

Information for Our Vascular Surgery Patients

Preparing for your leg bypass surgery

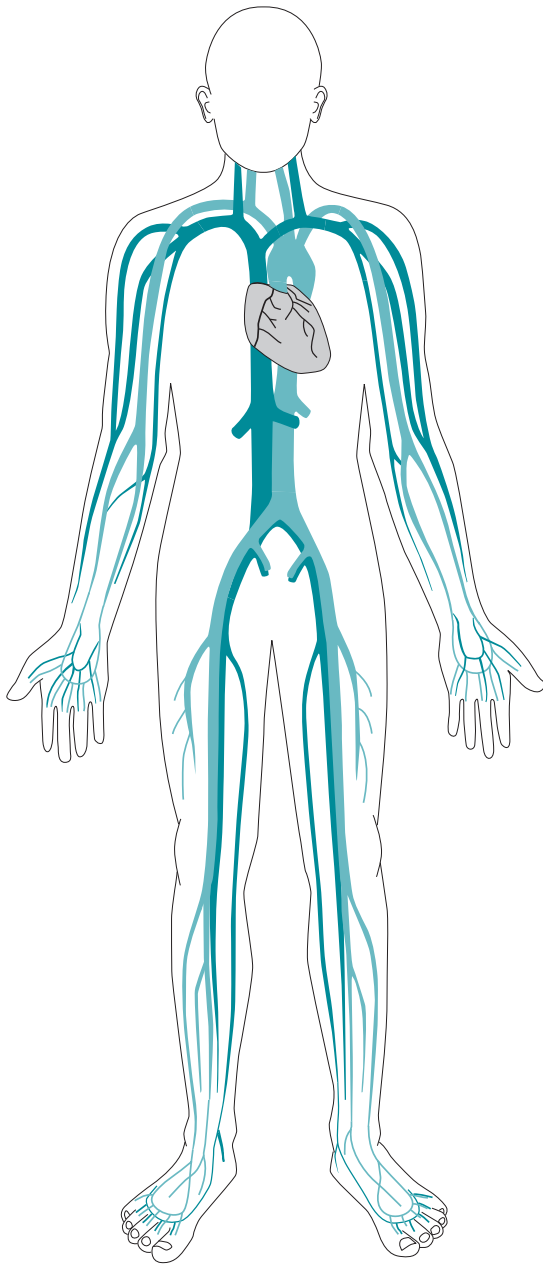


UMassMemorial

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Understanding Your Circulatory System and Peripheral Arterial Disease



The circulatory system moves blood cells and fluids throughout the body. It is made up of arteries, veins and lymphatic vessels. The arteries carry blood away from the heart and deliver oxygen and nutrients to the tissues and muscles. The veins carry the blood back to the heart. In this process of “feeding” the tissues, some fluid leaks out of the blood vessels. This fluid, called lymphatic fluid, is collected and carried back to the venous circulation by the lymphatic vessels.

Atherosclerosis, or “hardening of the arteries” causes the arteries to become narrowed or “blocked” by fat, cholesterol and calcium (often referred to as plaque). This is a gradually progressive disease that can occur in any artery of the body. As a result, the amount of blood and oxygen available to the tissues is reduced.

What Causes Atherosclerosis?

The exact cause of atherosclerosis is unknown. However, there are several factors that have been found to contribute to the development of atherosclerosis. These are called “risk factors.” Risk factors that you should be aware of, but have no control over include:

- Age
- Gender
- Heredity (family history of atherosclerosis)

As you get older, the risk of developing atherosclerosis increases. Men over the age of 45 are at risk for developing atherosclerosis. Women over the age of 60 or those with premature menopause not taking estrogen replacement therapy are at risk. Also, if your parents have had a stroke, heart disease or circulation problems, you have a greater chance of developing atherosclerosis.

