

Information for Our Vascular Surgery Patients

Preparing for your carotid surgery



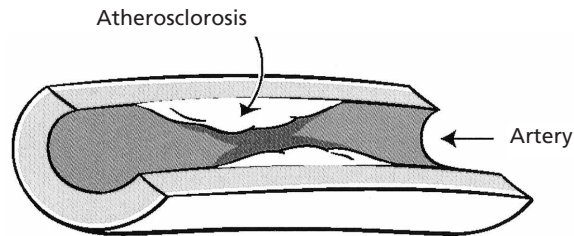
UMassMemorial

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Understanding Arterial Disease

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:

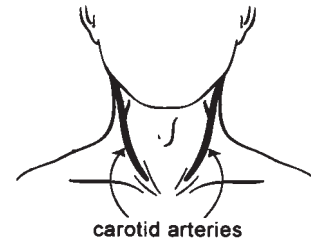
- Smoking
- High cholesterol levels (hypercholesterolemia)
- High blood pressure (hypertension)
- Diabetes
- Stress
- Lack of regular exercise
- Being overweight

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 your cholesterol, control your blood pressure, assist with weight loss, control the urge to smoke and relieve stress.

What Are the Carotid Arteries and What is Carotid Artery Disease?

The two carotid arteries are located on either side of your neck and carry most of the blood to your brain. We know that about one third of all strokes are caused by narrowing of one or both carotid arteries in the neck. This narrowing is called a stenosis.



Carotid artery disease can be detected during a routine physical examination. When the blood flows through a narrowed portion of the carotid artery, it makes a swooshing sound

or bruit (pronounced bru-ee). A bruit can be heard with a stethoscope placed on the side of your neck.

A typical symptom of carotid artery disease is temporary loss of vision in one eye, often described as a “gray shade” coming across the visual field, lasting for a few seconds or minutes. Other symptoms include numbness, weakness or tingling on one side of the body (face, arm and leg) or trouble speaking. Atherosclerotic plaque or small clots that have broken free from the carotid plaque and traveled to the brain cause these symptoms.

If these symptoms resolve within 24 hours, it is called a transient ischemic attack, or TIA. If symptoms do not resolve within 24 hours, a stroke has occurred.

Understanding Carotid Surgery

What Is a Carotid Endarterectomy?

Carotid endarterectomy is the name of the operation that removes the obstructing plaque from the carotid artery. During the operation, an incision is made on the side of the neck over the carotid artery. An incision is then made in the artery and the atherosclerotic plaque is removed.

Carotid endarterectomy is a very common operation performed at UMass Memorial. However, all operations have some risks associated with them. The risks of carotid endarterectomy include:

- Stroke
- Bleeding at the site of the operation
- Infection
- Injury to the nerves giving the voice its strength or controlling coordination of the tongue

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

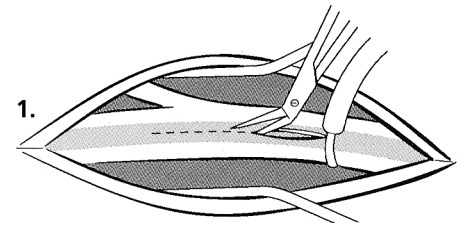
What Is Carotid Artery Stenting?

Carotid artery stenting is a minimally invasive procedure in which a tiny mesh tube, called a stent, is placed inside of the carotid artery to increase the blood flow through the artery. Prior to placing the stent, your surgeon will perform an angioplasty. Angioplasty is a procedure in which a balloon is inflated in the narrowed part of the carotid artery to flatten the plaque and open the artery. The stent is then placed to hold the artery open, like scaffolding.

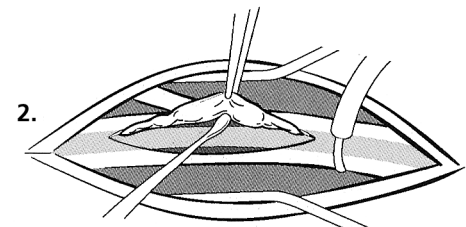
Carotid artery stenting may be recommended for people who are unable to undergo a carotid endarterectomy, are not able to tolerate the side effects of general anesthesia or who have renarrowing of the carotid artery following a carotid endarterectomy.

Risks associated with carotid artery stenting include:

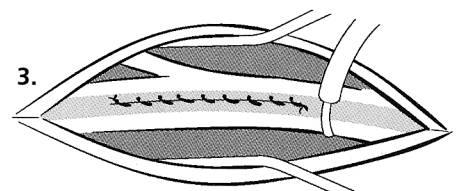
- Stroke – This happens if a loose piece of plaque or a blood clot breaks off and blocks an artery in your brain. However, using an embolic protection device minimizes the risk of stroke.
- Abrupt closure of the artery following the procedure.
- Restenosis or renarrowing of the artery.
- Kidney dysfunction – the dye used for the angiogram can sometimes cause damage to the kidneys. However, your kidney function will be closely monitored and steps will be taken to minimize any impairment to your kidneys.



