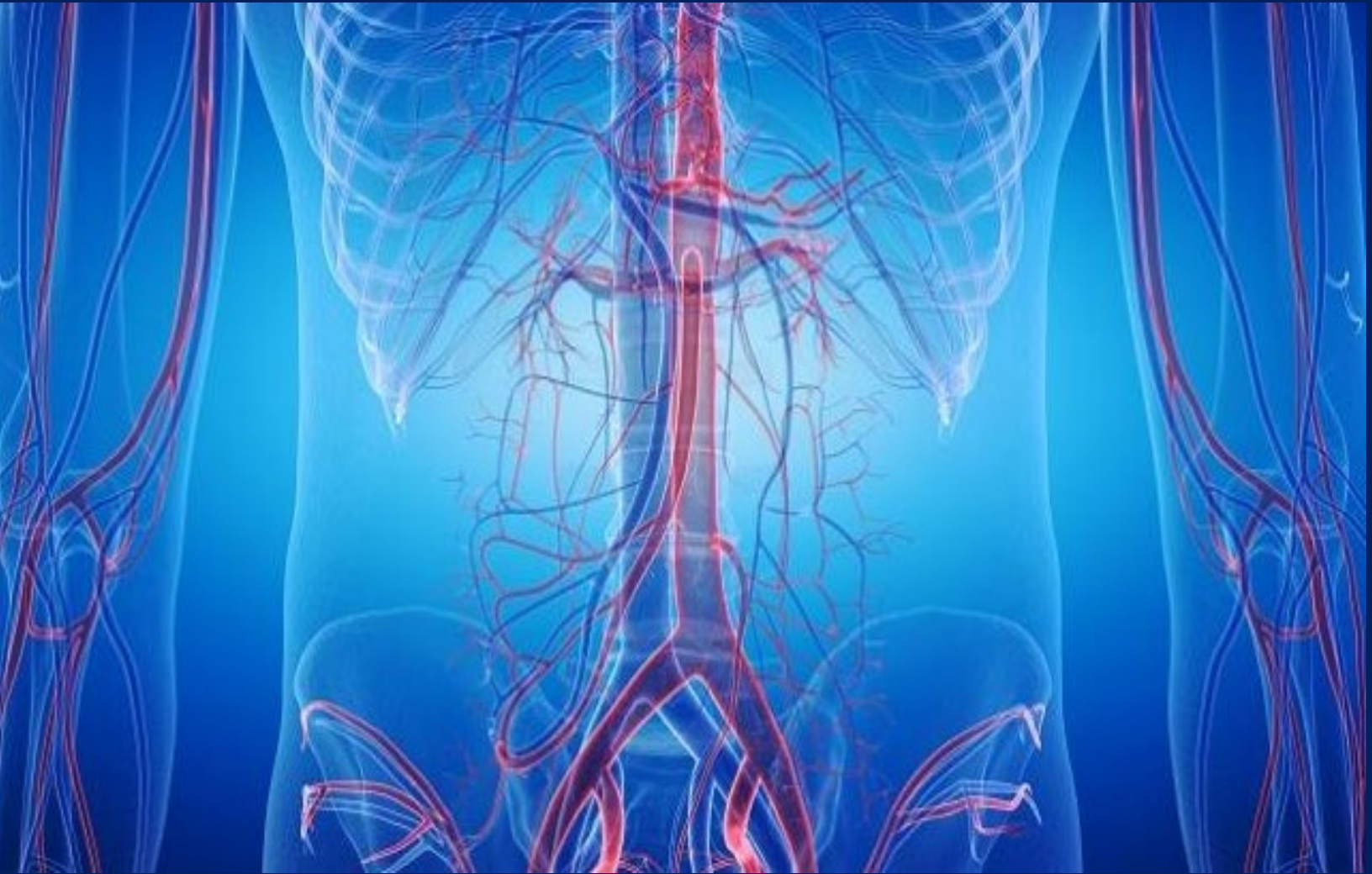


Vascular Surgery: Abdominal Aortic Aneurysm Repair

# Enhanced Recovery After Surgery (ERAS)

Your Guide to Healing



**UVA Health**

UVA Vascular Surgery  
Clinic 1215 Lee Street  
Charlottesville, VA 22903  
434-243-2000

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-----  
Patient Name

-----  
Surgery Date/Time to Arrive

-----  
Surgeon

We want to thank you for choosing UVA Health for your surgery. Your care and well-being are important to us. We are committed to providing you with the best possible care using the latest technology.

This handbook should be used as a guide to help you through your recovery and answer questions that you may have. Please give us any feedback that you think would make your experience even better.

Please bring this book with you to:

- Every office visit
- Your admission to the hospital
- Follow up visits

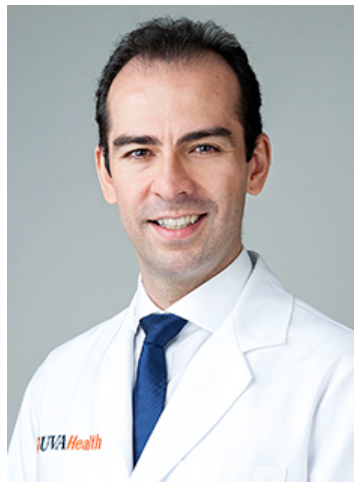
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## Your Care Team

In addition to the nursing staff, the Vascular team will care for you. This team is led by your surgeon, and includes a fellow or a chief resident along with residents, advanced practice providers (NPs/PAs) and 1-2 medical students. There will always be a physician in the hospital 24 hours a day to tend to your needs.



Dr. W. Darrin Clouse



Dr. Behzad Farivar



Dr. Margaret Tracci



Dr. John Kern



Dr. M. Libby Weaver



Dr. Melina Kibbe

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# Contact Information

The main hospital address: UVA Health System  
1215 Lee Street Charlottesville VA 22908

UVA Health Heart and Vascular Center toll free number: 1-844-467-5578

Contact	Phone Number
Dr. W Darrin Clouse	434.243.2000
Dr. Behzad Farivar	434.243.2000
Dr. Margaret Tracci	434.243.2000
Dr. John Kern	434.243.2000
Dr. M. Libby Weaver	434.243.2000
Dr. Melina Kibbe	434.243.2000
Vascular Surgery Fax Number	434.244.9430
If no call for surgery time Before 4:30pm the day before surgery	434.982.0160
Anesthesia Perioperative Medicine Clinic	434.924.5035
Hospital Inpatient Unit: TCV Intensive Care Unit (TCVPO) STBICU 4 West/TIMU	434.982.0301/434-982-2703 434.924.2288 434.924.5338
UVA Main Hospital	434.924.0000 (ask for the TCV surgery resident on call –pager 1944)
Lodging Arrangements/ Hospitality House	434.924.1299/434.924.2091
Parking Assistance	434.924.1122
Interpreter Services	434.982.1794
Hospital Billing Questions	800.523.4398

For more information on ERAS, helpful links for getting ready for surgery, and to view this booklet online, visit: [uvaeras.weebly.com](http://uvaeras.weebly.com)



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# Enhanced Recovery After Surgery (ERAS)

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## What is Enhanced Recovery?

Enhanced recovery is a new way of improving the experience of patients who need major surgery. It helps patients recover sooner so life can return to normal as quickly as possible. The ERAS program focuses on making sure that patients are actively involved in their recovery.



