

# Electrophysiology: Studies And Cardiac Ablations



**What you need to know:**  
A patient and family guide

## Regional Cardiac Electrophysiology Lab

**PHONE** 250.862.4300 Ext. 21301

KELOWNA GENERAL HOSPITAL  
2268 PANDOSY STREET, KELOWNA, B.C. V1Y 1T2



# BEFORE YOUR PROCEDURE

## Why Am I Having An Electrophysiology Study?

Electrophysiology studies (also known as EP studies) are performed to assess your heart's electrical system or activity in order to diagnose and treat complex arrhythmias (irregular heart beats). The Doctor may order an EP Study if you have any of the following:

- A heart beat that is too fast, too slow, or irregular (arrhythmias)
- Are undergoing Cardiac Ablation
- A temporary loss of consciousness (syncope)
- A risk of sudden cardiac death
- Are undergoing heart surgery

## What Is An Electrophysiology Study?

An EP study is a heart test where the doctor inserts a thin flexible tube called a catheter into a blood vessel in your leg that leads to your heart. This special catheter can send electrical signals to your heart while recording its electrical activity. Before your appointment please watch this patient education video:

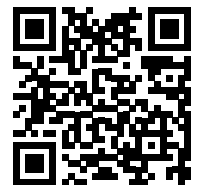
### EP Study and Ablation

(scan code using the camera of your mobile device or enter link below):

<https://youtu.be/StTxhSiCkLw>

Includes:

- Patient's journey
- Pre-procedure workup
- What to expect day of the procedure
- Post-procedure care and recovery



# BEFORE YOUR PROCEDURE

## Treatment Options

After your EP study, your results will be available immediately. These results will be explained to you, and your treatment care-plan will be discussed with you. This care-plan could include one of the following or a combination of the below:

- Medications
- Cardiac Ablation
- Pacemaker – an implanted device that helps maintain a regular heart beat
- Implantable Cardioverter Defibrillator (ICD) – An implanted device that helps prevent sudden death in individuals with dangerously irregular heart rhythms

## What Is Cardiac Ablation?

A cardiac ablation is a medical procedure used to correct an irregular heart beat (arrhythmia). It restores the normal rhythm of the heart by scarring or destroying the tissue in the heart that is triggering the abnormal rhythm. This then allows the heart to return to a normal rhythm.


The Electrophysiologist inserts a catheter (tube) through the groin (femoral vein), up to the heart. An x-ray is used to help guide the catheter to the heart. Once the abnormal tissue has been identified in the EP study, electrical energy is directed at this tissue. This causes a scar in the tissue and blocks the abnormal electrical signals from passing through it.

## Directions And Maps

The Regional Cardiac Electrophysiology Lab is located in Kelowna General Hospital on the main floor of the Royal Building.