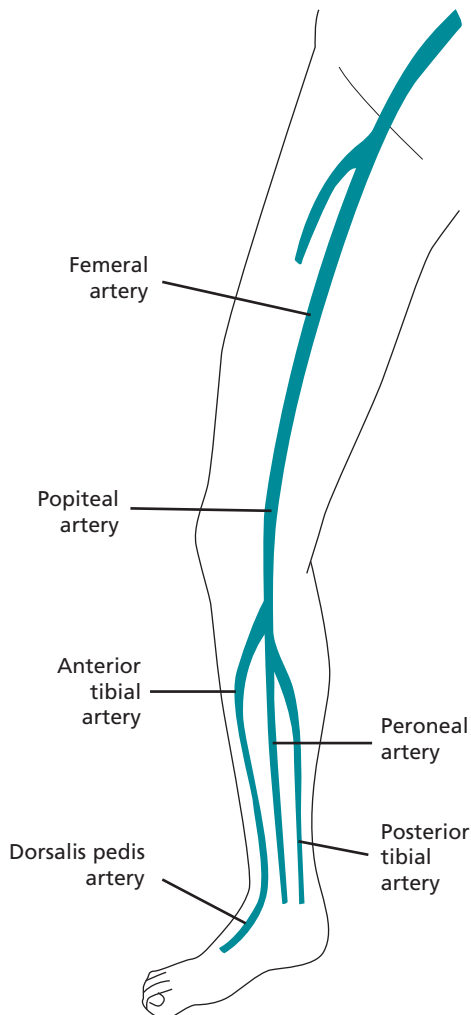
Other risk factors, which you can change or control include:

- Smoking
- High cholesterol levels (hypercholesterolemia)
- High blood pressure (hypertension)
- Diabetes
- Stress
- Lack of regular exercise
- Being overweight

You can slow the progression of atherosclerosis by stopping smoking, controlling blood pressure and diabetes, reducing your cholesterol level, and following a diet low in cholesterol and saturated fats.

Moderate exercise, such as walking 15 to 30 minutes a day, can lower cholesterol, control blood pressure, assist with weight loss, control the urge to smoke and relieve stress.

What Are The Names of the Arteries In The Leg And What Do They Do?



The femoral artery begins in the groin

At the level of the knee the femoral artery is renamed the popliteal artery

The popliteal artery then branches into the anterior tibial artery, peroneal artery and posterior tibial artery which carry blood to the calves and feet

The leg arteries transport oxygen and other nutrients to the tissues of the leg and foot. Atherosclerosis causes a narrowing of these arteries and subsequently reduces the amount of blood flow to the leg.

What Are The Symptoms Of Atherosclerosis Of The Leg Arteries?

Intermittent Claudication

Intermittent claudication is the most common symptom of atherosclerosis. It is cramping or aching in the muscles of the calves, thighs or buttocks, which is brought on by walking and is relieved by rest.

Rest Pain

When the arterial blockages become more severe, the circulation is decreased further and pain can occur without any activity. This is called ischemic rest pain. Rest pain is frequently described as an aching cold numbness affecting the toes or top of the foot. Rest pain initially occurs at night and may interfere with sleep. Relief may be obtained by walking or by hanging the foot over the side of the bed.

Ulceration and Gangrene

Tissue loss, ulcer formation and gangrene may also occur when the tissues do not get enough blood to sustain their viability.

Diagnostic Tests

Arteriogram (angiogram) – An arteriogram is an x-ray of the blood vessels. It provides information about the exact location of the blockages or narrowings of the arteries. The arteriogram will also determine if angioplasty and stenting of the artery is possible or if an operation is necessary.

This procedure is usually done on an outpatient basis and takes approximately two hours. You will be given sedative medication to relax you, and numbing medicine will be injected into your groin or arm. A catheter, a small flexible tube, will then be inserted into the artery and contrast media will be administered into your bloodstream. After the contrast is injected, you may experience a temporary warm flushing sensation and/or a metallic taste in your mouth. Several x-rays will be taken to view the arteries.

Preparing for the Arteriogram

Eating

You should not eat or drink after midnight the night before the arteriogram.

