

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



### RADIOFREQUENCY ABLATION OF THE KIDNEY

#### What is it?

Radiofrequency Ablation (RFA) of the kidney is a minimally invasive procedure used to treat small kidney tumors. During RFA, a radiologist inserts a thin, needle-like probe into the tumor, guided by imaging techniques like ultrasound and CT to ensure precise targeting while protecting nearby healthy tissue. The probe sends out radiofrequency energy, creating heat at its tip that destroys cancer cells and seals small blood vessels, reducing the risk of bleeding. Over time, the destroyed tumor cells are replaced by scar tissue that gradually shrinks.

Because RFA does not involve large incisions, most patients experience less pain and a quicker recovery compared to traditional surgery. It's a valuable option for people who may not be suitable candidates for surgery.

You will have a **consultation** with an Interventional Radiologist **before** booking this procedure to discuss your specific situation and the benefits of RFA.

#### Why do I need it?

Radiofrequency ablation of the kidney is used on<sup>1</sup>:

- Patients who are poor surgical candidates, due to:
  - Impaired kidney function
  - Having a solitary kidney
  - Other comorbid health conditions
- Patients at high risk of recurrent renal cell carcinoma (RCC) due to genetic syndromes, including:
  - Von Hippel-Lindau syndrome
  - Birt-Hogg-Dubé syndrome



### 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.

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

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 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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#### Bloodwork<sup>4</sup>

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  $\leq 1.8$ )
- 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 Medications<sup>4</sup>

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 ( <b>Argatroban</b> )	2-4 hours	4-6 h
Aggrenox ( <b>ASA/dipyridamole</b> )***	3-5 days	Next day
Angiomax ( <b>Bivalirudin</b> )	2 hours	4 h
Arixtra ( <b>Fondaparinux</b> )	2 days (3 days if eGFR is $<50$ )	24 h
ASA ( <b>Aspirin</b> )	Do not stop	N/A
Brilinta ( <b>Ticagrelor</b> )***	5 days	Next day
Coumadin ( <b>Warfarin</b> )*/**	5 days (recheck INR)	Same day (evening)
Effient ( <b>Prasugrel</b> )***	7 days	Next day
Eliquis ( <b>Apixaban</b> ) **	2 days (3 days if eGFR is $<50$ )	Second day
IV Heparin (unfractionated)**	4 hours (check PTT)	6 h
LMWH (prophylactic): enoxaparin ( <b>Lovenox</b> ), dalteparin ( <b>Fragmin</b> )**	12 hours	Next day
LMWH (therapeutic): enoxaparin ( <b>Lovenox</b> ), dalteparin ( <b>Fragmin</b> )**	24 hours	Next day
Plavix ( <b>Clopidogrel</b> )***	5 days	6 h (if 75 mg) 24 h (if 300 mg)
Pradaxa ( <b>Dabigatran</b> ) **	2 days (3 days if eGFR is $<50$ )	Next day
Savaysa ( <b>Edoxaban</b> )	2 days	Next day
Subcutaneous Heparin (unfractionated)**	8 hours (check PTT)	Same day (evening)
Xarelto ( <b>Rivaroxaban</b> )**	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.



## PATIENT INFORMATION

## Diagnostic Imaging – Interventional Radiology

**Hours: Mon – Fri, 9:00 am – 4:30 pm**

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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 will receive a patient wristband and be directed to the **Day Surgery department**. Day Surgery will prepare you for the procedure and bring you down to the **Diagnostic Imaging department** at your scheduled appointment 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.

This procedure is performed in the CT Scan Department of Diagnostic Imaging.

**The duration of your appointment time will vary from 2 - 3 hours.**

**You will recover in the Post Anesthesia Care Unit (PACU) for another 3 - 6 hours**

1. You will be changed from above and below the waist into a hospital gown.
2. A medical radiation technologist (MRT) or nurse will review the procedure and answer any questions you have.
3. You will lay on your stomach on a CT scan table for the procedure.
4. This is an aseptic procedure, so your skin will be cleaned where the probe is to be inserted.
5. Sterile towels and drapes will be used to cover you and protect you from infection.
6. A radiologist will use a numbing agent called Lidocaine to numb the skin where the port goes. You will receive conscious sedation.
7. The radiologist will use a combination of ultrasound and CT scan to perform the procedure. A biopsy of the mass on the kidney is also performed.

**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):

[illegible]



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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.

**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<sup>2</sup>

- Rest for the remainder of the day and take it easy for 1–3 days after, as needed.
- 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. Drink plenty of fluids unless otherwise directed by your doctor.
- Limit arm and upper body movements that might strain the incision for the first week, avoiding lifting over 4.5 kilograms (10 pounds) or doing strenuous activities (e.g., biking, jogging, weight lifting) until your doctor or healthcare provider approves.
- Begin with short walks, gradually increasing distance daily to improve blood flow and reduce risks of pneumonia and constipation.
- Consult your doctor or healthcare provider on when it's safe to drive and when you can return to work.
- Most people return to work typically within 1-2 weeks.



