**

If you are pregnant or planning to become pregnant, please discuss this with your doctor before your intravitreal injection treatment. Anti-VEGF medicines should be used with caution during pregnancy. Women of child-bearing potential should use effective contraception during their treatment and for at least three months after the last intravitreal injection. If you do become pregnant whilst undergoing intravitreal injections, please inform your doctor immediately. Anti-VEGF medicines are not recommended during breast-feeding because it is not known whether the medicine passes into human milk. Ask your doctor for advice before treatment.

### **Who else should not be treated with anti-VEGF?**

You should not be given anti-VEGF treatment if you have any of the following:

- allergy to anti-VEGF or

any of its ingredients.

- an infection in or around either eye or severe infection anywhere in your body.

Anti-VEGF should be used with caution in patients who have had a heart attack or stroke in the last three months, or who have uncontrolled angina or uncontrolled high blood pressure. **Please ensure you inform the doctor if there are any changes in your medical condition.**

### How does an anti- VEGF injection prevent sight loss?

Anti-VEGF medicines stop the abnormal blood vessels growing, then leaking and bleeding under the retina. This prevents or limits damage to the retinal light receptors and loss of central vision. These medicines are effective in preventing further central vision loss in up to 90% of treated eyes.

### Is anti-VEGF treatment right for me?

Your ophthalmologist will advise if the treatment is appropriate for you and which anti-VEGF medicine will be used. Only patients with active leaking of blood and fluid can benefit from it. The treatment that's right for you will depend on the specific condition of your central retina (macula), your vision and whether there is scarring at the macula. We perform scans and

photographs of the eye which show us the different layers of the retina. These scans can show us if there is blood or fluid present within the retinal layers and help us decide on your treatment.

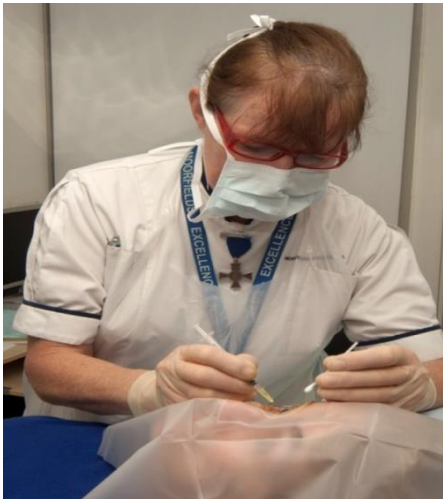
### How is the treatment given?

The drug is injected into your eye with a fine needle. Minimal discomfort is to be expected (equivalent to having blood taken from your arm). The procedure takes five to seven minutes, but the injection itself is over in less than 20 seconds.

The injection is given with you lying down comfortably on the couch. Firstly, local anaesthetic drops are applied to numb your eye and minimise discomfort. Then, your eyelids and surface of the eye are cleaned to prevent infection. Your face and the area around your eye will be covered by a small surgical sheet (a drape) to keep the area sterile. A small clip (speculum) will be used to keep the eye open (see picture below). The injection site is marked with callipers and your eye is stabilised with forceps or a cotton bud. A few seconds later, the injection is given. The injecting clinician will use lubricating drops after your injection. Your vision is assessed post injection by checking you can see hand movements or can count fingers.

The image on the next page shows an eye draped with a speculum in

place. The cotton bud is stabilising the eye while the injection is being given.



### Who will give the injection?

These injections will be given either by an ophthalmologist or a registered nurse practitioner.

### What happens after the treatment?

The injecting clinician will use lubricants after the injection. There is no benefit to be gained by using antibiotic drops afterwards and so you will just be given lubricants to take home. These will provide some comfort after the injection and you may use them as often as necessary. Please be aware that you might have to wait to have your pressure checked. Your next appointment will be scheduled the same day or sent to you by post. Your GP will also be sent a letter after every visit.

Many patients require a loading course of three injections at regular intervals of four weeks. After the first three courses

of injections, the majority of patients will require further injections, depending on the leakiness of the blood vessels. You will need to be reviewed at regular intervals (timing to be decided at each visit), as to when further treatment might be given. This will ensure benefits of the treatment are maintained.

