

YOUR COMPLETE GUIDE TO ATRIAL FIBRILLATION

MANAGING ATRIAL FIBRILLATION (AF) (MODULE 2)

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OVERVIEW OF MANAGING AF

MODULE 1	AF Diagnosed What is it? Is it harmful?		Find and Treat Co	Find and Treat Common Causes	
MODULE 2	Manage Arrhythmia Symptoms		Assess Stroke Risk (CHADS ₂)		
	Rate Control • Medicine • Procedures	Rhythm Control • Medicine • Procedures	Blood Thinner, As	pirin, or Nothing	
MODULE 3	Living Well with AF				
	What to Expect from Your AF Management Plan	Following a Healthy Lifestyle	Understanding Common Responses and Finding Support	Patient Stories	

FACT SHEET: OVERVIEW OF MANAGING AF

WHAT ARE TWO WAYS TO MANAGE AF?

While AF is a chronic condition, it can be managed by:

- medicine
- procedures

Medicine is usually tried first to manage symptoms caused by AF.

The treatment depends on a person's health, symptoms, lifestyle, and their preference (one size does not fit all). One strategy is not better than the other.



WHAT ARE THE GOALS OF MANAGING **AF AND ATRIAL FLUTTER**

THE TWO MOST IMPORTANT GOALS ARE MANAGING THE ARRHYTHMIA (DECREASING SYMPTOMS) AND REDUCING COMPLICATIONS (PREVENTING THE RISK OF STROKE).

TWO MOST IMPORTANT GOALS IN MANAGING AF

Decrease Symptoms	Reduce complications
Control the heart rate or maintain normal heart rhythm with:	prevent strokeprevent the heart from becoming weak
 medicine procedures such as electrical cardioversion, ablation, or a pacemaker 	 less visits to the Emergency Department or hospital admissions because of the AF
Decreasing the symptoms can improve your quality of life.	

RATE CONTROL STRATEGY: HOW IS THE HEART RATE CONTROLLED?

IF A CONTINUOUS, FAST HEART RATE DUE TO AF HASN'T BEEN TREATED FOR WEEKS, MONTHS, OR YEARS, IT CAN CAUSE THE HEART TO BECOME LARGE AND/ OR WEAK IN **SOME** PEOPLE. MEDICINES AND/OR PROCEDURES CAN HELP PREVENT THIS.



A) MEDICINES TO CONTROL HEART RATE

Medicine is used to slow the conduction of electrical impulses from the top chambers (atria) to the bottom chambers (ventricles) of the heart and prevent the ventricles from beating too fast. A slower heart beat gives the ventricles more time to relax and fill with blood.

The rate control medicine only **slows** the heart rate. It **doesn't stop the AF** or bring the heart rhythm back to normal, but it usually does improve the symptoms.

Medicine you may take every day

There are three types of rate control medicine. They can be used alone or in combination:

- beta blockers, such as atenolol (Tenormin), bisoprolol (Monocor), carvedilol (Coreg), and metoprolol (Betaloc, Lopresor)
- 2. calcium channel, such as diltiazem (Cardizem, Tiazac) and verapamil (Isoptin)
- 3. digoxin (Toloxin)

Your doctor will choose the medicine that is best for you.

To learn more, see <u>beta blockers</u>, <u>calcium channel</u> <u>blockers</u>, and <u>digoxin</u>.

* The generic and brand names of the medicine available in Canada are in brackets. The medications cited in this presentation are the most current at the time of publication. The CCS and HSF do not recommend one drug over another.

PLEASE READ THE INFORMATION THAT COMES WITH YOUR PRESCRIPTION SO THAT YOU KNOW WHAT SIDE EFFECTS ARE NORMAL AND WHEN YOU SHOULD CALL YOUR DOCTOR.

FACT SHEET: RATE CONTROL MEDICINE

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RATE CONTROL MEDICINE

CLASS	WHAT THEY DO	POSSIBLE SIDE EFFECTS	TIPS	MONITORING
 BETA BLOCKER atenolol bisoprolol carvedilol metoprolol 	 slow the heart rate reduce the electrical impulses through the AV node block stress hormones that stimulate the body 	 feel tired feel dizzy wheezing upset stomach changes in sleep or mood cold hands/feet impotence don't tolerate exercise as well 	 don't stop taking it suddenly tell your doctor if you are dizzy, light-headed, or more tired than usual 	 ECG pulse or heart rate
CALCIUM CHANNEL BLOCKERS • diltiazem • verapamil	 slow the heart rate reduce the electrical impulses through the AV node 	feel dizzyswollen anklesflushed skinconstipation	 tell your doctor if you are dizzy, light-headed, or more tired than usual 	ECGpulse or heart rate
DIGOXIN	• slow the heart rate	 vision changes (blurry, yellow halo) upset stomach, nausea, vomiting, no appetite 	 tell your doctor if you are dizzy, light-headed, or more tired than usual 	 ECG pulse or heart rate digoxin blood level

TIPS ABOUT YOUR MEDICINE

• Always keep an up-to-date list of the medicine you take with you (your pharmacist can probably make one for you or help you make one). Be sure the list has the name, dose, instructions, and why you take it.

The list should include all prescription, nonprescription, food and vitamin supplements, and alternative medicine (like herbal products).

- Also keep a record of allergies or intolerances to medicine.
- Ask your pharmacist about using a pill/dosette box or blister pack to help you remember to take your medicine regularly and as prescribed.
- If you forget a dose, **don't** double the next dose.
- Make sure you have enough medicine to last until your next appointment.
- If you feel the medicine isn't working or you are having side effects, talk with your doctor, nurse, or pharmacist to see what adjustments can be made.

- Check with your doctor, nurse, or pharmacist before starting a new prescription or over-thecounter or alternative or herbal (complementary) medicine. Some of these medicines may interfere with the ones you already take.
- Record and report any troublesome or unusual effects to your healthcare team.



B) PROCEDURES TO CONTROL THE HEART RATE

PACEMAKER: Sometimes people don't tolerate the medicine used to manage AF because the heart can then beat too slowly. A pacemaker may be needed. Once the pacemaker is implanted, medicine can be given to manage symptoms caused by AF.

To learn more, see <u>implantable pacemaker</u> (Heart and Stroke Foundation) or go to <u>heartandstroke.ca</u> and search "implantable pacemaker".



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MODULE 2: MANAGING ATRIAL FIBRILLATION

ATRIO-VENTRICULAR NODE ABLATION (PACE AND ABLATE STRATEGY): This procedure is done if the AF can't be controlled with medicine. This procedure has two parts. Implanting the pacemaker needs to be done first.

- *Part 1*: A pacemaker is implanted to prevent the heart from beating too slow. You will have a pacemaker for the rest of your life.
- *Part 2*: An <u>AV node ablation</u> is done to disconnect the electrical connection between the atria and the ventricles. **The fast atrial signals can't get to the ventricles**.



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You will still be in AF, but now the pacemaker keeps your ventricles at a regular pulse or heart rate. Because your atria are still fibrillating, you still need to take blood thinners to prevent a stroke if they were recommended before the procedure. The ablation is **permanent**—it can't be reversed.

The pacemaker is usually programmed so that it will speed up the pulse or heart rate during activity and slow it down during rest.

You can usually stop taking the rate control medicine unless you take them for another reason (like high blood pressure).

The risk of serious complications from this procedure are very low—less than 1 person out of every 100 who has the ablation.

After the procedure, the more concerning problems that could happen are:

 bleeding or bruising at the site where the tubes were placed in the vein (this usually stops by putting pressure on the area)

- a small risk that during the ablation one of the pacemaker wires could be pulled out of position (may need surgery to replace it)
- very rarely, after a complete AV node ablation, the bottom chambers of the heart can develop a fast, dangerous rhythm. To reduce this risk, the pacemaker rate is usually increased for a few months after the procedure and then lowered.

FACT SHEET: PROCEDURES TO CONTROL THE HEART RATE

RHYTHM CONTROL STRATEGY: HOW IS THE HEART RHYTHM CONTROLLED?

FOR SOME PEOPLE, SLOWING THE HEART RATE DURING AF MAY BE ENOUGH TO CONTROL SYMPTOMS. OTHERS NEED THE HEART RHYTHM BROUGHT BACK TO NORMAL.

A) MEDICINES TO CONTROL THE HEART RHYTHM

Rhythm control medicine (also called antiarrhythmics) converts AF to <u>normal sinus rhythm</u> or maintains the normal sinus rhythm after a <u>cardioversion</u>.

