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ARTERIOVENOUS FISTULA / GRAFT

What is it?

AV Fistula:

An arteriovenous (AV) fistula is a type of vascular access for hemodialysis. A surgeon connects a vein to an artery in your arm, allowing it to grow larger and stronger for dialysis. Typically created in the upper or lower arm, an AV fistula takes 4-8 weeks to develop and may need procedures to maintain function. AV fistulas are created months before dialysis and carry a lower infection risk since no synthetic materials are used.

AV Graft:

An arteriovenous (AV) graft is used when an AV fistula isn't possible. It connects a vein to an artery with a synthetic tube, allowing blood flow for dialysis. AV grafts are placed under the skin, often in the arm or leg, and can be ready in days to weeks. Though they have a lower infection risk than catheters, they have a higher infection and clotting risk compared to AV fistulas and may need procedures to keep working.

Procedures related to an AV fistula or graft might be required to ensure proper blood flow for dialysis or to address complications. These procedures include the following:

AV Fistulogram / Graftogram: An imaging procedure where a contrast medium is injected into the AV access to assess blood flow and identify any blockages or narrowing.

AV Angioplasty: A procedure to widen a narrowed section of the AV access using a small balloon that is inflated inside the blood vessel to improve blood flow.

AV Side-Branch Embolization: A procedure to block off abnormal or unnecessary side branches of the AV access using small materials, preventing blood from flowing into these branches.

AV Thrombolysis: A treatment to dissolve or remove blood clots that may form in the AV access, restoring proper blood flow. Medications are injected to break down the clot.

Why do I need it?

Your doctor or healthcare provider may order one of the above procedures in order to:

- Improve blood flow through your AV fistula for dialysis.
- Prevent blood from flowing into abnormal side branches of the fistula.
- Treat narrowing or blockages that could reduce fistula function.
- Remove blood clots that could block the fistula and interfere with dialysis.
- Ensure the long-term function and effectiveness of your AV fistula.



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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.

Bloodwork:

Your doctor or healthcare provider will order bloodwork and it must be completed **within 1 week before** your scheduled procedure to ensure we receive your results before your appointment. Unavailable bloodwork results may cause a delay or rebooking of your procedure.

Medication:

Your doctor or healthcare provider may require you to stop any blood thinners you take (also known as anticoagulation or antiplatelet medications). Talk to your doctor or healthcare provider about which medications you might need to stop prior to the procedure, for how long, and when you can safely start them again.

If your doctor or healthcare provider wants you to stop your blood thinners, then we recommend following the below timeline for the number of days to withhold medication. **Do not stop any medications until you have first spoken with your doctor or healthcare provider.**

Medication		Number of Days to Hold
Enoxaparin	(Lovenox)	Withhold 1 dose before procedure
Dalteparin	(Fragmin)	Withhold 1 dose before procedure
Apixaban	(Eliquis)	Withhold 3 days before procedure
Rivaroxaban	(Xarelto)	Withhold 3 days before procedure
Dabigatran	(Pradaxa)	Withhold 4 days before procedure
Warfarin*	(Coumadin)	Withhold 5 days before procedure until target INR ≤ 1.8
Clopidogrel	(Plavix)	Withhold 5 days before procedure
ASA	(Aspirin™)	Withhold 5 days before procedure

*Patients on **Warfarin (Coumadin)** require a new INR drawn 1 day before the procedure.



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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 30 minutes – 60 minutes

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 arm with the AV fistula 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 AV fistula.
7. A wobble device is often left in place and a dressing applied at the end of the procedure.
8. You will recover in PACU and then be taken to Main Dialysis to immediately use your AV fistula.

WHAT TO EXPECT AFTER



Recovery & Going Home

You will be sent to the **Post Anesthesia Care Unit (PACU)** to recover from the procedure. Once recovered, you will be taken to the Main Dialysis unit to have a dialysis session. You may be in dialysis for up to **4 hours**.

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 & Activity¹

- Rest for the remainder of the day
- 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.

Please discuss with your nurse in dialysis anything you should avoid or not participate in after this procedure



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Wound Care^{1,2}

- The procedure site will be covered with a see-through dressing and often contains a woggle (a temporary stitch used to control bleeding after a procedure on an AV fistula).
- A dialysis nurse will remove the woggle and apply a new dressing before you go home.

Basic care of your AV Fistula:

- Wash daily with soap and warm water, and before each dialysis session.
- Check daily to ensure blood flow by feeling for a vibration (the "thrill").
- Avoid injuries to the arm with the fistula or graft.
- Don't scratch or pick at your access.
- Avoid tight clothing, watches, or jewelry on the access arm.
- Don't carry heavy items like bags or children with the access arm.
- Avoid sleeping on the access arm.
- Don't allow IVs, blood draws, or blood pressure checks on the access arm.

- It is important to keep the area dry and clean to prevent infection.



Bathing¹

- You can shower or bathe normally as long as there is no dressing or active bleeding from your fistula.

Talk to your dialysis nurse further about bathing techniques.



Medication¹

- **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 HELP^{1,2}**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; and/or
- Significant bleeding from the puncture site (i.e. bright red blood that won't stop)

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

- Increased pain, swelling, warmth, or redness at the procedure site. **If swelling of the arm with the AV fistula/graft occurs**, then elevate your arm and notify your healthcare team.
- 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
- You don't feel a vibration (the "thrill") – This could mean that your access has stopped working or closed up.

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. Dialysis and Fistula/Graft Dec clotting and Interventions. Accessed October 8, 2024. RadiologyInfo.org. <https://www.radiologyinfo.org/en/info/dialysisfistulagraft>
2. Preparing for Hemodialysis. Accessed October 8, 2024. Lexi-Comp Online. <https://online.lexi.com/>

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