There are four main stages:

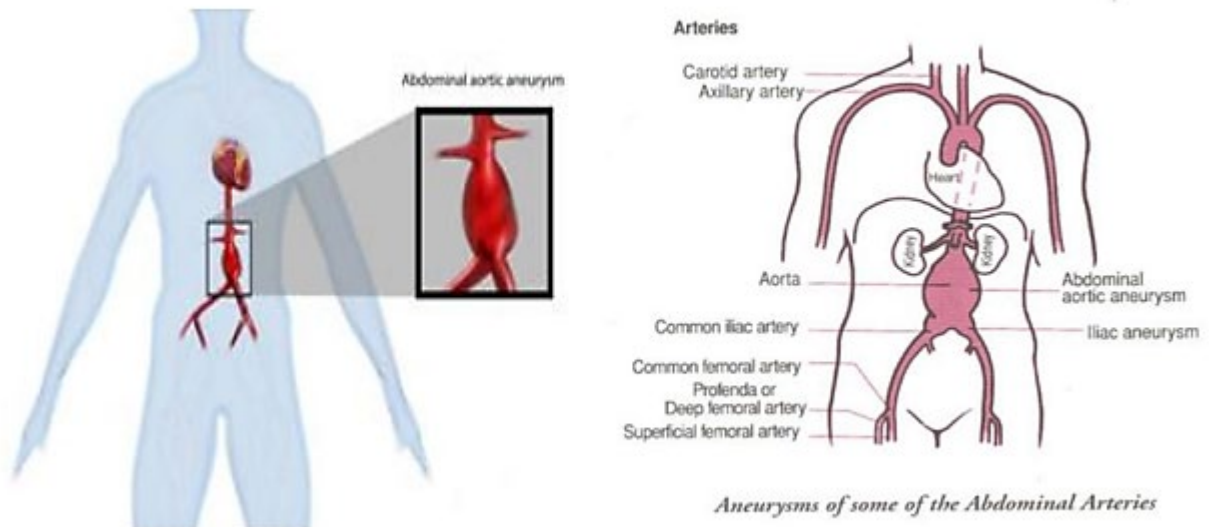
1. **Planning and preparing before surgery**– giving you plenty of information so you feel ready.
2. **Reducing the physical stress of the operation** – allowing you to drink up to 2 hours before your surgery.
3. **A pain relief plan** that focuses on giving you the right medicine you need to keep you comfortable during and after surgery.
4. **Early feeding and moving around after surgery** – allowing you to eat, drink and walk around as soon as you can.

It is important that you know what to expect before, during and after your surgery. Your care team will work closely with you to plan your care and treatment. You are the most important part of the care team.

It is important for you to participate in your recovery and to follow our advice. By working together, we hope to keep your hospital stay as short as possible.

# Introduction to Vascular Surgery

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## The Abdominal Aortic Anatomy:

The largest blood vessel in the body is the abdominal aorta. It contains the celiac, superior mesenteric, inferior mesenteric, renal and iliac arteries and directs oxygenated blood from the heart to the rest of the body. The arterial wall consists of three layers and the lining is smooth and strong so blood can flow easily.

## Abdominal Aortic Aneurysm (AAA)

The exact cause of an aneurysm is often unknown. People who smoke, have coronary artery disease and/or peripheral artery disease are more likely to have an abdominal aneurysm. In order for an aneurysm to be classified as a true aneurysm it must involve all three of the arterial wall layers. The larger the aneurysm grows the higher the risk of it leaking or rupture. When diagnosed with an AAA, blood pressure control is very important. There will be medical and/or surgical management with the goal to relieve the symptoms, stop the growth and avoid rupture of the aneurysm. When it is decided that your aneurysm is large enough to require surgery, your team will discuss your options.

## Types of Testing, Procedures and Definitions:

**Physical examination** is the first diagnostic test performed. This includes checking your pulses, listening to your arteries and pressing or feeling the abdomen. The size of the aneurysm as well as the size of the person will determine if an aneurysm can be detected using this method. Additional non-invasive or invasive testing will likely be necessary to confirm presence of an aneurysm.

**Non-Invasive Testing** is painless and without known risks or side effects. Blood pressure cuffs are placed on your arms and legs to collect pressure readings. With the use of a special ultrasound, the vascular technician can make recordings of the blood flow at different points along arms and legs. From these tests, the location and severity of your disease can be determined.

*Abdominal Aortic Duplex* is an ultrasound of the abdomen using high-frequency sound waves and a computer to create images of blood vessels, tissues and organs. It can provide information on a blood vessels location, size, shape and blood flow. You will be given instructions about how to prepare for this test.



**Invasive Testing** usually for surgical planning and may require some preparation and possibly a short hospital stay.

*Computed Tomography (CT) Scan or CT Angiography (CTA)* is an imaging study utilizing non-contrast and / or intravenous (IV) contrast to identify specific anatomy. You will lie on a table and be asked to remain still while you pass through a donut shaped scanner. X-rays will be taken.

*Magnetic Resonance Imaging (MRI) / Magnetic Resonance Angiography (MRA)* is an imaging study which creates images of blood vessels which can be three dimensional. It may or may not involve the use of contrast or IV's. You will be asked specific questions about your past medical and surgical history. You will lie on a table and be asked to remain still while you pass through a donut shaped scanner.

*Arteriogram* is an x-ray of the arteries using contrast to highlight the blood vessel. It is completed by injecting contrast through a needle in either the groin or the upper arm.

*Intravascular ultrasound (IVUS)* is a study that sends high frequency sound waves into the blood vessel from a catheter inside the artery forming an image. The technique of doing this test is similar to an arteriogram. No contrast is necessary for this study.



## Do you take anticoagulant/antiplatelet (blood thinner) medication?

Some examples of blood thinner medications: Coumadin (warfarin), Plavix (clopidogrel), Pletal (cilostazol), Xarelto (rivaroxaban), Eliquis (apixaban), Lovenox (enoxaparin), or others.

If so, you will need to notify the doctor that prescribed it to you and let them know you *may* receive a **spinal block** for pain management. We require you to stop some of these medications **72 hours or more** before we can give you a spinal block. It is the prescribing provider's responsibility to provide instructions for how long you can safely be off this medication.

It is very important to follow the instructions given to you to prevent your surgery from being postponed or cancelled!

If you are on any blood thinner medications, your nurse may give you specific instructions as to when to stop taking them before surgery. It is very important to follow these instructions.

We are giving you instructions on \_\_\_\_\_

Your last dose of blood thinning medication **before surgery** should be on

\_\_\_\_\_

We are recommending a bridge of this medication. Please refer to your After Visit Summary (AVS) for specific instructions about this medication.

Please follow up with \_\_\_\_\_

# Before Your Surgery

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## Clinic

During your clinic visit we will check to see if you need surgery and what type you will need. You will work with our entire team to prepare for surgery:

- The surgeons, who may have fellows, residents, or medical students working with them
- Nurse practitioners (NPs) and Physician Assistants (PAs)
- Clinical nurse coordinators and Licensed practical nurses
- Physical Therapists
- Medical technicians
- Administrative assistants

During your clinic visit, we will:

- Ask questions about your medical history
- Perform a physical exam
- Ask you to sign the surgical consent forms



You will also receive:

- Instructions on preparing for surgery
- Instructions for taking your medications as well as special instructions for what to do before surgery, if you are on any blood thinners
- Instructions on the use of an incentive spirometer
- Special body wash to be used to shower on the night before and on the morning of your surgery
- Instructions on quitting smoking if you currently smoke. Please see the next page for more information.

## Quitting Smoking Before Surgery

If you smoke, we encourage you to stop at least 2 weeks before surgery because it will:

- Improve wound healing after surgery
- Help avoid complications during and after surgery



If you are not able to be off cigarettes at least 2 weeks before surgery, we ask that you cut back on your smoking and encourage you to quit smoking as soon as possible after surgery. This is very important to your health.

**Please let your surgeon's nurse know if you smoke. We will give you an education packet to help you quit smoking and refer you for smoking cessation counseling.**



### **Some Long-Term Benefits of Quitting May Include:**

- Improved Survival
- Fewer and less serious side effects from surgery
- Faster recovery from treatment
- More energy
- Better quality of life
- Decreased risk of secondary cancer

Some key things to think about before your surgery, as you begin to think about quitting

- All hospitals in the United States are smoke free. You will not be allowed to smoke during your hospital stay
- Your doctor may give you medicine to help you handle tobacco withdrawal while in the hospital and after you leave.

