

## Warfarin Information for Patients With a Ventricular Assist Device

*If you have any questions, please ask your physician, nurse or pharmacist.*

Warfarin (Coumadin® or Jantoven®) is a medication that prevents blood clots from forming. It is an anticoagulant, often called a “blood thinner.” However, warfarin does not actually thin the blood. It works to prevent new clots from forming or existing clots from getting bigger and causing more serious problems. Warfarin does not dissolve clots that have already formed.

### Warfarin therapy after receiving a ventricular assist device

A ventricular assist device (VAD) changes the way blood flows through the body. This can cause blood clots to form in the pump. If a blood clot forms in the pump, there is a risk that the clot will travel to the brain and cause a stroke.

Taking warfarin lowers the risk of blood clots and strokes in patients with VADs.

### Blood tests while taking warfarin

The international normalized ratio (INR) is a calculation based on a simple blood test to check the thickness of your blood. An INR less than 2.0 means your blood clots more quickly, and you may be at risk for blood clots. An INR more than 3.0 means your blood clots more slowly, and you may be at risk for bleeding. The desired range for people taking warfarin is typically 2.0 to 3.0, **but your physician will decide the range that is right for you.**

Low INR	INR in Desired Range	High INR
Less than 2.0 (risk of clotting)	2.0 to 3.0	More than 3.0 (risk of bleeding)

Your VAD team will select the correct dose of warfarin for you based on your INR result. When you first start taking warfarin, your INR will be checked often. This is to determine a safe and effective dose.

Once your dosage is stable, you may not need your INR checked as often. However, you should still have it checked on a regular basis. This helps make sure your dose is working properly.

Your VAD team may change your warfarin dosage from time to time based on your INR results.

If insurance coverage allows, many patients can use a home INR monitor after the first few months of treatment in order to limit laboratory visits outside of your home. Your VAD team will let you know if this option is right for you.

## How to take warfarin

Follow your physician's directions for taking warfarin. Here are some guidelines:









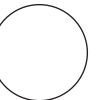
- **Take it in the evening.** This is important because your VAD team may want to change your dose after checking your INR.
- Take it with or without food, but try to be consistent.
- If you forget to take a dose at the scheduled time in the evening, but remember before you go to sleep, take the missed dose. If you do not remember until the next morning, skip the missed dose and take your next scheduled dose at the right time that evening.
- Do not take 2 doses of warfarin on the same day unless your VAD team tells you to do so.

Keep a record of each dose as you take it to avoid mistakes. Be sure to make a note of any missed doses. Bring this information to each follow-up appointment.

### **Tablet strengths**

Warfarin comes in different milligram (mg) strengths. Each strength is a different color tablet. Remember:

- If your dosage is unchanged, your pills should always be the same color.
- If your VAD team changes your dosage, you will notice a different pill color.

1 mg	2 mg	2.5 mg	3 mg	4 mg	5 mg	6 mg	7.5 mg	10 mg
								
Pink	Lavender	Light Green	Tan	Blue	Peach	Teal	Yellow	White

## Taking warfarin before a medical procedure

Your warfarin dosage may change if you are scheduled for certain procedures that may cause bleeding. Your INR goal may change or you may be asked to hold (skip) a dose before a scheduled medical visit or procedure such as a right-sided heart catheterization.

**Let the VAD clinic know ahead of time about any scheduled medical procedures, including dental appointments.**

## Diet, supplement and medication guidelines

### ***Vitamin K***

Vitamin K is a fat-soluble vitamin found in many foods. It may affect the way your body bleeds or clots. Warfarin is affected by vitamin K. Eating too much vitamin K may lower your INR.

Certain foods contain a lot of vitamin K. Carefully monitor how much you eat of these foods. It is important to remember to:

- Eat foods high in vitamin K in smaller amounts. Keep the amount you eat of these foods the same from week to week. For example, if you like to eat 3 sides of broccoli *each* week, try to eat 3 sides of broccoli *every* week.
- Read food labels. Vitamin K is found in many “health” foods, including protein shakes.

<b>Some Examples of Foods High in Vitamin K</b>	
Asparagus	Pickles
Blueberries	Pine nuts
Brussels sprouts	Sauerkraut
Broccoli	Soybeans
Kale	Spinach
Lettuce	

### ***Vitamins, supplements and herbal products***

Talk with your physician about all vitamins, nutrition supplements and herbal products that you are taking (or want to take) while you are taking warfarin. Remember:

- If your multivitamin contains vitamin K, make sure you always take your vitamin every day. Do not skip a day.
- Large amounts of vitamin A and vitamin E may affect the way warfarin works in your body. Do not add these vitamins to your supplements without speaking with your physician first.
- Some supplements such as Ensure® contain vitamin K.

**Some supplements can thin your blood. Avoid these herbal supplements until you discuss with your VAD team:**

- Ginkgo
- Ginseng
- Garlic tablets
- St. John’s wort
- Coenzyme Q 10
- Fish oil
- Dong quai
- Feverfew
- Ginger
- Licorice
- Willow bark
- Wheatgrass
- Flaxseed oil

## Medications

Aspirin may be prescribed for you in addition to warfarin. Aspirin will help your blood flow smoothly through the VAD. Remember:

- Aspirin also thins the blood.
- Only take aspirin as directed by your VAD team.