Medications

You may take your usual medications (except as noted below) with a sip of clear liquid the morning of the arteriogram.

- Diabetic medication - If you have diabetes, do not take your insulin or oral diabetic medication the morning of your arteriogram. Your blood sugar will be monitored and treated as needed. If you normally take Glucophage (metformin) do not take it for two days before and two days after the arteriogram.
- Warfarin (Coumadin) - Notify your surgeon's office if you are taking warfarin (Coumadin). It should be stopped three to four days prior to the arteriogram. Your surgeon will tell you when to stop this medication.
- Clopidogrel (Plavix) - Notify your surgeon's office if you are taking clopidogrel (Plavix). This medication is sometimes stopped five days prior to the arteriogram unless instructed otherwise. Your surgeon will tell you when to stop this medication.

You should take all of your other medications, including Aspirin.

The Day of the Arteriogram

- Memorial Campus: You will report to the surgical unit located on the second floor, or the admitting office, located on the first floor in the main lobby of the hospital.
- University Campus: You will be instructed to report to the cardiac catheterization lab on the second floor.
- An intravenous line will be placed in your arm and intravenous fluid will be infused to keep you hydrated. If you are diabetic, your blood sugar will be checked and managed appropriately.

If you have an allergy to the intravenous contrast you will need to take **Prednisone** and **Benadryl** prior to the arteriogram. You will be provided with a prescription for the Prednisone. Please let your surgeon know if you have had any type of reaction to contrast dye in the past.

If you have impaired kidney function you may be asked to take **Acetylcysteine (Mucomyst)** prior to the arteriogram. Your blood will be checked prior to the procedure to evaluate your kidney function. Acetylcysteine is a medication that helps to minimize

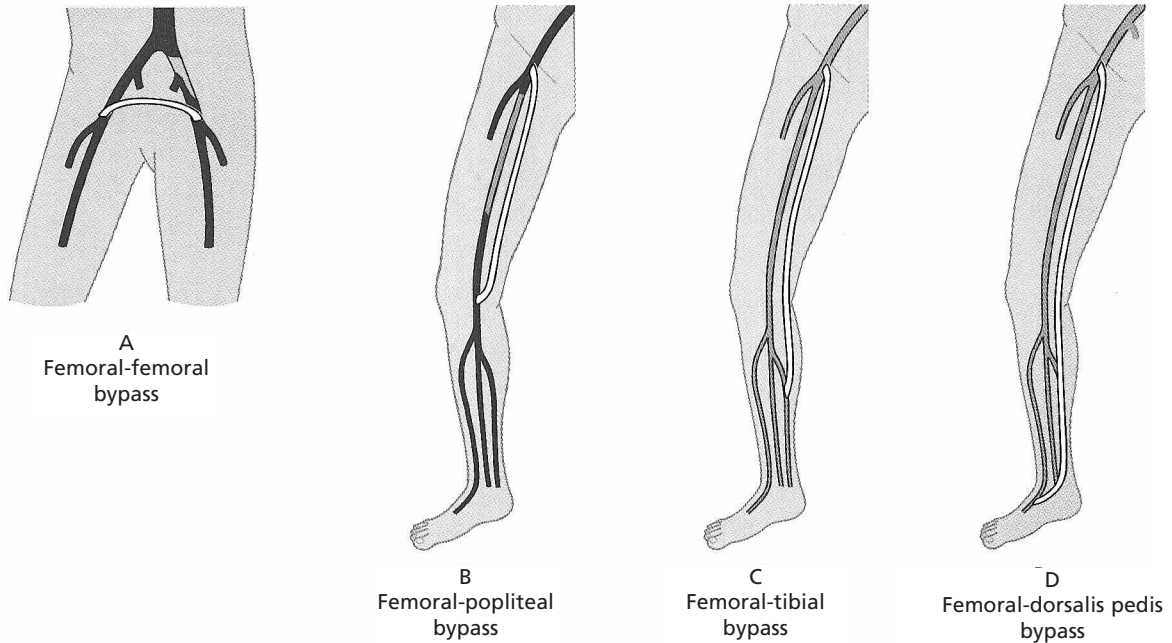
impairment of your kidney function. This medication should be taken in the morning and in the evening on the day before the procedure and on the day of the procedure.

