

Information for Our Vascular Surgery Patients

Preparing for your aortoiliac surgery



UMassMemorial

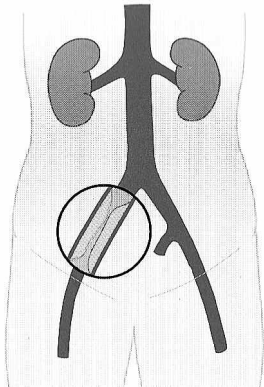
Contents

What Is Aortoiliac Occlusive Disease?	4
What Are the Signs and Symptoms of Aortoiliac Occlusive Disease?	4
What causes Aortoiliac Disease?	5
How Is Aortoiliac Disease Diagnosed?	5
Diagnostic Tests	6
Preparing for the Arteriogram	6
The Day of the Arteriogram	7
After the Arteriogram	7
Going Home after the Arteriogram	8
Treatment of Aortoiliac Disease	8
Balloon Angioplasty	8
Bypass Surgery	8
Preparing for Your Surgery	10
Pre-admission Assessment	10
Hibiclens Antiseptic	11
Peridex	11
Evening before Surgery	11
Morning of Surgery	12
Arriving at the Hospital	13
Notifying Your Family	13
After Your Surgery	14
Your Discharge	15
Activity	16
Resources	16
Directions	17
University Campus	17
Memorial Campus	18

What Is Aortoiliac Occlusive Disease?

A narrowing or blockage of the aorta or iliac arteries resulting in decreased blood flow to the legs and feet is known as aortoiliac occlusive disease.

What Are the Signs and Symptoms of Aortoiliac Occlusive Disease?



Intermittent Claudication

Intermittent claudication is the most common symptom of aortoiliac occlusive disease. Intermittent claudication is a cramping, aching or fatigue in the muscles of the hips, thighs, buttocks or calves brought on by walking and relieved by rest. Claudication occurs when the muscles do not receive adequate amounts of blood and oxygen during exercise as a result of the narrowing in the arteries.

Erectile Dysfunction

Impotence, an inability to sustain an erection, is present in varying degrees of severity in approximately 30 to 50 percent of men with aortoiliac disease. Although there are many reasons impotence may develop, inadequate circulation in the pelvis, as a result of aortoiliac occlusive disease, is a potential cause.

Rest Pain

When the arterial blockages become more severe, and involve the arteries of the lower leg, pain can occur without 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.

Dependent Rubor

Redness of the feet when they are hanging down is defined as dependent rubor. This is a sign of very poor circulation to the feet.

What Causes Aortoiliac Disease?

Atherosclerosis is the primary cause of aortoiliac occlusive disease. Atherosclerosis, or "hardening of the arteries," is a gradual process in which fat, cholesterol and calcium accumulate inside the arteries. This accumulation of substances is called plaque. Aortoiliac disease occurs when the plaque narrows or blocks the arteries.

There are several factors that are known 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

As you get older, the risk of developing atherosclerosis increases. Men over 45 are at risk for developing atherosclerosis; while women over 60 or those with premature menopause not taking estrogen replacement therapy are at risk. 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, include:

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

How Is Aortoiliac Disease Diagnosed?

History and Physical Exam

An accurate history may provide clues to the diagnosis of aortoiliac occlusive disease, including a history of:

- Claudication
- Rest pain
- Gangrene and/or ulceration

- Presence of risk factors
 - Diabetes
 - Smoking
 - High blood pressure
 - High cholesterol

Physical examination of the iliac and leg arteries involves checking the pulse in the groin, behind the knee and on the foot. Patients with aortoiliac disease have diminished or absent pulses in their groins, legs and feet. Another way to check the blood flow to the legs and feet is by comparing the blood pressures at the ankle to the blood pressures in the arms. This is called an ankle/brachial index (ABI).

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 have anything to 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 metformin (Glucophage) do not take it for two days before and two days after the arteriogram.

- **Warfarin (coumadin)** – You should notify your surgeon’s office if you are taking warfarin (coumadin). This medication should be stopped three to four days prior to the arteriogram. Your surgeon will tell you when to stop this medication.
- **Plavix (clopidogrel)** – You should notify your surgeon’s office if you are taking Plavix (clopidogrel). This medication is usually 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 be asked to report to the Surgical Admission 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 asked 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 angiogram. 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 **Mucomyst (Acetylcysteine)** prior to the angiogram. Your creatinine 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 the morning of the procedure.

After the Arteriogram

- After the arteriogram you will be brought back to the short care stay area, located on the second floor, on the University Campus or to the Post Anesthesia Unit, located on the third floor, if on the Memorial Campus, 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.