Here are some tips to help you throughout your journey:

- Speak with your provider about medications that can help you with transitioning from a smoker to a nonsmoker.
- Identify your triggers and develop a plan to manage those triggers.
- Plan what you can do instead of using tobacco. Make a survival kit to help you along your quit journey. In this kit have: nicotine replacement therapy, sugar-less gum or candy, coloring books, puzzles, or bubbles for blowing.

### **Keys to Quitting and Staying Smoke Free:**

- Continue your quit plan after your hospital stay
- Make sure you leave the hospital with the right medications or prescriptions
- Identify friends and family to support your quitting
- **Speak with your doctor about getting a referral to meet with our tobacco treatment specialist**

You Don't Have to Quit Alone!



1.800.QUITNOW



<https://smokefree.gov/>

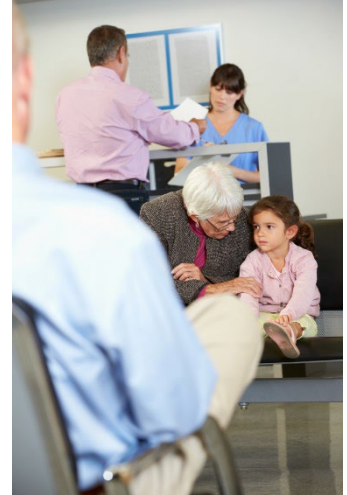


## Anesthesia Perioperative Medicine Clinic

The Anesthesia Perioperative Medicine Clinic will review your medical and surgical history to determine if you will need an evaluation prior to surgery.

If an in person anesthesia evaluation is needed, the Anesthesia Perioperative Medicine Clinic will notify you.

- An appointment will be scheduled for an office visit a few weeks prior to the surgical date.
- Your medications will be reviewed
- You may have a blood test, test of the heart (EKG), and/or other tests the surgeon or anesthesiologist requests.
- For questions or if unable to keep the appointment with Anesthesia Perioperative Medicine Clinic please call **434-924-5035**. Failure to keep this visit with Anesthesia Perioperative Medicine Clinic before surgery may result in cancellation of surgery.



There may be times that you are instructed to go to the Anesthesia Perioperative Medicine Clinic after your appointment with your surgeon. If this is the case, you are welcome to a same day appointment but please allow for up to 2 hours.

Write any special medication instructions here:

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# Preparing for Surgery

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You should expect to be in the hospital for about \_\_\_\_\_ days. When you leave the hospital after your surgery, you will need some help from family or friends. It will be important to have help with meals, taking medications, etc.

You can do a few simple things before you come into the hospital to make things easier for you when you get home:



Clean and put away laundry.

Put clean sheets on the bed.

Put the things you use often between waist and shoulder height to avoid having to bend down or stretch too much to reach them.

Bring the things you are going to use often during the day downstairs. But remember that you WILL be able to climb stairs after surgery.

Buy the foods you like and other things you will need since shopping may be hard when you first go home.

Cut the grass, tend to the garden and do all housework.

Arrange for someone to get your mail and take care of pets and loved-ones, if necessary.

We recommend you have the following non-prescription medications at home before your surgery:

- Tylenol (acetaminophen) 325mg tablets (for pain)
- Miralax powder (for constipation)

**Stop taking ibuprofen (Motrin® or Advil®) and naproxen (Aleve®) 5 days before surgery. You may continue to take acetaminophen (Tylenol®).**

**If you are taking additional medications for chronic pain, please continue those up until your surgery.**

If you are on blood thinning medications ***remember to follow any instructions you received from the doctor or nurse.*** This is very important to prevent your surgery from being postponed or cancelled! ***If you have any questions on the instructions you received, call your surgeon's office right away.***

## Pre-Surgery Checklist

### What you SHOULD bring to the hospital:

- A list of your current medications.
- Any paperwork given to you by your surgeon
- A copy of your Advance Directive form, if you completed one
- Your “blood” bracelet, if given one
- A book or something to do while you wait
- A change of comfortable clothes for discharge
- Any toiletries that you may need
- Your CPAP or BiPAP, if you have one**
- If you use an oxygen tank, be sure you have enough oxygen and tank supplies for the ride home after surgery



### What you SHOULD NOT bring to the hospital:

- Large sums of money
- Valuables such as jewelry or non-medical electronic equipment
- Home medication (unless specifically requested to do so)

\*Please know that any belongings you bring will go to “safe keeping.”

### For your safety, you should plan to:

- Identify a Care Partner for your stay in the hospital.
- Have a responsible adult with you to hear your discharge instructions and drive you home. If you plan to take public transportation, a responsible adult should travel with you.
- If possible, identify someone to stay with you the first week after discharge to help take care of you.

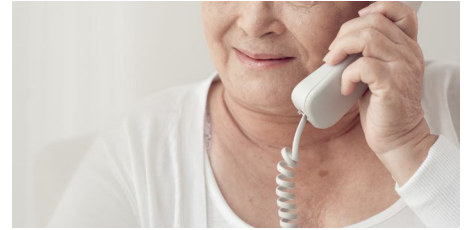


# Days Before Surgery

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## Scheduled Surgery Time

A nurse will call you the **day before your surgery** to tell you what time to arrive and where to check in at the hospital for your surgery. If your surgery is on a Monday, you will be called the Friday before.



If you do not receive a call by 4:30 pm, please call 434.982.0160.

Please write the time and check in location that the nurse tells you on page 1 of this handbook in the space provided.

## Miralax Bowel Preparation



In order to prepare your bowels for surgery, we ask that you take 1 dose (1 heaping capful) of Miralax daily on each of the 3 days before you come in for surgery. This will help to get your bowels regular.

We will also ask you to continue taking this **after your surgery** so please purchase a large bottle.

## Food and Drink the night before surgery

- Stop eating solid foods after midnight before your surgery.
- You CAN have water or Gatorade™ until you arrive at the hospital.
- Be sure to have a 20-ounce Gatorade™ **ready and available for the morning of surgery.** You will be able to drink this until your arrival time.



## Instructions for Bathing

We will give you a bottle of HIBICLENS foam (body wash) to use the night before and the morning of your surgery.

HIBICLENS is a skin cleanser that contains chlorhexidine gluconate (an antiseptic). This key ingredient helps to kill and remove germs that may cause an infection. Repeated use of HIBICLENS creates a greater protection against germs and helps to lower your risk of infection after surgery.



### **Before using HIBICLENS, you will need:**

- A clean washcloth
- A clean towel
- Clean clothes

### **IMPORTANT:**

- HIBICLENS is simple and easy to use. If you feel any burning or irritation on your skin, rinse the area right away, and do NOT put any more HIBICLENS on.
- Keep HIBICLENS away from your face (including your eyes, ears, and mouth).
- DO NOT use in the genital area. (It is ok if the soapy water runs over but do not scrub the area.)
- Do NOT shave your surgery site. This can increase the risk of infection. Your healthcare team will remove any hair, if needed.

### **Directions for when you shower or take a bath:**

1. If you plan to wash your hair, do so with your regular shampoo. Then rinse hair and body thoroughly with water to remove any shampoo residue.
2. Wash your face and genital area with water or your regular soap.
3. Thoroughly rinse your body with water from the neck down.
4. Move away from the shower stream.
5. Apply HIBICLENS directly on your skin or on a wet washcloth and wash the rest of your body gently from the neck down.
6. Rinse thoroughly.
7. Do NOT use your regular soap after applying and rinsing with HIBICLENS.
8. Dry your skin with a clean towel.
9. Do NOT apply any lotions, deodorants, powders, or perfumes after using HIBICLENS.
10. Put on clean clothes after each shower.

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# Day of Surgery

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## Before you leave home



- ☑ Take another shower with the body wash provided.
- ☑ Remove nail polish, makeup, jewelry and all piercings.
- ☑ Continue drinking water or Gatorade™ on the morning of your surgery. Do NOT drink any other liquids. If you do, we may have to cancel surgery.
- ☑ Remember to drink your Gatorade™ on the way to the hospital and finish at the time specifically instructed by the phone call nurse.

