

Preparing for your Carotid Endarterectomy Surgery

**Michigan Medicine
Department of Neurosurgery**

Michigan Medicine Phone Numbers

Billing	855-855-0863 734-615-0863
Neurosurgery Call Center	734-615-4486
Office of Clinical Safety (comments)	877-285-7788
Emergency Department	734-936-6666
Guest Assistance Program (GAP) (accommodations)	800-888-9825
Hospital Operator	734-936-4000
Lost & Found	734-936-7890
Mardigian Wellness Resource Center	734-232-4120
Parking & Transportation	734-764-7474
Registration & Insurance Verification	866-452-9896
Med-Inn (hotel)	800-544-8684 734-936-0100
Tobacco Consultation Services	734-938-6222
Units (Patient Care):	
Neurosurgery ICU	734-936-6520
Other:	
Michigan Quit Line (Smoking)	800-784-8669

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What are my pre-operative medications instructions?

A member of your health care team will review your medications at your history and physical visit. They will tell you which medications to stop before surgery, and which to take on the morning of your surgery with sips of water.

Insulin: Your health care team will let you know if there are any changes to your dose(s) the night before and/or the day of surgery.

What about my blood thinners?

- Your care team will talk to you about your blood thinners. Tell them if you are on a blood thinner such as: Warfarin (Coumadin®), Rivaroxaban (Xarelto®), Dabigatran (Pradaxa®), or Apixaban (Eliquis®), Edoxaban (Lixiana®).
 - You may have to **stop taking** your blood thinner. Sometimes a different blood thinner will be used instead.
- Continue to take Aspirin or Clopidogrel (Plavix®) unless your surgeon tells you not to.

What about over the counter medications and supplements?

Below are common medications and supplements you need to discontinue before your procedure. Here are a few general rules that you should follow:

- **(10) days before surgery:** stop taking Non-Steroidal Anti-Inflammatory Drugs (NSAIDs):

Advil® (ibuprofen)	Motrin® (ibuprofen)	Midol® (ibuprofen)
Aleve® (ibuprofen)	Naprosyn® (naproxen)	Nuprin® (ibuprofen)

- **(10) days before surgery:** stop taking Vitamin E, Herbal Supplements, or Fish Oil.

Note: the medications listed are selective and do not include all medications that affect bleeding. You should always follow your health care team's directions about taking medications.

- **Do not** smoke for 2 weeks before surgery

How can I prepare for my hospital stay?

- **Quit smoking and vaping** -The sooner you quit before surgery, the better. Patients who smoke up until the day of surgery are at higher risk of developing complications during and after surgery. If you continue to smoke, you will be more likely to have:
 - A longer stay in the hospital
 - A greater chance of needing intensive care
 - Increased risk of poor wound healing
 - Increased risk of death

If you want assistance to quit smoking prior to surgery, ask for a referral to the MHealthy Tobacco Consultation Service or call them yourself at **(734) 998-6222**.

Other resources:

- The Michigan Tobacco Quit line: 1-800-QUIT-NOW (free resource)
 - The Truth Initiative: www.becomeanex.org
 - US Department of Health and Human Services: www.smokefree.gov
- Plan to bring any special equipment you use at home:
 - Glasses, dentures, and hearing aids with storage cases. Make sure you label these items with your name.
 - CPAP and/or BiPAP machine if you have sleep apnea.
 - Walker or cane, labeled with your name.
 - Review the preoperative booklet and bring it with you. If you received one, please bring the light blue Blood Bank form.

- Assign a family member or friend as your driver, you will not be able to drive yourself home. Taking a cab or bus alone is unacceptable unless someone you know is with you.
- Leave all jewelry at home. Including wedding bands, hair clips, body piercings, earrings and watches.
- Bring your advanced directive and insurance cards.

While you do not need to bring anything with you to the hospital, you may choose to bring:

- Loose, comfortable clothing. Loose comfortable neckline is preferred.
- Robe.
- Comfortable, slip-on walking shoes.
- Toiletry articles: toothbrush, comb, etc.
- A list of medications that you are currently taking including vitamins and herbal supplements. Do not bring the actual medications with you.