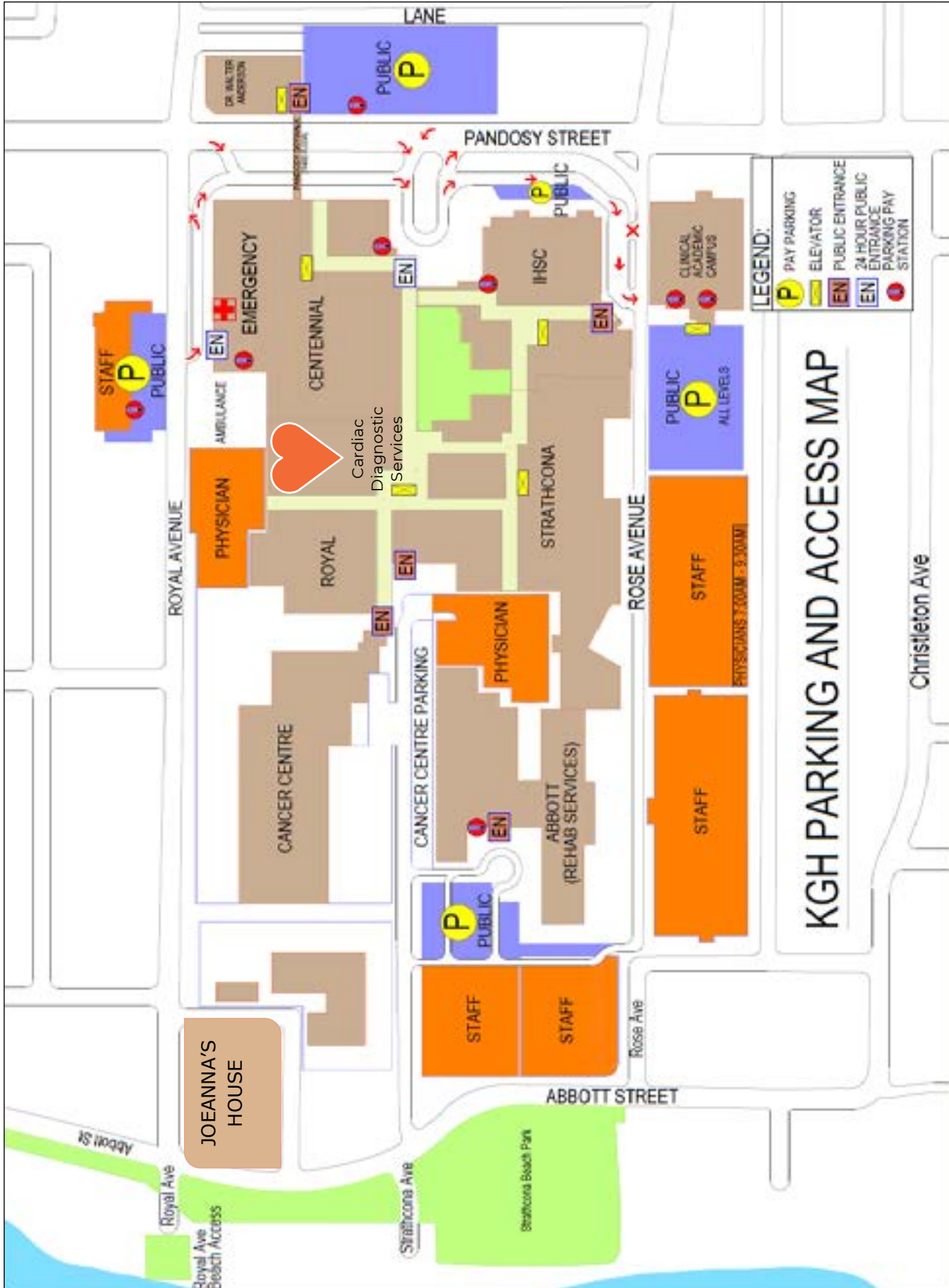
Kelowna General Hospital is located close to downtown Kelowna. If you are driving from Vernon (South on Hwy 97), turn left on to Pandosy Street. If you are driving from Penticton (North on Hwy 97), turn right on to Pandosy Street. The hospital is located at the intersection of Rose Avenue and Pandosy Street.

The main hospital entrance is located on Pandosy between Royal Avenue and Rose Avenue where there is a drop off car loop for your accompanying person to drop you off while they park (see [EN](#) on Map).

Public parking is located around the hospital campus (see [P](#) on the Map). Enter at closest Public Entrance (see [EN](#) on map) and follow signs for Royal Building to the Cardiology Reception  (red heart) or ask a hospital volunteer (dressed in Red Coats and located throughout the facility).

Approximate cost for parking per day: \$6.00. Please allow time for parking.

# BEFORE YOUR PROCEDURE



# BEFORE YOUR PROCEDURE

## Electrophysiology Coordinator

The Electrophysiology Coordinator is a Registered Nurse who works with the medical team and reviews your referral and test results.

The Electrophysiology Coordinator will:

- Review details about your past medical history
- Inform you about additional tests or appointments that you may require
- Schedule your test date, with the guidelines set by Cardiac Services British Columbia
- Advise you on any medication changes needed before your procedure

If you are an outpatient, you will be called directly by the Electrophysiology Coordinator or booking clerk. If you are currently admitted to hospital, your primary nurses will be advised as to your care plan. The contact telephone number for the Coordinator is 250-862-4300 Ext. 21301.