**Some medications can interact with warfarin and thin your blood.**

Medications to Avoid	
Nonsteroidal anti-inflammatory medications (NSAIDs)	Ibuprofen (Motrin <sup>®</sup> , Advil <sup>®</sup> ) Naproxen (Aleve <sup>®</sup> , Naprosyn <sup>®</sup> ) Aspirin-containing migraine products (Excedrin <sup>®</sup> , BC <sup>®</sup> Powder, Goody's <sup>®</sup> Powder)
Medications to Use with Caution (Call Your VAD Team Before Using)	
Antibiotics	Some antibiotics can increase or decrease the effect of warfarin. Before taking any new antibiotics, please check with your VAD team about interactions with warfarin.
Over-the-counter (OTC) medications	Avoid taking cold or sinus medicine, laxatives or antacids without talking to someone on your healthcare team first. Aspirin or NSAIDs may be a hidden ingredient in these products.
New prescription medications	Make sure your VAD team knows about any new prescriptions that another healthcare provider prescribes you.

## Treatment for a low INR

If your INR is too low, you may be at risk for blood clots. You may need to come into the hospital for a heparin infusion or use enoxaparin (Lovenox<sup>®</sup>) injections at home. Enoxaparin is an injectable blood thinner. Note that:

- You may need to take Lovenox injections with warfarin for a short time to “bridge” to an INR range that is right for you.
- Lovenox is a “bridge” to protect you from clots while your INR is lower than your goal number.

Lovenox is given as a shot (or injection) 2 times per day about 12 hours apart. You or a family member can give the injection. A member of your VAD team will show you how to give the injections (see: Appendix: How to inject enoxaparin).

Lovenox is not safe for people with chronic kidney disease or for people whose kidneys are not working properly. In this case, you may need to come to the hospital to receive a different blood-thinner medication through an IV (into the vein) line.

## When to call your VAD team

Signs of Bleeding	
<p><b>Normal and expected symptoms</b> Let your VAD team know if these symptoms become more noticeable or bothersome.</p>	<ul style="list-style-type: none"> <li>▪ Prolonged bleeding from cuts or wounds</li> <li>▪ Frequent nosebleeds</li> <li>▪ Unusually heavy menstrual bleeding</li> <li>▪ Bleeding gums, especially while brushing your teeth</li> <li>▪ Unusual bruising or changes in skin color</li> </ul>
<p><b>Unexpected and emergency symptoms</b> Call your VAD team right away.</p>	<ul style="list-style-type: none"> <li>▪ Coughing up blood or something that looks like coffee grounds</li> <li>▪ Blood in your urine or stool</li> <li>▪ Black-colored stool (if you are not taking iron supplements)</li> <li>▪ Dizziness or faintness</li> </ul>

Signs of Clotting	
<p><b>Unexpected and emergency symptoms</b> Call your VAD team right away.</p>	<ul style="list-style-type: none"> <li>▪ <b>Cola- or tea-colored urine</b></li> <li>▪ Sudden swelling in one leg or arm</li> <li>▪ Warmth or redness of your skin</li> <li>▪ Bluish discoloration of your skin</li> <li>▪ Limb weakness</li> </ul>

## For your safety

- Immediately report any unexpected symptoms of clotting or bleeding to your VAD team.
- If you have a fall or hit your head, please call your VAD team for further instructions.

Call your VAD team and seek medical attention right away if you have any of these symptoms:

- **Cola-colored or tea-colored urine**
- **Rapid heart rate**
- Chest pain or discomfort
- Shortness of breath or rapid breathing
- Cough or sudden onset of bloody saliva/mucus
- Fainting
- Sudden, unexplained pain, redness or swelling of an extremity

F.A.S.T. is an acronym to help you detect the signs of stroke quickly. It stands for:

<b>F: Face drooping</b>	Smile. Is one side of your face drooping?
<b>A: Arm weakness</b>	Lift both arms to an even height. Does one arm fall down? Is one arm numb?
<b>S: Speech difficulty</b>	Try to repeat a simple sentence. Is your speech slurred?
<b>T: Time to call 911</b>	<b>Call 911 right away if you have any of these symptoms.</b>

## Contact information

Please call the VAD clinic with any questions or concerns about your warfarin or other medications. We are here to help keep you healthy and safe.

**VAD clinic: 312.926.1711 (TTY: 711)** Calls are received weekdays from 8 am to 5 pm and are returned within 24 hours. Calls received after 3 pm or on the weekend will be returned the next business day.

**VAD emergency pager: 312.695.9611 (TTY: 711)**

## Appendix: How to Inject Enoxaparin

Enoxaparin (Lovenox) is an injectable blood thinner. Follow these instructions if you are prescribed to inject Lovenox at home.