Going Home after the Arteriogram

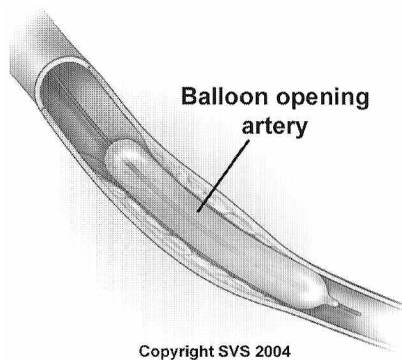
- Please arrange for someone to drive you home after the arteriogram.
- You may need to have blood drawn 24 to 48 hours following the arteriogram, to determine if the contrast dye caused any impairment of your kidney function.

Treatment of Aortoiliac Disease

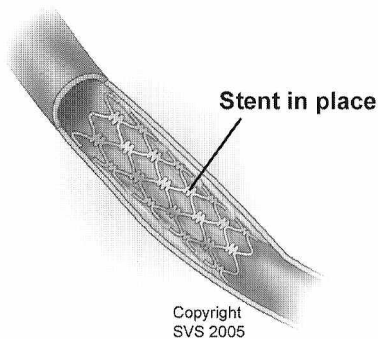
Endovascular treatment may be done at the same time as your arteriogram. You may go home the same day or stay overnight at the hospital.

Balloon Angioplasty

This procedure may be used for short localized areas of blood vessel narrowing.



A catheter, with a deflated balloon on the end of it, is placed in the artery. The balloon is then inflated and the plaque is pushed against the inner wall of the artery. This ultimately increases the diameter of the blood vessel and makes more room for the blood to flow.

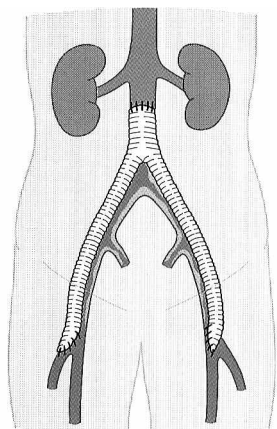


The balloon is then deflated and the catheter is removed. Contrast dye is then injected into the artery to determine if the artery has opened adequately. If not, the procedure may be repeated or a stent (a wire mesh tube) may be placed to further compress the plaque against the sides of the artery.

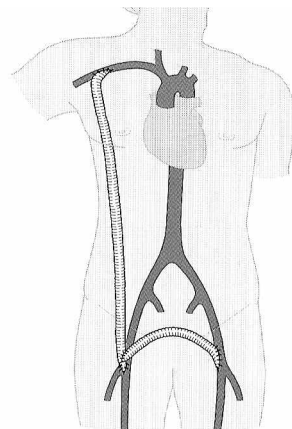
Surgical Treatment: After an arteriogram is performed, your surgeon will discuss the results with you and your surgical options.

Bypass Surgery

If the atherosclerosis involves a longer area of the aorta and/or iliac arteries then bypass grafting is indicated. The extent of the aortoiliac occlusive disease will determine what type of surgical bypass that is performed.



Aortofemoral bypass



Axillofemoral bypass

Patients with aortoiliac occlusive disease who are not able to physically tolerate aortic bypass surgery may undergo an axillofemoral bypass.

Aortoiliac operations are relatively common procedures performed at UMass Memorial. However, all operations have some risks associated with them. The risks of abdominal aortic operations include:

- Bleeding, possibly requiring a blood transfusion
- Infection
- Colon ischemia (lack of blood flow to the intestine)
- Impotence
- Retrograde ejaculation
- Atheroembolism (tiny pieces of plaque that break off and travel to the small arteries in the feet, causing pain or the development of sores or gangrene)
- Paraplegia

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

Once you and your surgeon have decided that your condition should be surgically repaired, you may be advised to have one or more of the following tests:

- Persantine thallium heart scan
- Pulmonary function tests

Preparing for Your Surgery

While some patients may already be in the hospital when informed that surgery is necessary, many people having vascular surgery 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 Plavix (Clopidrogel). 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.

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 the 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 these 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, removing 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 will 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 the 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 the elevator A to the second floor to the Surgical Admission Unit. The receptionist will direct you to where you will get prepared for surgery.

Once you arrive at the Preprocedure Unit, 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 phone number where your family or a friend can be reached.

After Your Surgery

- After your operation you will be brought to the intensive care unit.
- The ICU team will continually monitor you and care for you after your operation.
- You will be very sedated and relaxed when you start to wake up from anesthesia but may be aware that there is a breathing tube in place. Although you will not be able to speak while the tube is in place, the nurses will be able to communicate with you and understand your needs.
- The breathing tube will be removed once you are fully awake, typically the morning after the operation.
- You may experience some discomfort around the abdominal incision. You will be given pain medication as needed.
- You will not be able to eat or drink anything for three to four days following the open aortic operation.
- You will have a nasogastric tube in place. This tube will be placed before the operation, but after you are asleep. It is inserted through your nose and drains digestive secretions. This will help to prevent nausea, vomiting and gastric distension. Once your intestinal activity has recovered, this tube will be removed. At this time you may start taking fluids by mouth.
- You will have an intravenous line (IV) in place through which you will receive fluids, nutrients and medications as needed.
- A bladder catheter will collect your urine. The catheter may give you the sensation that you need to pass your urine.
- Your vital signs and 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.
- Following the operation, you will have an abdominal dressing in place, which will be removed on the second postoperative day.
- You will typically be transferred from the ICU to a regular hospital room on the second postoperative day.
- After the operation, you will be able to get out of bed and begin walking on the first postoperative day and will usually be discharged on the fifth or sixth postoperative day.
- To be discharged, you should be eating your normal diet and walking with little or no assistance. A physical therapist will evaluate your walking ability, make recommendations about your discharge plans (home or a rehabilitation hospital), and determine if assistive devices, such as a cane or a walker, are necessary.