Please notify the Coordinator as soon as possible if you have ;

1. Stopped your blood thinner (anticoagulant) for any reason during the month before your procedure (i.e. for another procedure or you forgot to take it).
2. If you have had a recent infection or fever.
3. If you have sought medical attention due to an increase in the severity or frequency of your symptoms.
4. If for any reason you will not be available for your procedure (ie. vacation).

# BEFORE YOUR PROCEDURE

## Preparation Instructions For Your EP Study/Ablation

**If you have not followed these instructions carefully, your procedure may need to be cancelled or rescheduled.**

You may be required to attend appointments for blood work and x-ray/CT/MRI – these must be done before your procedure date.

If you require medical documentation for this procedure, please contact the Electrophysiology Coordinator to help you.

### Medications

- Your doctor or nurse may advise you to stop, or adjust, some of your medications before the procedure.
- Please bring all your medications in their original bottles. This includes prescription and non-prescription drugs, vitamins, and herbal products.

### Preparation the morning of your test

- Shower on the morning of your procedure and wear loose, comfortable clothing.
- If you wear contact lenses, please wear glasses for the day.
- Be prepared to stay for the entire day.

### Valuables & Personal Belongings

- Do not bring valuables or a lot of personal items and clothing ipads/phones can be locked away if needed.
- The hospital will not accept responsibility for keeping your valuables safe.

### Food/Fluid

- Follow the eating and drinking instructions that you have been given.
- Do not eat any solid food starting at midnight prior to your procedure. If you must take medications, drink small sips of water to help you swallow the pills.

### Pregnancy

- If you think you might be pregnant you must alert the medical team as x-ray is used during the procedure.
- All women of child bearing age must have a blood test (hCG) within 2 days of their procedure to confirm they are not pregnant.

### What to arrange ahead of the procedure

- A responsible friend or relative who can stay with you for **24 hours after the procedure**. They will need to come in to the hospital at the end of your stay and receive education before your are discharged in to their care.

# BEFORE YOUR PROCEDURE

## What To Bring

- Form of picture ID (eg. Driver's License)
- BC Services Card (Care Card)
- CPAP machine if you have sleep apnea
- The phone number of your responsible friend/relative
- Glasses and hearing aids, if you require them to clearly communicate with staff
- A translator if you do not understand English
- A book as you may have a wait before your procedure

## Planning For Going Home

### When you come to Kelowna General Hospital from home:

#### Driving

You are not legally allowed to drive after the procedure. Driving restrictions are:

- Minimum 48 hours following the procedure.
- Depending on the reason for your procedure, you may be given different driving restrictions other than those listed above.

#### Safety

A responsible adult must meet you in the recovery area of the EP Lab to assist you in going home and stay with you overnight. You can not be responsible for anyone else in your care during this time. If you cannot arrange this, please let the Electrophysiology Coordinator know as your procedure may have to be re-booked.

This person needs to be in the EP Lab for 30 minutes before you go home so we can explain the procedure and care required.

#### Stay

If you live more than 50 kms from Kelowna, you will need to arrange to spend the night in the Kelowna area.

- Some accommodations near the hospital provide a "Medical Rate", please inquire when you are booking.

### When you come to Kelowna General Hospital from another hospital:

You may be transferred and admitted to Kelowna General Hospital. If so, and when discharged - you will be asked to arrange your own transportation home.

# BEFORE YOUR PROCEDURE

## When You Arrive At The EP Lab

You will:

- Change into a hospital gown, removing all clothing including undergarments.
- Give a detailed history including medical history, medications and allergies (including x-ray dye, iodine, shellfish, or dental freezing, etc.).
- Be weighed, and may have an ECG, blood tests and/or a Chest X-ray as necessary.
- Have an intravenous (IV) inserted by a health care provider for fluids and/or medications.
- Have the hair removed with clippers, from your groin(s), chest and back by a nurse.

## During The Study Or Ablation You Can Expect

You may walk or be taken in by stretcher to the procedure room.

You may be awake or you may be put to sleep by an Anesthetist after getting on the x-ray table (dependent on physician and procedure).