They may not stop all the AF episodes but may lower the number you have or make the episodes shorter.

WHO WOULD RHYTHM CONTROL MEDICINE WORK BEST FOR?

They may work best for people:

- who have moderate to severe symptoms when in AF
- who have tried rate control medicine but are still troubled by symptoms
- prefer to be in normal sinus rhythm

WHAT ARE THE TWO WAYS RHYTHM CONTROL MEDICINE CAN BE USED?

1. DAILY RHYTHM CONTROL: Some people have to take a rhythm control medicine every day to help keep the heart in normal sinus rhythm. This may help to reduce symptoms caused by AF. **Most often**, a combination of rate and rhythm control medicine is needed.

The most **common** medicines for rhythm control are:

- amiodarone (Cordarone)
- dronedarone (Multaq)
- flecainide (Tambocor)
- propafenone (Rythmol)
- sotalol (Sotacor)

FACT SHEET: RHYTHM CONTROL MEDICINE



RHYTHM CONTROL MEDICINE

NAME	POSSIBLE SIDE EFFECTS	TIPS	MONITORING
Amiodarone	 upset stomach/nausea, or constipation (this should go away over time) more sensitive to the sun or that your skin discolours when exposed to the sun 	 take with food don't drink grapefruit, pomegranate, or grapefruit juice as it may cause dangerous side effects use a sunscreen (minimum SPF 15) wear protective clothing and a hat 	 ECG/chest x-ray pulmonary function tests every year eye exam blood tests pulse or heart rate
Dronedarone	 upset stomach/nausea, or constipation (this should go away within a week) 	 take with food don't drink grapefruit, pomegranate, or grapefruit juice as it may cause dangerous side effects 	ECGblood testspulse or heart rate
Flecainide	 dizziness, upset stomach, mild headache, and/or tremors (usually goes away after 3 days) 	take with food	ECGpulse or heart rate
Propafenone	 dizziness (usually goes away after 3 days) unusual/unpleasant taste in mouth 	• check with your pharmacist before you start a new medicine	ECGpulse or heart rate
Sotalol	dizzinessfeeling tiredslow heart rate	• take with a full glass of water	ECGpulse or heart rate

2. INTERMITTENT OR "PILL-IN-THE-POCKET"

THERAPY: People with healthy hearts who don't have AF episodes very often may only have to take a rhythm-controlling medicine when they have symptoms. The most common medicine used is **flecainide (Tambocor)** or **propafenone (Rythmol)**. This medicine tries to stop or shorten the AF episode. It is usually taken along with a rate-controlling medicine (for example: a beta blocker or a calcium channel blocker).

At your clinic visit, your doctor will give you instructions if this therapy is an option for you.

FACT SHEET:

"PILL-IN-THE-POCKET" RHYTHM CONTROL

The first dose is given in **an emergency room or healthcare centre**, where you can be monitored. It's best to take the medicine within 30 minutes of the start of the AF. IF YOU FIND THAT YOU ARE HAVING EPISODES OF AF MORE OFTEN (LIKE TWICE A MONTH) TELL YOUR DOCTOR. YOU MAY NEED TO START TAKING ONE OF THESE MEDICINES EVERY DAY TO CONTROL YOUR HEART RHYTHM.

All anti-arrhythmic medicine can cause serious problems with heart rhythm. Your doctor will choose the medicine that is best for you, depending on your symptoms and other health conditions.

B) PROCEDURES TO CONTROL THE HEART RHYTHM

ELECTRICAL CARDIOVERSION

Electrical cardioversion is done to return the heart back to normal sinus rhythm.

This procedure isn't a cure. If the AF comes back, your doctor may change your medicine, do the cardioversion again, or look at another procedure, like an ablation.

The cardioversion is done in an area of the hospital where you can be closely monitored, such as an emergency room, intensive care unit, or recovery room.

The **electrical cardioversion will not** be done in the emergency department if:

- you've been in AF for longer than 48 hours and you're not on a blood thinner
- you're not sure of how long you've been in AF and you're not on a blood thinner

- your INR blood tests haven't been between 2.0–
 3.0 for at least 1 month, if you are taking warfarin (Coumadin)
- you've missed a dose of the newer blood thinner, such as apixaban (Eliquis), dabigatran, (Pradaxa), or rivaroxaban (Xarelto)

The emergency doctor will talk more about this with you.

FACT SHEET: ELECTRICAL CARDIOVERSION FOR RHYTHM CONTROL

IF THE CARDIOVERSION IS A SCHEDULED PROCEDURE:

- You will take a blood thinner for 3 to 4 weeks before and 4 weeks afterwards. The blood thinner reduces your risk of having a stroke. How long you have to take a blood thinner for after the procedure will depend on your stroke risk.
- If you are on warfarin (Coumadin), your INR blood level will be checked. Warfarin (Coumadin) is the only blood thinner that needs to have INRs done.
- You may take a rhythm control medicine before the procedure and for some time afterward to help the heart stay in normal rhythm after the electrical shock.

Electrical cardioversion doesn't always work as hoped. The AF can start again, sometimes not too long after the cardioversion.

Factors that affect how well cardioversion works include:

- how long you've been in AF (especially if continuous for more than a 1 year)
- size of the left atrium (especially if greater than 5 cm)
- leaky heart valves
- other medical problems

What are the risks?

The main risk of electrical cardioversion is the low chance of having a stroke at the time of cardioversion and up to 1 month after. This is why it's important you take a blood thinner.

Other risks or side-effects include having a reaction to the medicine used to put you to sleep. Sometimes the skin under the pads can become red and irritated.

HOW IS THE CARDIOVERSION DONE?

- Two electrical pads are used. Usually one on the chest and the other on the back. Sometimes, both are put on the chest.
- The area of the chest where the pads are placed may need to be shaved so that the pads stick well to the skin (a nurse or doctor would do this at the time of the procedure).
- You are given medicine by <u>intravenous</u> (IV) to make you sleep.
- A machine (defibrillator) delivers a brief electrical shock. You won't feel any pain during the procedure and you won't remember it. The shock won't damage your heart.



ELECTRICAL CARDIOVERSION

WHAT IS A TEE-GUIDED CARDIOVERSION?

This is **not** done as a routine procedure. It only needs to be done if you (a) aren't taking a blood thinner, (b) the AF has gone on longer than 48 hours, and (c) your condition warrants it.

A TEE (transesophageal echocardiogram) is a special ultrasound scan of the heart, especially the left atrium. A medicine is given to make you sleepy. A small probe with a camera is passed through the mouth and down the esophagus (as the food pipe lies behind the left atrium of the heart).

The TEE reduces the risk of stroke because the doctor is able to see if there is a blood clot in the left atrium of the heart. If **there is** a blood clot, you will be put on blood thinners until the blood clot is gone (usually 4 weeks).

If there **is no** clot in the left atrium of the heart then the electrical cardioversion can be safely done.

A very rare risk is injury to the esophagus (food pipe).



TRANSESOPHAGEAL ECHOCARDIOGRAM (TEE)

ABLATIONS

Ablation may be offered to people who:

- are bothered by the symptoms of AF or • atrial flutter
- are taking rhythm control medicine but still having episodes
- can't take rhythm control medicine •

Two types of ablations may be offered:

- AF ablation (or pulmonary vein isolation)
- Atrial flutter ablation (typical)

AF ablation (or pulmonary vein isolation) that may or may not also include extra ablation in the left/right atria (PV/LA ablation).

It is not open heart surgery. The small piece of heart tissue in the left atrium, around the pulmonary veins (and sometimes in other places) that is causing the AF is destroyed using heat (radiofrequency energy) or freezing (cryoablation).



AF ABLATION OR PULMONARY VEIN ISOLATION

MODULE 2: MANAGING ATRIAL FIBRILLATION

AF ablation may not be the best treatment for everyone with AF. The procedure works **best** in people:

- whose AF is causing bothersome symptoms
- who have paroxysmal AF (starts and stops by itself and episodes last less than 1 week)
- who don't find the medicine is helping, or they don't tolerate the medicine
- who have a mild to moderate heart structure (for example: the heart chambers [especially the left atrium] are not too enlarged, there are no valve problems, and the heart muscle is fairly strong)
- under 80 years old (while the success rate of the procedure doesn't seem to change much with age, the older the person is, the greater the risk of complications.)
- willing to take blood thinners 1 month before and 3 months after the ablation (people who already take a blood thinner for stroke risk would keep taking it)

The **overall** risk of a complication during or after an AF ablation is up to 5%.