After the Arteriogram

- After the arteriogram you will be brought back to the short stay area, located on the second floor on the University Campus; if on the Memorial Campus, to the post anesthesia unit located on the third floor, then to the surgical admission unit on the second floor.
- You will be asked to lie flat for four to six hours to help prevent bleeding from the puncture site.
- You will need to drink plenty of liquids to help your kidneys eliminate the contrast from your body.
- Please arrange for someone to drive you home after the arteriogram. You may need to have blood drawn 24 to 48 hours following the arteriogram, to determine if the contrast dye caused any impairment of your kidney function.

Understanding Leg Bypass Surgery

If the atherosclerosis has spread or encompasses a longer area of the artery, then bypass grafting is necessary. There are different types of leg bypass operations, depending upon the extent and location of the blockage:



During the operation, an incision is made along the inside of the leg. This incision may run the length of your leg. The blocked artery is “bypassed” using either a vein or a synthetic graft. The vein may be removed from the leg being operated on, from the opposite leg or from an arm. If for some reason you do not have any usable veins, a synthetic graft will be used.

Leg bypass grafting is a relatively common operation at UMass Memorial Medical Center. However, all operations have some risks. The risks of leg bypass grafting include:

- Bleeding at the site of the operation
- Infection
- Failure of the graft to restore adequate blood flow
- Heart attack
- Early clotting of the graft requiring re-operation

Your vascular surgeon will discuss the specific risks and benefits of the operation with you.

Preparing for Your Surgery

While some patients may already be in the hospital when informed that surgery is necessary, many people come directly from home the morning of the procedure. If you are preparing for your operation from home, there are several guidelines to follow to ensure that everything goes smoothly.

- If you smoke, please stop. A past history of smoking sometimes causes problems with anesthesia and increases the risk of getting pneumonia after the surgery.
- Do not drink alcohol. If you typically drink two or more drinks daily, let your surgeon know so anesthesia and recovery medications can be adjusted to your body's needs.
- Your surgeon will discuss specific instructions about aspirin or products that contain aspirin. (Aspirin-like products include Motrin, Ibuprofen and Advil.) In most cases, there is no need to stop these medications.
- You should inform your surgeon if you are taking warfarin (Coumadin) or clopidrogel (Plavix). You may be instructed to discontinue some of these medications prior to your day of surgery.
- Review all prescribed and over-the-counter medications, vitamins and herbs you are taking with your surgeon. Some nonprescription medications can have side effects.
- Continue to take all your other medications as directed until the day of surgery.
- If you have completed a health care proxy, bring a copy with you the day of your surgery.
- Contact your surgeon if you develop a cold, fever or flu-like symptoms within a week of your surgery date.

Pre-admission Assessment

People who are scheduled to be admitted to the hospital on the morning of surgery are typically seen in our Pre-admission Testing Area sometime prior to surgery. During this appointment, a nursing assessment is initiated and you will meet with a member of the Anesthesiology Department. This assessment includes taking an accurate and complete medication history. Please bring a current list of medications you take to review with the nurse and anesthesiologist. Lab work or other testing is also done as ordered by your surgeon.

Hibiclens Antiseptic

Normal skin is not sterile and we need to be sure that your skin is as free of germs as possible before surgery. Hibiclens antiseptic contains chlorhexidine gluconate, which is very effective in reducing the number of germs on your skin when used before surgery.

During your pre-admission assessment you will receive four packets of the Hibiclens antiseptic for showering the night before and the morning of surgery. Be sure to read the instructions thoroughly so you understand them prior to showering with Hibiclens.

