

# **THICK & THIN LIVING WITH ANTICOAGULATION**

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# HEART DISEASE AND STROKE COLLECTIVELY CAUSED

# 1 IN 4

# DEATHS WORLDWIDE

- ▶ Stroke is the **3<sup>RD</sup>** leading cause of death
- ▶ 140,000+ people die each year from stroke
- ▶ Stroke is the leading cause of serious, long-term disability
- ▶ Approximately 795,000 people suffer a stroke each year
- ▶ About 600,000 of these are first attacks, and 185,000 are recurrent attacks
- ▶ Atrial fibrillation (AF) increasing risk **5 FOLD**
- ▶ High blood pressure is **THE MOST** important risk factor for stroke

# FACTS ABOUT STROKES IN U.S.

“Anticoagulants reduce the risk of blood clots.

They’re often called blood thinners, but these medications don’t really thin your blood.

Instead, they help prevent or break up dangerous blood clots that form in your blood vessels or heart.

Without treatment, these clots can block your blood circulation and lead to a heart attack or stroke.”

**“ANTI”** meaning **“against”**  
+  
**“COAGULANT”** or **“blood clot”**

**Though the blood is not actually “THINNER” it does take longer to clot when you take an anticoagulant.**

## WHAT IS AN “ANTICOAGULANT?”

HEART ATTACK

DEEP VEIN  
THROMBOSIS

ABNORMAL  
HEARTBEAT  
LIKE **AFIB**

CONGENITAL  
HEART DEFECT

MECHANICAL  
HEART VALVE  
SURGERY

PULMONARY  
EMBOLUS

STROKE  
OR TIA

SOMETIMES  
AFTER  
SURGERY

SEVERAL REASONS TO TAKE  
ANTICOAGULANTS

**F**

FACE  
DROOPING

**A**

ARM  
WEAKNESS

**S**

SPEECH  
DIFFICULTY

**T**

TIME TO  
CALL 911

# KNOW THE SIGNS OF A STROKE



**STROKE  
CAUSES  
FIVE TYPES  
OF DISABILITIES**

**SENSORY DISTURBANCES INCLUDING PAIN**

**USING OR UNDERSTANDING LANGUAGE**

**PROBLEMS WITH THINKING**

**PARALYSIS OR PROBLEMS  
CONTROLLING MOVEMENT**

**EMOTIONAL DISTURBANCES**

# WHAT CAN WE DO TO PREVENT STROKES?

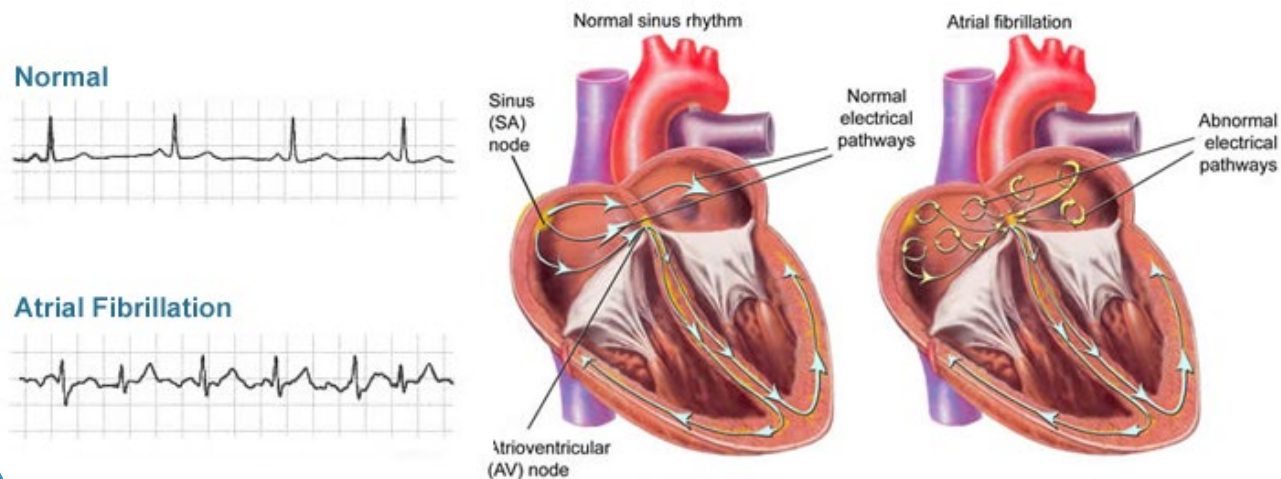
<b>KEEP</b>	<b>Keep blood pressure under control</b>
<b>DON'T</b>	<b>Don't smoke cigarettes</b>
<b>CONTROL</b>	<b>Control diabetes mellitus</b>
<b>STAY</b>	<b>Stay physically active and maintain a healthy weight</b>
<b>TAKE</b>	<b>If you have Atrial Fibrillation, take Anticoagulants as ordered by a Medical Doctor</b>



The heart's upper chambers (**atria**) beat out of coordination with the lower chambers (**ventricles**).