## Hospital arrival

- ☑ Arrive at the hospital on the morning of surgery at the time you wrote on page 1. (this will be approximately **2 hours before surgery**)
- ☑ Finish the Gatorade™ at the time specifically instructed by the phone call nurse. You cannot drink after this.
- ☑ Check in at your scheduled time in the Family Waiting Lounge (waiting room).
- ☑ Your family will get a surgery guide to explain the process. They will be given a tracking number so they can monitor your progress.

## Surgery

When it is time for your surgery, you will be brought to the Surgical Admissions Suite (SAS).

In SAS, you will:

- ☑ Be identified for surgery and get an ID band for your wrist.
- ☑ Be checked in by a nurse and asked about your pain level.
- ☑ Be given an IV and weighed by the nurse.
- ☑ Be given several medicines that will help keep you comfortable during and after surgery. The medications may include acetaminophen (Tylenol), gabapentin (Neurontin) to help with nerve pain, and celecoxib (Celebrex) to help with inflammation.
- ☑ Meet the anesthesia and surgery team where your consent for surgery will be reviewed. Your family can be with you during this time.



A physician may also mark your abdomen depending on the type of surgery you are having.

## In the Operating Room

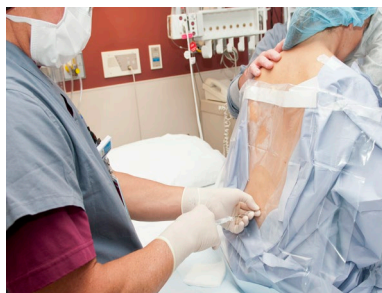
From SAS, you will then be taken to the operating room (OR) for surgery and your family will return to the family lounge.

Many patients do not recall being in the OR because of the medication we give you to relax and manage your pain.



Once you arrive in the OR:

- ☑ We will do a “check-in” to confirm your identity and the location of your surgery.
- ☑ You will lie down on the operating room bed.
- ☑ You will be hooked up to monitors.
- ☑ Boots will be placed on your legs to circulate your blood during surgery.
- ☑ You may also be given a blood thinner shot to prevent blood clots.
- ☑ We will give you antibiotics, if needed, to prevent infection.
- ☑ Then the anesthesiologist will put you to sleep with a medicine that works in 30 seconds.
- ☑ Just before starting your surgery, we will do a “time out” to check your identity and confirm the location of your surgery.
- ☑ After you are asleep, we will place tubes and lines such a foley catheter to keep your bladder empty, Endotracheal tube (breathing tube) and central and arterial line to for fluids and monitoring.



The anesthesia doctor may also place a small catheter (epidural) into your back just before surgery. The epidural delivers a small constant amount of pain medicine close to your incision site. This provides excellent pain relief with fewer side effects than other forms of pain medicine. This also helps us to decrease the amount of oral pain medicine you need after surgery which could delay your recovery.

Your anesthesiologist will talk to you about an epidural before your surgery. It is much easier for you to have the epidural placed before your surgery when you are not having pain. Having an epidural does not mean that other pain-relieving treatments will not be used. After this, your surgical team will perform your operation. During your surgery, the Operating Room nurse will call your family every 2 hours to update them.



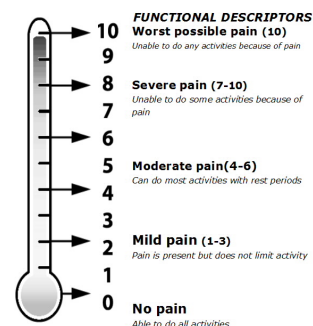


## Pain control following surgery

Managing your pain is an important part of your recovery. It is normal for you to have some pain for a few days after surgery. The goal is to lower the pain so that you can comfortably walk and take deep breaths effectively. We will ask you regularly about your level of comfort.

One way your care team will help you safely control your pain after surgery is by using *non-opioid* medications during your recovery. The goal is to use as little *opioid* medication as possible to control your pain. If you need stronger pain medication, it is OK. If your pain is worsening and it is not relieved with any medication, you should let your surgeon know.

### UVA ADULT PAIN SCALE TO HELP YOU CONTROL YOUR PAIN



- You will get several *non-opioid*, pain medications around-the-clock to keep you comfortable, examples include:
  - Tylenol (acetaminophen)** – is a pain killer and reduces fevers.
  - Ketoralac or Advil, Motrin (ibuprofen)** – are medications that decrease swelling and pain after surgery. These medications are known as NSAIDs and are safe for short-term use after surgery (unless you had a gastric bypass).
  
- You will have *opioid* pain medication as needed for additional pain.
  - Opioids are powerful pain medications, with many serious side effects. Opioids (usually **oxycodone**) may be used after surgery only when needed for severe pain, but they should not be used first to treat mild or moderate pain.
  - Side effects of opioids include nausea, constipation, dizziness, headache, drowsiness, vomiting, itching, and respiratory depression.
  - Prescription opioid drug use may lead to misuse, abuse, addiction, overdose and death. Your risk of opioid abuse gets higher the longer you take the medication.

If you are on long-standing pain medication prior to surgery, you will be provided with an individualized regimen for pain control with the assistance of our pain specialists.

## Comfort Menu

Your comfort and controlling your pain are very important to us. As part of your recovery, we like to offer you different ways to address your pain. In addition to medication, we offer other options to help make you comfortable during your stay. We hope this comfort menu will help you and your healthcare team to better understand your pain and recovery goals. Please discuss your pain control goals and comfort options with your nurse.



- Distraction:** focus your mind on an activity like creating art with our art supplies, doing puzzle books and reading magazines
- Ice or Heat Therapy:** ice packs and dry heat packs are available, depending on your surgery
- Noise or Light Cancellation:** an eye mask, earplugs and headphones are available for your comfort and convenience. We can also help you create a sleep plan.
- Pet Therapy:** hospital volunteers visit the unit with therapy animals. Ask about their availability.
- Positioning/Movement:** changing position in your bed/chair or getting up to walk (with help) can improve your comfort.
- Prayer and Reflection:** connect with your spiritual or religious center of healing and hope through prayer, meditation, reflection and ritual. Also, ask about our chaplaincy services.
- Controlled Breathing:** taking slow deep breaths can help distract you from pain you are feeling. This can also help if you are feeling nauseated (upset stomach).  
Using the **4-7-8** technique, you can focus on your breathing pattern:
  - Breathe in quietly through your nose for 4 seconds
  - Hold the breath for 7 seconds
  - Breathe out through your mouth for 8 seconds
- Television Distraction:** we offer a relaxation channel through the UVA in-room television. Turn to channel 17.
- Calm App:** for Android or iOS: if you have a smart device, download the free **Calm** app for meditation and guided imagery. You can find it by searching in the app store.



# After Surgery

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The Vascular Team is led by your surgeon and includes a Fellow, along with residents, 1-2 medical students, and members from the ICU, stepdown unit and nursing staff.

The vascular team also includes Nurse Practitioners and Physician Assistants that will care for you in the ICU and on the floor. Other members of your care team may include pharmacists, physical and occupational therapists, respiratory therapists, dietitians, social workers, care coordinators, patient care assistants, case managers, transporters, sonographers, and many others.



The TCV ICU team includes intensive care specialists (Intensivists), **who will help care for you**. Intensivists are physicians who specialize in intensive care medicine. They may also specialize in vascular anesthesia or vascular surgery. You may also be followed by other specialists, such as pulmonologists (lung specialists), endocrinologists (diabetes specialists), or nephrologists (kidney specialists).

**Patient safety** is our #1 concern.

There will be times that the staff will ask not to be interrupted. These times may be during change of shift, during report, during handover of care, during medication or blood administration, or during an emergency.

During these times, staff are passing along, discussing, or verifying valuable information in order to provide the best and safest care possible.

Change of shift occurs from 7:00 to 7:30 in the morning and evening. During this time, we ask that you:

- Hold phone calls until after 7:30.
- Use the call button located on the television remote, and on the side rails of every bed, for any assistance you may need.

