What can I expect?

You will be told to wash your hair the night before your arrival at the hospital (no conditioner or gel). You may also be asked to avoid caffeine 8 hours prior to your EEG appointment.

When you arrive at the hospital, you will be asked to either sit or lie down comfortably. A technician will measure your head and use wax to mark areas where the electrodes will be placed. A thick soap will then be applied to these areas. The electrodes, which are wired to a computer, will then be placed on your head with cream. Some hospitals may use a rubber cap with attached electrodes.

You will be asked to perform several tasks such as:
- stare at a flashing light
- breathe deeply
- open and close your eyes

Time: This test usually lasts about 60 minutes.

SPECT

A Single-Photon Emission Computed Tomography (SPECT) is a diagnostic imaging technique that measures blood flow through your brain. A small amount of a radioactive tracer will be introduced into your body that will emit particles measured by a SPECT camera. The greater the blood flow, the more particles are emitted. This allows doctors to visualize the functions of certain parts of your brain.

As the data is collected, an image of the brain is generated with different coloured areas to represent varying amounts of blood flow. This information will indicate if certain areas of your brain are getting too much or too little blood (and oxygen). Areas where seizures occur usually show increased blood flow.

This test is not usually necessary for diagnosing epilepsy. If your doctor recommends a SPECT test, you will likely also require an MRI.

What can I expect?

When you arrive at the hospital you will be asked a series of questions about your medical and seizure history and the possibility of pregnancy. You will then be led to a room where the radioactive tracer will be administered via an IV in your arm. Next, you will be asked to lie down on a table and the tracer will be administered via an IV in your arm. Next, you will be asked to lie down on a table and the tracer will be administered via an IV in your arm. Next, the table you are lying on will enter a doughnut shaped hole in the middle of the machine and a camera will rotate around you.

Time: This test lasts approximately 60 minutes. After the test you will be told to drink lots of fluids the following day to flush the tracer out of your system.
A Magnetic Resonance Imaging (MRI) is a non-invasive diagnostic test that uses a powerful magnet to measure magnetic field changes in the brain. MRIs produce many detailed cross-sectional images ("slices") of the brain's internal structure. These images can be used to detect structural abnormalities and may help pinpoint the cause of seizures. This is considered to be the most important scan when diagnosing epilepsy because it produces a very accurate representation of your brain.

This procedure is generally non-invasive, although a contrast dye may be administered by a needle to provide the doctor with a clearer image. Functional MRIs (fMRIs) monitor neural signals through changes in blood flow.

What can I expect?
The technologist will ask if you have any metallic objects in your body (e.g., Dental Fillings), that may interfere with the magnets. You will be asked to remove any metal accessories such as jewellery or piercings. Also, some tattoos may interfere with the test as well. You will need to wear a hospital gown.

If the contrast dye is required, a nurse will insert a small IV tube into your arm. The dye will be added directly before the scan.

The MRI machine is a large metal box with a tunnel-like donut-shaped hole. You will lie down on a table with your head in a headrest. A cage will be lowered over your head but you will still be able to see and breathe. You may also wear earplugs or goggles. During the test, the table will slide in and out of the machine. This can be quite loud at times, but many people fall asleep during the test.

Time: This test usually lasts approximately 1-2 hours.

Open MRI

Traditional MRI machines are ‘donut-shaped’ enclosed spaces. An open MRI offers the same advanced diagnostic imaging as a typical MRI but is open on all four sides. This enables patients who might be claustrophobic or have a larger body type to undergo an MRI with greater ease. Open MRI systems accommodate all sizes of patients and are often quieter.

Open MRIs are available at private clinics only. Ontario residents can visit Buffalo MRI in Buffalo, U.S. There will be fees for tests.

MEG

A Magneto Encephalo Graphy (MEG) is a new tool used to generate a representation of your brain’s magnetic fields. By analyzing brain activity, the MEG can help localize areas in your brain causing the seizures. Doctors can then use this information to help determine what is provoking your seizures.

What can I expect?
You will be told not to wear makeup, hairspray or jewellery and will be asked to wear a hospital gown. A technician or doctor will ask you a series of questions regarding your medical history and if you have any metallic objects in your body (e.g., Dental Fillings) that may interfere with the magnets. If so, another machine will move over your body to erase the interference.

Metal electrodes will be placed on your head and heart. Metal coils will also be attached to electrodes placed on your forehead.

During the test you will recline on the MEG chair and be given pillows and blankets for comfort. Sensors will then be placed over the top of your head, while your face will remain uncovered.

Time: This test usually lasts approximately 1-2 hours.