

Evoked Potentials (A neurological test)

Evoked Potentials

Evoked potentials (EPs) are tests used to assess the nerve pathway and brain responses to different sensory stimuli. Depending on the question your consultant has asked, this may be a visual stimulus or a small electrical pulse at your arms and/or legs.

The EPs will be performed by a Healthcare Scientist (HCS) and it will take around 30mins-45mins for each test.

EPs are useful in helping to investigate a number of different neurological problems.

On this occasion your test will be

VEP

SEP

VEP (Visual EP)

Preparation

- Please make sure your hair is clean, dry, and do not apply any hair spray, oil, mousse or creams. This is because hair products and even the hair's natural oils can make it difficult for us to get a good recording.
- If you wear contact lenses or glasses please bring them with you for the test.
- You can eat, drink and take any medicine as usual.
- Please bring a list of medicines you may be on.

What happens during the test?

This test records the electrical signals travelling from the eye to the brain.

Our brain cells communicate by producing tiny electrical impulses. For a VEP, about 6-8 small discs (electrodes) are placed on the scalp using a special sticky paste. The electrodes are connected by wires to a computer which records the changes in the electrical signals as you look at a visual stimulus.

You will be asked to sit still and relax in front of a computer screen, which displays a black and white checked pattern.

One eye will be covered and each eye will be tested in turn. You will be asked to look at the screen for around 3-4 minutes at a time as the computer collects the information.

On occasions you may have an extra test, called a pattern electroretinograph (PERG). This test records the electrical signal produced by the retina. This will involve a thin electrode thread being put along the bottom eyelid.

How the test will feel?

During electrode placement, the application of each disc to your head may feel a little scratchy.

The VEP recording causes no discomfort as the electrodes only record activity.

If a PERG is performed, the thin thread may feel uncomfortable to begin with but this wears off quickly.

SEP (Somatosensory EP)

Preparation

- Please make sure your hair is clean, dry hair, and do not apply any hair spray, oil, mousse or creams. This is because hair products and even the hair's natural oils can make it difficult for us to get a good recording.
- Please wear loose clothing that gives easy access to your arms and legs.
- Please avoid using moisturising creams or gels on your skin on the day of the test as they can interfere with the test.
- You can eat, drink and take any medicine as usual.
- Please bring a list of medicines you may be on.

What happens during the test?

This test records the electrical signals travelling from arms or legs, to the brain.

Our brain cells communicate by producing tiny electrical impulses. For an SEP, about 4-6 small discs (electrodes) are placed on the scalp using a special sticky paste. Electrodes may also be placed at other sites on your body (arms, legs, back, trunk).

Small electrical pulses are used to stimulate the nerve and the results are recorded using electrodes placed on your arms and/or legs. The pulses will make the muscles in your hand or foot twitch or jump.

How the test will feel?

The pulses are felt as a sharp tapping sensation which can feel uncomfortable but should not be painful.

If you find the test is getting too uncomfortable, please let the HCS know and they will try their best to minimise the discomfort.

Risks and Side-effects

EPs have no lasting effects and you can resume normal activity straight away.

Having this test will not affect mobility or your ability to drive home.

This test carries no risk to pregnancy.

What are the consequences of not having EPs?

EPs are a well-established method of helping doctors to diagnose and treat a range of medical conditions. Your doctor would not have as complete a picture as required and hence your child's diagnosis may take longer and/or your treatment may not be the most appropriate.

What happens after the test?

- Once we have enough information, the electrodes will be removed and your hair cleaned with warm water. Your hair will feel sticky until it is washed.
- We will send the results back to your consultant; this can take up to 4 weeks.

Contacting Us

Staff in the department will be happy to answer any query you may have and will do their best to ensure your comfort.

Please let us know if you are unable to attend your appointment by ringing the telephone number below.

If you have any questions or concerns about the test please ring the Neurophysiology Department on **01392 402458**.

We welcome feedback about our service. Please tell a member of staff if you felt the service is good or otherwise.

The Trust cannot accept any responsibility for the accuracy of the information given if the leaflet is not used by RD&E staff undertaking procedures at the RD&E hospitals.

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