The night before surgery:

1. Begin by washing your hair with your regular shampoo and, if you choose, a conditioner. Wash above your neck (face, ears) and your genitals with your regular soap. Rinse your hair and genitals thoroughly with water removing all shampoo and soap residue.
2. Use Hibiclens only from the neck down. Shower (preferably) or bathe using two packets of Hibiclens applying it to wet skin. Wash your entire body, except for your head, face, genitals and deep open wounds. Wash thoroughly, paying special attention to the area where your surgery will be.
3. Turn the water off to prevent rinsing Hibiclens off too soon. Wash your body gently for five minutes. Do not scrub your skin too hard. Do not wash with your regular soap after Hibiclens is used.
4. Do not shave the general area of your body where your surgery will be performed.
5. Turn the water on and rinse your body thoroughly. Pat dry with a clean, soft towel. Rinse washcloth after use to remove the Hibiclens, then launder.

The morning of surgery:

Repeat the process outlined above using the other two packets of Hibiclens.

Peridex

During your pre-admission assessment we will also provide you with a special mouthwash called Peridex. You will be given a prescription for this. We ask you to use it on the evening before and the morning of surgery as an added step to help reduce infection.

Evening before Surgery

Patients coming from home to the hospital will be contacted the evening before surgery by a staff member to confirm the time of the procedure. Unfortunately, there are situations when unexpected schedule changes may occur that could result in rescheduling the time of surgery. If you have any questions about your surgery schedule, please call your surgeon's office.

Remember:

- Do not eat or drink anything after midnight. You may take the medications you were instructed to take with a few sips of water.

- Shower with the antiseptic skin cleaner Hibiclens
- Gargle with the Peridex gargle

Evening before Surgery Checklist

- No food or drink after midnight
- Shower using Hibiclens
- Gargle with Peridex

Morning of Surgery

- Remove all makeup, and fingernail and toenail polish.
- Do not eat or drink anything. You may brush your teeth or use mouthwash to gargle only.
- You may wear eyeglasses and/or dentures. We encourage you to have a family member bring these home the day of your surgery. When you need these items, they can be brought back in for you.
- Wear comfortable clothing such as a sweat suit.
- Do not bring any clothing or toiletries on the day of surgery. Your family may bring these items to the hospital when you need them after surgery.
- Do not bring more than \$10 cash.
- Arrive at the hospital at the time given to you.
- Shower with the antiseptic skin cleaner Hibiclens.
- Do not use any powders or lotions after showering.
- Gargle with the Peridex gargle.
- If instructed, continue to take any prescribed medications with a sip of water.
- Remove all jewelry/valuables (including rings) and leave them at home.

Morning of Surgery Checklist

- No food or drink after midnight
- Shower using Hibiclens
- Gargle with Peridex

Arriving at the Hospital

University Campus:

Your surgery will be performed in the operating rooms in our Lakeside Wing. Enter the hospital through the main doors of the Duddie Massad Emergency and Trauma Center. The receptionist will direct you to the Preprocedure Unit on the second floor.

Memorial Campus:

Your surgery will be performed in the operating rooms at 119 Belmont Street. Enter the hospital through the main entrance of the Memorial Campus and take elevator A to the second floor to the Surgical Admission Unit. The receptionist will direct you to where you will get prepared for surgery and the waiting room for your family.

Once you arrive, you will change into a hospital gown. You will be asked to remove any dentures, hairpins, hairpieces, rings, nail polish, makeup, jewelry, artificial body parts and underwear. Your belongings will be secured for you or a family member may take them home for you. A nurse will complete a nursing assessment, take your blood pressure, pulse, temperature and respirations, and answer any of your questions. The anesthesiologist will conduct an assessment and insert an IV to provide you with medication.

Notifying Your Family

Family members may wait in the waiting area. The surgeon will let them know about your progress soon after the operation is over. Alternatively, you may leave a telephone number where your family or a friend can be reached.