After change of shift, your current nurse will come in to introduce the oncoming nurse. As part of their handover of care, you will notice both nurses verifying any IV medications that are being administered. After the nurses have completed their handover of care, we encourage you to ask any questions you may have!

# After Surgery (continued)

## Thoracic Cardiovascular Intensive Care Unit (TCV ICU)

From the OR, you will be taken directly to the TCV ICU on the 4th floor. Families generally wait in the waiting room nearest to the unit, next to 4 West. There are two waiting areas located on the 4th floor. Please use the area closest to 4 West. If this is full, you may use the near 4 Central. Once the surgery is completed, the surgeon will meet or call your family or care partner(s).

You will be transferred to the ICU directly from the operating room. Once you are brought up from the operating room, the nurses and other staff will need about 60-90 minutes to get you settled in and ensure that you are stable.

Once you are settled in the unit, your family or care partner(s) will either be called for or someone will come get them from the 4th floor waiting room. If your family does not hear from someone, please come to the ICU doors and call into the unit from the “doorbell” on the wall.

After you are settled in the TCV ICU:

- Your family and friends can come see you.
- You may still be asleep and may have all the tubes and lines in place.
- You may look pale and swollen. This is normal and should improve over the next few days.

The TCV ICU nurse will explain what to expect and how to contact the staff. They will also answer any questions.

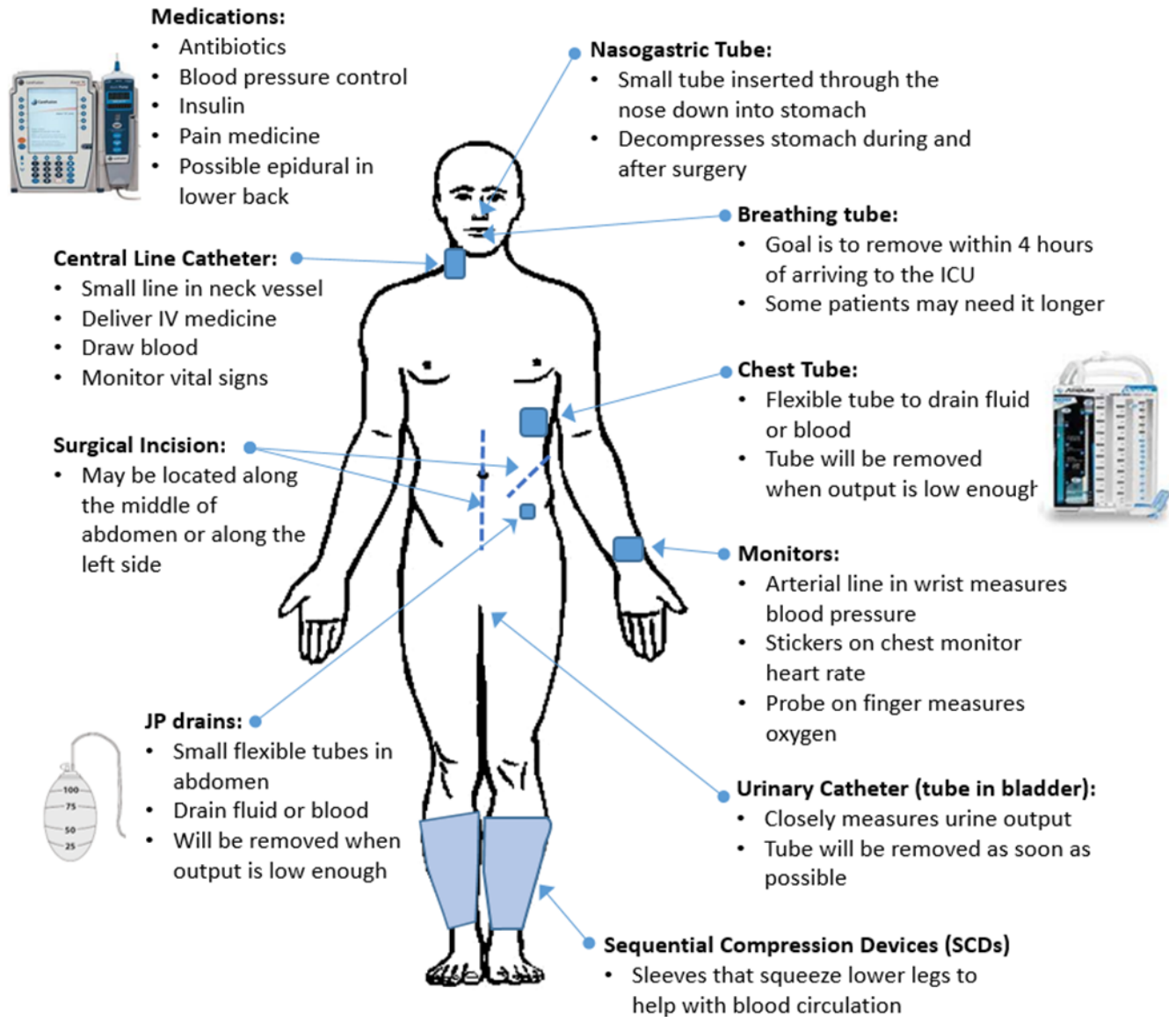
The TCV ICU staff use white boards for communication in each patient room. You will see the date and names of your care team on this board, as well as the plan for the day and your sleep plan.



# After Surgery (continued)

## TCV ICU Postoperative Vascular Surgery Patient

This drawing shows the various tubes, lines, and dressings that may be in place immediately after surg



# After Surgery (continued)

## To aid in your recovery:

### Incentive Spirometer

The incentive spirometer is a device to help see how deeply you are breathing and to exercise your lungs. You will use the incentive spirometer with a general goal of 10 times an hour every hour you are awake.



### Medications

You may receive a blood thinner injection every day to help prevent blood clots or you may be asked to wear special compression hose.

You may be started on medications to help manage your blood sugar after surgery.

Your medications will be adjusted throughout your hospital stay. This includes medications such as for diabetes and blood pressure. Your nurse and/or a pharmacist will go over all your medications with you and your care partner before discharge.

### Quiet at Night

Quiet at Night is an effort to promote sleep while in the hospital. Sleep improves immune function, reduces the risk of delirium, and improves wound healing and recovery as well as many other positive benefits. Everyone feels better with some sleep!

Our goal is to give you 4 hours where interruptions are minimized each night beginning at 10:00 pm. Quiet at Night will start in the ICU and progress with you throughout your hospital stay. When you are admitted to the ICU, the staff will give you or your care partner a sleep plan along with ear plugs and an eye mask. The nurses will ask questions each day to develop an individualized plan that meets your needs. They will write the plan on the white board in your room.

In addition to the eye masks and ear plugs, the ICU has headphones for the in-room TV, a relaxation channel (17), chamomile or decaffeinated tea, a dark screen saver for the bedside computer, and a couple of other tools to help with sleep.

# After Surgery (continued)

## To aid in your recovery (continued)

### Patient Progression

The team will work with you and your family as you progress after surgery. Again, each patient is different and will progress at a different rate. The team will work to be sure you are comfortable and safe as you progress through your recovery and will set goals daily.

One of our first goals is to wake you up slowly and to remove the breathing tube as soon as possible sometimes before you leave the operating room.

As you are able, we will then begin early movement. We will work with you to have you sit up in bed, then sit up in a chair, and finally begin to walk...slowly.

Early movement promotes health for all systems of the body:

- Helps breathing, strength, and normal bodily functions.
- Helps to reduce the risk of pneumonia, blood clots, and skin breakdown.

Early movement includes:

- Raising the head of the bed, we like for you to sit up in bed on the day of surgery.
- Sitting up, either on the edge of the bed or in a chair.
- Marching in place.
- Walking around the room or in the hallway.

You will receive help from the nurses and possibly physical and occupational therapists. We encourage you to ask questions.



