

For more information please visit us online at: <http://www.osmh.on.ca/diagnostics/>

If you or your support person do not clearly understand the procedure, please ask for clarification



EMBOLIZATION (GENERAL)

What is it?

An embolization procedure is a minimally invasive treatment used to block blood flow to a specific area of the body. During this procedure, an interventional radiologist uses a combination of ultrasound and fluoroscopy, to insert a small tube (catheter) into a blood vessel. Tiny particles or coils are then delivered through the catheter to block the blood flow to the targeted area. This treatment is often used to stop bleeding, shrink tumors, or treat abnormal blood vessels, all without the need for traditional surgery.

Why do I need it?¹

Reasons your doctor or healthcare provider may have ordered this procedure include:

- Traumatic injury bleeding, such as from accidents (abdomen/pelvis).
- Gastrointestinal bleeding from ulcers or diverticular disease.
- Vascular malformations like abnormal artery-vein connections.
- Tumor bleeding, to reduce pain and control bleeding.
- Block blood vessels to shrink or slow tumor growth.
- Treat aneurysms by blocking blood flow or closing the sac.
- Reduce congenital venous malformations to ease pain, swelling, and clotting.



HOW IS THE PROCEDURE PERFORMED?

Before

For specific questions regarding the clinical need for this procedure, please contact your ordering provider.

Patient Preparation:

You should wear loose-fitting clothing that is easy to change out of. **You will need to arrange for someone to drive you home after you have recovered from the procedure.** One support person (spouse, friend, caregiver, family member) may accompany you on the day of your appointment, but not into the procedure room.

You may have clear fluids up to **four hours** before the procedure. Continue taking your morning medications, **except for blood thinners** (see next page), with a small sip of water.

Please bring a list of the medications you are currently taking and a list of any drug/medication allergies you may have.

Please phone the Diagnostic Imaging booking line at **705-325-2201 ext. 3505** for cancellations or rebooking if you are unable to attend your appointment.

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Bloodwork⁴

Bloodwork is required and must be done within **2 weeks** of your appointment (within 72 hours for inpatients). Your doctor may order:

- INR (must be ≤ 1.8)
- PTT
- CBC (platelets must be $\geq 50 \times 10^9/L$ or greater)

If you take **Warfarin (Coumadin)**, you'll need a new INR drawn the **day before** your procedure.

Important: Missing bloodwork may cause delays or your procedure to be rescheduled.

Blood Thinners / Anticoagulants / Antiplatelets Medications⁴

Stop the listed medications as per the below schedule before your procedure unless instructed otherwise. If unsure, then consult your doctor or healthcare provider about which medications to pause, for how long, when to restart them, and any concerns you may have.

Medications	When to Stop	Restart After
Acova (Argatroban)	2-4 hours	4-6 h
Aggrenox (ASA/dipyridamole)***	3-5 days	Next day
Angiomax (Bivalirudin)	2 hours	4 h
Arixtra (Fondaparinux)	2 days (3 days if eGFR is <50)	24 h
ASA (Aspirin)	Do not stop	N/A
Brilinta (Ticagrelor)***	5 days	Next day
Coumadin (Warfarin)*/**	5 days (recheck INR)	Same day (evening)
Effient (Prasugrel)***	7 days	Next day
Eliquis (Apixaban) **	2 days (3 days if eGFR is <50)	Second day
IV Heparin (unfractionated)**	4 hours (check PTT)	6 h
LMWH (prophylactic): enoxaparin (Lovenox), dalteparin (Fragmin)**	12 hours	Next day
LMWH (therapeutic): enoxaparin (Lovenox), dalteparin (Fragmin)**	24 hours	Next day
Plavix (Clopidogrel)***	5 days	6 h (if 75 mg) 24 h (if 300 mg)
Pradaxa (Dabigatran) **	2 days (3 days if eGFR is <50)	Next day
Savaysa (Edoxaban)	2 days	Next day
Subcutaneous Heparin (unfractionated)**	8 hours (check PTT)	Same day (evening)
Xarelto (Rivaroxaban)**	2 days (3 days if eGFR is <30)	Next day
* Consider bridging with heparin (need admission) for high thrombosis risk cases ** Consider using reversal agent if emergent or STAT *** Consider continuation for arterial procedures including mesenteric, renal, subclavian, and infra-inguinal angioplasty/stent		

Important Notes

- Patients on Warfarin (**Coumadin®**) need an **INR** test the **day before** the procedure.
- Those with **prosthetic valves, prior clots, or stroke-related atrial fibrillation** may need bridging therapy to prevent thrombosis.
- **Do not** stop blood thinners if you have **coronary or brain stents**—consult your doctor first.
- If anticoagulation is stopped, your doctor must provide instructions.
- Applies only to elective procedures, not emergencies.