### **Supplies**

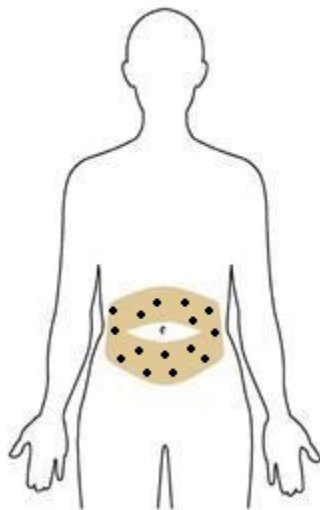
- Alcohol wipes or cotton balls soaked with 70% rubbing alcohol.
- Pre-filled syringe of your medication.
- A metal or heavy plastic, puncture-proof container with a tight-fitting lid. “Sharps” containers may also be used. Use this to discard the used syringes. Never put used needles or syringes directly into a garbage can.

### **Injection instructions**

Before starting, look closely at the syringe. The liquid in the syringe should be clear. Do not use it if you notice any leaks, discoloration or floating materials in the syringe.

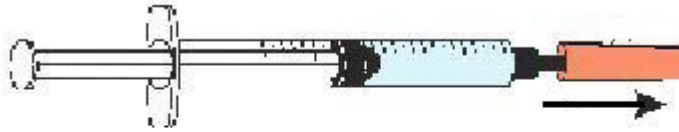
1. Wash your hands and the area of skin where you will inject the medicine.
2. Sit or lie down with your head up so you can see your stomach.
3. Choose a site to inject the medicine.
  - The best sites are on your abdomen, above and below the belly button.
  - If needed, the upper outer area of the thigh may also be used.
  - Choose a different site for each dose. For example, if you use the right side one time, go to the left side next time. When you return to the right side, select a site at least a few inches away from the previous site.
  - Do not inject the medicine into a bruised area or scar.

### **Injection sites**

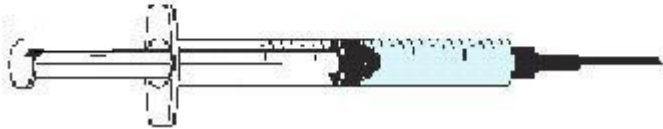


4. Gently wipe the injection site with an alcohol wipe or cotton ball soaked with rubbing alcohol.

5. Pull the needle cap away from the syringe.



**Removing needle cap**



**Syringe with needle  
(cap removed)**

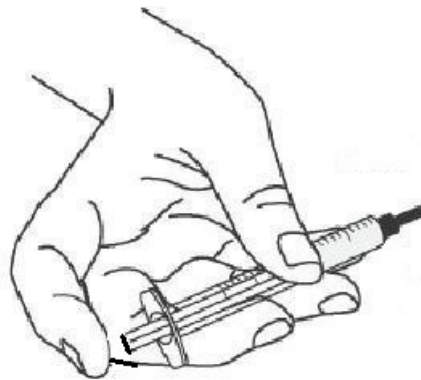
6. Gently squeeze the skin between your thumb and index finger as shown below.

**Creating a skin fold**



7. Carefully hold the syringe with the needle facing you. It may be easiest if the thumb and middle finger are placed on each side of the syringe. This leaves your index finger free to depress the plunger at the right time. If someone else is giving this to you, they may need to change the finger placement.

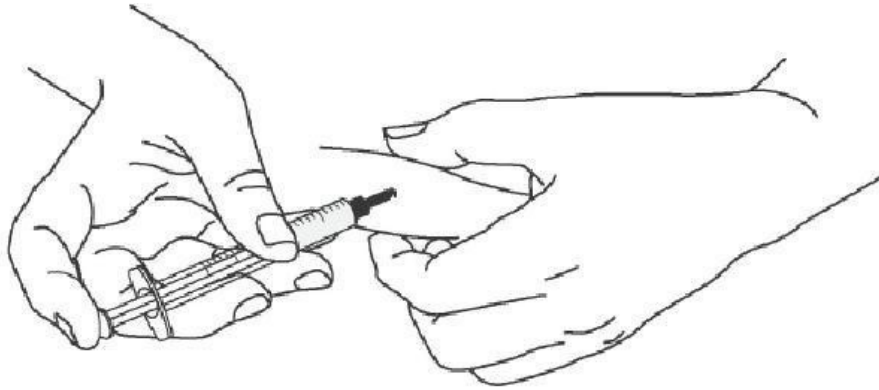
**Finger placement  
for self-injection**





8. Insert the needle at a 45- to 90-degree angle into the thickest part of the squeezed skin. Be sure to insert the entire length of the needle.

### **Injecting Lovenox**



9. Keeping the skin pinched, slowly push the plunger all the way in.
10. After all the medicine has gone in, pull out the syringe and release your skin. Hold the needle away from you and anyone else.
11. Do not put the cap back on the needle. Use the needle safety device to retract the needle and prevent injury. Depending on the type of syringe, press the plunger rod or designated button to activate. Activate the safety device only after removing the needle from your skin.
12. Discard the syringe and needle cap in the disposal container and secure the lid.