This condition may have no symptoms, but when symptoms do appear they include palpitations, shortness of breath, and fatigue.

*People with Afib are at a greater chance of a stroke (about 2 to 7 times the regular population), and Afib is the leading cause of stroke.*



# WHAT IS ATRIAL FIBRILLATION?

# ACCORDING TO THE U.S. FOOD & DRUG ADMINISTRATION

**If you're one of the 2.7 million Americans who have atrial fibrillation, you have an increased risk of a stroke. You can greatly reduce the risk of a stroke by 50% to 60% by taking a blood thinner (anticoagulant).**

# WHY $\frac{1}{2}$ OF PEOPLE WITH ATRIAL FIBRILLATION DON'T TAKE BLOOD THINNERS

## REASON ONE

**Anticoagulants don't affect how patients feel**

## REASON TWO

**Anticoagulants can cause bleeding**

**Putting themselves at risk of Irreversible Brain Damage & Disability.**

# “A STROKE CAN RUIN A LIFE — OR END ONE.”

According to Ellis F. Unger, M.D., the Director of FDA’s Office of Drug Evaluation:

- ▶ “Fear of bleeding is the main reason many patients do not use them, but most bleeding is not serious. It can be as minor as what occurs when you brush your teeth or shave. More serious bleeding, such as internal bleeding, can occur, but it’s rarely life-threatening.”
- ▶ “Bleeding is scary, but it is usually treatable and unlikely to cause permanent damage. It’s much less dangerous overall than a stroke.”

# STILL, DO I REALLY NEED ANTICOAGULATION?

## According to Dr. January and the American College of Cardiology:

- ▶ Atrial Fibrillation, whether it comes and goes or is permanent, and whether you are symptomatic or don't even know you have it, Atrial Fibrillation significantly increases the risk of stroke.
- ▶ Atrial Fibrillation increases risk of stroke **5 TIMES**, and if you have Atrial Fibrillation with mitral stenosis, the risk increases the incidents of stroke **20 TIMES** over that of patients in sinus rhythm.
- ▶ Blood clots occurring with AF is associated with a greater risk of recurrent stroke, more severe disability, and mortality.
- ▶ Silent Atrial Fibrillation (when you don't know you have AF) is also associated with stroke.
- ▶ The appropriate use of “blood thinners” and the control of other risk factors, including high blood pressure and high cholesterol, substantially reduce stroke risk.

# WHAT ARE YOUR OPTIONS TO PREVENT STROKE?

**Coumadin®**

*warfarin*

**Pradaxa®**

*dabigatran*

**Eliquis®**

*apixaban*

**Xarelto®**

*rivaroxaban*

**Savaysa®**

*edoxaban*

Most Medications have the Patented Name and the Generic Name:  
think “Kleenex®” & “Facial Tissues” OR “Xerox® copy & “Photo Copy”



- ▶ *From cows in the meadow to most successful anti-clotting agent of all time seems a big leap!*
- ▶ *In 1921, an exhaustive comparative study between fields where the cows were having longer clotting time and those with cattle without changes in clotting times revealed that the cows that were different had been eating a certain spoiled sweet clover.*



# THE DISCOVERY OF WARFARIN

# IS WARFARIN OR A NEW ANTICOAGULANT FOR ME?

## Warfarin

- ▶ Approved for use with Mechanical Valves, Ischemic Cardiomyopathy- New Anticoagulants are not to be used.
- ▶ Warfarin and testing to verify INR lab testing is covered by Medicare. INRs must be checked as directed by a nurse or physician.

## New Anticoagulant

- ▶ New Anticoagulants like Xarelto and Eliquis are not completely covered by Medicare and some insurance companies.
- ▶ New Anticoagulants are not to be used with Mechanical Heart Valves or Ischemic Cardiomyopathy. Check with your Cardiologist which is right for you.