Most of these complications can be reversed or treated.

Some of the more possible serious complications include:

- stroke
- puncturing the heart during the procedure
- pulmonary vein narrowing
- damaging other structures around the heart
- death (risk of death because of the procedure is around 1 in 1,000)

WILL THE ABLATION STOP THE AF?

You may still have episodes of AF, but will find that they are shorter, the symptoms are milder, or you have no symptoms. Some people may still be bothered by symptoms. Depending on your symptoms and the therapy you and your doctor decide on, the ablation may be done again. The success rate after 1 year of an AF ablation is:

- between 50% to 70% after the first procedure
- between 75% and 85% after two or more attempts

You may still need to take medicine to control the symptoms after the ablation. Some people find that the medicine that didn't work well before may work well after the ablation.

If ablation is an option for you, your doctor will talk to you more about the procedure and the risks.



ATRIAL FLUTTER ABLATION

Ablation may be offered to people who are bothered by the symptoms of atrial flutter. This ablation may be offered to people before medicine is tried.

Typical atrial flutter, the most common type, starts in the right atrium. It can be a challenge to manage with medicine, but can be successfully controlled with an ablation procedure. However, within 5 years between 25% and 40% of people with typical atrial flutter ablation could develop AF as a separate rhythm problem.

Ablation for typical atrial flutter is usually a very safe procedure. The risk of a serious complication is between 1% and 2%. The most common problem is bleeding or bruising around the site where the tubes are placed in the vein(s).

ATRIAL FLUTTER ABLATION (TYPICAL)



OTHER LESS COMMON PROBLEMS INCLUDE:

- puncturing the heart during the procedure (around 1 in 200 procedures)
- damaging the normal conduction system in the heart (less than 1 in 100 procedures)
- stroke (less than 1 in 500 procedures)

People who have to take blood thinners for the rest of their lives because of their stroke risk will still have to take them after the ablation.

Your doctor will talk to you more about the procedure and the risks.

For atypical atrial flutter, the less common type, medicine is usually the first step in treatment. If a person is bothered by symptoms and the medicine doesn't work then an ablation can be done. Your doctor will talk to you more about the procedure and the added risks, depending on the site of the circuit.



TYPES OF ABLATIONS

	AF ABLATION	TYPICAL ATRIAL FLUTTER ABLATION	ATYPICAL ATRIAL FLUTTER ABLATION	AV NODE ABLATION/ PACEMAKER
GOALS	 Rhythm control Improve symptoms May be able to stop some medicine 	 Rhythm control Improve symptoms May be able to stop some medicine 	 Rhythm control Improve symptoms May be able to stop some medicine 	 Rate control Improve symptoms May be able to stop some medicine
FIRST TREATMENT CHOICE?	 Rarely At least 1 anti-arrhythmic has usually been tried but hasn't managed symptoms 	• Yes	 Sometimes Usually at least 1 anti-arrhythmic has been tried but hasn't managed symptoms 	 No Permanent procedure Pacemaker has to be implanted before the ablation
TESTS	 CT, CT angiogram, or MRI to look at left atrium and pulmonary veins Sometimes a TEE is done to assess for left atrial clots Baseline blood tests, (INR if on warfarin) ECG 	 Sometimes a <u>TEE is</u> <u>done</u> to assess for left atrial clots Baseline blood tests, <u>INR</u> if on warfarin 	 CT, CT angiogram, or MRI to look at left atrium TEE, baseline blood tests (INR if on warfarin) ECG 	• Baseline blood tests (<u>INR</u> if on warfarin)

	AF ABLATION	TYPICAL ATRIAL FLUTTER ABLATION	ATYPICAL ATRIAL FLUTTER ABLATION	AV NODE ABLATION/ PACEMAKER
ACCESS/ PUNCTURE	 Veins in the groin, neck, or under the collarbone Transeptal puncture: once in heart, puncture made between atria to get to left atrium 	• Veins in the groin, neck or under collarbone	 Veins in the groin, neck or under collarbone possible Transeptal puncture: once in heart, puncture made between atria to get to left atrium 	• Veins in the groin
MEDICINE: BEFORE AND DURING PROCEDURE	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy or put you to sleep 	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy 	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy or put you to sleep 	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy or put you to sleep
SITE OF ABLATION	 Area around the pulmonary veins in the left atrium Sometimes other areas of the left or right atrium 	• In the right atrium	• In the right or left atrium	• The electrical connection between the atria and ventricles (AV node)
PROCEDURE TAKES	• 3 to 6 hours	• 2 to 3 hours	• 2 to 6 hours	• 1 to 2 hours

	AF ABLATION	TYPICAL ATRIAL FLUTTER ABLATION	ATYPICAL ATRIAL FLUTTER ABLATION	AV NODE ABLATION/ PACEMAKER
SUCCESS RATE	 After 1 year of an AF ablation between 50% to 70% after the first procedure Can increase by 10% each time the ablation is done to a maximum success rate of 75% to 85% 	 90% to 95% May develop AF at some time 	• 40% to 90%, depending on where in the right or left atrium	• 99%
RISK OF COMPLICATIONS	• up to 5%	• 1% to 2%	• 1% to 5% (depending on if the right or left atrium treated)	• 1% to 2%

FACT SHEET: AF ABLATION FOR RHYTHM CONTROL FACT SHEET: ATRIAL FLUTTER ABLATION (TYPICAL) FOR RHYTHM CONTROL FACT SHEET: TYPES OF ABLATIONS

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REDUCING THE RISK OF STROKE: HOW IS MY STROKE RISK ASSESSED?

AF INCREASES THE RISK OF STROKE, WHICH CAN LEAD TO DISABILITY AND DEATH.

When the atria are quivering and not pumping properly, blood can pool and form a clot in the heart. The clot can then be pumped out of the heart and travel to the brain, which can cause a stroke (sometimes called a brain attack) or mini-stroke (TIA).

Blood thinners are used to prevent the clots from forming when you're in AF. The type of blood thinner depends on your medical conditions or stroke risk factors.

The medical conditions that increase the risk of having a clot stroke due to AF are:

- congestive heart failure
- high blood pressure

- being age 65 or older
- diabetes
- if you had a stroke or mini-stroke (TIA) before
- hardening of the arteries (atherosclerosis) and other vascular disease

There are tools that help your healthcare provider decide which blood thinner is best for you.

COMMON SCORING TOOLS TO ASSESS YOUR STROKE AND BLEEDING RISK

The CHADS₂ score is used to estimate the risk of stroke in people **without** heart valve problems.

CHADS₂ Score

ACRONYM	QUESTION	POINTS
C ongestive Heart Failure	Do you have heart failure (your heart doesn't pump as well as it should)?	1
H ypertension (high blood pressure)	Do you have high blood pressure (even if it is controlled by medicine)?	1
Age	Are you 75 years of age or older?	1
Diabetes	Do you have diabetes?	1
S troke	Have you had a stroke or mini-stroke?	2
	Total =	6

Most people with a CHADS₂ risk score of 1 or more will have to take a blood thinner. Only certain people with a low risk of stroke will be given ASA (Aspirin, Entrophen, Novasen). Your healthcare provider will speak with you about the best choice for you.

A CHADS₂ score of 0 means that you are at a low risk for a stroke caused by a blood clot. Your healthcare provider also looks at other factors, such as if you:

- have hardening of the arteries (atherosclerosis) or other vascular disease
- are between the ages of 65 and 74

Even if your CHADS₂ risk score is 0, you may still need to take a blood thinner because of other underlying risk factors for stroke.

FACT SHEET: COMMON SCORING TOOLS TO ASSESS YOUR STROKE AND BLEEDING RISK

ASSESSING YOUR BLEEDING RISK

The **HAS-BLED** score assesses what your bleeding risk is. This is done before a blood thinner is started. **Factors that increase your bleeding risk include:**

- you have had a stroke
- you have high blood pressure
- your kidneys or liver aren't working as well as they should
- you already have bleeding problems
- your INRs aren't well controlled on warfarin (Coumadin)
- you are over 65 years old
- you take medicine that increases your bleeding risk
- you drink alcohol

In general, people with a high HAS-BLED score need to be monitored closely and often. How often you are seen and monitored will be decided by your doctor or other healthcare providers.