If you are awake, you will need to lie flat while the staff prepares equipment around you.

If you are put to sleep, you will not feel anything or know what is happening after this time. The Anesthetist will be monitoring you and ensuring you are safe during the procedure.

The skin of the groin area will be cleaned with a solution. The area will be draped with a sterile (germ-free) sheet. The team will respect your privacy at all times.

The electrophysiologist will then:

- Inject freezing into the groin area. Once the area is frozen, a tube will be placed into the chosen blood vessel.
- Guide a small catheter up to your heart through this tube.
- These catheters (tubes) will be used to locate the abnormal heart tissue.
- If an ablation is required heat energy or cold energy will be directly applied to the tissue, to disrupt the abnormal heart tissue.

The procedure will last approximately 1-4 hours.



# What Happens Immediately After My EP Study/Ablation?

## Recovery

You will be taken to the recovery area, connected to a heart monitor and your blood pressure, pulse and heart rhythm will be checked regularly.

Recovery time will be approximately 4-5 hours. Your care providers will monitor the puncture site carefully.

- Your puncture site (where we inserted the sheaths) will be looked at and your pulses will be felt in both your groin and feet regularly. This is normal care after this procedure.
- You will be asked to lay flat for 4-5 hours following your procedure.
- To lower your risk of bleeding or complications, you will be given clear instructions on safety, movement and positioning listed in the next section.
- In recovery we will give you some juice or water and a snack.
- The nursing staff will tell you how to care for yourself over the next few days.

## Preparing to go home

- Plan to rest the day after the procedure.
- The doctor or nurse will review additional driving instructions, activity restrictions and when you may return to work.
- When you can return to work depends on the type of work that you do. In general, you can return to work in 4-7 days. If your work involves a lot of physical activity or if your symptoms are worsening you may need a longer period of rest.
- For the next 24 hours:
  - Do not drink alcohol or take any sedatives/sleeping medications.
  - Do not make important decisions or sign documents.

# AFTER YOUR PROCEDURE

## Family / Friend Information

- Your pick up time can vary from 10-12 hours after arrival time.
- We will give your contact person 1-2 hours of notice when you will be ready to be picked up.
- The person picking you up must come to the Regional Cardiac Catheterization Lab/Electrophysiology Lab. This the “orange heart” near to the “red heart” on the map (see page 4).
- The Doctor will speak to you before you leaving the hospital
- Your responsible family member friend has to stay with you for 24 hours.

## Electrophysiology Study Or Cardiac Ablation Procedure Performed

Today we performed \_\_\_\_\_

## Care Of The Insertion Site

Follow instructions from your nurse about how to take care of your insertion site. Make sure you:

- Keep the dressing on your groin for 24 hours, making sure the dressing stays dry.
- If the dressing needs to be changed, wash your hands before with soap and water. If soap and water are not available, use hand sanitizer.
- Avoid lotions, creams in the area until completely healed.
- Leave the dressing on your groin for 24 hours after you have been discharged from the outpatient department. After this time period you may remove the dressing. Take the dressing off and leave it open to air.
- You may shower 24 hours after you have been discharged from the hospital.

If you notice bright red bleeding and/or sudden severe pain and swelling around your groin site:

- Lie down on the floor/bed
- Have someone remove the bandage
- If there is bleeding or swelling have someone apply pressure firmly on the hole and call 9-1-1

# AFTER YOUR PROCEDURE

## How To Exit The Bed After Your Procedure

### Step 1.

Lying flat



### Step 2.

Bend knee of the unaffected leg



### Step 3.

Place your hand next to head



### Step 4.

Push off the mattress and move legs to the side of the bed



# AFTER YOUR PROCEDURE

## Step 5.

Push with your hands to be in the sitting position



## Step 6.

Slide forward to the edge of the bed



## Step 7.

Standing upright place hand over the groin puncture site



## Step 8.

Sitting in a chair, lean back, extend the leg to keep it straight and take pressure off the area

## Learn the signs of stroke

<b>F</b>	<b>ACE</b>	Is it drooping?
<b>A</b>	<b>RMS</b>	Can you raise both?
<b>S</b>	<b>PEECH</b>	Is it slurred or jumbled?
<b>T</b>	<b>IME</b>	to call 9-1-1 right away

Act **FAST** because the quicker you act, the more of the person you save.