After Your Leg Bypass Surgery

Recovery Room

- After your operation you will go to the recovery room to wake up from the anesthesia.
- You will have a bandage on the inside of your leg.
- A urinary catheter will collect your urine. You may have the sensation that you need to pass your urine. This sensation is from the presence of the catheter.
- The circulation to your feet will be checked frequently. The nurses and doctors will feel the pulses in your feet and measure the blood pressure at the level of your ankles.
- Once you are fully awake and stable, you may be transferred to the nursing unit or you may spend the night in the recovery room.
- Your family can visit you while you are in the recovery room.

Visitors in the ICU or Recovery Room:

Visits in these areas may be restricted to two immediate family members for 10 minutes every hour. This brief visitation schedule is important so that the vascular team can better focus on attending to all your postoperative needs.

After the Recovery or ICU:

You may be transferred to a nursing unit after six to 24 hours in recovery. Most patients will remain on this nursing unit where the nurses are specialized in vascular care until they are discharged. While on the nursing unit, you will increase your activity and get out of bed as much as possible and begin preparing for discharge.

Getting Ready for Discharge

- Most patients are discharged two to four days after the operation.
- To be discharged, you should be eating your normal diet and be able to walk with little or no assistance. A physical therapist will evaluate your walking ability, make recommendations about your discharge plans (home versus a rehabilitative hospital), and determine if assistive devices, such as a cane or walker are necessary.
- If you are not physically ready to go home, arrangements will be made for you to go to a rehabilitative hospital. A discharge coordinator will meet with you and your family to discuss your options and assist you in choosing a rehabilitative hospital that would best suit your needs. At the rehabilitative facility you will receive physical therapy and nursing care to facilitate your recovery and prepare you for home.
- If you are able to go home but need continued nursing care or physical therapy, arrangements will be made for you to receive home physical therapy and nursing care.

- If you have any open wounds on your legs or feet, a referral will often be made for home care nursing services to provide wound care and continued evaluation.
- Your leg bandage will be removed before you go home. Your sutures will be removed at the time of your follow-up appointment.

Going Home after the Operation

Care of the Surgical Incision

The surgical incision is normally tender, slightly swollen and bruised. You should inspect your incision daily. The following are signs of infection. You should call your surgeon if any of these symptoms occur:

- Increased redness
- Increased tenderness
- Local heat
- Drainage or pus from the incision
- Fever above 101°F

You will have an incision in your groin. These incisions are susceptible to infection due to the skin folds and moist environment of the groin. You may place a gauze pad here to keep the area clean and dry. If you notice an increasing amount of drainage from the groin wound, you must contact your surgeon's office.

If there are open wounds on your feet you will also need to monitor these areas daily for signs of infection. Daily or twice daily dressing changes will be ordered. Arrangements will be made with a nursing agency to assist with the dressing changes at home.

Leg Swelling

Leg swelling is common after leg bypass surgery. The swelling occurs as a result of a disruption to the lymphatic vessels. The swelling should gradually resolve within six months. To minimize the swelling you should keep your legs elevated above the level of your heart when you are not walking. Some surgeons allow the use of "TED" stockings or ace bandages wrapped from the toes to below the knee to help reduce swelling. Do not do this unless your doctor has instructed you to do so. If your leg suddenly becomes cold, painful or numb contact your surgeon's office immediately.

Bathing

You may bathe or shower as soon as you leave the hospital. Let the water run over the incision (do not apply soap) and pat it dry afterward.

Pain

For mild pain you may take regular or extra strength Tylenol every four to six hours. For more severe pain you may take the prescription pain medication that you were given at discharge from the hospital. Nausea can occur as a result of taking pain medication. We suggest that you take prescription pain medication with a meal or a snack to prevent nausea. Occasionally, constipation occurs as a result of taking prescription pain medication. You should drink plenty of liquids and eat high fiber foods (fruits, vegetables and grains) while you are taking pain medication.

Activity

You should initially avoid strenuous activity and may gradually return to all of your usual activities, including physical work, sports and sex over the course of one month. If you notice increased leg swelling, you have done too much and you need to decrease your activity and elevate your legs. If there are open wounds on your feet your activity will be limited until the wounds have healed. You may drive after one week. Do not drive if you are taking prescription pain medication.

