

Branched Thoracic Endovascular Aortic Repair

How to prepare and what to expect

This handout describes how to prepare for a branched thoracic endovascular aortic repair and what to expect afterward.

What is a branched thoracic endovascular aortic repair?

A *branched thoracic endovascular aortic repair* (B-TEVAR) is a procedure to repair a *thoracoabdominal aortic aneurysm* (TAAA). A TAAA is a bulge (aneurysm) in part of the *aorta* that goes from your chest to your belly. The *aorta* is the main vessel that carries blood from your heart to the rest of your body.

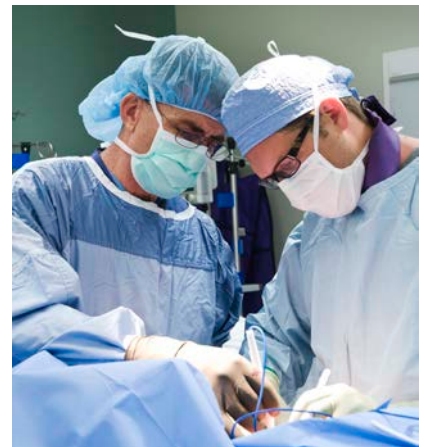
During B-TEVAR, your surgeon will place a special metal tube inside the damaged section of your *aorta*. Once in place, this tube will support your *aorta* wall.

B-TEVAR is a *minimally invasive surgery*. This means that it uses very small incisions.

How does B-TEVAR differ from TEVAR?

TEVAR is used to repair bulges or tears in a straight section of the *aorta*. But these problems can occur in a part of the *aorta* where it branches to carry blood to other parts of the body. If this happens, we cannot use a straight TEVAR graft to repair it.

Instead, we must use a *branched endograft*. This special type of graft has branches that connect the aortic stent to the branches of the *aorta*.



B-TEVAR is minimally invasive surgery.

How is it done?

- Before surgery, a branched endograft will be placed inside a small *catheter* (tube).

- Your surgeon will make a small cut into a *femoral artery* in your groin.
- Your surgeon will place the catheter and special graft into your femoral artery and move it up into your aorta.
- Once the graft is in the right place, it will be released from the catheter. The catheter will then be removed from your body.

How do I prepare for surgery?

- **Medicines:**

- If you take aspirin, keep taking it unless your surgery team tells you not to.
 - Starting 1 week before your surgery, **stop** taking any *nonsteroidal anti-inflammatory drugs* (NSAIDs) such as ibuprofen (Advil, Motrin) and naproxen (Aleve, Naprosyn).
 - Starting 10 days before your surgery **stop** taking clopidogrel (Plavix).
 - Ask your surgical team if you should stop taking warfarin (Coumadin), dabigatran etexilate (Pradaxa), enoxaparin (Lovenox), and other medicines that affect blood clotting.
 - If you take medicine for diabetes, talk with your surgery team. You may need to change your dose before surgery.
- **Shaving:** Do **not** shave any part of your body that you do not already shave every day. If you normally shave near your surgical site, do **not** shave that area for 2 days (48 hours) before your surgery.
 - **Hospital stay:** You will stay in the hospital for 5 to 7 days after surgery. When you go home, you may need someone to help you fix meals and do other household chores for 1 to 2 weeks.

Day Before Surgery

- **Shower:** Take a shower the night before your surgery:
 - Use the antibacterial soap your nurse gave you to wash your body. Do **not** use the antibacterial soap on your face and hair. (See directions that came with the soap.)
 - Use your own soap and shampoo on your face and hair.
 - Use clean towels to dry off, and put on clean clothes.

- **Arrival time:** A patient care coordinator (PCC) will call you by 5 p.m. the night before your surgery. If you are having surgery on a Monday, the PCC will call you the Friday before. If you do not receive this call by 5 p.m., please call **206.598.6541**.