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Coming To The Hospital

You must first sign-in with **Centralized Patient Scheduling & Registration (CPSR)**, which is located immediately to your left when you enter the hospital from the main entrance (off Dunlop Street, across from the gift shop). You'll receive a wristband and be directed to **Day Surgery**. They'll prepare you and take you to **Diagnostic Imaging** at your scheduled time.

Please bring to the hospital your OHIP card and a list of current medications you are taking.

You may also bring a book, water, phone/tablet with earphones, and a snack in a small bag for when you are recovering from the procedure.

During

This procedure is performed in the Interventional Radiology Department of Diagnostic Imaging.

The duration of your appointment time will vary from 1 hour – 3 hours.

You will recover in the Post Anesthesia Care Unit (PACU) for another 1 hour – 2 hours.

1. You will change into a hospital gown.
2. A medical radiation and imaging technologist (MRIT) will explain the procedure and answer any questions you have.
3. You will lie on your back on a fluoroscopy table and will be awake for the procedure. You may receive pain medication during the procedure.
4. This is an aseptic procedure; your wrist or groin (depending on location to be embolized) will be cleaned using a hospital-approved cleansing agent, and sterile drapes applied.
5. A radiologist will inject a numbing agent, called Lidocaine, at the procedure site. This numbs the area.
6. The radiologist will use ultrasound and x-rays to gain access to, assess, and treat your condition.
7. A dressing applied at the end of the procedure. A closure device may also be used.
8. You will recover in PACU and be discharged once you meet recovery standards. In some cases, you may be admitted to the hospital for overnight observation.

Notes / Questions *(write down any notes or questions you may have for your doctor, healthcare practitioner, or the care team in Diagnostic Imaging on the day of your appointment. You can also use this space to write down a list of your current medications):*



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WHAT TO EXPECT AFTER



Recovery & Going Home

You will be sent to the **Post Anesthesia Care Unit (PACU)** to recover from the procedure. Before being discharged, bloodwork may be taken to determine if you have met recovery standards. In some cases, you may be admitted overnight for observation. This possibility will be discussed with you at the time of your consultation appointment.

Note: If you had an arterial puncture in the groin then you must lay relatively flat for at least **4 hours** after the procedure in PACU.

You will need someone to drive you home after the procedure. Don't drive for the next 24 hours or while you're taking strong pain medicine. If you were given medication to help you relax or manage pain during the procedure, then you cannot drive for the next 24 hours.



Diet & Activity^{2,3}

- Rest for the remainder of the day. Sleep when you feel tired.
- Have an adult family member, caregiver, or friend stay with you the night after the procedure in case you need help.
- Resume your normal diet, but if you feel nauseous, try bland, low-fat foods like rice, chicken, toast, or yogurt.
- You may resume light activities after 24 hours.
- Avoid lifting anything heavier than 4.5 kilograms (10 pounds) for 3 days.
- Do not participate in sports or strenuous activity.
- You can bathe or shower whenever you feel ready.
- Gradually increase your physical activity as you feel comfortable.
- Depending on your job, you can return to work when you feel ready.
- Check your temperature twice daily for the next five days.
- If you were given antibiotics or pain medication, take them as directed. Some pain is normal.

Please discuss with the radiologist anything you should avoid or not participate in after this procedure



Wound Care

- You will have a standard bandage / dressing covering the insertion site of your procedure
- It is normal to feel soreness in the area of the insertion site for 2 – 3 days.
- Keep a dressing / bandage over the insertion site for the first day.
- After 24 hours you should change the dressing / bandage. You may replace it with a Band-Aid that is big enough to cover the insertion site from the catheter.
- It is important to keep the insertion site clean and dry.
- Your insertion site should stay soft and dry as it heals. If you notice minor bleeding:
 1. Lie flat immediately.
 2. Apply **firm pressure** with a clean cloth or tissue for **15 minutes**. If possible, have someone else help.
 3. After 15 minutes, the site should be dry and flat. Cover it with a bandage.
 4. Notify your doctor or healthcare provider right away.