Preventative Antibiotics

A preventative dose of antibiotics prior to dental work and other invasive procedures is recommended if a synthetic graft was used for your bypass. Please inform with your dentist and primary care physician about the synthetic graft.

Risk Factor Reduction

Atherosclerosis is a process that affects all arteries in the body simultaneously. In order to slow down this process risk factor reduction is essential for all patients. This includes smoking cessation, cholesterol management, weight loss (if needed), and control of diabetes and blood pressure.

Appointments

- A follow-up appointment will be scheduled to see your surgeon approximately two to four weeks after your operation, or sooner if you have an open wound or sutures in place.
- You should make an appointment to see your primary care physician.

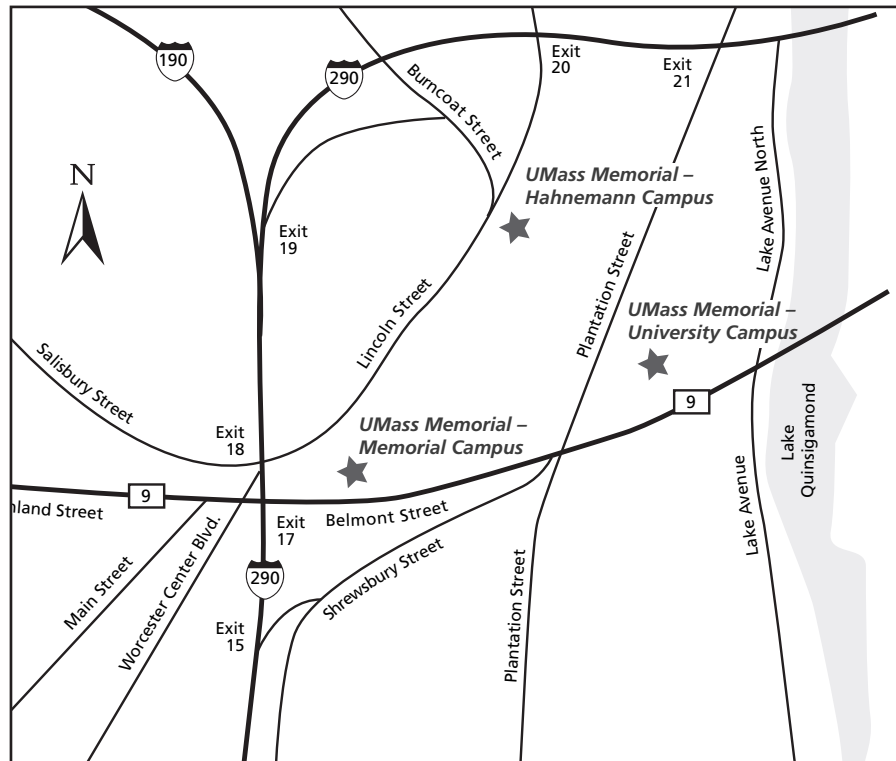
Resources

If you have been diagnosed with a vascular condition, there are many support groups and informational web sites that serve as valuable resources.

Vascular Disease Foundation
1075 South Yukon Street, Suite 320
Lakewood CO 80226
www.vdf.org

U.S. National Library of Medicine
National Institute of Health
8600 Rockville Pike
Bethesda, MD 20894
www.nlm.nih.gov

Directions



University Campus

55 Lake Avenue North, Worcester 01655

Telephone connecting all campuses: 508-334-1000

From the east: Take the Mass. Pike (Route 90) West to Exit 11 (Route 122). Take a left off the exit ramp onto Route 122 North (Grafton Street). At the intersection with Sunderland Road, take a right. At the first set of lights on Sunderland Road, take a left onto Lake Avenue and proceed for 2.5 miles. Get into the left lane at the intersection of Route 9 (Mr. Tux will be on left) and turn left. Get into the right lane. Turn right at the traffic light onto Plantation Street. University Campus is on the right.