### Hospital Inpatient Unit

After TCV ICU, once you are ready for the next level of care, you will be transferred to the Intermediate Care Unit (TIMU/VIMU) or 4 West. You will continue to be followed closely by the Vascular Surgery Team. This unit has both semiprivate and private rooms. While on this unit, it is important to remember that you are no longer in need of direct one-on-one care. Your nurse will be caring for several patients at the same time.

In the TIMU and on 4 West, there are several processes in place to encourage you and your family to participate in planning your care.

# After Surgery (continued)

## Hospital Inpatient Unit (continued)

For example:

- The team will give a verbal report at your bedside during change of each shift.
- Comfort Rounds are done periodically to check on each patient throughout the day to check on their comfort.
- You will have a white board in your room that contains information about your care team and daily tasks as reminders for you and your family.
- Quiet at Night efforts will continue. As you may recall, this an effort to promote healing and well-being. This may include a sleep plan with input from you and your family.

In addition, as you progress:

- Each day you will be working towards your discharge.
- Each day you may have a tube or drain removed.
- To assist you with safe and early movement after surgery, you may have physical and occupational therapists working with you.
- Your diet will be advanced as tolerated and you may receive additional education on what you should be eating.

During any of the handover of care reports or rounds please feel free to ask questions.

## Pain Tolerable Recovery

Managing your pain and allowing for pain tolerable recovery is very important. Although we may not be able to make you pain free, our goal is to make your discomfort tolerable. The goal should be where you are comfortable and allows you to continue to participate in your recovery.

We use multimodal medications, meaning medications that work independently and together in order to help make the pain tolerable.

- Before surgery: you may be given medications before surgery that will help with the pain afterwards
- During surgery: you may be given an injection at the surgery site during surgery.
- After surgery: you may also be given medications in your IV or vein to help keep you comfortable. As you improve, you may be given medications by mouth. You may need a narcotic pain pill, such as oxycodone, for severe pain. Each person's pain tolerance and expectations are different; however the plan is to decrease the amount of narcotics we give as you recover.



# After Surgery (continued)

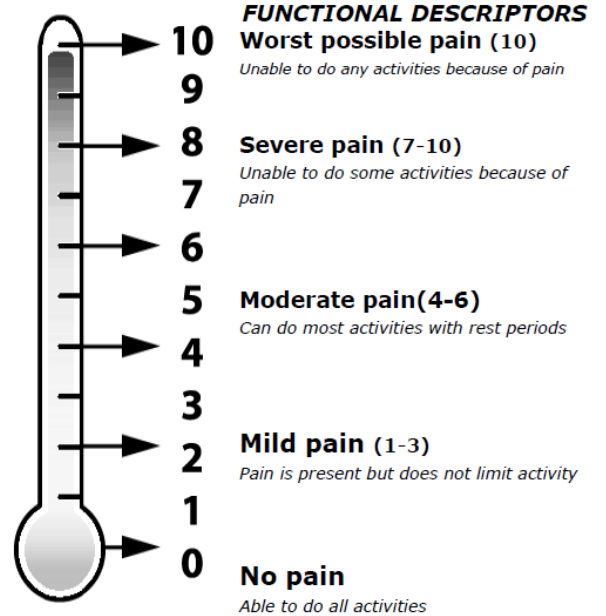
## Pain Tolerable Recovery (continued)

Preventing and treating mild pain early is easier than treating pain after it becomes severe. We will create a specific plan to try to keep your pain tolerable.

We will ask you regularly about your level of comfort. It is important that you are able to take deep breaths, cough, and move.

There are a few things that you can do to help make the discomfort tolerable, such as splinting techniques. We will encourage you to use the “Splinting Technique” to minimize pain at your surgical site. To do this, press a pillow or your hand against your incision area and support it when you take a deep breath, cough, sneeze, laugh, move, etc.

### UVA ADULT PAIN SCALE TO HELP YOU CONTROL YOUR PAIN



# Complications Delaying Discharge

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**Bleeding:** We will monitor you closely for any signs of blood loss.

**Altered mental status:** An altered mental status may be related to delirium, neurological changes, not getting enough sleep, a stroke, or a transient ischemic attack (TIA). Before surgery we will evaluate your risk for a stroke or a TIA and will do what we can to decrease the risk.

**Wound infection:** We do everything possible to prevent wound infections. We encourage everyone to wash their hands often! If you develop a wound infection, you may be discharged with an open wound that requires dressing changes at home. We will arrange for assistance with this before discharge if covered by your insurance.

**Blood sugar control:** Patients who undergo vascular surgery often have a challenge with maintaining blood sugar control. Surgery increases stress, which can raise your blood sugar levels. It is important to maintain good blood sugar control to help prevent wound infections and promote healing. If you have diabetes, you may be on higher doses of your medication(s). If you do not have diabetes, you may need to be on medication for blood sugar control.

**Respiratory problems – prolonged ventilation, pleural effusion, pneumothorax, pneumonia:** This is one of the more common complications after surgery. Patients with lung disease, pulmonary hypertension, or with a strong smoking history are at higher risk. If you are a smoker, the sooner you can quit before surgery the better. If possible, practice with the incentive spirometer prior to surgery. After surgery, we encourage you to use the incentive spirometer every hour after the breathing tube is removed. We also encourage “progressive mobility”. We want to work with you to get you up and moving as soon as we can after surgery.

**Post-operative nausea and vomiting / Decrease in appetite:** It is very common to feel sick after your surgery. We give you medication to reduce this. If you feel sick, you should eat small frequent meals and/or switch to a liquid diet. Many patients also have a decrease in appetite after vascular surgery. We encourage you to eat foods high in protein and eat frequent meals to try to decrease this from happening.

**Postoperative ileus:** Following surgery, your bowel can shut down, so food and gas have trouble passing through the intestines. This is called an ileus and may only last 2-3 days. The best way to avoid it is to decrease the amount of narcotic pain medications you take, get up as much as possible after your surgery, and eat small amounts of food and drinks. You may also be given medications to help your bowel function.

**Kidney problems:** Some patients have a higher risk than others; we try to predict those who are a higher risk and work very closely with a team of kidney specialists. Poor kidney function, heart failure, blood transfusions, infection, recent dye loads, and prolonged surgery times can lead to challenges with the kidney function.

**Limb ischemia or blood clots:** Some patients are at a higher risk of developing limb (arm or leg) ischemia (lack of or low blood flow) or forming a blood clot. The approach and the type of surgery may put you at an even higher risk. We may recommend blood thinners, sequential circulatory devices (SCDs), and TED stockings to reduce blood clots in the legs. We also encourage progressive mobility in order to reduce the risk of forming blood clots.

**Depression:** Depression can occur after surgery. We encourage you to talk to your friends and family about these feelings. Please also let your care provider know if you are feeling depressed or emotional. Participating in a support group may help.

This list is not all inclusive. Each patient is unique and has a unique risk for any event that may delay discharge. Please speak to your provider about any concerns you have.



## Discharge

Before you are discharged, you will be given:



- A copy of your discharge instructions.
- A list of any medications you may need.
- A prescription for pain medicine.
- Instructions on for follow-up appointments. Wound check in 2 weeks and see your surgeon usually 4 weeks, depending on your surgery.

## Before you leave the hospital

- We will ask you to identify how you will get home and who will stay with you.
- If you use oxygen, we will want to make sure you have enough oxygen in the tank for the ride home.
- Be sure to collect any belongings that may have been stored in “safe keeping.”

Our Case Managers help with discharge needs. Please let us know the names, locations, and phone numbers of:

- Your home pharmacy:

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- Your home healthcare agency (if you have one):

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- Any special needs after your hospital stay:

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# After Discharge

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## When to Call

Complications do not happen very often, but it is important for you to know what to look for if you start to feel bad.