- If you are not physically ready to go to your own home or if there is insufficient help at home, we may suggest a short stay at a rehabilitation hospital. A discharge coordinator will meet with you and your family to discuss your options and to assist you in choosing a rehabilitation hospital. At the rehabilitation facility you will receive physical therapy and nursing care to facilitate your recovery and prepare you for home.
- If you return to your own home we will arrange for the visiting nurse association to provide appropriate therapy and nursing care until you are fully recovered and independent.

Your Discharge

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:

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

Your sutures will be removed at your follow-up appointment. You may also have incisions in your groin. These incisions are susceptible to infection due to the moist environment of the groin. You may place a gauze pad in the groin to keep the area clean and dry. We would like you to shower daily. If you notice an increasing amount of drainage from the groin wounds, you should contact your surgeon.

Leg Swelling

Leg swelling may occur if your bypass surgery involved groin incisions. This 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 advise 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.

Bathing

You may shower as soon as you leave the hospital. Let the water run over the incision (do not apply soap) and pat it dry afterward. Do not take a bath or go swimming until your incisions are healed.

Pain

For mild pain, you may take regular or extra strength Tylenol every four to six hours. You will also be given a prescription for stronger pain medication. This should be used to treat pain that is not relieved with regular Tylenol. Nausea and constipation can occur as a result of taking prescription pain medication. Taking the pain medication with a meal or snack may help to prevent nausea, while drinking plenty of liquids and eating high fiber foods (fruits, vegetables and grains) can help prevent constipation. Metamucil or Milk of Magnesia may also be used to treat constipation.

Activity

Following the operation:

- You should avoid strenuous activity and heavy lifting (anything greater than 10 pounds) for two months.
- You may climb stairs.
- You may drive two weeks following the operation if you are not taking prescription pain medications.
- It is normal to feel tired after this operation. Expect that it will take about two to three months to "feel like yourself" again.
- If you notice increased leg swelling you should decrease your activity and elevate your legs.

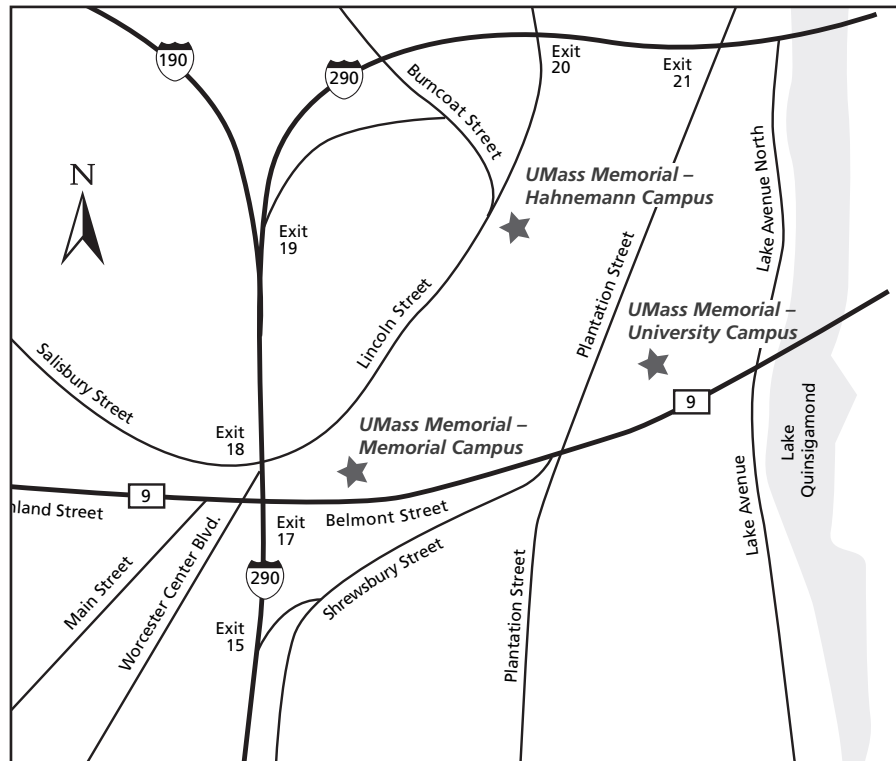
Resources

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.VDE.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.

Department of Surgery – Division of Vascular and Endovascular Surgery
UMass Memorial – University Campus
55 Lake Avenue North, Worcester, MA 01655