Or: Take the Mass. Pike (Route 90) West to Exit 10. Take I-290 East to Exit 21. Turn right off exit onto Plantation Street. Go to second traffic light. University Campus is on the left.

From the west: Take Mass. Turnpike East to Exit 10 (I-290 East). Take I-290 to Exit 21. Turn right off exit onto Plantation Street. Go to third traffic light. University Campus is on the left.

From the north: Take I-495 South to Exit 25B (I-290 West). From I-290 West, take Exit 22 and turn right off exit. At second traffic light, turn left onto Plantation Street. Go to fourth traffic light. University Campus is on the left.

Or: Take I-190 South, follow signs for I-290 East to Exit 21. Turn right off exit onto Plantation Street. Go to second traffic light. University Campus is on the left.

From the south: Take I-495 North to Exit 25B (I-290 West). From I-290 West, take Exit 22 and turn right off exit. At second traffic light, turn left onto Plantation Street. Go to fourth traffic light. University Campus is on the left.

Or: Take I-395 North to where it becomes I-290 East. Take I-290 to Exit 21. Turn right off exit onto Plantation Street. Go to second traffic light. University Campus is on the left.

Or: Take Route 146 North to I-290 East to Exit 21. Turn right off exit onto Plantation Street. Go to third traffic light. The University Campus is on the left.

Memorial Campus

119 Belmont Street, Worcester 01605

Telephone connecting all campuses: 508-334-1000

From the east: Take Mass. Turnpike West to I-495 North. Take Exit 25B to I-290 West. Follow I-290 to Exit 18. Turn right off exit onto Lincoln Street. Bear left and proceed to Lincoln Square (intersection of Route 9/Belmont Street). Take left onto Belmont Street. Memorial Campus is 1/2 mile on the left.

From the west: Take Mass. Turnpike East to Exit 10 (I-290 East). Take I-290 East to Exit 17. Turn right off exit onto Route 9/Belmont Street. Memorial Campus is on the left.

From the north: Take I-495 South to Exit 25B (I-290 West). Follow I-290 to Exit 18. Turn right off exit onto Lincoln Street. Bear left and proceed to Lincoln Square (intersection of Route 9/Belmont Street). Take left onto Belmont Street. Memorial Campus is 1/2 mile on the left.

Or: Take I-190 South to I-290 West toward Auburn. Follow I-290 to Exit 18. Turn right off exit onto Lincoln Street. Bear left and proceed to Lincoln Square (intersection of Route 9/Belmont Street). Take left onto Belmont Street. Memorial Campus is 1/2 mile on the left.

From the south: Take I-495 North to Exit 25B (I-290 West). Follow I-290 to Exit 18. Turn right off exit onto Lincoln Street. Bear left and proceed to Lincoln Square (intersection of Route 9/Belmont Street). Take left onto Belmont Street. Memorial Campus is 1/2 mile on the left.

Or: Take I-395 North to where it becomes I-290 East. Take I-290 to Exit 17. Turn right off exit onto Route 9/ Belmont Street. Memorial Campus is on the left.

Or: Take Route 146 North to I-290 East to Exit 17. Turn right off exit onto Belmont Street/Route 9. The Memorial Campus is on the left.

UMass Memorial Health Care is the largest not-for-profit health care system in Central Massachusetts with 1,500 physicians and more than 12,000 employees. Our comprehensive network of care includes teaching hospitals, affiliated community hospitals, outpatient clinics, community-based physician practices, long-term care facilities, and home health, hospice, rehabilitation and mental health services. UMass Memorial is dedicated to promoting health and wellness in the community, and is proud to be the clinical partner of the University of Massachusetts Medical School. Contributions and memorial gifts to UMass Memorial Health Care are deeply appreciated. For information, call the UMass Memorial Foundation at 508-856-5520 or e-mail to giving@umassmed.edu.

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