

## Electrodiagnostic tests (Vision related)

This leaflet is designed to give you some information about the test for which you have been referred. The procedure will also be explained on the day by the technician doing your test who will be happy to answer any further questions you have about the procedure.

### What tests will I have?

There are 3 main tests available. You have been referred for one or more of the following tests circled below:

**VEP**            **ERG**            **EOG**

### What are these tests?

- **Visual Evoked Potential (VEP)**  
This is a test of the pathway between the eye and the vision area at the back of the brain. We will record the electrical signals produced naturally by your brain following repeated stimulation of each eye.
- **ElectroRetinogram (ERG)**  
This is a test of the retina at the back of the eye. We record the electrical signals produced naturally by the retina in response to stimulation of both eyes.
- **Electrooculogram (EOG)**  
This is also a test of the retina of the eye, but we record the electrical signals produced by the eye when you move your eye from side to side.

### How is the VEP test done?

The test takes 30-60 minutes.

The technician starts the test by measuring your head and attaching 7 small discs onto your head using a sticky paste. The skin under each disc has to be rubbed gently to make a good contact.

During the test you will be asked to look at the centre of a computer monitor screen that has a moving black and white chequerboard pattern (like a chessboard). Each eye is tested separately with a patch covering the other eye, and the room lights off. This is a painless procedure.

### **How is the ERG test done?**

The test takes about 1-2 hours.

We may need to use eye drops (Tropicamide) to dilate your pupils for the test. The technician who performs your test will start by making measurements of your head and attaching a few small discs to your head using a sticky paste and tape.

The eye recording is done with a very fine thread which is looped across the eye and needs to make contact with the surface of the eye. The thread electrode can feel unusual and sometimes causes irritation during the test (like a fine hair in the eye). Do not worry about this because we can use anaesthetic eye drops (Proxymetacaine) to temporarily numb the eye so you do not feel the thread electrode.

Both eyes are tested together. You will be asked to look at the centre of a computer monitor screen that has a moving black and white chequerboard pattern (pattern ERG) and will be asked not to blink for several seconds at a time.

For the main ERG test (flash ERG) you will be shown a series of flashes of light of different brightness whilst looking into a large light bowl (known as a Ganzfeld stimulator).

Part of the test involves sitting in the dark for 20-30 minutes whilst your eyes adapt to the dark then looking at further flashes of light. You are welcome to bring along some music to listen to during this stage (e.g. an MP3 player or music CD and for younger children an audio story book or CD is a good idea (we have a CD player in the department).

After the test the discs and thread are removed.

### **Electro-OculoGram (EOG)**

The test takes about 60minutes. The technician will attach discs to your skin with sticky tape, on both sides of your eyes.

You will be asked to look into a large light bowl (known as a Ganzfeld stimulator) that has alternating flashing red LED lights and you will be asked to follow the lights with your eyes without moving your head. Recording of your eye movements will be made for about 15 seconds, repeated every minute throughout the test. Around half of the test will be performed in darkness and half in bright light. You may need to return on a separate date for this test if your doctor has requested you have all the above tests (VEP, ERG and EOG).

### **Before the test- what preparation is needed?**

- Please make sure your hair is clean and free from grease, hair spray and hair gels etc. Loose clothing will be most comfortable. If you wear makeup this should be removed from around the eyes and forehead.
- Please continue to take your normal medication at the usual times and have your meals at your usual times.

- You should bring along any reading or other glasses you wear. If you normally wear contact lenses, please remove them and wear glasses instead.
- If you are having an ERG test you may wish to bring dark glasses for your journey home and you should not drive yourself home.
- Please inform the technician before the start of the test if you have previously suffered any allergic skin reactions to sticky plaster or latex.
- Inform the technician if you have ever had an allergic reaction to Tropicamide or Proxymetacaine eye drops.

### **Will there be any after effects?**

- If you are given the Tropicamide eye drops you will have blurred vision for 2-3 hours after the test and so will not be able drive yourself home.
- The Tropicamide eye drops dilate your pupils so you should avoid bright light and sunlight after the test until this effect has worn off. Bring a pair of dark glasses to wear when you go outside.
- There is a very small risk of developing a condition called acute closed angle glaucoma after pupil dilation. This is a rare but serious condition which if left untreated can cause loss of vision. If you suffer any of the following it is important you should seek immediate medical attention (visit Accident and Emergency). The symptoms are: red, painful eye, blurred vision, feeling or being sick (nausea /vomiting). This condition is mainly seen in people aged 55 years or over who have a particular shape to part of their eye which makes them susceptible to the condition.
- Both types of eye drops can sting when they first go into the eye.
- If you have the anaesthetic eye drops (Proxymetacaine) do not rub your eyes until the effect of the eye drops has worn off (20 minutes) as you will not be able to feel if there is anything in your eye.
- The ERG thread electrode can very rarely cause scratching to the front of the eye (cornea), causing irritation and watering of the eye after the test has finished. If this happens you should visit your family doctor.
- After the test the discs and thread are removed. Small amounts of sticky paste will be left in your hair- this will wash out with shampoo.
- If you suffer from photosensitive epilepsy (flashing lights trigger your seizures) then there is a small risk that the tests could cause a seizure. If you suffer from epilepsy you should phone to let us know before the test.

### **Will I have to wait long?**

You have been given an appointment time and would normally be seen on time. Departments work to a busy schedule, so it is important you arrive on time.

### **Will I get the result the same day?**

No- the results of the investigation need to be analysed afterwards. A full report will be sent to the doctor who referred you for the test.

### **Any questions?**

If you have any questions or concerns about these tests, please do not hesitate to contact our staff on **01603 287306** before your appointment, or talk to us before the start of your test. The department is open **Monday-Friday 8am-4.30pm**. There is a voicemail service to leave a message if we are unavailable.