How will I prepare for surgery?

Instructions for the day before surgery:

- **Do not** drink alcohol 24 hours before surgery.

Confirming your arrival and surgery time

- The business day (M-F) before your surgery, you will receive a call confirming:
 - The location of your surgery and where to park
 - The time your procedure starts and what time you should arrive the day of your surgery.
 - When to stop eating food and drinking liquids.
 - Medications you should take on the day of your procedure.

Who do I contact if I'm not feeling well the day before my surgery?

Report any symptoms of flu, cold or infection to your surgeon. It is important

that you be in your best health possible for surgery.

- To report any of these symptoms before 4:30pm call **(734) 936-7010**
Monday - Friday
- To report symptoms after 4:30pm, or on weekends or holidays call **(734) 936-6267**
 - Ask the hospital operator to page the Neurosurgery Resident on call. You will receive a call back from the Resident.

What activities should I avoid the night before my surgery?

- After midnight the night before your surgery:
 - **Do not eat** gum, hard candy, or food of any kind
 - You may have sips of water with your morning medications up to (2) hours before your arrival time.

How do I shower and get ready for my surgery?

On the night before and morning of your surgery, you will be asked to shower using Chlorhexidine (CHG) 4% antiseptic soap which is a surgical soap that reduces the number of germs on your skin.

1. Take a shower **the night before** your surgery.
2. Use regular soap to wash your face.
3. Use regular shampoo to wash your hair. Make sure to rinse your hair completely after shampooing.
4. Use the chlorhexidine body wash from the neck down. Lather your body for at least 5 minutes with a freshly laundered washcloth:
 - First, wash **your surgical site** area and all surrounding skin with the CHG soap.
 - Then wash your underarms, chest, under your breasts, stomach/belly button, hips, groin and buttocks.
 - Rinse thoroughly.
 - **Do not** use the body wash on your face, eyes, ears, mouth, or hair.

- **Do not** use in your genital area (“private parts”).
- 5. Rinse your body completely and pat your skin dry with a freshly laundered towel.
 - **Do not** apply make-up, deodorant, lotions, sprays, gels, creams, ointments or powders after showering with the CHG soap.
 - After showering, use clean clothes and freshly laundered bed linens.
- 6. **On the morning** of your surgery, use a new freshly laundered washcloth and towel and repeat steps 1-5.
- 7. Put on clean underwear, socks and clothing.
- **Do** brush your teeth the morning of surgery.
- **Do not shave** the hair on your neck. Shaving your skin with a razor can increase your risk of infection. We will prepare your skin by removing hair with special clippers the morning of your surgery.
- If you have a long beard, we recommend neatly trimming it before surgery.
- **Do not** wear contact lenses to the operating room.

What happens when I arrive at the hospital?

- Park in the Visitor Parking Structure P2 or P3.
- Locate the parking structure elevator. Take the P2/P3 elevator to the **1st floor**.
- Follow the signs toward University Hospital (UH).
- Look for the Welcome Desk and Main Lobby.
- Continue down the hall, through the double doors. You will see a tall red column labeled **Family Surgery Waiting Area**. This is where you will check in.

Please Note: The Welcome Desk Staff on the 1st floor can help you find your location.

Valet service is available for patients, families, and other visitors for fee. The University Hospital Valet Service is available:

- Monday through Friday 5:00 a.m. to 7:00 p.m.

- Saturday and Sunday 8:00 a.m. to 5:00 p.m.

What will my hospital stay be like?

After your surgery, you will be admitted to the Neurosurgical Intensive Care Unit. Our team will help you recover here from your surgery. When you arrive to the unit, your nurse and patient care technician (techs) will meet you. They will orient you and your family to the unit. Most people are discharged home the day after surgery before lunch.

