Welcome to the epilepsy surgery program. The following is an overview of what will take place before, during and after your surgery. The goal of the surgery is to find the place in your brain where the seizures begin and remove that area without causing damage. You may be worried about having surgery, but it is not as bad as you think! Lots of kids worry, but then they see our cool playrooms, with the big screen TV and video games and board games and activities! Then, they feel better.
THE BRAIN

TESTS:

Tests that will be done may include:

1. A video EEG – to measure the electrical impulses in your brain. You will stay overnight for one to three nights in the Epilepsy Monitoring Unit at Beth Israel. (The Epilepsy Monitoring Unit is located on 6 Dazian in the Milton and Bernice Stern Department of Pediatrics at Beth Israel Hospital.) The video EEG is an EEG (or test of your brain waves) while you are filmed by a video camera. That way, we can see exactly what your seizures look like and where in your brain the seizures begin – which side and which area. You will need to have several seizures while this test is being done.

We will stop some or all of your medications before entering the hospital.

We need you to tell us which things make you have a seizure – stress, not enough sleep, homework, etc.
AN EEG

The nursing station.
What you will look like!

Welcome to the Epilepsy Monitoring Unit
2. You will need to have an MRI. (This is done using special instructions from us that need to be given to the person who performs the MRI.) This test takes place in a machine that takes a picture of your brain. It does not involve x-rays. You must lie still and will slide into a tunnel where there will be lots of loud noise. YOU WILL HEAR LOTS OF LOUD BANGING!! Your mom or dad can stay in the room and they may play music for you, but it will be with special equipment because the machine works with a big magnet. The MRI looks at the structure of your brain – to decide if there are any areas that may be damaged or may have formed abnormally before you were born. These abnormal areas could be the cause of your seizures. We need to know what these areas look like and where they are! The MRI is usually performed at Roosevelt Hospital or at Beth Israel Hospital.
An MRI looks like this.

3. Some people may also have a functional MRI – this is just like a regular MRI, but you will be asked to talk and move different parts of your body while you are in the machine. This test is done so that we know which part of your brain controls which part of your body. This is so we can avoid touching important parts of your brain while the part of the brain that causes your seizures is being removed. Functional MRI provides additional information about where the areas of your brain that control speech and movement are located.
4. You may need a PET scan. This is usually done at New York Presbyterian Hospital – in another machine:

A PET scan looks like this:
The PET scan gives us information about the energy and workings of your brain. Often, the area where the seizures begin is quieter or less active than other areas of the brain.

5. You may need something called neuropsychological testing. This testing takes place over a few days, and is done with paper and pencil and computers, building things and talking to a psychologist. These tests tell us about your short-term and intermediate-term memory, expressive and receptive language, general intelligence, concentration, attention, motor skills, sensory skills, visual-spatial skills, complex problem-solving and executive functioning. The tests are graded for speed and accuracy.

6. Some people also have visual field tests:

This tests how well you see. If the area of your brain where the seizures begin is located near the visual part of your brain, the
tests will help us to locate the area of your brain that controls vision.

7. Some people also need a CAT scan – another trip into a machine! This is shorter than the MRI and does NOT make a lot of noise. It is used to determine if there are any abnormalities in your skull.

A CAT scan looks like this:
8. Some patients have a WADA. This test involves injection of medicine into an artery to determine which side of the brain controls the patient’s language. An EEG is done at the same time. This is done in a special room in the hospital. A neuropsychologist, neurologist and EEG technician are present. You are awake for this test. You must answer a series of questions and move your arm.

9. A SPECT test is also done in the hospital, either in between seizures or during a seizure. This involves an injection and measures blood flow to the brain.

After all the tests are done, we will meet with you and your family. Then, we will decide if you are a good surgical candidate and, if so, when to perform the surgery.

There are usually two surgical procedures. The first is to do a video EEG with the electrodes directly on your brain. The electrodes are contained in things called “grids” and “strips.” Your skull is opened up and the flexible plastic grids and strips are placed on the areas of your brain where we determined from the video EEG that your seizures are starting. This pinpoints EXACTLY where on the brain the seizures begin.

The second procedure is the resection. During this, the area of the brain where the seizures start is removed.

Usually, the two surgeries are scheduled one week apart. In between, you will be in the pediatric intensive care unit on 6 Dazian in the Milton and Bernice Stern Department of Pediatrics at Beth Israel. During this time, you will have another video EEG (but with the electrodes resting directly on your brain.)

