Overview

EEG scalp recording cannot always identify the exact location of where a seizure starts. Some people will need further testing, which can be done using intracranial electrodes such as depth electrodes. Surgery is needed to put these special electrodes in place. Your neurologist and neurosurgeon will discuss all options and information about the surgery with you prior to the operation.

What are intracranial electrodes?

Intracranial electrodes are EEG electrodes that are placed inside the skull in order to monitor seizure electrical activity in the brain as precisely as possible

Depth electrodes are thin, wire-like tubes with metal contacts. These are inserted into the brain.

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If you have any questions or concerns you can speak to a nurse, neurologist, neurosurgeon, or other member of the health care team.

The EMU telephone number is 519 685-8500x 33317

The Epilepsy Navigator can be reached at x 36775

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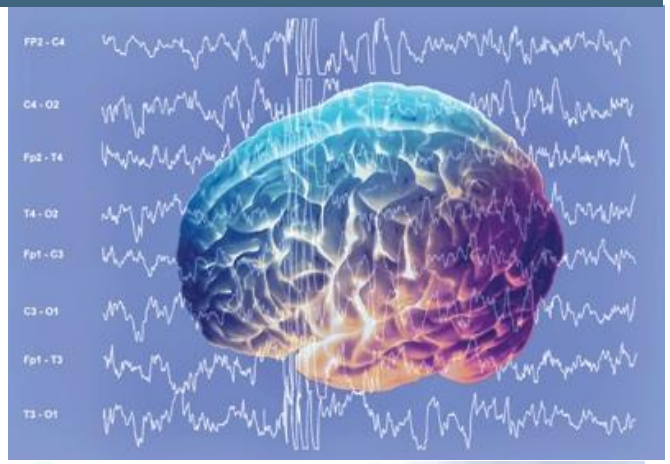

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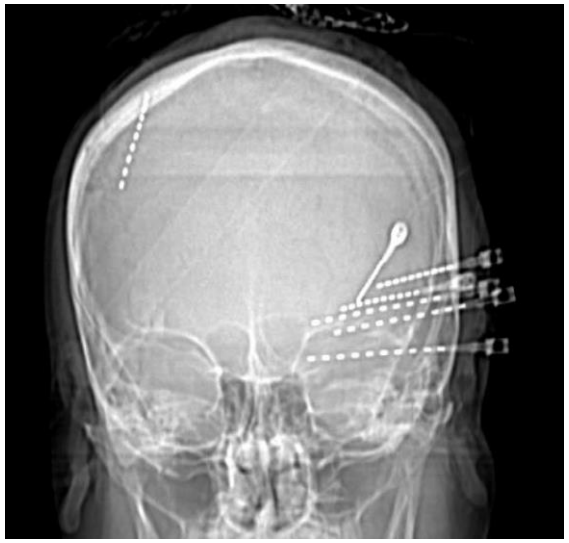
This pamphlet will help you understand what you can expect throughout the process.

The Surgery

Depth electrodes are inserted while you are under a general anesthetic, meaning you are asleep during the surgery. It is called surgery because it is done in the operating room. Depth electrodes are individually inserted by the neurosurgeon with the help of a robot through tiny holes in the skull. Depth electrode wires are attached to the head with small metal bolts. There is no need to shave your hair to have this done.

After the surgery, you will go to the post anesthetic care unit (PACU) for monitoring until you wake up. Before going to the epilepsy unit, you will go for a CT scan and/or MRI to verify the electrode placement.



A large, bulky dressing is applied over the wires. You might have drainage onto this dressing for the first few days after surgery. If there is a large amount, nurses will reinforce the dressing and keep the head of your bed at a 30 degree angle.

The dressing will be changed at the surgeon's discretion. At that time, the surgeon may examine the incisions for redness, infection, or leakage of cerebrospinal fluid (CSF). Nurses will assist the neurosurgeon in this process, which is done on the epilepsy unit with curtains drawn for privacy.

Post-Operative Care

After surgery, our goal will be to make you as comfortable as possible. You will be offered medication for pain and nausea which should be minimal if any. In addition to being monitored for seizure activity, your neurological condition will be checked very carefully by the EMU nurses.
You will have an intravenous (IV) infusing after the surgery to help keep you hydrated. The IV will be discontinued once you are eating and drinking well and any required antibiotics are given. You will be wearing special stockings to help the circulation in your legs until you are up walking. It is highly encouraged that you begin to resume your normal activity levels after surgery to promote your health and healing.

Removing the Electrodes

Once the neurological team is satisfied with the EEG recordings from your seizures, the neurosurgeon will remove the electrodes. Removing depth electrodes is a simple procedure done in the treatment room while you are awake. Sutures or stitches are used to close the holes in the skin made by the electrodes and bolts.

You will be discharged the next day. Nurses will explain and provide instructions for your discharge. A follow-up appointment with your family doctor is needed to remove the sutures. You will also receive a follow-up appointment with your neurologist/neurosurgeon.

It will take about 6 months to 1 year for the bones to heal from the holes. Scalp incisions will heal in 7-10 days.