Our Visitor Policy

- The COVID-19 pandemic has presented a host of challenges and changes to the way we care for those we serve. Please speak with your team regarding the Visitor Policy during COVID-19 prior to your arrival. Our visitor policy changes frequently as the situation evolves.
- “Family” (for purpose of visitation) is defined by you. It is usually 1 or more individuals who play a significant role in your life. Family members may be related in any way- biologically, legally or emotionally. Your family member may include a person(s) who is not legally related to you.
- At times, we may ask your family members to step outside of the room if procedures or other necessary interventions need to be done. Your family will be welcomed back as soon as possible.

What types of tubes, wires and equipment will be attached to me after surgery?

It is normal to have tubes and wires attached to your body after surgery. The following is a description of some of the tubes, wires and what you can expect.

- **Foley catheter**-may be placed during surgery to drain urine from your bladder.
- **Intravenous line (IV)**-placed in a vein in your arm to give your fluids and medications.

- **Arterial line**-a catheter placed into an artery in your wrist to continually monitor your blood pressure. It also allows for your blood to be drawn without having to be poked.
- **Portable heart monitor** (telemetry unit)-this monitor transmits your heart rate and rhythm to monitors located at your bedside and at the nursing station. This portable monitor allows you to walk in the halls freely.
- **Jackson-Pratt (JP) drain** – a small drain may be placed in your incision site. The drain helps prevent blood and body fluid from collecting near your incision site. It will be removed prior to discharge.

What type of monitoring will I need while I'm here?

During and after surgery, you will be watched closely by your care team. The care you may receive is described below:

- The nurses and techs will regularly check your blood pressure, heart rate temperature, and incision.
- You will have your blood drawn for lab tests.
- We will measure how much you drink and urinate. We will provide a container for you to urinate into for measurement. We will also ask that you keep track of the amount of fluid that you drink and report it to your nurse or tech.
- You will be weighed daily.
- A member of your care team will enter your room to assess your needs hourly.
- The care team will assess you for bleeding at your incision site and for stroke-like symptoms.
- The care team will assess you for post-operative headaches, difficulty swallowing or speaking.

What kind of pain or discomfort will I feel after my surgery?

Experiencing pain after surgery is normal. You may be surprised where you feel

pain after surgery. Often your incision site is not the only area of discomfort. Please tell a member of your healthcare team about the pain you have, which can include:

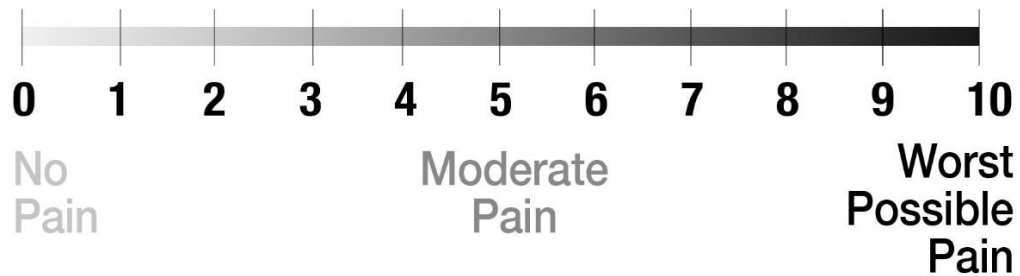
- **Muscle pain:** You may feel muscle pain or tightness in your chest, back neck, shoulders or legs. This is from lying on your back on the operation table.
- **Incision discomfort:** You may feel numbness along your incision line, jaw and your earlobe.
- **Throat discomfort:** Your throat may feel sore, or you may notice changes in your voice (hoarseness).

What can I do to help keep my pain under control?

Your care team will order effective medications to keep your post-surgical pain under control. Narcotics are not typically prescribed for this procedure. You will most likely receive acetaminophen (Tylenol®) or ibuprofen (Motrin®). Your nurse will ask you about your pain regularly throughout your recovery. You shouldn't hesitate to ask for pain medication if needed.

Throughout your hospital stay, the nurses will monitor your need for pain medication. You can use the numeric pain rating scale below to measure your pain. This is a helpful tool you can use to describe how much pain you are feeling and to measure how well treatments are relieving your pain. You will be asked to rate your pain using a 0-10 pain scale. 0 means "no pain." 10 means the "worse pain possible."