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Bathing

- You can shower or bathe normally after 24 hours, as long as the insertion site is scabbed over or closed.
- Be gentle as you wash over this area of your body.

Talk to the interventional radiologist about bathing techniques if you have concerns.



Medication

- **If your doctor or healthcare provider advised you to stop any medications for this procedure then consult with them first about the safety of when you can start your medications again;**
- Otherwise, resume your normal medication schedule.
- If you **normally** take acetylsalicylic acid (Aspirin™) or another blood thinner medication, ask your doctor or healthcare provider when to start taking it again. Make sure that you understand exactly what they want you to do;
- Otherwise, **do not** take (Aspirin™) or anti-inflammatory medicines (such as ibuprofen) for one **week** after the procedure.

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WHEN TO SEEK HELP³



Call 911:

If you believe you require emergency care – **call 911**. Reasons to call 911 include:

- You have passed out (lose consciousness), or become very dizzy, weak, or less alert
- You have severe trouble breathing
- You have a fast or uneven pulse
- You experience sudden chest pain and shortness of breath
- Significant bleeding from the puncture site (i.e. bright red blood that won't stop)
- Continuous profuse blood streaming from the wound
- A jet of blood pumping from the puncture wound
- Quickly increasing swelling of the area around the wound, which may be pulsating



Call your doctor, healthcare provider, or Health Connect Ontario immediately if you experience:

- Increased pain, swelling, warmth, or redness at the procedure site
- Redness or warmth around the procedure site or pus or blood draining from the procedure site
- Your access arm or hand is pale, painful, or cold during treatment
- A fever (more than 100°F / 38°C)
- Chills, with or without fever
- Bright red blood has soaked through the bandage / dressing over the procedure site.
- You have bleeding from your access site that does not stop after 20 minutes of gentle pressure.
- You have new or worse pain at the procedure site.
- You are vomiting, or have new or worse nausea and/or vomiting
- Pain or cramping in the abdomen not relieved by pain medication
- Redness or red streaks around the skin wound
- Bleeding, pain or drainage at the puncture site
- Calf tenderness or pain
- Numbness or tingling in the foot, thigh or leg (groin puncture), or numbness or tingling in the hand, forearm or upper arm (wrist puncture)
- Swelling of the ankle and/or foot (groin puncture) or swelling of the hand and/or wrist (wrist puncture)
- Increased bruising extending beyond the puncture site
- Colour change and/or coolness of the leg or foot (groin puncture) or arm or hand (wrist puncture)

Health Connect Ontario may be reached 24-hours a day, including weekends, by:

- Calling 8-1-1
- Calling 1-866-797-0007 (TTY – teletypewriter service)
- Visiting <https://healthconnectontario.health.gov.on.ca/> and selecting “Chat with us”

BRING THIS INFORMATION PACKAGE WITH YOU SHOULD YOU URGENTLY NEED TO SEE YOUR DOCTOR OR GO TO THE EMERGENCY DEPARTMENT OF YOUR NEAREST HOSPITAL.

Use this material for your information only. It does not replace advice from your doctor or other health care professionals. Do not use this information for diagnosis or treatment. Consult with your health care provider about a specific medical condition.

References:

1. Catheter Embolization. Accessed October 9, 2024. RadiologyInfo.org. <https://www.radiologyinfo.org/en/info/cathembol>
2. Endovascular Embolization. Access October 9, 2024. Lexi-Comp Online. <https://online.lexi.com/>
3. Bland Embolization Patient Education. Accessed October 9, 2024. Northwestern Medicine. <https://www.nm.org/patients-and-visitors/patient-education/hematology-oncology/bland-embolization-patient-education>
4. Patel et al. Society of Interventional Radiology Consensus Guidelines for the Periprocedural Management of Thrombotic and Bleeding Risk in Patients Undergoing Percutaneous Image-Guided Interventions—Part II: Recommendations. JVIR 2019; 30:1168–1184.

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