HOW ARE BLOOD THINNERS USED TO **REDUCE THE RISK OF STROKE IN AF?**

BLOOD THINNERS, ALSO CALLED ANTI-COAGULANT OR ANTI-PLATELET MEDICINE, ARE COMMONLY USED TO REDUCE THE RISK OF STROKE DUE TO AF. YOU TAKE THE BLOOD THINNER EVERY DAY. IT'S IMPORTANT NOT TO MISS A DOSE.

COMMON BLOOD THINNERS

Anti-platelet drugs include:

- ASA (Aspirin, Entrophen, Novasen)
- clopidogrel (Plavix)

Anti-coagulants include:

- apixaban (Eliquis)
- rivaroxaban (Xarelto)
- dabigatran (Pradaxa)
- warfarin (Coumadin)

Your healthcare provider will speak with you about the best choice for you after your stroke and bleeding risk have been assessed.

FACT SHEET: HOW BLOOD THINNERS ARE USED TO REDUCE THE RISK OF STROKE IN AF

COMMON BLOOD THINNERS

BLOOD THINNER NAME	BLOOD TESTS	POSSIBLE SIDE EFFECTS	DRUG INTERACTIONS
ASA (ANTI-PLATELET)	• None	BleedingUpset stomachUlcers	• NSAIDS (like ibuprofen)
CLOPIDOGREL (ANTI-PLATELET)	• None	• Bleeding	NSAIDs and herbal medicinesSpeak with your pharmacist
WARFARIN (ANTI-COAGULANT)	 Weekly until INR's stable (2.0 - 3.0) and then at least monthly <u>INRs</u> or as directed 	• Bleeding	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist
DABIGATRAN (ANTI-COAGULANT)	• Kidney function at least once a year	BleedingUpset stomach	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist
RIVAROXABAN (ANTI-COAGULANT)	• Kidney function at least once a year	Bleeding	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist
APIXABAN (ANTI-COAGULANT)	• Kidney function at least once a year	• Bleeding	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist

Because they are new, the last three blood thinners or anti-coagulants are sometimes called novel oral anti-coagulants (NOAC).

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DO BLOOD THINNERS HAVE RISKS?

You can sometimes have minor bleeding when you take a blood thinner. Minor bleeding may include:

- nose bleeds
- bruising easily
- bleeding from the gums
- blood in the urine (urine is red or brown)

If you are concerned about any of the above, please speak with your healthcare provider. You can also ask your pharmacist more about the blood thinner you are taking.

More serious types of bleeding (for example: into the brain or the digestive system) needs immediate medical care. Your healthcare team will speak with you more about what to watch for.



STROKE SIGNS STROKE IS A MEDICAL EMERGENCY.

LEARN THE SIGNS OF STROKE



ACT **FAST** BECAUSE THE QUICKER YOU ACT, THE MORE OF THE PERSON YOU SAVE.

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IF YOU OR SOMEONE WITH YOU EXPERIENCES ANY OF THESE SIGNS, CALL 9-1-1 OR YOUR LOCAL EMERGENCY NUMBER IMMEDIATELY. ACTING QUICKLY CAN IMPROVE YOUR SURVIVAL AND RECOVERY.

FACT SHEET: STROKE SIGNS

BEING REALISTIC WHEN MANAGING AF

AF IS A CHRONIC CONDITION THAT CAN BE WELL MANAGED.

- While common, AF is seen more often in people over the age of 65, those with a family history of AF, and males (more common in men). These are things that you can't change.
- Managing and controlling other known medical conditions (for example high blood pressure) can help slow the progression of AF.
- Ways to manage your AF may change over time.
- Medicine and procedures are used to treat AF symptoms. They will not stop every episode of AF but make the episode more manageable. Your stroke risk assessment is ongoing. People with AF are at risk of stroke.

Conditions like high blood pressure, diabetes, stroke, or heart failure also increase your risk of stroke.



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MODULE 2: MANAGING ATRIAL FIBRILLATION

Because your risk of stroke goes up as you get older, see your healthcare provider once a year, especially when you turn 65.

- To lower your risk of a stroke, your doctor will start you on a blood thinner that's right for you.
- Know the 5 signs and symptoms of a stroke call
 9-1-1 or your local emergency number right away.
- You **don't** need to go to the emergency department every time you have an episode of AF.
- It's best to see a doctor or go to the emergency department if you can't do your usual activities and you are:
 - dizzy, feel faint, weak or unusually tired
 - short of breath for several hours or have chest pain
 - having problems after an AF-related procedure
 - trying a prescribed anti-arrhythmic (rhythm control) medicine for the first time

Remember: You are part of the healthcare team and play a big role in managing your AF.

FACT SHEET: BEING REALISTIC WHEN MANAGING AF





DISCLAIMER (CCS)

This educational material was developed by Canadian atrial fibrillation experts through consideration of medical literature and clinical experience. These modules provide reasonable and practical information for patients and their families and can be subject to change as medical knowledge and as practice patterns evolve. They are not intended to be a substitute for clinical care or consultation with a physician.

DISCLAIMER (HSF)

This publication **Your Complete Guide to Atrial Fibrillation** is for informational purposes only and is not intended to be considered or relied upon as medical advice or a substitute for medical advice, a medical diagnosis or treatment from a physician or qualified healthcare professional. You are responsible for obtaining appropriate medical advice from a physician or other qualified healthcare professional prior to acting upon any information available through this publication.

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GLOSSARY

Ablation - A procedure in which a small portion of heart tissue is destroyed using heat (<u>radiofrequency ablation</u>) or freezing (<u>cryoablation</u>) to control abnormal heart rhythms.

Anesthesia - Medicine given through an intravenous (IV). It may be given to make a person feel sleepy or to sleep during a procedure or surgery (for example: during electrical cardioversion).

Anti-arrhythmic medicine – Drugs used to keep the heart beat in a normal sinus rhythm.

Anti-coagulant medicine – Drugs used to make the blood less likely to clot. Also called blood thinners.

Anti-platelet medicine – Drugs used to thin the blood. These aren't as strong as anti-coagulants (blood thinners).

Arrhythmia – An abnormal heart rhythm or irregular heart beat.

Asymptomatic - Having no symptoms or signs of an illness or disease.

Atria - The two upper chambers of the heart (right atrium and left atrium) that receive and collect blood before filling the lower chambers (ventricles).

Atrial fibrillation – An arrhythmia caused by very fast, chaotic/disorganized electrical activity in the atria.

Atrial flutter – An arrhythmia caused by very fast, organized electrical activity in the atria.

Atrial remodelling – Structural changes in the atria caused by disease or aging.

Atrioventricular (AV) node – Part of the heart's electrical conduction system; it co-ordinates electrical signals between the atria and ventricles.

Atypical atrial flutter – Atrial flutter in which an organized electrical impulse circulates around parts of the atria other than the circuit of typical atrial flutter. The circuit of atypical flutter is usually in the left atrium.

Blanking period - The period after ablation, usually 3 months, when a person may have an episode of AF. This may be due to the procedure itself rather than meaning that the procedure didn't work. If AF happens after the blanking period, then the procedure may have to be done again.

Blister pack – An organizing system designed to help someone to remember to take their medicine. Ask your pharmacist about blister packs.

Cardiac electrophysiologist – A doctor who treats problems with the heart's electrical system.

Cardiac tamponade – Bleeding into the sac that surrounds the heart (pericardium). The bleeding compresses/squeezes the heart, which can cause a sudden drop in blood pressure. It is treated by draining fluid.

Cardiomyopathy – Condition where the heart muscle enlargers and/or becomes weaker.

Cardioversion – A way to make the heart switch from an abnormal to a normal rhythm, either by using medicine (chemical cardioversion) or <u>electrical cardioversion</u>.

Cardiovascular system – Also called the circulatory system. It includes the heart and blood vessels of the body. It carries blood, oxygen, and nutrients to the organs and tissues of the body. It also carries the waste and carbon dioxide from these tissues for the body to remove.

Carotid doppler – An ultrasound to view the carotid arteries in the neck.

Catheter – A flexible wire with electrodes used to measure electrical impulses in the heart. Some catheters also deliver therapy, as in ablation.

Computerized tomography (CT) scan – Also called a CAT scan. It's a very detailed type of x-ray.

Congestive heart failure (CHF) - A condition in which the heart can't supply the body with the blood it needs because the ventricles are either too large or weak. It causes fluid to build up in the lungs and/or other tissues.

Contraction – Squeezing action of the atria or ventricles.

CHADS, - A scoring tool used to learn a person's risk of having a stroke.