Numeric Pain Rating Scale



Why is it so important to control pain after surgery?

Having good pain control not only helps you feel more comfortable, but also helps you recover faster and may reduce your risk of developing certain complications such as pneumonia and blood clots. If your pain is well managed, tasks such as sitting, walking coughing, deep breathing and eating will be easier.

What exercises will I do after surgery?

Exercise is an important part of the recovery process after surgery. Below are activities you will be expected to perform during your hospital stay:

- **Deep breathing and coughing**

Use your breathing machine (incentive spirometer) 10 times every hour while you are awake. For example, if you like to watch TV, you should be using your incentive spirometer 2-3 times during commercial breaks.



How to Use an Incentive Spirometer

By BruceBlaus - Own work, CC BY-SA 4.0

Tips when using the incentive spirometer:

- Do not get discouraged if you do not reach the number marked for you. You will improve with practice as your body heals.
- If you start to feel dizzy or light-headed, remove the mouthpiece from your mouth and take some normal breaths. Once you feel better, continue using the incentive spirometer.

- **Walking:**

Walking after surgery is one of the most important things you can do. The day after surgery, you will have the following exercise goals:

- Walk 4 times a day
- Sit in the chair 3 times a day

- **Repositioning:**

To prevent pressure injuries during your hospital, stay, you need to change your body position. The following recommendations will help you reposition yourself:

- **While in bed:** turn your body at least every 2 hours from side to side.
- Keep the head of your bed at a 30-degree angle or lower to prevent too much pressure on your bones.
- Place a pillow between your ankles and knees when lying on your side.
- Place a pillow under your lower legs to elevate the heels when lying on your back.
- **When sitting,** change your position every 15 minutes by tilting your body forward or to the side so that your bottom lifts off the seat.
- Stand up or do “pushups” by using arms to raise off the seat every hour.

What will my diet be after surgery?

Your food will be low in fat and cholesterol and will not have any added salt or sugar. Although this food may be different than what you are used to eating at home, this change in diet is very important in the healing process.

You may choose clear liquids or soft foods for the first few days as you may experience a sore throat caused by irritation from the breathing tube.

Healthy food choices play a key role in the healing process. Eating a balanced diet of carbohydrate-rich foods high in fiber, along with a variety of fruits, vegetables, low-fat dairy products, and lean meats are good guidelines to

follow. Eating protein-rich foods such as fish, eggs, dairy, beans, and nuts is very important for the healing of wounds.

Room service is available 7 days a week from 6:30 am to 9:00 pm. Your nurse will bring you a menu so you can choose what you would like to eat. Your nurse will check to see if you ordered food and if help is needed, will assist you.

If you are diabetic or insulin dependent, your nurse will ask you to call them before you eat so that they can check your blood sugar. It is fine for your family to bring home-cooked food, but it should be low in salt and low to moderate in fat.

Many patients experience constipation after surgery due to inactivity and pain medication. Eating a diet rich in fiber, drinking enough fluids, walking the halls and taking a stool softener will help your bowels move. Sometimes a suppository or laxative is needed to help aid this process along.

Our registered dietitians are food and nutrition experts. They are available to discuss heart healthy choices and salt alternatives or salt reduction. They provide sound, easy-to-follow nutrition advice. If you are interested in speaking to a dietician, ask your nurse to arrange a visit.

How will I care for myself while in the hospital?

- Wash your hands or use hand sanitizer or sanitizer wipes after using the bathroom, before eating and after touching objects or surfaces in your hospital room. Hand hygiene is the number one way to prevent the spread of infection.
- Bathe daily with the assistance of a staff or family member.
- Do not touch, scratch, or rub your incision to prevent infection.

What can I expect on the day of discharge?