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# AFTER YOUR PROCEDURE

## What Can I Expect After My Ablation?

Expect that you will need some recovery time after your procedure. You should plan to take time off and give your body the time it needs to heal. Please refer to the list below for some common affects you should be aware of.

POTENTIAL EFFECTS	INFORMATION
Chest pain	Mild chest pain or discomfort is common and lasts a few days. Acetaminophen (Tylenol®) or generic brand can be used.  Occasionally you may feel a burning sensation and shortness of breath in the chest for a few days after the ablation – this is usually caused by some irritation to the lining of your heart (pericardium).
Pain at the tube insertion site(s)	Bruising, soreness and some swelling at the insertion site is normal for a few days after the procedure.
Nausea or grogginess	General anesthesia can cause nausea and/or grogginess that can last hours to days.
Sore throat	A common side effect after the breathing tube has been removed, recovery is usually quick, within a couple of days.
Arrhythmia (palpitations)	Short episodes of an irregular heart beat can happen for a few weeks after your procedure due to swelling of the heart tissues.
Increased resting heart rate	An increase in heart rate by 10-20 beats per minute from pre-procedure can occur in the weeks or months after ablation. This usually resolves.
Decreased exercise tolerance	Patients often find their exercise tolerance is lower for weeks to months after the procedure but it will come back with time.
Fluid overload	There can be swelling of hands, feet or face due to fluids given during the procedure.
Digestion	You may find that you experience indigestion, a bloating sensation, or unable to eat large portions. This will settle with time, and you may be started on a new medication for a short time to help this.
Visual Disturbances	Some patients may experience visual disturbances (aura), more common in those who already have migraines. If you experience the visual disturbance along with slurred speech, limb weakness get help immediately as this could be a stroke. The visual disturbances should resolve on their own.

# AFTER YOUR PROCEDURE

## What Do I Watch For After The Procedure?

### Contact A Health Care Provider If:

- You have a fever or chills
- You have an episode of Atrial Fibrillation lasting hours or making you feel unwell
- The insertion site:
  - Feels warm to touch
  - Has pus or a bad smell coming from it
  - Has redness, swelling or pain around it
  - Has fluid or blood coming out of it
  - Has blood collecting in the tissue around the site (hematoma). The hematoma may be painful to the touch place pressure on the area. This can quickly become a medical emergency.
- You have fever with a temperature greater than 38°C

### Get Help Right Away If:

- The catheter insertion area swells very fast
- The catheter insertion area is bleeding, and the bleeding does not stop with pressure on the area
- If your leg on the catheter insertion side becomes pale, cool, tingly, or numb
- You have severe pain at the insertion area
- You have severe chest pain
- You have weakness/numbness/blue colour of a limb
- You have difficulty speaking
- You have difficult and/or painful swallowing
- You are vomiting or passing blood

### Pulmonary vein ablation patients (Atrial Fibrillation Patients Only)

If you have an episode of Atrial Fibrillation or arrhythmia that makes you feel unwell, go to the nearest Emergency department for treatment. If you go in to Atrial Fibrillation that is sustained it is required to be treated within 24 hours, please plan for this about 10 hours in to the arrhythmia. Episodes that are shorter or do not cause you distress are not uncommon for the first few weeks after the test.

If you develop a fever over 38°C severe chest pain, weakness or numbness of a limb difficulty speaking, difficulty swallowing, vomiting or passing blood or any stroke like symptoms, **please call 911**

**These symptoms may represent a serious problem that is an emergency. Do not wait to see if the symptoms will go away. Get medical help right away. Call your local emergency services (911). Do not drive yourself to the hospital.**