Before the surgery, you will need to see your pediatrician and get some blood tests.

On the day of the surgery, you will come to Beth Israel very early in the morning (usually around 6:30.) You will not be able to eat
or drink after midnight. When you arrive, you will go to a waiting area. Your parents will stay with you. You will meet the anesthesiologist, the neurosurgeon (Dr. Ghatan) and the neurologist (Dr. Wolf or Dr. LaVega-Talbott or Dr. Kang.)

One of your parents will go into the operating room with you until you are asleep.
You will be put to sleep using a mask that you breathe into. When you wake up, the surgery will be over and you will be in the Pediatric Intensive Care Unit, with lots of nurses and doctors to take care of you. Of course, your family will be there, too!

You will have a CAT scan immediately after the surgery. You will have a thick bandage on your head and wires coming out of it, which are attached to the same machine that was used for the video EEG. You will have an IV in your arm. Your face may be swollen or bruised and one of your eyes may be shut. You will need to stay in bed. You will have a catheter at first, then a bedpan, and then a special toilet, called a commode. You will have your own room, with a TV and DVD player and video games. People from the playroom will come to see you.
You may have a headache – if you do, you will get medicine so that it does not hurt. You will be asked to stay awake as much as possible and to move around as much as possible. It is important to eat and drink and play games and talk.

You may get medicine through the IV in your arm or by mouth. You may need blood tests. You will have no hair! It is shaved off before the surgery.

We will wait to perform the second surgery until after you have had some seizures. The more seizures you have, the easier it is to tell where the seizures begin.

After you have been in the hospital for at least a week, you will go back to the operating room for the next surgery. If you have a lesion on your brain (an area of abnormality) it will be removed. If the electrodes don’t show any area of abnormality, you may simply have the grids removed and be sent home. Further surgery will be scheduled at a later date.
If you are having the second stage of surgery – the resection - a test called “brain mapping” may be done in your hospital room a couple of days before the surgery. You will be asked to look at pictures and tell us what they are and will be asked if you feel certain things in your arms and legs. This uses electrical stimulation to determine what part of your brain controls language and motor function. This takes less than an hour and does not hurt!

After the surgery, you will spend another week or so in the hospital. You will still have a bandage on your head, but probably no wires!

After about a week, depending on how you feel, you will go home. You will have either no bandage or a very small bandage on your head. The dressing will be changed before you go home.

You will go to see the neurosurgeon within a week after discharge and he will take out the stitches about a week after the surgery. You will need to see the neurologist in a week. Your parents will put ointment on the suture lines and may put a bandage on your head every day. Your head may feel itchy. Your hair will start to grow back!

You can take a shower but not a bath.

You will feel tired after going home and may not feel as if you have enough energy to go back to school and normal activities right away. We will decide with you when you go back to normal activities.

You will continue taking medicine when you go home. These medications will include antibiotics, anti-epileptic medication, and steroids. You will need to wear a helmet when you ride a bike, ski, skate, and ride a scooter.

You will need another MRI in approximately 6 months. You will see Dr. Ghatan (neurosurgeon) in 1 week, then again in 2 weeks;
6 weeks, 3 months, 6 months, 9 months and 1 year after the surgery (unless he decides differently.) You will see the neurology team (Wolf, McGoldrick, LaVega-Talbott and Kang) at least every month and maybe more often. You will continue to take medicine and to have your blood levels checked regularly for at least a year!
PEOPLE INVOLVED IN YOUR CARE:

The Pediatric Epilepsy/Neurosurgery Team - (Beth Israel & St. Luke’s-Roosevelt)
Steven Wolf, MD – Director- Epileptologist
Patty Engel McGoldrick, NP
Saadi Ghatan, MD – Neurosurgeon
Harriet Kang, MD – Epileptologist
Maite LaVega-Talbott, MD – Epileptologist
Kathy Maloney-Lutz, RN, MSN – Program Director

The Pediatric Team - (Beth Israel)
Ed Conway, Jr- Chairman, Dept of Pediatrics
Elizabeth Polanco, RN, MSN – Nurse Manager
Honey Shields, Director of Child Life
Kristen Fruchter, SW
Attending Physicians:
Robert Da Rosso, MD
Rebecca Fisk, MD
Richard Korongy, MD
Daphne Sack-River, MD
David Shipman, MD
Jessica Williams, MD

The Video EEG Team:
(Beth Israel)
Roxanne Isom, Supervisor