

Procedure Information Sheet – Electro-encephalography

Hosp No. :	HKID No.:
Case No. :	
Name :	
DOB :	M / F
Adm Date :	
Contact No.:	

1. Introduction

- 1.1. Electro-encephalography (EEG) is a test to record the activities of the nerve cells of the brain. The nerve cells can emit electrical activity that can be picked up by an EEG machine and transformed into graphs for recording.
- 1.2. EEG is used to find out certain disorders affecting the brain such as epilepsy, infections, tumours or other masses and metabolic disturbances.

2. Procedural Preparation

- 2.1. Please follow your doctor's instruction for medication.
- 2.2. Fasting is not required. Avoid coffee, black tea, alcohol, chocolate on the day of the test.
- 2.3. Please wash your hair the day before going to hospital. No hair cream, gel should be applied after shampoo. Please make sure the hair is dry during the test.
- 2.4. Some of the children may need sedatives in order to be recorded effectively. Please ask your case doctor if you have any inquiry.
- 2.5. For children under 3 years old:
 - 2.5.1. Sleep is to be discouraged 4 hours prior to the test to facilitate a possible spontaneous sleep recording.
 - 2.5.2. Parent/ guardian please bring along a bottle of milk, water, fruit juice or toys to entertain the baby during the test.
- 2.6. Generally, the patient is able to go home after the test. For patient who have sedatives, he can go home only after the assessment by medical professionals.

3. Procedure

- 3.1. Technical Aspects of EEG:
 - 3.1.1. The EEG measures the difference in electrical potential between two points on the surface of the head. It is a tracing of the voltage fluctuations over time recorded from electrodes placed over the scalp. This represents fluctuating electrical potentials in membranes of neurons (brain cells) in superficial layers of the brain cortex. The skull, scalp, and cerebrospinal fluid reduce the EEG activity that is detected on the surface of the scalp.
 - 3.1.2. Typically, put on an EEG cap, 19 EEG electrodes are placed over the scalp as well as electrodes that are reference electrodes, placed over the ears, cheek and wrist to pick up the electrocardiogram (ECG). Some water-soluble adhesive gel will be put on the electrodes and attach them to spots on your scalp. In selective situations, the neurologist may suggest some additional electrodes in order to record the EEG activity that may be missed by a routine EEG.
- 3.2. EEG test includes the steps of:
 - 3.2.1. Eye closing and Eye opening in relax state.
 - 3.2.2. Deep breathing for 5 minutes (Pregnant women and the elderly who aged >65 yrs are excluded, or according to doctor's order).
 - 3.2.3. Intermittent photic stimulation.
- 3.3. Activation Procedures during an EEG:
 - 3.3.1. Activation procedures include the deep breathing (hyperventilation) and the flash (intermittent photic stimulation). Activation procedures are performed in order to induce or bring out EEG abnormalities that may not be present on routine EEG recording.
 - 3.3.2. Hyperventilation particularly tends to influence absence seizure. Absence seizure is a specific type of seizure that have a classical EEG pattern, called three-second spike and wave discharges. Absence seizure occurs more prominently in children than in adults.
 - 3.3.3. Intermittent photic stimulation using a strobe light is an activator of spike wave or polyspike wave discharges that occur more typically in certain genetic forms of epilepsy or myoclonic epilepsy. This phenomenon is referred to as photosensitivity or a photoparoxysmal response.



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3.4.1. Doctor may order to do this specific type of recording for patient as in certain types of epilepsy, EEG abnormalities may appear only when sleeping. For this type of EEG, patient should stay up late at the night before the test and get up very early in the morning so that the patient can be easier to sleep during the test.

3.6. EEG will be reported by neurologist and the test results will be explained in details by your case doctor.

- 4.1. It is a common procedure and generally safe.
- 4.2. It is a non-invasive procedure and does not have any side effects.

5.1. The above-mentioned procedural information is not exhaustive. Please contact your physician for further enquiry.

6.1. Electro-encephalography. Queen Mary Hospital.
6.2. Electro-encephalography. B C Epilepsy Society.
6.3. 青山醫院電子醫學檢驗組 - 腦電圖檢查簡介。

Patient/ Relative Signature: _____

Patient/ Relative Name:

Date: _____

