Electrophysiological Studies (EPS)
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You are scheduled to have a check of your heart’s “electrical” system. The heart’s electrical system causes it to beat and pump blood to all parts of your body. Sometimes there is a “short circuit” in this electrical system. When that happens, the heart can begin to beat too quickly or too slowly. This can cause some people to feel dizzy, have trouble catching their breath, or even to faint.

EPS is used to search for or gather information about a possible abnormal heart rhythm. It can help your doctor find out what is causing your abnormal heart beat and how to control it.
Getting ready

• In most cases, you will be seen in the Cardiac Pre-Assessment Clinic on the day before your EPS procedure. A doctor or nurse practitioner will examine you.

• The doctor will explain the test to you. You will then sign a consent form together.

• If you are taking pills to control your abnormal heart rhythm, you may be told to stop them a few days before the scheduled EPS procedure.

• An ECG (a tracing of your heart’s electrical activity) will be done.

• A small sample of blood will be taken and sent to the lab for tests.

• Any questions you have about the EPS will be answered at this visit.
EPS procedure day

• A small area in both groins will be shaved. Men should expect extensive shaving of the chest. A small area of the upper back may also need to be shaved.

• If your test is the next morning, do not eat or drink anything after midnight. Unless told otherwise, you may take your pills with a small amount of water.

• Sometimes, if your test is planned for later in the day, you may eat a light breakfast on the day of your test. You will have nothing to eat or drink after this meal. Your nurse will give you instructions.

• When you are told it is time for your test:
  › Empty your bladder (pee).
  › Wear a johnny shirt - no underwear or slippers.
  › Wear your dentures and hearing aid if needed.
  › You may wear your watch and glasses if you wish.

• Sedation (sleeping medicine) is usually not given before this test as it can interfere with the results.
What happens during the test?

• In the Electrophysiology Lab, you will be asked to move onto the procedure table.

• The nurses and doctors will be wearing gloves, masks, and gowns.

• Large sticky monitoring patches will be placed on your chest and upper back.

• The site(s) where the pacing catheters (thin tubes) are to be inserted in your groin(s) will be washed with a cool solution.

• Sheets will be used to cover you (maybe even part of your face). This is to keep the site(s) clean. You will feel a “sting” when the doctor freezes the skin at the site(s).

• A sheath (short, hollow tube) will be inserted into the vein(s) of one or both upper leg(s)/groin(s).

• Pacing catheters will then be guided through the sheath and large vein(s) to your heart. You may feel pressure when they are inserted but should not feel any pain.

• These pacing catheters are then connected to recording machines so that your heartbeat can be monitored.

• If you are uncomfortable or anxious, mild sedation or pain medications may be given.
• The doctor may try to bring on an abnormal heartbeat. During the test, your heart may beat faster or slower depending on your condition. **Let the doctor or nurse know about any feelings you have during the test (racing heart, dizziness, faintness, pain, or upset stomach).** The irregularities will be recorded to figure out the cause. A medicine may be given through a vein to cause and/or correct the irregularities.

• The test takes about 2 hours, but can be longer.

**After the test**

• The pacing catheter(s) and sheath(s) will be removed. Pressure will be applied to stop any bleeding. A small bandage will be put over the site(s).

• You will be taken to your room by stretcher.

• You will be asked to stay flat on your back in bed for 3-4 hours. At some point, the nurse may raise the head of your bed 30 degrees.

• Do not bend the leg(s) from which the catheters were removed. Keep the leg(s) straight.

• Keep your head on the pillow.
• Apply firm pressure over the bandage at your puncture site(s) if you laugh, cough, sneeze, or pass your urine (pee).
• Your nurse will check the site(s) for bleeding.
• Your blood pressure and pulse will be taken every 15 minutes for the first hour and then every 30 minutes for 2 more hours.
• You may eat and drink as soon as you return to your room.
• You may have an ECG after you return to your room.

Going home

When will I be discharged from the hospital?
• After checking all the test results, your doctor will tell you when you can go home. You may need to return to the QEII in a couple of months for a check-up.
• If you live a long distance from the QEII, your family doctor or heart doctor may be able to provide your medical care.

When can I take a bath?
• You may shower the morning after your test. Do not direct the shower stream at the puncture site(s).
• Do not take a tub bath or swim in a pool for 2 days.
When can I remove my bandage?
• The bandage may be removed on the evening after your procedure.

When can I drive?
• Do not drive a vehicle for 48 hours after your procedure.
• Talk about this with your doctor. The results of this test and the nature of your heart condition may affect when you may drive.

When can I return to work?
• Talk with your doctor about returning to work. The kind of work you do will determine when you can return to work.

When can I exercise?
• Do not bend, squat, or lift anything heavy for at least 3 days.
• Do not do any rough sports, such as jogging or tennis, for 2 days after your test.
• Climb stairs slowly for 1-2 days.
• Do not walk quickly for 1-2 days.
What should I do if I start to bleed from my puncture site(s)?

- Apply gentle pressure to the puncture site(s) when you laugh, cough, sneeze, or use the bathroom for the next 2 days. This will prevent bleeding.

- Blood can flow from the puncture site(s) or remain under the skin in the form of a firm “lump”. If bleeding occurs or a “growing” lump is noticed while in hospital, apply firm pressure; return to bed and ring for a nurse.

- If you notice bleeding after you leave the hospital, lie on your back and apply pressure to the area until the bleeding stops or the lump softens and gets smaller. Pressure should always be applied with your hand about ½ an inch above the puncture site(s). Someone may have to help you with this. If the lump does not soften after 5-10 minutes of pressure, it should be looked at by your family doctor the next day.

- If you can’t stop the bleeding or the lump continues to get bigger, call 911 to take you to the nearest Emergency Department.
Should I drink more fluids?
• Unless told otherwise, drink plenty of fluids for the next 24 hours to prevent dehydration (drying effect). Try to drink water or juice. Avoid caffeine as it may make you pass your urine more often.

Will my medications change?
• Your medications may change after EPS. Your cardiologist will talk about this with you before you leave the hospital.
• To prevent any blood clots, your doctor may recommend that you take an ASA (Aspirin®) every day for 1-3 months.

Contact your family doctor if you have:
› Swelling in your legs.
› Bleeding, pus, or redness at the groin site(s).
› A firm lump at the puncture site(s) that does not soften after applying pressure for 5-10 minutes.
› Fever or chills.
Go to the nearest Emergency Department or call 911 if you:

• Have intense pain at the puncture site(s) or you notice a change in the colour of your leg (such as turning white, blue, or purple).
• Have a large bruise or swelling that gets bigger even though pressure has been applied.
• Are unable to stop the bleeding at the puncture site(s).
• Have significant chest pain or trouble breathing.

Notes: