

# Bioimpedance Spectroscopy

## Lymphedema

The lymphatic system removes extra fluid from body tissue into the bloodstream.

Lymphedema is the swelling of body tissue that can be caused by tissue damage or lymph node removal. Some people without cancer get lymphedema but the main cause in the U.S. is cancer or cancer treatment, such as surgery, radiation or lymph node removal.

This swelling most often occurs in your arm or leg. Only the side of your body that had damage or nodes removed would be affected.

Lymphedema can develop right away after surgery or many years later. All people who have had lymph node surgery have the potential to develop lymphedema.

### What to watch for

- Check for early symptoms of lymphedema:
  - changes to your skin
  - skin feels sore or tight
  - your arm or leg feels heavy
  - you have a cut or burn that does not heal
  - your clothing feels tighter
  - your rings, shirts, pants or socks do not fit as well.

## Bioimpedance Spectroscopy

Bioimpedance spectroscopy (BIS) is a test that can help find lymphedema early, when it is easier to manage.

It uses an electrical signal to measure the amount of fluid in your arms and legs. The electrical signal is low in strength and painless. An increase in fluid may mean that you have early signs of lymphedema.

The test will take about 5 minutes.

The first test is known as a baseline. This will be done before you have surgery. These measurements will show what is normal for you.

After surgery, you will have measurements taken every 6 months during your follow-up visits. This will help your health care provider watch for signs of lymphedema.

### What to tell your health care provider

BIS is a safe test but there are certain things that could interfere with it. Before your scheduled test, tell your health care provider if you:

- are pregnant or think you may be pregnant
- have any implanted device or foreign object in your body such as:
  - a brain aneurysm clip
  - an implantable cardioverter defibrillator (ICD)
  - a pacemaker

**(over)**

- ❑ an electronic or magnetic device or implant
- ❑ an insulin pump
- ❑ an infusion pump or implanted drug infusion device
- ❑ an artificial joint (prosthesis) or implant
- ❑ any metal object inside or outside of your body.

### **Before the test**

- Do not drink alcohol for 12 hours before your test.
- Do not exercise or have any caffeine for 2 hours before your test.
- You will be asked to empty your bladder before starting the test.
- You will be asked to remove any tight-fitting clothing. You will be given a hospital gown to wear, if needed.

### **During the test**

- You will lie on your back on an exam table.
- A member of your health care team will place adhesive patches (electrodes) on your hands and feet.
- You will need to lie still during the test.
- An electrical signal will pass through the fluid in your arms and legs.

### **After the test**

- Your health care provider will talk about the results of your test with you.
- You may return to your normal activities.

## **Cancer Rehabilitation Program**

After surgery, your surgeon will refer you to the Courage Kenny Rehabilitation Institute's Cancer Rehabilitation Program.

This program offers consultations by health care providers who specialize in physical medicine and rehabilitation, and therapists who have advanced training in cancer rehabilitation.

These health care providers provide care options to address the unique needs of people who have cancer such as:

- lymphedema
- balance and coordination
- pain and fatigue
- muscular strength and range of motion
- thinking and processing information.

If you are at risk for developing lymphedema, you will be scheduled to see a certified lymphedema therapist. He or she will teach you about lymphedema including symptoms to watch for and what to do if you have symptoms. You will also learn how to do range of motion exercises.

For more information, please talk with a member of your health care team.

### **Lymphedema diagnosis**

- An exam by a health care provider is needed to correctly diagnose lymphedema.
- To make an appointment with a certified lymphedema therapist, call 612-262-7900.

### **Cost**

BIS is approved by the Food and Drug Administration. However, some insurance providers do not cover the cost for this test.

If you choose to have this test done, the amount you will have to pay will be based on:

- what your health plan covers
- your copay (a fixed amount you will pay for the test)
- your coinsurance (your share of the costs of the test)
- your deductible (any other out-of-pocket costs before your insurance provider pays for any part of the test).

Please call your insurance provider to find out if this test is covered by your health plan.

If your insurance provider does not cover the test, Allina Health will discount your bill to \$137 if you meet the following criteria:

- You have met your benefit plan's out-of-pocket maximum.
- You have no coinsurance
- You have no deductibles (or you have met your total for the year).
- You have no copays.