Day of Surgery

At Home

- **Food and drink:** After midnight the night before surgery, do **not** eat any food or drink alcohol.
- **Clear liquids:** You may drink clear liquids until 2 hours before your scheduled arrival time. Clear liquids include water, clear juices (no pulp), carbonated drinks, clear tea, or coffee (no creamers or milk).
- **Shower:** Take another shower with the antibacterial soap. Follow the same steps as you did the night before.
- **Medicines:** Follow the instructions the nurse gave you about which medicines to take or not take. Remember to sip **only** enough water to swallow your pills.

At the Hospital

- **Heating blanket:** To lower your risk of infection, we will cover you with a heating blanket while you wait to go into the operating room. This will warm your body and help prevent infection. Ask for a heating blanket if you do not receive one.

After Your Surgery

You will wake up in the Recovery Room or the Intensive Care Unit (ICU). You will feel sleepy. You will have:

- An **intravenous (IV)** tube in a vein in your arm. We use this tube to give you medicine for pain and nausea.
- An **arterial line** inserted into your arm. We use this line to monitor your blood pressure.
- A **bladder catheter** (tube) to drain your urine (see page 4).
- **Sequential compression devices (SCDs)** on your legs. These leg wraps inflate from time to time to help with blood flow. They help keep blood clots from forming while you are in bed.

- A **lumbar drain catheter** in your back to take fluid off of the spinal cord. This drain helps prevent paralysis after surgery.

After 3 to 4 days in the ICU, you will move to a surgical unit for the rest of your hospital stay.

You may be on bedrest for 2 to 3 days after surgery. Your nurses will check on you often. They will monitor your:

- Blood pressure
- Heart rate
- Breathing
- Pulses (in your feet)
- Nerve function to your legs (having you lift your legs)

Recovering in Your Hospital Room

Incisions

- You will have puncture sites in your groin. If your surgeon needed to use an artery in your arm to place the stent, you may also have a 1 to 2 inch incision in your arm.
- Your incisions will be closed with surgical glue. This will come off on its own in 1 to 2 weeks.

Blood Pressure

We will closely watch your blood pressure after surgery. Your doctor may prescribe a medicine called *midodrine* to increase your blood pressure. Most times, we want to keep a patient's blood pressure higher than normal after surgery to help protect their spinal cord.

Pain Control

You may have a pain-medicine pump called a PCA (*patient-controlled analgesia*) for 1 to 4 days after your surgery. A PCA allows you to give yourself pain medicine through your IV when you need it.

Nutrition

- You will not be allowed to eat anything by mouth on the day of your surgery. You will receive fluids through your IV to keep you hydrated.
- As your intestines recover from your surgery, you will pass gas. After this happens, you will be able to drink clear liquids.

- When you can drink clear liquids and not feel nauseous, your doctor will add regular foods back into your diet.

Activity

Every day, you will become more active. Moving your body helps prevent *pneumonia* (lung infection) and blood clots in your legs.

- Your nurses will help you increase your activity each day as you recover.
- As your strength returns, we will urge you to walk more.
- Your nurses will teach you coughing and deep-breathing exercises. You will do these important exercises after surgery to help prevent pneumonia.

Bowels

It might be several days after your surgery before you have a bowel movement. This is normal. Both surgery and opioids can cause *constipation* (hard stool).

We do not want you to strain to have a bowel movement. While you are taking opioids, take the laxative and stool softener your doctor prescribed. If you have loose stools, stop taking these products.

Bladder Catheter

You may have a catheter in your bladder for up to 5 days after surgery. It will be removed when you can get up and use the toilet.

Swelling

Most patients have leg swelling for a while after surgery. To help ease the swelling, raise your legs above the level of your chest when you are sitting or lying down. Your doctor may prescribe special stockings or elastic bandages to lessen swelling.

Self-care at Home

Bathing

- You may shower every day.
- Do **not** take a bath, sit in a hot tub or sauna, or go swimming until your incision is fully healed. This will take **at least** 6 weeks.

Pain Control

- Use the pain medicine your doctor prescribed for you. Take acetaminophen (Tylenol) for mild to moderate pain. If needed for severe pain, take your *opioid* pain pills exactly as prescribed.
- It is normal to have some back pain after this surgery. This will get better over time. Walking will help.
- If you have any weakness, numbness, tingling into your legs, or any other changes along with the back pain, please call our clinic.