Circulation – The normal flow of blood through the body's blood vessels and organs.

Conscious sedation - Medicine given by IV; the person is not fully "asleep" but may not remember everything about the procedure.

CT angiogram – A CT image of parts of the circulatory system.

Cryoablation - A procedure in which a small portion of heart tissue is destroyed using freezing.

Dosette – Like a blister pack but the pills are placed in a window that can be opened for each day of the week, rather than "punched" out. Ask your pharmacist about dosettes.

Electrical cardioversion - A way to make the heart switch from an abnormal to a normal rhythm using a machine called a defibrillator.

Electrical conduction system - The electrical "wiring" or pathways through which impulses or signals travel through the heart.

Electrical impulses – The electrical energy created by specialized pacemaker cells within the heart that follows a pathway from the atria to the ventricles

Electrocardiogram (ECG or EKG) - The recording of the electrical activity of the heart.

Electrodes - Sticky discs that are placed on the chest. They pick up the heart's electrical signals during an ECG, Holter monitor, or Event recorder. The metal contacts on the catheters placed in the heart during an electrophysiology study and ablation are also called electrodes

Electrophysiology lab - A hospital room or area set up to do ablations and other procedures related to the heart's electrical system.

Electrophysiology studies - A procedure where one or more wires (catheters) are passed through the blood vessels and into the heart to record the electrical signals. The studies can help the doctor learn the cause of abnormal heart rhythms. It is one of the tests that can decide if an ablation is needed.

Esophagus (food pipe) – The tube food travels down after it is swallowed. It is directly behind the heart.

General anesthesia - Medicine that causes a person to sleep. It can be given into a vein or can be breathed into the lungs.

HAS-BLED – A scoring system to estimate a person's risk of bleeding (for example: if they are to take a blood thinner).

Heart failure – A condition in which the heart can't supply the body with the blood it needs because the ventricles are either too large or weak

Heart rate - The speed the heart beats. It is measured in beats per minute (bpm).

Holter monitor - A portable device that records the heart's electrical activity. The test is usually done at home over 24 to 48 hours. Electrodes are placed on the chest and connected to a recorder. worn on a belt.

The person will carry on with their usual daily activities.

Hypertension - High blood pressure.

International Normalized Ratio (INR) - A blood test to check how well the blood clots when taking some types of blood thinners (like warfarin).

Intravenous - Into the vein

Local anesthesia - Medicine given to freeze (numb) a specific area of the body.

Lone or Primary atrial fibrillation - AF without underlying heart disease or for which the cause is unknown. It's more common in younger people.

Magnetic resonance imaging (MRI) - A machine that creates detailed images of the body's tissues using magnetic impulses rather than x-rays.

Natural pacemaker - The SA node, found in the top right atrium (see sinoatrial node).

Oral anti-coagulant – A medicine taken by mouth that prevents clots from forming in the blood.

Palpitations - The awareness or sensation that the heart is beating irregularly and/or too fast.

Pericarditis – Inflammation of the sac surrounding the heart. It causes chest pain.

Permanent pacemaker (artificial) – A small device that is implanted under the skin of the chest. Up to 3 wires are placed in different chambers of the heart to prevent pauses and/or control abnormal heart rhythms. This device uses electrical pulses to stimulate the heart to beat at a normal rate.

Phrenic nerve – The nerve that controls the muscle for breathing (diaphragm).

Pill-in-the pocket – A rhythm control treatment plan that can be used for people that don't have many AF episodes. It includes medicine to control the heart rate and rhythm.

Pulmonary veins – Vessels that carry oxygenated blood from the lungs to the left atrium. It is also the site where AF often starts.

Pulmonary vein stenosis – A narrowing or blockage in one of the veins that drains blood from the lungs into the heart. It can cause shortness of breath.

Radiofrequency ablation – A procedure in which a small portion of heart tissue is destroyed using heat

Remodeling – Changes in structure or electrical properties of the chambers of the heart

Rhythm - The pattern of the heart beat.

Sinoatrial (SA) node – The body's natural pacemaker. Found where the superior vena cava and right atrium meet. It creates the first of the electrical signals that make the heart beat.

Sinus rhythm – A normal, steady heart beat, usually between 60 and 90 beats per minute.

Sleep apnea – When the throat muscles relax and block the airway during sleep (obstructive sleep apnea). It sometimes can happen because of a "glitch" in the nervous system that regulates sleep (central sleep apnea). It leads to pauses in breathing and low blood oxygen levels during sleep.

Stroke – Sometimes called a "brain attack". Ischemic stroke is caused by a blood clot blocking a blood vessel to the brain. Hemorrhagic stroke is caused by bleeding into the brain tissue

Subcutaneous – Under the skin.

Symptoms – Usually unpleasant feelings caused by an illness, disease, or a condition.

Tachycardia-induced cardiomyopathy – A type of weakening of the heart muscle caused by long periods of a fast heart rate (usually weeks or months).

Transeptal puncture – A procedure where a long, thin hollow tube is passed from the right atrium into the left atrium. The needle is used to make a hole in the thin wall (septum) separating these chambers. This allows access to the left atrium if an ablation is being done there. **Transient ischemic attack** (TIA) – Sometimes called a mini-stroke or stroke warning. It's a short interruption of blood flow to the brain, causing temporary, stroke-like symptoms that don't last longer than 24 hours.

Typical atrial flutter – An arrhythmia in which an organized electrical impulse circulates in the right atrium, around the tricuspid valve.

Valves – Structures in the heart that separate the atria from the ventricles. They open and close, allowing blood to flow through in one direction. The four valves of the heart are the tricuspid, mitral, pulmonic, and aortic valves.

Ventricles – The two (right and left side) lower chambers of the heart. They pump blood to the lungs and around the body.

Ventricular rate – The speed at which the bottom chambers of the heart contract.

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To learn more, see Module 2: Managing Atrial

4 SIGNS OF A STROKE

Stroke can be treated. That's why it's so important to know and respond to the warning signs. Below are the signs of a stroke.

LEARN THE SIGNS OF STROKE



IF YOU OR SOMEONE WITH YOU EXPERIENCES ANY OF THESE SIGNS, CALL 9-1-1 OR YOUR LOCAL EMERGENCY NUMBER IMMEDIATELY. ACTING QUICKLY CAN IMPROVE YOUR SURVIVAL AND RECOVERY.

FACT SHEET: STROKE SIGNS

ACT **FAST** BECAUSE THE QUICKER YOU ACT, THE MORE OF THE PERSON YOU SAVE.

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To learn more, see Module 2: Managing Atrial

AF ABLATION FOR RHYTHM CONTROL

Ablation may be offered to people who:

- are bothered by the symptoms of AF or atrial flutter
- are taking rhythm control medicine but still having episodes
- can't take rhythm control medicine

AF ablation (or pulmonary vein isolation) that may or may not also include extra ablation in the left/ right atria (PV/LA ablation).

It is **not** open heart surgery. The small piece of heart tissue in the left atrium, around the pulmonary veins (and sometimes in other places) that is causing the AF is destroyed using heat (radiofrequency energy) or freezing (cryoablation).



AF ablation may not be the best treatment for everyone with AF. The procedure works **best** in people:

 who have paroxysmal AF (starts and stops by itself and episodes last less than 1 week)

- who don't find the medicine is helping, or they don't tolerate the medicine
- who have a mild to moderate heart structure (for example: the heart chambers [especially the left atrium] are not too enlarged, there are no valve problems, and the heart muscle is fairly strong)
- under 80 years old (While the success rate of the procedure doesn't seem to change much with age, the older the person is, the greater the risk of complications.)
- willing to take blood thinners 1 month before and 3 months after the ablation (people who already take a blood thinner for stroke risk would keep taking it)

To learn more, see Module 2: Managing Atrial

The **overall** risk of a complication during or after an AF ablation is up to 5%.

Most of these complications can be reversed or treated. Some of the more possible serious complications include:

- stroke
- puncturing the heart during the procedure
- pulmonary vein narrowing
- damaging other structures around the heart
- death (risk of death because of the procedure is around 1 in 1,000)

WILL THE ABLATION STOP THE AF?

You may still have episodes of AF, but will find that they are shorter, the symptoms are milder, or you have no symptoms. Some people may still be bothered by symptoms. Depending on your symptoms and the therapy you and your doctor decide on, the ablation may be done again. The success rate after 1 year of an AF ablation is:

- between 50% to 70% after the first procedure
- between 75% and 85% after two or more procedures

You may still need to take medicine to control the symptoms after the ablation. Some people find that the medicine that didn't work well before may work well after the ablation.