An incision is made in the carotid artery.



Plaque is removed from the artery.



The artery is sutured closed.

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 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.

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 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 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:

- 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 to remove all shampoo and soap residue.
- 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.
- 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.
- Do not shave the general area of your body where your surgery will be performed.
- Turn the water on and rinse your body thoroughly. Pat dry with a clean, soft towel. Rinse washcloth after use to remove 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

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 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, 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 Carotid Surgery

Recovery Room

- After your operation you will go to the recovery room to wake up from the anesthesia.
- You will have a dressing on the side of your neck.
- In some cases, there will be a drain underneath the dressing, which drains excess fluid from the site of the operation. The drain will be removed on the first day after the operation.
- 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.
- Once you are fully awake and stable, you may be transferred to a hospital room or you may spend the night in the recovery room.
- Your family can visit you while you are in the recovery room. You should rest and let other people care for you.
- Most patients do not experience substantial pain after this operation. However, if you should have discomfort your nurse will give you pain medication.

- You will be able to eat a regular diet the day after your operation.
- Your urinary catheter will be taken out. Your nurse will help and encourage you to get out of bed and walk.

Visitors in the 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.

Getting Ready for Discharge

- Most patients are discharged the day after the operation.
- To be discharged, you should be eating your normal diet and be able to walk with little or no assistance.
- Before you go home, your neck dressing will be removed. Some surgeons close the neck incision with sutures, which will be removed seven to 10 days after discharge. Other surgeons use absorbable sutures that do not require removal and dissolve on their own. In either case, the wound will be reinforced with adhesive tape called Steri-strips.
- On the day of discharge your surgeon will make recommendations to guide your recovery. He/she will also answer your questions and arrange for a follow up visit in two to four weeks.

Your Discharge

Care of the Surgical Incision

- The surgical incision is normally tender, slightly swollen and bruised.
- It is not unusual for some old blood to drain from the lower end of the incision. Use a gauze pad or band-aid to absorb any drainage. Drainage usually stops within a day or so.
- Numbness of your earlobe and along the incision is also normal. This numbness may take up to a year to resolve.

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

Gently remove any Steri-strips that have not fallen off within five days after discharge from the hospital.

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. You should not go swimming for one week after the operation.

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 avoid strenuous activity for seven to 10 days. Thereafter, you may gradually return to all of your usual activities, as you feel able, including physical work, sports and sex. Do not drive for one week or when you are taking pain medication.

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

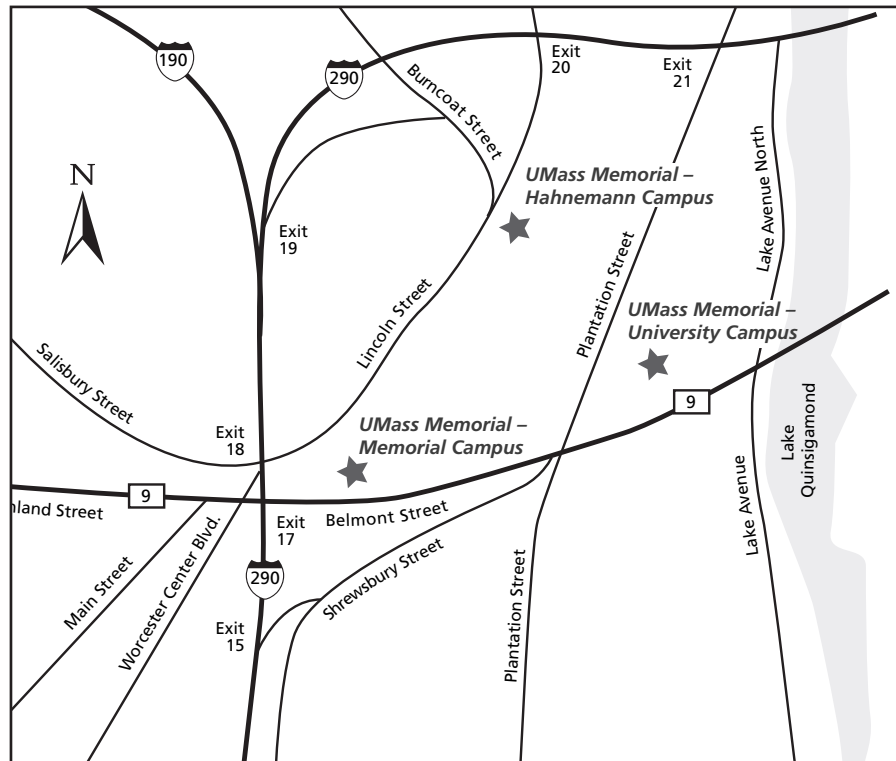
Resources

If you have been diagnosed with a vascular condition, there are 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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