# AFTER YOUR PROCEDURE

## What Can I Do When I Get Home?

Activity	<ul style="list-style-type: none"><li>• For the first 7 days, do not lift items over 10 pounds (5 kg). Avoid prolonged bending or straining. Avoid strenuous activities. You can return to regular exercise in 1 week.</li><li>• Avoid stairs- if you must climb stairs, climb them slowly.</li><li>• You may resume sexual activity after 1 week.</li></ul>
Hygiene	<ul style="list-style-type: none"><li>• Take a shower the morning after your procedure. Do not have baths or go swimming/hot tubbing/bathing for 7 days.</li></ul> <p>Note: Your skin may look pink because it was cleaned with a pink solution.</p>
Return to Work	<ul style="list-style-type: none"><li>• Please ask your doctor when you should return to work. Sedentary work can usually be resumed in 2-3 days.</li></ul>
Diet	<ul style="list-style-type: none"><li>• Resume a heart healthy diet once you go home. Canada Food Guide <a href="https://food-guide.canada.ca/en/">https://food-guide.canada.ca/en/</a></li><li>• It is recommended that you ask your family doctor for a referral to a dietitian. <a href="https://www.heartandstroke.ca/">https://www.heartandstroke.ca/</a></li></ul>
Driving	<ul style="list-style-type: none"><li>• Driving restrictions following your procedure are _____ _____ (these are based on Canadian Guidelines and Road Safety BC).</li></ul>

### For the next 8 weeks

Please contact the Heart Rhythm Clinic (250-862-4300 Ext. 21301) if you are admitted to hospital for any reason.

**Do not undergo an upper gastro-intestinal endoscopy procedure without speaking to the Electrophysiologist who performed your procedure.**

# AFTER YOUR PROCEDURE

## Medication Information

You may go home with new medications for your heart; these are listed on the back page of the booklet.

Continue to use your regular medications unless your doctor has told you to stop.

If you do not know what your medications are, please check with the doctor or nurse before you go home.

It is important to know the names, doses and how often you take all of the medications prescribed to you by your doctor.

**Do not let anyone stop your blood thinner in the next month except for in cases of life-threatening bleeding.**

## Lifestyle Information

Adopting a healthy lifestyle is important to help prevent further development of heart disease. This includes diet, exercise, medications, limiting alcohol, quitting smoking and watching your weight.

Diet	Following Canada's food guide that includes a variety of vegetables, fruits and whole grains is recommended.
Exercise	Regular exercise will help you stay at a healthy weight, reduce your risk for heart disease, diabetes and sleep apnea. Aim for 30 minutes of vigorous exercise each day.
Alcohol	Too much alcohol can trigger Atrial Fibrillation/Flutter. Men should have no more than 3 drinks a day (maximum 15 drinks a week) and women no more than 2 drinks a day (maximum 10 drinks a week). New research shows little or no alcohol is better for Atrial Fibrillation/Flutter.
Smoking	By quitting smoking NOW, your health will start to improve immediately. Quitting smoking will reduce your risk of heart attack by 50% after just 1 year.
Weight	Keeping your body at a healthy weight helps control your Atrial Fibrillation/Flutter symptoms and reduces your risk of stroke and heart disease.



# AFTER YOUR PROCEDURE

## Resources

### IH ELECTROPHYSIOLOGY COORDINATOR

If you have any questions or concerns after your procedure, please call us.

Tel: 250-862-4300 Ext. 21301  
Toll Free: 1-888-877-4442 Ext. 21301

### CARDIAC EDUCATION

#### COACH

(Coach Cardiac Rehab Program)  
Tel: (250) 763-3433  
[www.coachkelowna.com](http://www.coachkelowna.com)

#### Heart and Stroke Foundation of Canada

Tel: 1-888-473-4636  
[www.heartandstroke.ca](http://www.heartandstroke.ca)

#### Cardiac Services BC

[www.cardiacbc.ca](http://www.cardiacbc.ca)

### DIABETES EDUCATION

**Diabetes Canada** (*please refer yourself*)  
Toll Free: 1-800-226-8464  
[www.diabetes.ca](http://www.diabetes.ca)

**Central Okanagan Diabetes  
Program** (*please refer yourself*)  
Tel: (250) 980-1405

### STOP SMOKING

#### Quit Now

24 hours a day, 100 languages spoken

Toll Free: 1-877-455-2233  
[www.quitnow.ca](http://www.quitnow.ca)