If ablation is an option for you, your doctor will talk to you more about the procedure and the risks.

ATRIAL FLUTTER ABLATION (TYPICAL) FOR RHYTHM CONTROL

Ablation may be offered to people who are bothered by the symptoms of atrial flutter. This ablation may be offered to people before medicine is tried.

Typical atrial flutter, the most common type, starts in the right atrium. It can be a challenge to manage with medicine, but can be successfully controlled with an ablation procedure. However, within 5 years between 25% and 40% of people with typical atrial flutter ablation could develop AF as a separate rhythm problem.

Ablation for typical atrial flutter is usually a very safe procedure. The risk of a serious complication is between 1% and 2%. The most common problem is bleeding or bruising around the site where the tubes are placed in the vein(s).

Other less common problems include:

- puncturing the heart during the procedure (around 1 in 200 procedures)
- damaging the normal conduction system in the heart (less than 1 in 100 procedures)
- stroke (less than 1 in 500 procedures)

People who have to take blood thinners for the rest of their lives because of their stroke risk will still have to take them after the ablation.

Your doctor will talk to you more about the procedure and the risks.



To learn more, see Module 2: Managing Atrial

BEING REALISTIC WHEN MANAGING AF

- AF is a chronic condition that can be well managed.
- While common, AF is seen more often in people over the age of 65, those with a family history of AF, and males (more common in men). These are things that you can't change.
- Managing and controlling other known medical conditions (for example high blood pressure) can help slow the progression of AF.
- Ways to manage your AF may change over time.
- Medicine and procedures are used to treat AF symptoms. They will not stop every episode of AF but make the episode more manageable. Your stroke risk

assessment is ongoing. People with AF are at risk of stroke.

Conditions like high blood pressure, diabetes, stroke, or heart failure also increase your risk of stroke.

Because your risk of stroke goes up as you get older, see your healthcare provider once a year, especially when you turn 65.

- To lower your risk of a stroke, your doctor will start you on a blood thinner that's right for you.
- Know the 5 signs and symptoms of a stroke - call 9-1-1 or your local emergency number right away.
- You **don't** need to go to the emergency department every time you have an episode of AF.

- It's best to see a doctor or go to the emergency department if you can't do your usual activities and you are:
 - dizzy, feel faint, weak or unusually tired
 - short of breath for several hours or have chest pain
 - having problems after an AFrelated procedure
 - trying a prescribed anti-arrhythmic (rhythm control) medicine for the first time

Remember: You are part of the healthcare team and play a big role in managing your AF.

To learn more, see Module 2: Managing Atrial

COMMON SCORING TOOLS TO ASSESS YOUR STROKE AND BLEEDING RISK

AF increases the risk of stroke, which can lead to disability and death.

When the atria are quivering and not pumping properly, blood can pool and form a clot in the heart. The clot can then be pumped out of the heart and travel to the brain, which can cause a stroke (sometime called a brain attack) or mini-stroke (TIA).

The CHADS₂ score is used to estimate the risk of stroke in people without heart valve problems.

Most people with a CHADS₂ risk score of 1 or more will have to take a blood thinner. Only certain people with a low risk of stroke will be given ASA (Aspirin, Entrophen, Novasen). Your healthcare provider will speak with you about the best choice for you.

CHADS₂ Score

ACRONYM	QUESTION	POINTS
C ongestive Heart Failure	Do you have heart failure (your heart doesn't pump as well as it should)?	1
H ypertension (high blood pressure)	Do you have high blood pressure (even if it is controlled by medicine)?	1
Age	Are you 75 years of age or older?	1
Diabetes	Do you have diabetes?	1
S troke	Have you had a stroke or mini-stroke?	2
	Total =	6

To learn more, see Module 2: Managing Atrial

A CHADS₂ score of 0 means that you are at a low risk for a stroke caused by a blood clot. Your healthcare provider also looks at other factors, such as if you: have hardening of the arteries (atherosclerosis) or other vascular disease

- are between the ages of 65 and 74
- are female

Even if your CHADS2 risk score is 0, you may still need to take a blood thinner because of other underlying risk factors for stroke.

ASSESSING YOUR BLEEDING RISK

The **HAS-BLED** score assesses what your bleeding risk is. This is done before a blood thinner is started. Factors that increase your bleeding risk include:

- you have had a stroke
- you have high blood pressure
- your kidneys or liver aren't working as well as they should
- you already have bleeding problems
- your INRs aren't well controlled on warfarin (Coumadin)
- you are over 65 years old
- you take medicine that increases your bleeding risk
- you drink alcohol

In general, people with a high HAS-BLED score need to be monitored closely and often. How often you are seen and monitored will be decided by your doctor or other healthcare providers.

To learn more, see Module 2: Managing Atrial

ELECTRICAL CARDIOVERSION FOR RHYTHM CONTROL

Electrical cardioversion is done to return the heart back to normal sinus rhythm.

This procedure isn't a cure. If the AF comes back, your doctor may change your medicine, do the cardioversion again, or look at another procedure, like an ablation.

The cardioversion is done in an area of the hospital where you can be closely monitored, such as an emergency room, intensive care unit, or recovery room.

THE ELECTRICAL CARDIOVERSION WILL NOT BE DONE IN THE EMERGENCY DEPARTMENT IF:

- you've been in AF for longer than 48 hours and you're not on a blood thinner
- you're not sure of how long you've been in AF and you're not on a blood thinner
- your INR blood tests haven't been between 2.03.0 for at least 1 month if you're taking warfarin

 you've missed a dose of the newer blood thinner (apixaban (Eliquis), dabigatran (Pradaxa), or rivaroxaban (Xarelto))

The emergency doctor will talk more about this with you.

IF THE CARDIOVERSION IS A SCHEDULED PROCEDURE:

- You will take a blood thinner for 3 to 4 weeks before and 4 weeks afterwards. The blood thinner reduces your risk of having a stroke. How long you have to take a blood thinner for after the procedure will depend on your stroke risk.
- If you are on warfarin (Coumadin), your INR blood level will be checked. Warfarin (Coumadin) is the only blood thinner that needs to have INRs done.
- You may take a rhythm control medicine before the procedure and for some time afterward to help the heart stay in normal rhythm after the electrical shock.

To learn more, see Module 2: Managing Atrial

Electrical cardioversion doesn't always work as hoped. The AF can start again, sometimes not too long after the cardioversion. **Factors that affect how well cardioversion works include:**

- how long you've been in AF (especially if continuous for more than a 1 year)
- size of the left atrium (especially if greater than 5 cm)
- leaky heart valves
- other medical problems

WHAT ARE THE RISKS?

The main risk of electrical cardioversion is the low chance of having a stroke at the time of cardioversion and up to 1 month after. This is why it's important you take a blood thinner.

Other risks or side-effects include having a reaction to the medicine used to put you to sleep. Sometimes the skin under the pads can become red and irritated.



HOW IS THE CARDIOVERSION DONE?

- Two electrical pads are placed usually one on the chest, the other on the back. Sometimes, both are put on the chest.
- The area of the chest where the pads are placed may need to be shaved so that the pads stick well to the skin (a nurse or doctor would do this at the time of the procedure).
- You are given medicine by intravenous (IV) to make you sleep.
- A machine (defibrillator) delivers a brief electrical shock. You won't feel any pain during the procedure and you won't remember it. The shock won't damage your heart.

WHAT IS A TEE-GUIDED CARDIOVERSION?

This is **not** done as a routine procedure. It only needs to be done if you aren't taking a blood thinner, the AF has gone on longer than 48 hours, and your condition warrants it.



A TEE (transesophageal echocardiogram) is a type of ultrasound scan of the heart, especially the left atrium. A medicine is given to make you sleepy. A small probe with a camera is passed through the mouth and down the esophagus (as the food pipe lies behind the left atrium of the heart).

The TEE reduces the risk of stroke because the doctor is able to see if there is a blood clot in the left atrium of the heart. If **there is** a blood clot, you will be put on blood thinners until the blood clot is gone (usually 4 weeks).

If there **is no** clot in the left atrium of the heart then the electrical cardioversion can be safely done.

A very rare risk is injury to the esophagus (food pipe).

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To learn more, see Module 2: Managing Atrial

HOW BLOOD THINNERS ARE USED TO REDUCE THE RISK OF STROKE IN AF

Blood thinners, also called anti-coagulant or anti-platelet medicine, are commonly used to reduce the risk of stroke due to AF. You take the blood thinner every day. It's important not to miss a dose.