Incision Care

- Check your incisions every day. **Call your doctor if you have any signs of infection** (see page 6).
- It is normal to have a small lump at the incision sites. These should go away in 2 to 3 days
- If you have any a lot of swelling, pain, or drainage at this site, call your doctor or nurse.

Blood Pressure

- For 2 weeks after surgery, keep your systolic blood pressure between 130 to 150. After 2 weeks, aim to keep your blood pressure below 140.
- Do **not** stop midodrine quickly. Follow the weaning plan we gave you when you left the hospital.
- After you have weaned off midodrine, or 2 weeks have passed since surgery, please call your *cardiologist* (heart doctor) or primary care provider (PCP) to talk about restarting your blood pressure medicines.
- If you take more than 1 blood pressure medicine, do **not** restart them all at once. This can drop your blood pressure too quickly.

Bowels

If you have watery diarrhea, nausea, vomiting, or constipation, call your nurse at 206.598.4477.

Fatigue

Expect to feel *fatigued* (very tired) and have low energy after this surgery. Prescription pain medicine can also make you feel sleepy.

Take naps as needed. This tired feeling may last for 3 to 6 months after surgery.

But, be sure to get up and move around as much as you can. Walking and other exercise will help increase your energy and stamina (see “Activity”).

Activity

- Your belly will heal more quickly if it is not stressed. For **6 weeks** after your surgery:
 - Do **not** lift anything that weighs more than 20 pounds (a gallon of water weighs almost 9 pounds).
 - Avoid gardening, vacuuming, and any activity that increases your heart rate. Activities that do not cause pain should be safe.
- Walking every day will help speed your recovery. Slowly increase how far you walk.
- After 6 weeks, slowly add your usual activities back into your routine.
- You may resume sexual activity when it is comfortable and you want to do so. Some men may have problems having erections during their recovery period or longer. If you have any questions about sexual function, talk with your doctor.

Nutrition

Many people lose weight after a major surgery. This is because they do not feel like eating much. Call your surgical team if you lose more than 10 pounds, or if you think you are not eating enough.

Driving

- Do **not** drive until your doctor says it is safe.
- Do **not** drive while taking opioid pain pills. This medicine affects how quickly you can react. This makes it unsafe to drive

Follow-up Visits

- Your first follow-up visit will be 1 month after your surgery. You will have a *computed tomography* (CT) scan before this visit. This CT scan will show us how the stent is working. Our office will contact you to set up these visits.

- You will have other follow-up visits at 6 and 12 months after your surgery. After that, you will need to return for yearly visits.
- If you live outside of Seattle, you may see your local provider for these follow-up visits. Please tell our office if you plan to see your local provider. We will send them your paperwork and follow-up care plan. After you see your provider, please tell us so that we can follow up on the results of those visits.

Return to Work

How much time you take off work depends on what you do for a living. Most people take from 1 to 2 weeks to a few months off to recover. You may return to work as you feel able. Some patients start off with shorter days and then increase their hours as their energy improves.

When to Call

Call a nurse or your doctor if you have:

- Chest pain or shortness of breath that is new or is getting worse
- Bleeding or drainage that soaks your dressing
- Fever higher than 100°F (38°C)
- Shaking or chills
- Any sign of infection in your incision:
 - Redness or swelling
 - Increased pain
 - Drainage that smells bad
 - Increase in the amount of drainage from your incision
- Nausea, vomiting, or both
- Changes in your legs:
 - Pain that you did not have before surgery
 - Skin color changes
 - Legs feeling either very warm or very cold
- Concerns that cannot wait until your follow-up visit

Questions?

Weekdays from 8 a.m. to 4 p.m., call the Surgical Specialties Nurse Advice Line at 206.598.4477.

After hours and on weekends and holidays, call 206.598.6190 and ask to page the resident on call for Vascular Surgery.

Or, ask to page your surgeon:

Dr. _____