# COUMADIN®

## WARFARIN

- ▶ Taken once daily
- ▶ Does not need to be taken with food
- ▶ Adjusted dose for numerous situations
- ▶ Must be closely monitored
- ▶ Interacts with many drugs
- ▶ Reversal agent- Vitamin K
- ▶ Since 1954
- ▶ Est \$21 for THIRTY 5 mg tabs AND frequent blood draws for lab



# COUMADIN®

## WARFARIN – MORE FACTS

- ▶ Most commonly used oral anticoagulant
- ▶ Stops harmful blood clots from forming
- ▶ Partially blocks the re-use of vitamin K in the liver.
  - ▶ Vitamin K is needed to help the blood form clots to prevent bleeding
  - ▶ Vitamin K is found in green leafy vegetable
- ▶ Tablets are imprinted with strength of tablet
- ▶ Important to notice any change in size, color, or shape of tablets-DELETE /CHANGE
- ▶ Reversal agent- Vitamin K
- ▶ Since 1954
- ▶ Est \$21 for THIRTY 5 mg tabs AND frequent blood draws for lab



WARFARIN  
THERAPY MUST BE  
MONITORED BY  
BLOOD TEST  
CALLED  
**INR**  
INTERNATIONAL  
NORMALIZED  
RATIO

<b>MD Prescribes Range</b>	MD will determine range based on individual medical condition Examples: INR = 0.9-1.1 without warfarin INR = 2.0-3.0 for most indications, or 2.5-3.5
<b>Prescribed Range</b>	When INR falls within prescribed range, level is “therapeutic.”
<b>Below Range</b>	When INR falls below prescribed range: Example: 1.5 – Blood is too thick & at risk for forming blood clots
<b>Above Range</b>	When INR falls above prescribed range: Example: 4.5 – Blood is too thin & increases risk for bleeding
<b>Action to Return to Therapeutic Range</b>	Anticoagulation/ INR clinician will likely adjust dose, make recommendations on individual circumstances to reach goal range.

## ADVANTAGES to DOACs

- No routine monitoring
- Improved safety profile / Reversal Agent is Available
- Rapid onset (may preclude the need for induction or bridging therapy)
- Short half-life (the amount of time it takes before **half** of the active elements are either eliminated or broken down by the body) which is advantageous for surgical procedures or in the setting of an active bleed
- Fixed dosing - It doesn't routinely change
- Greater convenience, patient satisfaction and quality of life
- Potentially more cost-effective from health system perspective
- Fewer drug, disease and diet interactions

## DISADVANTAGES to DOACs

- No reliable, readily available measurement for medication effectiveness.
- Dose reduction or avoidance with kidney problems / moderate or severe liver problems.
- Cannot be used with mechanical mitral valves, pregnancy, malignant disease or antiphospholipid syndrome.
- DOAC drug interactions do exist – Some that would mean you can't take a DOAC
- Follow up requires twice a year routine kidney function testing to verify correct dose.
- Less flexibility in dosing
- Fewer studies and approved indications (e.g., contraindicated in mechanical valve replacement)
- Potentially higher drug costs for patients
- Short half-life (mandates strict adherence)

# ELIQUIS <sup>®</sup>

## APIXABAN

- ▶ Taken twice a day
- ▶ Does not need to be taken with food
- ▶ Interacts with few drugs
- ▶ Does not require regular blood tests / INRs
- ▶ Adjusted dose for kidney issues
- ▶ Reversal agent: AndexXa <sup>®</sup>
- ▶ Since 2012
- ▶ Est \$443 for SIXTY 5 mg tabs



# SAVAYSA®

## EDOXABAN

- ▶ Taken once daily
- ▶ Adjusted dose for kidney issues
- ▶ Does not require regular blood tests/ INRs
- ▶ Does not have an approved reversal agent
- ▶ Since 2015
- ▶ Est \$377 for THIRTY 20 mg tabs





# PRADAXA<sup>®</sup>

## DABIGATRAN

- ▶ Taken twice a day
- ▶ Adjusted dose for kidney issues
- ▶ Does not require regular blood tests/ INRs
- ▶ Reversal agent: PraxBind
- ▶ Since 2010
- ▶ Est \$460 for SIXTY 5 mg capsules
- ▶ **MUST** be stored properly:
- ▶ Between 68 – 77 degrees
- ▶ After opening bottle, use in 4 months
- ▶ Keep **PRADAXA** in the original bottle or blister package to keep it dry



# XARELTO

## APIXABAN

- ▶ Taken once daily with food
  - ▶ Effectiveness drops by 30% when taken without food.
- ▶ Adjusted dose for kidney issues
- ▶ Does not require regular blood tests/INRs
- ▶ Reversal agent: AndexXa ®
- ▶ Since 2011
- ▶ Est \$433 for THIRTY 20 mg tabs





TO INFORM YOUR HEALTHCARE PROVIDER  
(CARDIOLOGIST) WHEN MAKING ANY  
MEDICATION CHANGES, *REGARDLESS* OF  
HOW MINOR THEY MAY SEEM:



**303-744-1065** OPTION #3

ALWAYS CALL SDCA

# Why not just **ASPIRIN?**

1

Reason

“Guidelines are unequivocal: aspirin is not recommended to prevent thromboembolism in atrial fibrillation in any circumstance.”