Your healthcare provider will speak with you about the best choice for you.

COMMON BLOOD THINNERS

Anti-platelet drugs include:

- ASA (Aspirin, Entrophen, Novasen)
- clopidogrel (Plavix)

Anti-coagulants include:

- apixaban (Eliquis)
- dabigatran (Pradaxa)
- rivaroxaban (Xarelto)
- warfarin (Coumadin)

DO BLOOD THINNERS HAVE RISKS?

You can sometimes have minor bleeding when you take a blood thinner. Minor bleeding may include:

- nose bleeds
- bruising easily
- bleeding from the gums
- blood in the urine (urine is red or brown)

If you are concerned about any of the above, please speak with your healthcare provider. You can also ask your pharmacist more about the blood thinner you are taking.

More serious types of bleeding (for example: into the brain or the digestive system) needs immediate medical care. Your healthcare team will speak with you more about what to watch for.

FACTSHEET COMMON BLOOD THINNERS

To learn more, see Module 2: Managing Atrial

BLOOD THINNER NAME	BLOOD TESTS	POSSIBLE SIDE EFFECTS	DRUG INTERACTIONS
ASA (ANTI-PLATELET)	• None	BleedingUpset stomachUlcers	• NSAIDS (like ibuprofen)
CLOPIDOGREL (ANTI-PLATELET)	• None	• Bleeding	NSAIDs and herbal medicinesSpeak with your pharmacist
WARFARIN (ANTI-COAGULANT)	 Weekly until INR's stable (2.0 - 3.0) and then at least monthly <u>INRs</u> or as directed 	• Bleeding	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist
DABIGATRAN (ANTI-COAGULANT)	 Kidney function at least once a year 	BleedingUpset stomach	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist
RIVAROXABAN (ANTI-COAGULANT)	 Kidney function at least once a year 	Bleeding	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist
APIXABAN (ANTI-COAGULANT)	• Kidney function at least once a year	Bleeding	 Many, with certain prescription, non-prescription, and herbal medicines Speak with your pharmacist

Because they are new, the last three blood thinners or anti-coagulants are sometimes called novel oral anti-coagulants (NOAC).

"PILL-IN-THE-POCKET" RHYTHM CONTROL

The most important goals when treating AF are:

- 1. managing the arrhythmia
- 2. reducing the risk of stroke

INTERMITTENT OR "PILL-IN-THE-POCKET" THERAPY

People with healthy hearts who don't have AF episodes very often may only have to take a rhythm-controlling medicine when they have symptoms. The most common medicine used is **flecainide (Tambocor)** or **propafenone (Rythmol)**. This medicine tries to stop or shorten the AF episode.

It is usually taken along with a rate-controlling medicine (for example: a beta blocker or a calcium channel blocker).

At your clinic visit, your doctor will give you instructions if this therapy is an option for you.

The first dose is given in an emergency room or healthcare centre, where you can be monitored. It's best to take the medicine within 30 minutes of the start of the AF. It can take up to 3 hours for the rhythm control medicine to work. If it works and you tolerate it well, your healthcare provider may talk to you about treating future episodes yourself, without having to go to the emergency room.

Remember to check the expiry dates of the medicine since you only take it once in a while.

IF YOU FIND THAT YOU ARE HAVING EPISODES OF AF MORE OFTEN (LIKE TWICE A MONTH) TELL YOUR DOCTOR. YOU MAY NEED TO START TAKING ONE OF THESE MEDICINES EVERY DAY TO CONTROL YOUR HEART RHYTHM.

All anti-arrhythmic medicine can cause serious problems with heart rhythm. Your doctor will choose the medicine that is best for you, depending on your symptoms and other health conditions.

To learn more, see Module 2: Managing Atrial

PROCEDURES TO CONTROL THE HEART RATE

ATRIO-VENTRICULAR NODE ABLATION (PACE AND ABLATE STRATEGY): This procedure is done if the AF can't be controlled with medicine. This procedure has two parts. Implanting the pacemaker needs to be done first.

- Part 1: A pacemaker is implanted to prevent the heart from beating too slow. You will have a pacemaker for the rest of your life.
- Part 2: An <u>AV node ablation</u> is done to disconnect the electrical connection between the atria and the ventricles. The fast atrial signals can't get to the ventricles.



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To learn more, see Module 2: Managing Atrial

You will still be in AF, but now the pacemaker keeps your ventricles at a regular pulse or heart rate. Because your atria are still fibrillating, you still need to take blood thinners to prevent a stroke if they were recommended before the procedure. The ablation is **permanent**—it can't be reversed.

The pacemaker is usually programmed so that it will speed up the pulse or heart rate during activity and slow it down during rest.

You can usually stop taking the rate control medicine unless you take them for another reason (like high blood pressure).

The risk of serious complications from this procedure are very low—less than 1 person out of every 100 who has the ablation. After the procedure, the more concerning problems that could happen are:

- bleeding or bruising at the site where the tubes were placed in the vein (this usually stops by putting pressure on the area)
- a small risk that during the ablation one of the pacemaker wires could be pulled out of position (may need surgery to replace it)
- very rarely, after a complete AV node ablation, the bottom chambers of the heart can develop a fast, dangerous rhythm. To reduce this risk, the pacemaker rate is usually increased for a few months after the procedure and then lowered.

To learn more, see Module 2: Managing Atrial

RATE CONTROL MEDICINE

The most important goals when treating AF are:

- 1. managing the arrhythmia
- 2. preventing a stroke

WHAT ARE TWO WAYS TO MANAGE AF?

While AF is a chronic condition, it can be managed by:

- medicine
- procedures

The rate control medicine only **slows** the heart rate. It **doesn't stop the AF** or bring the heart rhythm back to normal, but it usually does improve the symptoms.

MEDICINES TO CONTROL HEART RATE:

There are three types of rate control medicine. They can be used alone or in combination:

 beta blockers, such as metoprolol (Betaloc, Lopresor), bisoprolol (Monocor), atenolol (Tenormin), and carvedilol (Coreg)

- 2. calcium channel blockers, such as diltiazem (Cardizem, Tiazac) and verapamil (Isoptin)
- 3. digoxin (Toloxin)

Your doctor will choose the medicine that is best for you.

PLEASE READ THE INFORMATION THAT COMES WITH YOUR PRESCRIPTION SO THAT YOU KNOW WHAT SIDE EFFECTS ARE NORMAL AND WHEN YOU SHOULD CALL YOUR DOCTOR.

 * The generic and brand names of the medicine available in Canada are in brackets. The medications cited in this presentation are the most current at the time of publication. The CCS and HSF do not recommend one drug over another.

To learn more, see Module 2: Managing Atrial

RATE CONTROL MEDICINE

CLASS	WHAT THEY DO	POSSIBLE SIDE EFFECTS	TIPS	MONITORING
 BETA BLOCKER atenolol bisoprolol carvedilol metoprolol 	 slow the heart rate reduce the electrical impulses through the AV node block stress hormones that stimulate the body 	 feel tired feel dizzy wheezing upset stomach changes in sleep or mood cold hands/feet impotence don't tolerate exercise as well 	 don't stop taking it suddenly tell your doctor if you are dizzy, light-headed, or more tired than usual 	 ECG pulse or heart rate
CALCIUM CHANNEL BLOCKERS • diltiazem • verapamil	 slow the heart rate reduce the electrical impulses through the AV node 	feel dizzyswollen anklesflushed skinconstipation	 tell your doctor if you are dizzy, light-headed, or more tired than usual 	 ECG pulse or heart rate
DIGOXIN	• slow the heart rate	 vision changes (blurry, yellow halo) upset stomach, nausea, vomiting, no appetite 	 tell your doctor if you are dizzy, light-headed, or more tired than usual 	 ECG pulse or heart rate digoxin blood level

To learn more, see Module 2: Managing Atrial

TIPS ABOUT YOUR MEDICINE

 Always keep an up-to-date list of the medicine you take with you (your pharmacist can probably make one for you or help you make one). Be sure the list has the name, dose, instructions, and why you take it.

The list should include all prescription, nonprescription, food and vitamin supplements, and alternative medicine (like herbal products).

- Also keep a record of allergies or intolerances to medicine.
- Ask your pharmacist about using a pill/dosette box or blister pack to help you remember to take your medicine regularly and as prescribed.
- If you forget a dose, **don't** double the next dose.
- Make sure you have enough medicine to last until your next appointment.