- Most people are discharged from the hospital within 24 hours after their surgery.
- Ask a family member or friend to arrive at 9:00am to review final discharge instructions with you and your nurse.
- Your case manager nurse will be in contact with you to explain your final discharge plans.
- Your nurse will review all discharge instructions with you. During this time, ask any questions that you may have about your care after discharge.
- Be sure to understand:
 - Your medications and prescriptions
 - Incision care
 - Before you go home, look at your incision in the mirror so you will know if there are any changes when you check it at home.
 - Activity and restrictions
 - Diet
 - Reasons to call your doctor
 - Follow up appointment information
- At home you will need to monitor your temperature and blood pressure until your next appointment. Please make sure that you have the proper equipment before you are discharged.
 - Working thermometer
 - Blood pressure cuff
- If you have a long drive home, make sure to get up and stretch at least once an hour to help prevent blood clots.

Discharge tips:

Please make sure to have all the items that you brought with you.

- Glasses, dentures and hearing aids
- CPAP machine
- Walker or cane
- All technology devices and chargers
- All medication

When do I need to seek emergency care?

Call 9-1-1 immediately if:

If you have any of the following **symptoms of a stroke**:

- Sudden confusion, trouble speaking or understanding others
- Sudden trouble seeing in one or both eyes
- Sudden numbness or weakness of the face, arm, or leg, usually on one side of your body
- Sudden trouble walking, dizziness, loss of balance or loss of coordination
- Sudden or severe headache with no known cause

If you have any of the symptoms listed below:

- Sudden onset of chest pain
- Shortness of breath not relieved by rest
- You believe you are experiencing a true emergency

When do I need to call my doctor?

- You develop a sudden, severe headache not relieved by acetaminophen (Tylenol[®]) or ibuprofen (Motrin[®])
- Your systolic blood pressure (top number) is 160 or higher for two or more readings

- Under the tongue temperature above 101.5° F
- Bleeding, redness, swelling, increased pain or drainage near your incision site
- Incisions that open after you leave the hospital
- Sudden or increased swelling in your neck
- Problems talking or swallowing
- Increased shortness of breath/difficulty breathing
- Trouble urinating
- Nausea, vomiting, or diarrhea
- Stomach pain or bloating
- Chills or excessive sweating
- A vague feeling that something is wrong

What is the number to call?

- Call Neurosurgery at **(734) 936-7010** Monday through Friday from 8:00am to 4:30pm
- Call **(734) 936-6267** after 4:30pm or on weekends or holidays:
 - Ask the hospital operator to page the Neurosurgery Resident on call. You will receive a call back from the Resident.

What type of follow up care will I receive?

You will have a post-operative visit in the Neurosurgery Clinic in approximately 2-4 weeks after your surgery. If you did not receive an appointment for your return visit before you left the hospital, please call **(734) 936-7010** to schedule this visit.

What steps should I take to monitor my health at home?

You will need to perform and record the following self-checks daily:

- Look in the mirror to check your incision(s) daily for signs of infection

including increased redness, tenderness, swelling, warmth or drainage.

- Take your temperature each morning before eating, drinking and anytime you think you may have a fever.
- Check your blood pressure in the morning 2 hours after you have taken your morning medications.
- Weigh yourself at the same time, on the same scale, in the same clothes, and in the same way each day.

How do I care for my incisions?

- You will have an incision about 3 inches long on the side of your neck. Your doctor will close your incision with stitches under the skin or skin glue. If you have stitches, they will dissolve on their own. If your doctor used skin glue or steri strips (small strips of tape), the glue and strips usually peel off in 7 to 10 days. **Do not** pick at the skin glue.
- Your incision may feel thick and raised, but this will decrease over time.
- The area around your incision may be swollen and bruised at first. The swelling usually takes 2-3 weeks to go away.
- Sleep with your head slightly elevated on 2 pillows to help decrease neck swelling.
- Your incision may cause numbness along your incision line, jaw and near your earlobe. Most of the time, this goes away in 6 to 12 months.

Follow these guidelines to care for your incision while bathing:

- Wash your surgical incision(s) with your usual bath soap and water every day. Pat dry and leave open to air. Use a freshly laundered wash cloth and towel each time you shower.
- **Do not** put any creams, lotions, powders or ointments on your surgical incision(s) until they heal.
- **Do not** soak in a bathtub, hot tub, or swim in a pool/lake for the next 4 weeks.