1

**DOACs are associated with a 28% lower risk of major bleeding than warfarin.**


2

**DOACs are also associated with a 57% lower risk of intracranial hemorrhage than warfarin.**


“We have a new class of expensive drugs, the direct oral anticoagulants going up against a very inexpensive but less effective drug, warfarin, that requires active monitoring.”



“While we found that a newer drug would be more cost-effective for society as a whole, and even cost-saving for people with drug coverage, the picture is very different for those without coverage.”



“Each patient must look at his or her own risk of stroke, and the likely costs of the two treatments - including the amount of time needed to visit an anticoagulation clinic each month if they opt for warfarin treatment.”



“The stroke-preventing benefit of DOAC drugs comes mainly from their ability to prevent rare, often deadly and very costly “bleeding strokes” far better than warfarin can.”

**Coumadin® has reversal: Vitamin K.**

**Pradaxa® has reversal agent: PraxBind®**

**Xarelto® & Eliquis® has reversal agent:  
AndexXa®**

AndexXa® counteracts the effects of Factor Xa inhibitors, helping to thicken the blood and prevent serious uncontrolled or life-threatening bleeding events.

# REVERSAL AGENTS

# EMERGENCY MEDICAL ID?



01

Yes!  
**ALWAYS**  
keep it with  
you.

02

Wear it on  
your person  
Or keep it in  
your purse  
or wallet.

03

What  
should it  
say?

04

Diagnosis or  
Medical  
Condition

05

Allergies  
&  
Medications

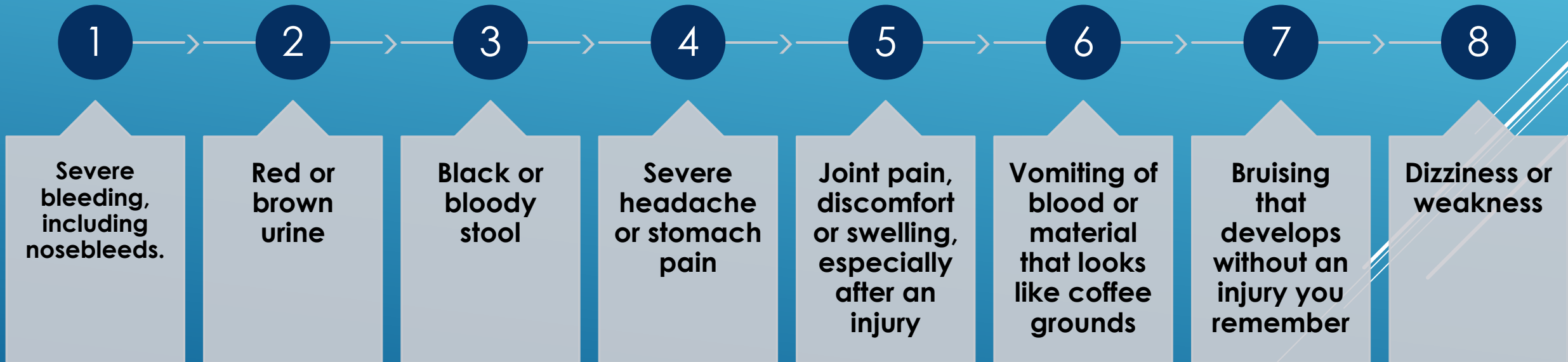
06

Your Name &  
Emergency  
Contact

Have an updated medication list in your wallet with you at all times!

Medical Identification **SAVES LIVES!**

# WITH ALL 'BLOOD THINNERS' SEEK MEDICAL ATTENTION IF:



**Do not stop Blood Thinners before discussing with your Healthcare Provider or Cardiologist**

# QUESTIONS AND ANSWERS

Anticoagulation

**THANK YOU FOR ATTENDING!**

Class is held at

South Denver  
Cardiology  
Associates

Every Third  
Monday

of the month.