- If you feel the medicine isn't working or you are having side effects, talk with your doctor, nurse, or pharmacist to see what adjustments can be made.
- Check with your doctor, nurse, or pharmacist before starting a new prescription or over-thecounter or alternative or herbal (complementary) medicine. Some of these medicines may interfere with the ones you already take.
- Record and report any troublesome or unusual effects to your healthcare team.

To learn more, see Module 2: Managing Atrial

RHYTHM CONTROL MEDICINE

The most important goals when treating AF are:

- 1. managing the arrhythmia
- 2. reducing the risk of stroke

WHAT ARE TWO WAYS TO MANAGE AF?

AF can be managed by:

- medicine
- procedures

MEDICINES TO CONTROL THE HEART RHYTHM

For some people, slowing the heart rate during AF may be enough to control symptoms. Others need the heart rhythm brought back to normal.

Rhythm control medicine (also called anti-arrhythmics) converts AF to <u>normal sinus rhythm</u> or maintains the normal sinus rhythm after a <u>cardioversion</u>.

They may not stop all the AF episodes but may lower the number you have or make the episodes shorter.

WHO WOULD RHYTHM CONTROL MEDICINE WORK BEST FOR?

They may work best for people:

- who have moderate to severe symptoms when in AF
- who have tried rate control medicine but are still troubled by symptoms
- prefer to be in normal sinus rhythm

Daily Rhythm Control: Some people have to take a rhythm control medicine every day to help keep the heart in normal sinus rhythm. This may help to reduce symptoms caused by AF. **Most often**, a combination of rate and rhythm control medicine is needed.

The most **common** medicines for rhythm control are:

- amiodarone (Cordarone)
- dronedarone (Multaq)
- flecainide (Tambocor)
- propafenone (Rythmol)
- sotalol (Sotacor)

All anti-arrhythmic medicine can cause serious problems with heart rhythm. Your doctor will choose the medicine that is best for you, depending on your symptoms and other health conditions.

FACTSHEET RHYTHM CONTROL MEDICINE

To learn more, see Module 2: Managing Atrial

NAME	POSSIBLE SIDE EFFECTS	TIPS	MONITORING
Amiodarone	 upset stomach/nausea, or constipation (this should go away over time) more sensitive to the sun or that your skin discolours when exposed to the sun 	 take with food don't drink grapefruit, pomegranate, or grapefruit juice as it may cause dangerous side effects use a sunscreen (minimum SPF 15) wear protective clothing and a hat 	 ECG/chest x-ray pulmonary function tests every year eye exam blood tests pulse or heart rate
Dronedarone	 upset stomach/nausea, or constipation (this should go away within a week) 	 take with food don't drink grapefruit, pomegranate, or grapefruit juice as it may cause dangerous side effects 	ECGblood testspulse or heart rate
Flecainide	 dizziness, upset stomach, mild headache, and/or tremors (usually goes away after 3 days) 	• take with food	ECGpulse or heart rate
Propafenone	 dizziness (usually goes away after 3 days) unusual/unpleasant taste in mouth 	 check with your pharmacist before you start a new medicine 	ECGpulse or heart rate
Sotalol	dizzinessfeeling tiredslow heart rate	• take with a full glass of water	ECGpulse or heart rate

To learn more, see Module 2: Managing Atrial

TIPS ABOUT YOUR MEDICINE

 Always keep an up-to-date list of the medicine you take with you (your pharmacist can probably make one for you or help you make one). Be sure the list has the name, dose, instructions, and why you take it.

The list should include all prescription, nonprescription, food and vitamin supplements, and alternative medicine (like herbal products).

- Also keep a record of allergies or intolerances to medicine.
- Ask your pharmacist about using a pill/dosette box or blister pack to help you remember to take your medicine regularly and as prescribed.
- If you forget a dose, **don't** double the next dose.
- Make sure you have enough medicine to last until your next appointment.

- If you feel the medicine isn't working or you are having side effects, talk with your doctor, nurse, or pharmacist to see what adjustments can be made.
- Check with your doctor, nurse, or pharmacist before starting a new prescription or over-thecounter or alternative or herbal (complementary) medicine. Some of these medicines may interfere with the ones you already take.
- Record and report any troublesome or unusual effects to your healthcare team.

FACTSHEET TYPES OF ABLATIONS

To learn more, see Module 2: Managing Atrial

	AF ABLATION	TYPICAL ATRIAL FLUTTER ABLATION	ATYPICAL ATRIAL FLUTTER ABLATION	AV NODE ABLATION/ PACEMAKER
GOALS	 Rhythm control Improve symptoms May be able to stop some medicine 	 Rhythm control Improve symptoms May be able to stop some medicine 	 Rhythm control Improve symptoms May be able to stop some medicine 	 Rate control Improve symptoms May be able to stop some medicine
FIRST TREATMENT CHOICE?	 Rarely At least 1 anti-arrhythmic has usually been tried but hasn't managed symptoms 	• Yes	 Sometimes Usually at least 1 anti-arrhythmic has been tried but hasn't managed symptoms 	 No Permanent procedure Pacemaker has to be implanted before the ablation
TESTS	 CT, CT angiogram, or MRI to look at left atrium and pulmonary veins Sometimes a TEE is done to assess for left atrial clots Baseline blood tests, (INR if on warfarin) ECG 	 Sometimes a <u>TEE</u> is done to assess for left atrial clots Baseline blood tests, <u>INR</u> if on warfarin 	 CT, CT angiogram, or <u>MRI</u> to look at left atrium <u>TEE</u>, baseline blood tests (<u>INR</u> if on warfarin) <u>ECG</u> 	• Baseline blood tests (<u>INR</u> if on warfarin)
ACCESS / PUNCTURE	 Veins in the groin, neck, or under the collarbone Transeptal puncture: once in heart, puncture made between atria to get to left atrium 	• Veins in the groin, neck or under collarbone	 Veins in the groin, neck or under collarbone possible Transeptal puncture: once in heart, puncture made between atria to get to left atrium 	• Veins in the groin

To learn more, see Module 2: Managing Atrial

	AF ABLATION	TYPICAL ATRIAL FLUTTER ABLATION	ATYPICAL ATRIAL FLUTTER ABLATION	AV NODE ABLATION/ PACEMAKER
MEDICINE: BEFORE AND DURING PROCEDURE	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy or put you to sleep 	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy 	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy or put you to sleep 	 Varies with medical centre and doctor Blood thinners Local anesthetic to numb insertion site Medicine to make you sleepy or put you to sleep
SITE OF ABLATION	 Area around the pulmonary veins in the left atrium Sometimes other areas of the left or right atrium 	• In the right atrium	 In the right or left atrium 	 The electrical connection between the atria and ventricles (AV node)
PROCEDURE TAKES	• 3 to 6 hours	• 2 to 3 hours	• 2 to 6 hours	• 1 to 2 hours
SUCCESS RATE	 After 1 year of an AF ablation between 50% to 70% after the first procedure Can increase by 10% each time the ablation is done to a maximum success rate of 75% to 85% 	 90% to 95% May develop AF at some time 	• 40% to 90%, depending on where in the right or left atrium	• 99%
RISK OF COMPLICATIONS	• up to 5%	• 1% to 2%	• 1% to 5% (depending on if the right or left atrium treated)	• 1% to 2%

To learn more, see <u>Module 2: Managing Atrial</u>

OVERVIEW OF MANAGING AF

GOALS OF AF THERAPY

1. Decrease symptoms:

- Control the heart rate or maintain normal heart rhythm with:
 - medicine
 - procedures such as electrical cardioversion, ablation, or a pacemaker
- Decreasing the symptoms can improve your quality of life.

- 2. Reduce complications:
 - prevent stroke
 - prevent the heart from becoming weak
 - less visits to the Emergency Department or hospital admissions because of AF

AF is a chronic condition but one that can be well-managed.

Manage Arrhythmia Symptoms		Assess Stroke Risk (CHADS ₂)
Rate Control • Medicine • Procedures • Pacemaker with AV node Ablation	Rhythm Control • Medicine • Procedures - Electrical Cardioversion - AF Ablation - Atrial Flutter Ablation	Blood Thinner, Aspirin, or Nothing • ASA (Aspirin, Entrophen, Novasen) • apixaban (Eliquis) • dabigatran (Pradaxa) • rivaroxaban (Xarelto) • warfarin (Coumadin)