- When shaving, be careful to avoid your incision.

What are my activity instructions?

After your surgery, you should gradually and consistently increase your physical activity. You may tire more easily than before surgery. This is normal. Your strength and energy level will increase as your body heals.

Restrictions

- Do not lift, push, or pull any objects over 10 pounds after surgery. As a reference, a gallon of milk weighs approximately 8 pounds. Your doctor will let you know when this precaution is lifted.
- **Driving:**
 - Your doctor will discuss with you when you can drive again.
 - **Do not** drive if you are taking narcotic pain medication.
 - Do not drive until you can safely check your blind spots.
 - You can ride as a passenger in a car at any time, but, as always, you should wear your seatbelt.
- Do not return to work until you have seen your doctor at the first follow up clinic visit.

Activities

- Walk every day (find an indoor setting during bad weather).
- You may climb stairs but take them at a slow pace.
- Limit the number of times you take the stairs until you feel well.
- Divide your time and spread activities throughout your day. Do not try to do everything at once.

How will I manage my pain and comfort at home?

You will experience minimal pain after your procedure. Your goal at home is to control your discomfort so you can do the things you need to do to

heal. It is important to know that discomfort is normal after this procedure. You may take acetaminophen (Tylenol[®]) or ibuprofen (Motrin[®]) for any discomfort at your procedure site.

Below are a few tips to help with pain relief:

- Remember to take your pain medication before activity.
- Be sure to get enough rest. If you are having trouble sleeping, talk to your doctor.
- Use pillows to support yourself while you sleep and when you do your coughing and deep breathing exercises.
- Ask your doctor if it is okay to use over the counter acetaminophen (Tylenol[®]) or ibuprofen (Motrin[®], Advil[®]).
- Try using alternative methods: heating pads or cold therapy, guided imagery, listening to soft music, or changing your position in bed.

What are my medication instructions?

- When you are discharged from the hospital, you will be given a complete list of the medications that you should take at home.
- Your medication list will include the following information:
 - Medication name(s)
 - Dose of the medication
 - Number of times to take the medication each day
 - The last time you took each medication
 - The next time that you should take each medication
- Your doctor may give you new prescriptions for your recovery before you leave the hospital. Contact your heart doctor or primary care provider if you need refills for your ongoing medications.
- Have your insurance cards with you to help speed up the filling of your prescriptions.
- Take your medicine exactly as your doctor prescribes.

- Do not take other medication without telling your doctor.
- Follow-up with your heart doctor and primary care provider within 2 weeks of discharge. They will need to make sure your medication list is complete and accurate. They may also need to adjust or change doses for the most effective treatment.
- Keep a current list of your medicines, dosages, and times to be taken in your wallet or purse.

How do I handle my emotions after I get home?

- Feeling like yourself again after surgery may take a while.
- People who have had surgery commonly experience mood swings, feel depressed or down after returning home.
- You may find yourself crying for no clear reason or feeling more emotional or sentimental than normal.
- Even though you may feel drained emotionally, follow the guidelines for good self-care. As you resume your normal activities, you should notice gradual improvement in your mood and positive outlook.
- If you find yourself still feeling unmotivated, unusually fatigued, weepy, angry, hopeless, or sad after 3 weeks, be sure to call the CVC Social Worker at **(734) 232-1559** or your Primary Care Doctor to make an appointment to talk about how you are feeling.
- If you have thoughts of hurting yourself call the National Suicide Prevention Lifeline at **(800) 273-8255**. This service is available 24 hours a day every day. Chat options are also available through their website <https://suicidepreventionlifeline.org/>

Disclaimer: This document contains information and/or instructional materials developed by Michigan Medicine for the typical patient with your condition. It may include links to online content that was not created by Michigan Medicine and for which Michigan Medicine does not assume responsibility. It does not replace medical advice from your health care provider because your experience may differ from that of the typical patient. Talk to your health care provider if you have any questions about this document, your condition or your treatment plan.

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