

Electroencephalography (EEG) is a non-invasive recording technique used to assess neural (brain) activity. This spontaneous electrical activity, picked up over a short period of time (usually 20-40 minutes), is the result of neuronal (brain cell) firing within the brain which generates both electrical and magnetic fields. These electrical field fluctuations can be picked up using electrodes placed over the scalp surface.

The Electroencephalography (EEG) examinations held at the Neuroscience unit of the Dikteon Medical Centre are used as a diagnostic aid in a wide range of disorders that affect the brain:

- Epilepsies
- Metabolic disorders (Hepatic/Renal dysfunctions)
- Stroke
- Brain tumours
- Infections of the Central Nervous System
- Neurodevelopmental disorders
- Neurodegenerative disorders
- Sleep disorders (Narcolepsy)
- Headaches & Migraines

The Neurophysiology Laboratory at Dikteon Medical Centre is equipped with the latest version and thus most advanced digital video-EEG equipment: Nicolet v32 channel - that is performed and interpreted by a trained and fully qualified Neurophysiologist with extensive experience in the Electroencephalography and in the Epilepsies.

Every effort is made to create a comfortable and safe environment offering routine, out-patients Electroencephalography that meets the gold-standard set by the American Clinical Neurophysiology Society.

PROCEDURE

- The patient's head is measured using the International 10-20 method of measurement in order to determine each electrode placement.
- Small, round metal disc electrodes are attached to the patient's scalp using a special conductive cream and held in place with sticky gauze.
- Once the recording begins, the patient will be tested with various stimuli in order to trigger abnormal (epileptiform) activity that might not be seen normally at rest. For example the examiner might pinch the patient on each limb (tactile stimulus, usually carried out in neonates for reactivity), the patient may be asked to shut his/her eyes (background reactivity), to breathe deeply and rapidly for 3 minutes (hyperventilation), to look at bright light flashing at different speeds (photic stimulation) or will be asked to sleep.
- If a sleep study is requested, the patient will need to sleep approximately 15-20 minutes depending on the specific clinical history.
- The EEG recording is later analysed by the Neurophysiologist and sent to the referring Neurologist or Pediatric Neurologist for clinical interpretation, further evaluation and management.