### What are the risks with these injections?

As with any medical procedure, there is a small risk of complications following anti- VEGF treatment. Most complications that might occur are from the injection itself, rather than the drug. For most patients, the benefit of the treatment outweighs the small risk of injection injury.

The following are some of the major potential risks and side effects of anti-VEGF injections. Please note that this is not a complete list of all risks. For a full list of risks, and further information about the medicine used in your treatment, please see the individual patient information leaflet found inside the drug packet. **It is important to note that these risks are all rare and significant loss of vision due to this treatment is very uncommon.**

Some common side effects that could occur include:

- Red eye (there is usually a bleed or bruise on the white part of the eye at the site of injection, which clears in a week or two).
- Sore and gritty eye (slight ache and discomfort lasting a

day or two).

- 'Blobs' or 'small specks' in your vision ('floaters') might be seen for a few days after the injection. You may also experience transient flashing lights or swirls of light immediately after the injection.

It is important to note that most of the discomfort relating to injections is due to the use of Povidone Iodine antiseptic. This is a vital part of the injection process and reduces the risk of infection. You may be sensitive to the iodine and so your injecting physician will make sure to wash it out. Please note that allergies to iodine are extremely rare.

#### **Rare risks of anti-VEGF injections:**

- serious eye infection (one in 2,000 cases).
- detached retina.
- increased eye pressure.
- blood clots and bleeding in the eye.
- inflammation inside the eye.
- cataract.

#### **Can other medicines or food affect anti-VEGF treatments?**

Anti-VEGF and certain other medicines can interact with each other. Some patients have developed a serious eye inflammation when receiving treatment with both anti-VEGF and verteporfin (Visudyne photodynamic therapy (PDT)). To avoid this, tell your eye doctor about all the

medicines you take, whether prescription or non-prescription medicines. This includes blood pressure medication, warfarin, aspirin, and vitamins. **You must also inform the doctor if any medication has changed since your last visit.**

#### **Other information**

You might notice some discomfort and redness for the first few days after your treatment. If your eye becomes redder, sensitive to light, swollen and painful, or your vision gets worse after the anti-VEGF treatment, you must seek medical help from an ophthalmologist. This might be a sign of infection, which would normally occur within the first week after the injection, with minimal risk.

**There are no special precautions following intravitreal injections and you will be able to travel, but please avoid getting water into your eye or swimming for the first few days afterwards.**

#### **What should I do if I am worried after treatment?**

**Contact the following numbers:**

- Moorfields retinal therapy department helpline on 020 7566 2311, Monday to Friday 8am – 4.30pm.
- Moorfields pharmacy

department on 020 7566 2369,  
open Monday to Friday 9am  
to 5.30pm.

- Out of hours: 020 7253 3411 or go to our accident and emergency department at City Road, open 24 hours for eye emergencies only.

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**Moorfields Eye Hospital NHS  
Foundation Trust**  
**City Road, London EC1V 2PD**  
**Phone: 020 7253 3411**  
**[www.moorfields.nhs.uk](http://www.moorfields.nhs.uk)**

### **Moorfields Direct telephone helpline**

Phone: 020 7566 2345  
Monday-Friday, 8.30am-9pm  
Saturday, 9am-5pm  
Information and advice on eye conditions and treatments from experienced ophthalmic-trained nurses.

### **Patient advice and liaison service (PALS)**

Phone: 020 7566 2324/ 020 7566 2325  
Email: [moorfields.pals@nhs.net](mailto:moorfields.pals@nhs.net)  
Moorfields' PALS team provides confidential advice and support to help you with any concerns you may have about the care we provide, guiding you through the different services available at Moorfields. The PALS team can also advise you on how to make a complaint.

### **Your right to treatment within 18 weeks**

Under the NHS constitution, all patients have the right to begin consultant-led treatment within 18 weeks of being referred by their GP. Moorfields is committed to fulfilling this right, but if you feel that we have failed to do so, please contact our patient advice and liaison service (PALS) who will be able to advise you further (see above). For more information about your rights under the NHS constitution, visit [www.nhs.uk/choiceinthenhs](http://www.nhs.uk/choiceinthenhs)