### STRESS MANAGEMENT

#### Bounce Back

24-hour, semi-automated  
Mental Health Information Line

Toll Free: 1-866-639-0522  
[www.bouncebackbc.ca](http://www.bouncebackbc.ca)

#### Canadian Mental Health Association

Kelowna Branch, B.C. Division

Tel: 250-861-3644  
Toll Free: 1-800-555-8222  
<https://cmhakelowna.com>

### HEALTHLINK BC

<b>Nurse</b>	24 hours, daily
<b>Pharmacist</b>	5 pm to 9 am, daily
<b>Dietitian</b>	9 am to 5 pm, Monday to Friday

Call 8-1-1  
[www.healthlinkbc.ca](http://www.healthlinkbc.ca)

# AFTER YOUR PROCEDURE

## Follow-up Appointments

You will need the following appointments after your procedure. These will be arranged before you leave the hospital.

		Date	Time	
Family Physician (You book)	in 1 week			<input type="checkbox"/> in person <input type="checkbox"/> virtual
Heart Rhythm Clinic call (1) (We will call you)	in ___ weeks			<input type="checkbox"/> Phone Call
Heart Rhythm Clinic call (2) (We will call you)	in ___ weeks			<input type="checkbox"/> Phone Call
Holter	in ___ weeks			<input type="checkbox"/> in person
Echocardiogram	in ___ weeks			<input type="checkbox"/> in person
Electrophysiology Nurse Practitioner or RN	in ___ weeks			<input type="checkbox"/> in person <input type="checkbox"/> virtual
Other	in ___ weeks			<input type="checkbox"/> in person <input type="checkbox"/> virtual

If you need to go to an emergency department for assessment/treatment. Take all the paperwork that you were given on discharge post procedure.

## Medications After Your Electrophysiology Study/Ablation

If you must return to the hospital, always bring your current list of medications and bring all original medication bottles with you when you are attending appointments.

Other Medication instructions:

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# AFTER YOUR PROCEDURE

## Medication, Action and Instructions

- ASA (Aspirin<sup>®</sup>) Enteric Coated

**ACTION:** Antiplatelet: prevents clots in blood vessels.

**INSTRUCTIONS:** Take for 30 days post procedure.

- Pantoprazole (Pantoloc<sup>®</sup>)

**ACTION:** Acid suppressor: prevents acid production and protects stomach.

**INSTRUCTIONS:** Take for 30 days post procedure.

- Amiodarone/Cordarone<sup>®</sup>
- Atenolol/Tenormin<sup>®</sup>
- Bisoprolol/Monacor<sup>®</sup>
- Carvedilol/Coreg<sup>®</sup>
- Metoprolol/Lopressor<sup>®</sup>
- Diltiazem/Tiazac<sup>®</sup> / Cardizem<sup>®</sup>
- Digoxin/Lanoxin<sup>®</sup> / Toloxin<sup>®</sup>
- Dronedarone/Multaq<sup>®</sup>
- Flecainide/Tambocor<sup>®</sup>
- Propafenone/Rhythmol<sup>®</sup>
- Sotalol/Sotacor<sup>®</sup>
- Verapamil/ Chronovera<sup>®</sup> /Isoptin<sup>®</sup>

**ACTION:** Antiarrhythmic (Rhythm Control): help control the disorganized electrical impulses that lead to irregular heart rhythms.

- Apixaban/Eliquis<sup>®</sup>
- Dabigatran/Pradaxa<sup>®</sup>
- Rivaroxaban/Xarelto<sup>®</sup>
- Edoxaban/Lixiana<sup>®</sup>

**ACTION:** Anticoagulant (Blood thinner): prevents stroke in patients with Atrial Fibrillation or Flutter.

**INSTRUCTIONS:** Take your next dose: \_\_\_\_\_

- Warfarin/Coumadin<sup>®</sup>

**INSTRUCTIONS:** If on Warfarin, your INR yesterday/today was:

Take \_\_\_\_\_ mg Warfarin starting (date) \_\_\_\_\_ and daily thereafter.

Please check your INR on (date) \_\_\_\_\_

