

Evoked potentials



Information for patients

Clinical Neurophysiology



We must obtain your consent for any procedure beforehand. Staff will explain all the risks, benefits and alternatives before they ask for your consent. If you are unsure about any aspect of the procedure proposed, please do not hesitate to ask for more information.

What are Evoked Potentials?

Evoked Potentials are signals from the brain that are given out when it is stimulated by visual, auditory and sensory stimuli. That is, signals given out as a result of the things you see, hear and touch. There are four different types of Evoked Potential tests and, depending on the reason for your referral, you may have one or more than one of them. **Please check your appointment letter to see which of the tests numbered below you are attending for.**

What is an Evoked Potential test?

The test records the signals to help study how well the nerves in your body are working. There are a series of tests designed to look at the nerves controlling the:

1. Optic nerve that controls sight - The Visual Evoked Potential (VEP)
2. Retinal Potentials in the eye - The Electroretinogram (ERG)
3. Auditory nerve that controls hearing - The Brainstem Auditory Evoked Potential (BAEP)
4. Sensory nerve that controls the nerves of the arms and legs - The Somatosensory Evoked Potentials (SSEP)

Where do I go?

The tests are done in a small recording room on N floor of the Royal Hallamshire Hospital. The room contains a couch, a chair and some equipment. The physiologist who does the test will be there and, if you wish, there is also room for someone to come in with you.

Enter through the main entrance on A floor (outpatients) or B floor (tower block) and take a lift to N floor.



Car parking is limited so please allow extra time to park, or use public transport when possible. Park and ride sites are available across the city to link with bus and tram routes.

If you are a blue badge holder, limited spaces are available on-site and also in the car park where you can take a ticket on arrival and present it with your blue badge at the kiosk when leaving for the charge to be waived.

The postcode if you are using a SatNav is S10 2JF.

How long will I be at the hospital?

Each of the four possible tests will take between 1 and 2 hours.

Please note (parents and guardians):

We have no provision for accompanying children to be supervised whilst you are having your Evoked Potential Test. If you have any problems arranging child care, please ring the department to discuss this.

Tel: **0114 271 3237**

How will these tests help me?

You may wonder why you are having responses tested in a different area to the symptoms you are experiencing e.g. we may look at your leg when you have had a problem with your vision. We do this so that we can get a fuller picture of the way the nerves are working throughout your body. This gives your consultant more information about how certain nerves are working and can help them to find the cause of your symptoms.

Is the test safe?

Yes. X-rays are not used. Occasionally patients experience minor skin irritations due to the products we use.

If you have a cardiac pacemaker and are having an SSEP then please tell the physiologist before you have the test.

What happens during the test?

This depends on the particular test. For all the tests it helps if you remain as still and relaxed as possible.

1. The Visual Evoked Potential Test (VEP)



Do I need to do anything before the test?

Yes, when coming for this test, you should make sure that you:

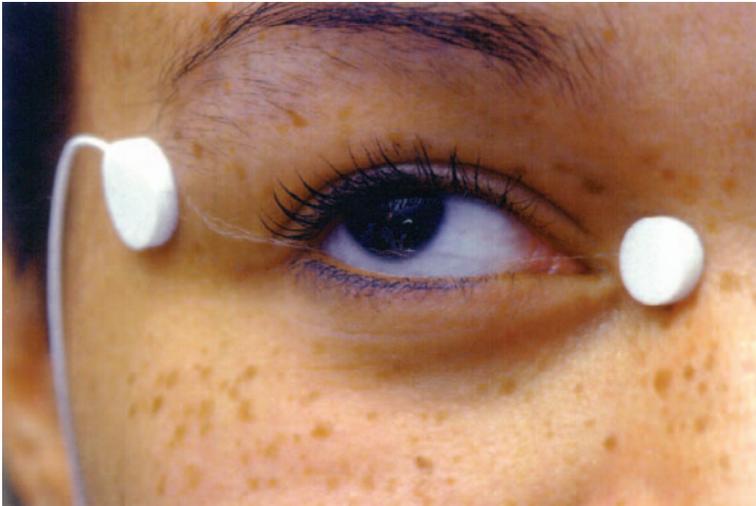
- **Bring your glasses or contact lenses with you**
- Have clean dry hair, free from any hairspray or gel

The test looks at the response of the nerves and brain to being stimulated with light.

It takes about 1 hour to do and is painless. Small discs will be attached to your scalp with adhesive cream. You will have alternate eyes covered with a patch and then you will be asked to concentrate and watch a spot in the middle of a moving checkerboard pattern and/or a flashing light. This will be repeated several times.

After the test the discs will be removed and your scalp will be cleaned. Any remaining paste will wash out with shampoo.

2. The Electroretinogram (ERG)



Do I need to do anything before the test?

Yes, when coming for this test, you should make sure that you:

- **Bring your glasses or contact lenses with you**
- Have clean dry hair, free from any hairspray or gel

The test looks at the response at the back of the eye to being stimulated with light.

The test takes 1 to 2 hours to do and is painless. Small discs will be attached to your scalp with adhesive cream. A fine thread is placed under your lower eyelid. You will be asked to concentrate and watch a moving checkerboard pattern and/or a flashing light. Your eyes will be tested together and/or separately and the test will be repeated a few times. After the test, the thread will be removed and the discs will be taken off and your scalp will be cleaned. Any remaining paste will wash out with shampoo.

3. The Brainstem Auditory Evoked Potential Test



Do I need to do anything before the test?

Yes, when coming for this test, you should make sure that you:

- Have clean dry hair, free from any hairspray or gel

This is the test that looks at the responses of the nerves/brain to stimulating the ear with sound.

The test takes about 1 hour to do and is painless. For the test, we will attach small discs to your scalp with adhesive cream. You will then be asked to wear some headphones and to listen to a series of clicks. You will hear the clicks in each ear separately. The test will be repeated a few times.

After the test, the discs will be removed and your scalp will be cleaned. Any remaining paste will wash out with shampoo.

4. The Somato-Sensory Evoked Potential Test



Do I need to do anything before the test?

Yes, when coming for this test, you should make sure that you:

- Have clean dry hair, free from any hairspray or gel.
- Please help us by wearing appropriate loose clothing. We will need to be able to reach your arms, shoulders and neck for the upper limb test and your ankles and the back of the knees for the lower limb test.

This test looks at the response of the brain when either your arms or legs are stimulated. The tests take about 45 minutes each to do.

During the test, we will attach small discs to your scalp with adhesive cream.

If you are having your arm tested, you will also have a pad attached to your wrist and stickers on your shoulders and neck.

If you are having your leg tested you will have a pad on your ankle and stickers at the back of your knee.

A stimulus is passed through the pad into your limb. You will feel a tapping/tingling sensation. This may result in a small twitch in the muscle in the hand or foot. Left and right sides will be tested separately and the test will be repeated several times. After the test, the discs will be removed and your scalp will be cleaned.

When will I get the results?

You will not get the results of these tests on the same day because it takes time to measure and analyse them. The doctor who referred you will be sent a report within 5 working days. These tests are performed for a variety of medical conditions. The results are only one part of the information your doctor will use to make a diagnosis. For this reason further information on the outcome has to be discussed with the doctor who referred you.

If you have any questions please ring the Department of Clinical Neurophysiology, Royal Hallamshire Hospital on:

- **0114 271 3237**
Monday - Friday 8.30am - 4.30pm



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