After you leave the hospital, you should call us at any time if you:

- Have a fever greater than 101.5 °F or chills.
- Are vomiting, nauseated, or have diarrhea
- Have unrelieved pain
- Have any aches or decreased appetite
- Have problems with the incision, including redness, drainage, bleeding or pus
- Have increased shortness of breath
- Have unexplained swelling
- Have a heart beat that feels fast, too slow, or skips
- Are feeling faint
- Have a change in your mental status
- Are feeling weaker instead of stronger
- Are unable to pass urine for more than 6 hours
- Are unable to have a bowel movement for more than 3 days



## Contact Numbers

If you have trouble between 8:30am and 4:00pm Monday- Friday, call our office.



**Vascular Surgeon office 434.243.2000**

**UVA Health Heart and Vascular Center toll free number:  
1-844-467-5578**

After 4:00pm and on weekends, call 434.924.0000. This is the main hospital number. Ask to speak to the **Vascular Surgery Resident or Fellow on call at pager 1944**. The resident or fellow on call is often managing patients in the hospital so it may take a few minutes longer for your call to be returned.

## **Pain**

You **will** alternate Tylenol and ibuprofen for improved pain control. Take over the counter medications as prescribed. Take these over-the-counter medications as prescribed.

Additionally, we may send you home with a prescription an opioid pain medication to use for severe pain only. If you would like this filled at the hospital pharmacy, please tell your nurse so it will not cause delay in your discharge home.

Since opioid pain medications can often cause nausea, you should take this medication with a small amount of food.

Your health care team will work with you to create a treatment plan based on the medications you are prescribed. It's important to remember that misuse of opioid pain medicines is a serious public health concern. If you take more of your opioid pain medication than was prescribed or more often than what was prescribed, you will run out of your medication before your pharmacy will allow a new prescription to be filled. Virginia has a Prescription Monitoring Program for these types of medications to help keep patients safe.

Ask your health care team if you have specific questions.

## **Pain Medication Weaning**

After surgery, you **may** be taking opioid medicine to help you with your pain. As your pain improves, you will need to wean off your opioid pain medication. Weaning means slowly reducing the amount you take until you are not taking it anymore. You may find that the pain is controlled by other medicines such as NSAIDS (ibuprofen) and acetaminophen (Tylenol).



Taking opioid may not provide good pain relief over a long period of time and sometimes opioids can actually cause your pain to get worse. This is important because opioids can have many different side effects including constipation, nausea, tiredness and even dependency. The side effects of opioids increase with higher doses. Gradually weaning to lower doses of opioid pain medication can help you feel better and improve your quality of life. If you are not sure how to wean off of your opioid medication, please contact your family doctor.

To wean from your opioid, we recommend slowly reducing the dose you are taking. For example, increase the amount of time between doses. If you are taking a dose every 4 hours, extend that time:

- Take a dose every 5 to 6 hours for 1 or 2 days
- Then, take a dose every 7 to 8 hours for 1 or 2 days.

You can also reduce the dose.

- If you are taking 2 pills each time, start taking 1 pill each time. Do this for 1 or 2 days.
- Then, increase the amount of time between doses, as explained above.

Once your pain has improved and/or you have effectively weaned off opioids, you may have opioids remaining. The **UVA Pharmacy** is now a **DEA registered drug take-back location**. There is a Drop Box available in the main lobby of the pharmacy 24 hours 7 days per week for patients or visitors to safely dispose of unwanted or unused medications.

## **Incision Care**

For the first 1–2 weeks following your surgery, your abdominal wounds may be slightly red and uncomfortable. If your wounds have increased redness, are painful, swollen or leaking milky fluid, please contact us.

- ☑ Clean your incision once daily with soap and water (on a clean wash cloth). Pat dry and leave open to air.
- ☑ If wound is draining, apply dry gauze dressing and change as needed.
- ☑ Once all dressings have been removed, you may shower.
- ☑ No tub baths or swimming until the incision areas have healed until after your surgical follow-up appointment
- ☑ If you have any dressing or drains, you will be given specific instructions on how to care for them and when they can be removed.

Your incision(s) will be closed with **staples, sutures, or medical glue**:

- ☑ You should return to clinic in 10-14 days for a check of your incision. We will arrange the appointment for you.
- ☑ At your follow-up appointment, we'll give you additional instructions about caring for your surgical incision.

## **Diet**

You may find that for a few weeks following your operation you may have to make some slight adjustments to your diet depending on your bowel pattern, your blood sugars, and your appetite.

Your team may advise you on a specific diet plan or encourage you to eat a regular diet until you regain your strength. A low-fat, heart healthy diet is generally recommended.

### **Be sure to:**

- Drink fluids as instructed. You may be asked to limit your fluid.
- Chew food well – take small bites!
- Get enough protein; consume high protein foods and beverages such as eggs, low-fat milk, yogurt or cottage cheese, lean meats, fish, beans and legumes.
- Try to eat 2 servings of fish a week; fatty, cold water fish such as salmon, tuna, trout, or sardines
- Eat 5 servings of fruit and vegetables a day
- Replace saturated fats (stick margarine, butter, shortening, coconut and palm oils) with unsaturated fats (olive oil, canola oil, avocado, unsalted seeds, nuts, and nut butters).
- Follow any dietary instructions given to you while in the hospital. This may include a diet for diabetics, patients on Warfarin, or a heart healthy/low fat diet.

### **Avoid:**

- ☒ Tough, thick pieces of meat, fried, greasy and highly seasoned or spicy foods.
- ☒ Adding salt to your food.
- ☒ Foods high in trans-fat (also called partially hydrogenated fat, fried and high fat baked goods).

If you feel gassy, avoid carbonated beverages in the first couple of weeks and avoid gas forming vegetables such as broccoli, cauliflower, beans (legumes).

Some patients find their appetite is decreased after surgery. One reason for this may be constipation. You may try over the counter laxatives but notify your physician if constipation is not resolved within days.

You may try to eat small, frequent meals throughout the day. You may also want to increase the fiber in your diet. Good sources of fiber include fresh fruits, vegetables, beans, legumes, and whole grains.

It is also important that you drink six to eight cups of non-caffeinated fluids per day to help prevent constipation - unless you have been asked to limit fluids or are on a fluid restriction.



Some patients also feel nauseated. To minimize this feeling, avoid letting your stomach get empty. Eat small amounts of food and eat slowly.

If you don't have an appetite, choose higher calorie versions and try to make the most of times when you feel hungry.

Our dietitians are available to speak with you about any specific questions you may have.



### **Low Grade Fever**

If you develop a low fever – 99.0° – 99.5°, this may mean that you need to work on deep breathing.

You should use your incentive spirometer (lung exerciser) 10 times per hour while awake and walk at least 3 times per day to help prevent pneumonia after surgery.



### **Constipation**

Constipation is very common with the use of narcotic pain medicine. We designed the ERAS program to decrease the risk of constipation by using pain medicine alternatives to help keep you comfortable.

It is very important to AVOID CONSTIPATION AND HARD STOOLS after surgery. Excessive straining will cause pain and possible harm to the surgery site.

If you are on a regular diet, include plenty of fiber. Good sources include fresh fruits, vegetables, dried beans and whole grains. You may use fiber supplements with water. It is important that you drink 6-8 cups of non-caffeinated fluids per day to prevent constipation.

We will also send you home with a prescription for a stool softener, Colace (docusate sodium), and a laxative, Miralax (polyethylene glycol), to help prevent constipation once you are home. Please continue to take this each night until you stop your narcotic pain medication. If diarrhea occurs, please stop this medication.



Walking and regular activity can also help prevent constipation.

## **Urinary Function**

After surgery you may get a feeling that your bladder is not emptying fully. This usually resolves with time. However, if you are not urinating or if there is any concern, contact us. If you have severe stinging or burning when passing urine, as you may have an infection.

## **Hobbies and Activities**

Walking is encouraged from the day following your surgery. Plan to walk three or four times daily.