### Wound Care<sup>2</sup>

- Keep a bandage on the puncture site for 2–3 days or until your doctor advises.
- Once cleared by your doctor or healthcare provider, wash the area daily with warm water and pat dry. Avoid hydrogen peroxide or alcohol, as they may slow healing. Use a gauze bandage if the site weeps or rubs against clothing, changing it daily.
- Keep the area clean and dry.
- Apply ice or a cold pack to the area for 10–20 minutes, 2–3 times a day, using a cloth between the ice and skin to reduce soreness or swelling.



### Bathing<sup>2</sup>

- Do not shower until your doctor, an Ontario Health atHome (Home Care) nurse, or other healthcare practitioner says it is okay to do so.
- You may shower 24-48 hours post-procedure if approved by your doctor. Use a plastic cover over the puncture site, and avoid baths for the first 7 days, or until your doctor or healthcare provider tells you it is okay.
- Do not get the dressing wet. Change the dressing immediately if it does become wet.

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### Medication<sup>2</sup>

- 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 are not taking a prescription pain medicine, ask your doctor or healthcare provider if acetaminophen (Tylenol) is safe for you. Also, ask how much you can safely take.
- 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.



### Special Instructions<sup>3</sup>

After the procedure, you may experience some common side effects, such as:

- Mild discomfort
- Raised temperature
- Flu-like symptoms
- Infection
- Bleeding
- Possible damage to surrounding areas

Make sure to inform your doctor, an Ontario Health atHome (Home Care) nurse, or other healthcare practitioner if you experience the above side effects.

### Pain:

You may feel mild pain or discomfort at the needle site. Some patients experience **referred pain**, typically occurring in the groin, lower back, or abdominal area, as the pain from the kidney region can radiate to these areas due to shared nerve pathways. Contact your doctor, an Ontario Health atHome (Home Care) nurse, or other healthcare practitioner if the pain persists or worsens after 1–2 weeks.

### Flu-like Symptoms (Post Ablation Syndrome):

Symptoms may start 3–5 days after treatment and last up to a week, including body aches and nausea. Your doctor will explain symptom relief options. Contact your doctor, an Ontario Health atHome (Home Care) nurse, or other healthcare practitioner if symptoms persist or if your temperature exceeds 38°C, as this could indicate an infection.

### Follow-Up:

You will be booked for a CT scan at 1 month, 3 months, 6 months, 9 months and 12 months post procedure to confirm if the procedure worked and if any follow up treatments are needed. The Diagnostic Imaging Department will contact you with the appointment dates & times.

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## WHEN TO SEEK HELP



### 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 procedure site (i.e. bright red blood that won't stop)



### Call your doctor, healthcare provider, or Health Connect Ontario immediately if you experience<sup>2</sup>:

- Increased pain or swelling at the procedure site
- A fast-growing, painful lump or new/worsening pain at the procedure site
- An open incision
- Bright red blood soaking through the bandage or bleeding at the procedure site
- **Signs of infection:** increased pain, swelling, warmth, redness, red streaks, pus, fever (above 100°F / 38°C), chills, back pain, or foul-smelling urine
- Redness or warmth around the procedure site or pus or blood draining from the procedure site
- Chills, with or without fever
- **Signs of a blood clot in the leg (DVT):** pain, redness, or swelling in the calf, knee, thigh, or groin
- Vomiting or coughing up blood
- Severe nausea or inability to drink fluids
- No bowel movement or gas, or no urination for 24 hours after the procedure
- Any other concerns

**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. Ziglioli F, De Filippo M, Cavalieri DM, et al. Percutaneous Radiofrequency Ablation (RFA) in renal cancer. How to manage challenging masses. A narrative review. *Acta Biomed.* 2022;93(5):e2022220. Published 2022 Oct 26. doi:10.23750/abm.v93i5.12827
2. Tumor ablation for kidney cancer: What to expect at home. My Alberta Health. Accessed November 12, 2024. [https://myhealth.alberta.ca/Health/Pages/conditions.aspx?hwid=custom.ab\\_kidney\\_cancer\\_tumor\\_ablation\\_ac](https://myhealth.alberta.ca/Health/Pages/conditions.aspx?hwid=custom.ab_kidney_cancer_tumor_ablation_ac)
3. Hersh, Erica. Pain After Radiofrequency Ablation. 2022. Healthline. Accessed November 12, 2024 <https://www.healthline.com/health/worse-pain-after-radiofrequency-ablation>
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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