

## Information for Patients

# Electrodiagnosis Clinic

You have been asked to attend the electrodiagnosis clinic to undergo a series of specialised diagnostic tests which will help your ophthalmologist manage your care. The tests assess the electrical response of your eye to flashes of light or patterns that are shown on a television screen. The tests are painless.

### What do the tests involve?

In order to make these recordings, some small sticky pads are placed on the skin around your eyes and also at the back of your head and are easily removed afterwards. These then pick up tiny electrical signals which naturally occur when your visual system is stimulated, either by patterns on a TV screen or by a flashing light. The following tests are routinely carried out. Each test takes about 30 minutes but not all patients have all tests performed; it depends on your eye problems. We also spend up to half an hour on other tests where we measure visual acuity and colour vision.

#### • Visual Evoked Potentials (VEPs)

This is a way of analysing brain waves which occur when you look at a moving pattern on a screen or at a flashing light. It allows us to check on the function of the optic nerves and of the seeing part of the brain.

#### • Flash Electroretinograms (ERGs)

By recording from sensors placed close to your eye, we can analyse the electrical signals produced by your eye in response to flashing lights. Part of this test is carried out in the light, and part of it follows a period of 15-20 minutes adaptation to darkness. This allows us to analyse the overall function of the retina's light-sensitive layer (the photoreceptors, or rods and cones). Two sensors are taped to the side of your head. We then lay a fine thread along your lower eyelid so that it rests against your eye or (with younger patients) attach a small sensor to the skin of the lower eyelid.

This test is routinely conducted with dilated pupils. Eye drops are used to enlarge your pupil (black part of the eye) and these need about 20–30 minutes to take effect. These drops temporarily blur your vision for between 6–8 hours, although sometimes it can last longer. It is important that you do not drive yourself to and from the appointment and do not drive until you feel your vision has returned to normal.

### • **Pattern Electroretinograms (pERGs)**

Using the same sensors as the flash ERG, but a patterned stimulus, we can further analyse the function of the optic nerve and the very sensitive central portion of the retina.

### • **Electro-oculograms (EOGs)**

This is another test of retinal function and is used to assess the integrity of the retinal pigment epithelium (RPE). This is the layer of the retina which nourishes the light-sensitive cells. Sensors are placed on the skin either side of each eye and you will be asked to make a series of guided eye movements at intervals over a period of about half an hour. Half the time is spent in darkness, and half in bright light.

### **How can you do this with children?**

We try to adapt the tests to meet the ability of the patient, and routinely just do VEPs and flash ERGs with younger children. They can sit on a parent's or guardian's lap throughout the procedure. During the test we can play DVDs or music which encourages the child to look at the test stimulus. Children can bring their own DVDs or CDs, and it is also a good idea to bring along a drink, a snack and a spare nappy (if used). A favourite toy (preferably small and noisy) can help us encourage the child to look at the stimulus. We have baby changing facilities in the unit.

### **What are the benefits of having these tests?**

These tests complement your other eye examinations, which are aimed at measuring what the doctor can see in your eye and what symptoms you might have, including what you yourself can see. Almost uniquely, electrodiagnostic tests allow us to monitor in real time the activity of the cells that make up your visual system and allow us to see how they respond to particular stimuli. This can provide the doctor with important information. In perhaps 8 out of 10 examinations, we can help your doctor reach a diagnosis, confirm a suspected diagnosis or rule out certain conditions. Sometimes electrodiagnosis is useful in monitoring a condition.

### **Are there any risks?**

These routine tests are harmless and non-invasive. The electrical activity we are measuring is present in your body all the time. There are no known associated risks.

### **Do I need to bring anything?**

Please bring your current reading/distance glasses with you. If you wear contact lenses we might need to remove them for one of the tests so please bring a spare pair or your contact lens cases and solutions. If you have had dilating drops you could be quite light sensitive for a couple of hours afterwards. Some people find it helpful to bring sunglasses with them to wear on the way home.

### **How long will it take?**

Once we have done the preliminary assessment, the electrodiagnostic tests themselves take about 30 minutes each, and you could have between one and four different tests. We might also have arranged tests for you in other departments, and you could be booked into clinic to see the doctor. We do try to take you through the system as quickly as possible, **but you should allow at least 3 hours for your appointment.** It is important that you arrive on time for your appointment as we are only able to see one patient at a time. Arriving late means delays for everyone, and might mean we do not have time to complete your tests.

### **Where do I come?**

The tests take place in Eye Clinic H which is on the ground floor of the Manchester Royal Eye Hospital. For directions to the hospital or further information about the tests please visit our website using the details at the end of this leaflet.

### **What happens next?**

When the results have been studied, a report will be sent to your consultant. The results might be discussed with you on the day if you are also attending for an out-patient appointment, or a further appointment will be sent to you if required. If you have been referred from another hospital, a copy of the results will be sent to the referring doctor. We do not routinely send your results to your GP; your eye specialist needs to look at the results alongside any other investigations you might have had.

### **Where can I find more information?**



**Manchester University**  
NHS Foundation Trust

For more information about the tests, go to [www.cmft.nhs.uk](http://www.cmft.nhs.uk) and click on 'Manchester Royal Eye Hospital'. Electrodiagnosis is listed under 'Our Services' just click 'E'. For general information about your visit, click on 'Plan your visit' on the main Eye Hospital page.

Telephone **0161 276 5533 Monday – Friday 9.00am – 5.00pm**