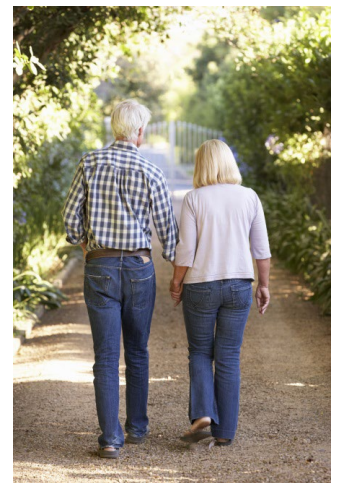
You should NOT:

- Do any heavy lifting for 2 weeks. After 2 weeks, you may lift up to 15lbs as you feel comfortable
- Play contact sports until 6 weeks following your surgery.

You SHOULD:

- Be able to climb stairs from the time you are discharged.
- Return to hobbies and activities soon after your surgery. This will help you recover.

Remember, it can take up to 2-3 months to fully recover. It is not unusual to be tired and need an afternoon nap 6-8 weeks following surgery. Your body is using its energy to heal your wounds in the inside and out.



## Resuming Sexual Relationships



You should be able to resume a normal, loving relationship after you have recovered from your surgery and you are not feeling any discomfort.

Please talk to your doctor if you are having problems resuming sexual activity or if you have any questions concerning your activity level.

## Work

You should be able to return to work 4–6 weeks after your surgery. This might be longer or shorter depending on your recovery rate and how you are feeling. If your job is a heavy manual job, you should not perform heavy work until 6 weeks after your operation. You should check with your employer on the rules and policies of your workplace, which may be important for returning to work.

If you need a “Return to Work” form for your employer or disability papers, ask your employer to fax them to our office at 434.244.9430.

## Driving

NO driving until you are seen by the vascular surgeon in the clinic 3–4 weeks after surgery. Do not drive anything with a wheel. For some surgeries you may be able to return to driving sooner if approved by your surgeon.



Write any questions you have here:

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4-14 Days prior to Surgery: Getting Ready		Check when complete
Medications	<p>Stop taking ibuprofen (<b>Motrin®</b> or <b>Advil®</b>) and naproxen (<b>Aleve®</b>) <b>5 days before surgery.</b></p> <p>We <b>MAY</b> tell you to stop taking anti-platelet medication, <b>if so</b> it will be written below.</p> <p>Name: _____</p> <p>Date: _____</p> <p>Stop blood thinner medication</p> <p>Name: _____</p> <p>Date: _____</p> <p><b>Note: If you are taking additional medications for chronic pain, please discuss with your prescribing doctor.</b></p>	
Diet	<p>Continue eating regular diet.</p> <p><b>Increase fiber in diet.</b></p>	
Action: Breathing	Practice <b>deep breathing</b> exercises. Use lung exerciser 4 times a day – each session 5-10 times in a row. Rest in between.	
Action: Taking care of the home	Make arrangements for pets and household needs.	
Action: Activity	Keep up <b>usual activity</b> – do not overdo it. This includes normal activities of daily living, like bathing and good oral care. Please continue to brush your teeth twice a day for at least two weeks prior to surgery.	

<p>Action: Planning your after- surgery care</p>	<p>Consider what type of help you will need after surgery. It is suggested that someone stay with you for the first week.</p> <p>Patients are discharged to either home with family or friends, home with home health, to a rehab facility, or to a nursing facility.</p> <p><b>JUST IN CASE: If you or your health care team thinks that you may need assistance of a facility after surgery, we encourage you and your family to visit facilities near you. Ask questions and go to <a href="http://www.medicare.gov">www.medicare.gov</a> to see how facilities are rated by Medicare. Speak to the Care Manager or Social Worker during your hospital stay.</b></p>	
<p><b>1-2 Days Prior to Surgery</b> <b>DATE:</b></p>		<p>Check when</p>
<p>Medications</p>	<p><b>Continue</b> taking your other usual medications unless instructed to stop. <b>These medications are especially important</b> to take right up until surgery and including the morning of surgery:</p> <p>Beta blocker Lipid lowering/cholesterol Anti-arrhythmics</p> <p>Additional medications to <b>stop</b> before surgery including diabetic meds.</p> <p>_____</p> <p>Name: _____ Date: _____</p> <p>_____</p> <p>Name: _____ Date: _____</p>	
<p>Action</p>	<p>Ensure you have arrangements to get to the hospital and begin to put together the items you will need to bring to the hospital (see “Day of Surgery” section for checklist).</p>	

<b>Night before Surgery</b>		<b>Check when</b>
<b>DATE:</b>		
Diet	<p>The night before surgery you can have your regular meal.</p> <ul style="list-style-type: none"> <li>• You may continue eating regular diet until 6 hours before scheduled arrival time.</li> <li>• Stop drinking clear liquids two hours before the scheduled arrival time.</li> <li>• You should have a 20 ounces of Gatorade® ready to drink on the morning of your surgery.</li> <li>• Do not drink if you have a history of delayed gastric emptying or aspiration risk (coughing after you drink) <ul style="list-style-type: none"> <li>○ emptying or aspiration risk (coughing after you drink)</li> </ul> </li> <li>• During the last two hours before arrival time, nothing by mouth except medications with a sip of water or glucose tablets for diabetes that are having low blood sugar.</li> </ul>	
Action	<p>Bathe or shower with the soap provided to you on the evening before surgery. Do not apply deodorant, lotion, powder or perfume after shower or bath. Please see separate sheet with detailed instructions.</p> <p>Don't forget good oral care - brush and floss your teeth.</p>	
Action	<p>For outpatients:  You should receive a call the day before surgery to tell you when to arrive for surgery. If surgery is on Monday, you will receive a call the Friday before.</p> <p><b>Call (434) 982-0160 if you don't receive a call from the OR by 4:30 pm with your arrival time.</b></p>	

Day of Surgery DATE:		Check when Complete
Medications	<p><b>Take your usual morning</b> medications with a sip of water unless you were instructed to stop. <b>These medications are especially important</b> to take right up until the morning of surgery:</p> <p>Beta blocker Lipid lowering/cholesterol Anti-arrhythmics</p>	
Diet	<p>Do not eat the morning of surgery. You may take your medications with a sip of water as instructed.</p> <p>Please finish your 20-ounce Gatorade® 2 hours before surgery as instructed.</p>	
Action	<p>Bathe or shower with the soap provided to you on the morning of surgery. Please see separate sheet with detailed bathing instructions (page 16).</p> <p>Brush your teeth.</p> <p>Do not apply deodorant, lotion, powder or perfume after shower or bath. Remove nail polish, makeup, jewelry, and all piercings.</p>	



<p>Action: Day of surgery - what to bring</p>	<p><b>Outpatients:</b> Bring in green arm blood band. Bring in the incentive spirometer, surgery notebook and bag. If you use a CPAP or BiPAP machine, please bring it with you. Clothes: bring comfortable clothing to wear at discharge. You will be provided with hospital gowns throughout your stay, but you can bring pajamas if you wish. Bring any toiletries you may need. Remember, no powder. Book or something to do while you wait. <u>Do not bring valuables with you.</u> Please bring a list of your current medications Please be ready to provide the name of one person you wish us to contact during surgery and the contact information for 1 or 2 Care Partners. Bring this checklist and any patient education materials you have been given, with you to the hospital to continue learning about your recovery process.</p>	
<p>Action: Day of surgery – where to go and what to expect</p>	<p><b>Parking:</b> Free with validation. Bring your green parking ticket when you register for your appointment, hand this to the person signing you in and they will provide validation.  Use the Lee Street or 11<sup>th</sup> street parking garages. <a href="http://www.uvahealth.com/patients-visitors-getting-here/parking">www.uvahealth.com/patients-visitors-getting-here/parking</a>  <b>Check in:</b> You will be called the evening before if you are an outpatient and be told what time and where to report on the day of surgery.  <b>Family waiting:</b> During surgery, the OR nurse will call your family (phone number provided by you just prior to surgery) every two hours to update them. In general, most patients are in the operating room for five to six hours. Do not be alarmed if the procedure takes longer than expected. Family and friends can wait on the 4th floor in the 4 West Visitor Family Lounge after you go to the operating room. The surgeon will speak with them toward the end of your operation.</p>	