

Visual Evoked Potential (VEP) and Electroretinogram (ERG)

Neurophysiology Department



Patient information leaflet

This leaflet aims to provide information for patients attending Royal Surrey County Hospital for Visual Evoked Potential (VEP) and Electroretinogram (ERG) testing. It describes what happens before, during and after the tests, together with an explanation of any risks.

What is a Visual Evoked Potential (VEP)?

A VEP is a diagnostic test which tests the electrical response of the optic nerve (the pathway between the eye and the brain).

What is an Electroretinogram (ERG)?

An ERG is a diagnostic test of the function of the retina (back of the eye).

Why am I having these tests?

You have been referred for VEP and ERG to aid your doctor in reaching a diagnosis. Normally VEP and ERG are carried out at the same visit.

What should I do before the test?

- Please ensure that your hair is clean and free from gel/lacquer etc.
- You may eat as normal prior to the test.
- Take any medication(s) as normal. Please bring a list of your medication(s) with you.
- If you wear glasses, please bring them with you. Contact lenses need to be removed for ERG so please bring a lens holder if necessary.

What does the test involve?

A Clinical Physiologist will perform the tests. He/she will explain the procedure to you and take any relevant medical history. Please feel free to ask any questions you have about the tests to be performed.

VEP – Prior to the test you will be required to read an eye chart to check your eyesight. Small discs called electrodes are then applied to your head by parting your hair and using a small dot of adhesive paste. The paste will be easily removed after the tests although you may wish to wash your hair again later.

You will then be asked to focus intently on the centre of a television screen with a moving pattern of black and white squares on it, rather like a chessboard. The Clinical Physiologist will take recordings on the machine as you do this. Each eye will be tested separately – a patch is used to cover the eye not being tested.

ERG – To perform the ERG, electrodes (as before) will be placed on the forehead. For adults and older children the Clinical Physiologist records the responses from the eye through a fine thread-like electrode. For younger children and babies a disc electrode on the nose is used instead. You will be asked to watch a television screen with a moving checkerboard pattern on it. After this, you will be asked to watch a flashing light which flashes briefly. The room will be darkened for 15 minutes to allow the eyes to adapt to the darkness, and you will be asked to look at more flashes of light.

Does it hurt?

We would not expect these tests to hurt. With regard to the ERG, the thread-like electrode is tolerated well by most people; however some patients have said that initially it can be uncomfortable before they get used to it.

How long will it last?

Your appointment will take approximately 1½ hours.

Are there any side effects and risks?

There are no serious side effects. There is a small risk of headache/migraine after VEP testing in people who are prone to this. Your ability to drive after the tests is not affected.

In the ERG test, there are minimal risks associated with the use of the thread electrodes, including the unlikely possibility of a scratch to the surface of the eye. This is avoided by careful placement of the thread by our experienced physiologists. It is also possible to experience minor skin irritation from the sticky discs which secure the thread. Please inform the physiologist if you are aware of any sensitivity to sticky tape/plasters.

Are there any alternatives?

VEP and ERG are diagnostic tests and there is no alternative. If you would prefer not to have the tests done you would need to discuss your options with your referring doctor.

What happens next and how do I get my results?

After the electrodes have been removed, you will be free to go home if you have no other tests or appointments planned.

You will **not** get the results of the tests on the same day. A report will be written by the Consultant Neurophysiologist and sent to the doctor who referred you for the test. They should have this within 2 weeks.

Reference sources

- Spehlmann R (1985)
Evoked Potential Primer: Visual, Auditory and
Somatosensory Evoked Potentials in Clinical Diagnosis.
Butterworth Publishers.
- Walsh P, Kane N, Butler S (2005)
The Clinical Role of Evoked Potentials
J Neurol Neurosurg Psychiatry 76:ii16-ii22

Contact details

If you have any further questions, please contact the Neurophysiology department

Telephone: 01483 464128

PALS and Advocacy contact details

Contact details of independent advocacy services can be provided by our Patient Advice and Liaison Service (PALS) who are located on the right hand side as you enter the main reception area. PALS are also your first point of contact for health related issues, questions or concerns surrounding RSCH patient services.

Telephone: 01483 402757

Email: rsc-tr.pals@nhs.net

Opening hours: 9.00am–3.00pm, Monday to Friday

If you would like information documents in large print, on tape or in another language or form please contact PALS.

Past review date: November 2017

Future review date: November 2020

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PIN171127–1363

