

# Injectable Anticoagulants

## Enoxaparin (Lovenox®), Dalteparin (Fragmin®), Fondaparinux (Arixtra®) and Heparin

An injectable anticoagulant is a medicine also known as a blood thinner. This medicine is given as a subcutaneous injection which means it goes into the fat below the skin. An anticoagulant is used to:

- Slow the clotting ability of your blood
- Treat any current blood clots
- Prevent blood clots from forming

Cancer patients are often prescribed blood thinning medicines as part of their treatment plan. Patients with atrial fibrillation/flutter (an irregular or very rapid heartbeat) may need to take anticoagulants to prevent a stroke. Patients with certain mechanical heart valves may need these medicines to prevent blood clots on the valve. Anticoagulants are given in lower doses to patients with certain high-risk cancers and after major surgery to prevent blood clots from forming.

### Precautions



**Before** you take this medicine, tell your doctor if:

- You are pregnant, think you are pregnant, plan to become pregnant or are breastfeeding
- You are allergic to any heparin products or have had a reaction to heparin
- You cannot take pork products for religious reasons
- You have a personal or family history of bleeding problems such as hemophilia
- You have a history of stroke, high blood pressure or blood vessel problems
- You have a stomach ulcer, diabetes, heart infection, kidney disease or liver disease
- You have recently had a stroke, surgery on your eyes, brain or spine, or had a heart valve replacement
- You take or plan to take any of the medicines below:
  - Antiplatelet medicines such as
    - Aspirin, cilostazol (Pletal®)
    - Clopidogrel (Plavix®)
    - Dipyridamole (Persantine®, Aggrenox®)
    - Prasugrel (Effient®)
    - Ticagrelor (Brilinta™)
    - Ticlopidine (Ticlid®)
    - Vorapaxar (Zontivity®)
  - NSAIDs such as:
    - Diclofenac (Voltaren®)
    - Diflunisal (Dolobid®)
    - Etodolac (Lodine®)
    - Ibuprofen (Motrin®, Advil®)
    - Indomethacin (Indocin®)
    - Ketoprofen (Orudis®)
    - Ketorolac (Toradol®)
    - Meloxicam (Mobic®)
    - Nabumetone (Relafen®)
    - Naproxen (Aleve®)
    - Oxaprozin (Daypro®)
    - Piroxicam (Feldene®)

– Other blood thinners such as:

- Apixaban (Eliquis<sup>®</sup>)
- Dabigatran etexilate (Pradaxa<sup>®</sup>)
- Rivaroxaban (Xarelto<sup>®</sup>)
- Edoxaban (Savaysa<sup>®</sup>)
- Warfarin (Coumadin<sup>®</sup>)

## Important Information About Your Medicine





- The doses for these medicines, except for heparin, are based on your weight. Weigh yourself every week. If you gain or lose more than 10 pounds, tell your health care team.
- Tell your doctor about any medicines you take, this includes non-prescription medicines (over-the-counter), nutritional supplements, vitamins, minerals or herbal products as some of these may increase the risk for bleeding.
- Store this medicine at room temperature and away from extreme heat, moisture and light. **Do not** freeze.
- Keep this medicine (both used and unused syringes) out of the reach of children and pets.
- Be careful not to fall, injure, cut or bruise yourself.
- Take special care while brushing your teeth. Use a soft toothbrush and floss gently.
- Apply pressure to any cut for 10 minutes to stop the bleeding. Draw a line around the edge of new bruises to monitor their size.
- You may need to stop taking blood thinning medicines before any procedure. Ask your health care team if you should stop this medicine before the procedure, including dental work. If you are told to stop taking your blood thinning medicines for any reason, be sure to ask when you can begin taking it again after the procedure.
- Talk with your doctor or pharmacist if you have questions about taking this medicine.



## Timeframe for Therapy



You may take a blood thinning medicine for at least 3 to 6 months when treating a blood clot. You may need to take it longer. **Do not** stop taking this medicine unless instructed to do so by your doctor or if you have a serious bleeding problem. If you need a refill, contact your primary health care team.

## Medicines

Generic Name	Brand Name	How to Take Medicine	Image of Medicine Syringe
Enoxaparin	Lovenox	<ul style="list-style-type: none"><li>• Injected 1 to 2 times a day</li><li>• If taken 2 times a day, take every 12 hours</li></ul>	
Dalteparin*	Fragmin	<ul style="list-style-type: none"><li>• Often injected 1 time a day</li><li>• First 30 days is a higher dose</li><li>• The dose may be lower beginning on day 31. If it is lower, you should notice a change in the syringe color.</li></ul>	

Fondaparinux*	Arixtra	<ul style="list-style-type: none"> <li>Injected 1 time a day</li> </ul>	
Heparin*		<ul style="list-style-type: none"> <li>Injected 2 to 3 times a day</li> <li>Helps prevent blood clots after surgery</li> </ul>	

\*These medicines may be hard to find outside of MD Anderson's pharmacy. Call your pharmacy in advance to make sure they have a supply.

## Home Dosing

You may receive the first dose of this medicine while in the hospital. If so, ask your nurse what time you were given the last dose. When you are home, if you are to take this medicine 2 times a day, slowly adjust the timing to what is convenient for you.

For example, if your first dose was at 3 a.m. in the hospital, your next dose should be at 3 p.m. at home. If you do not want a 3 a.m. and 3 p.m. schedule every day, move the time forward or back by 1 hour on the next day until the schedule is right for you. If the first dose is given at 3 p.m., the next dose is at 4 a.m., then the following dose at 5 p.m., and the next dose at 6 a.m. and 6 p.m. This can take several days until you are on a schedule that you want to follow every day.

## Missed Dose

If you miss a dose of **enoxaparin, dalteparin or fondaparinux**, follow these instructions if you are scheduled to take this medicine **1 time a day**.

Situation	What to Do	Example
You remember your missed dose on the <b>same</b> day.	Take the dose immediately. That new time is now your normal dose time.	If you take your medicine at 6 a.m. but forget until 1 p.m. that same day, take the dose at 1 p.m. You will then take medicine at 1 p.m. going forward.
You forgot your dose until the <b>next</b> day.	Take your dose at your normal dose time.	If you take your medicine at 6 a.m. but forgot on Monday. Then, take the dose at 6 a.m. on Tuesday and every day going forward.

If you are scheduled to take **enoxaparin 2 times a day (every 12 hours)** and miss a dose, follow these instructions.

Situation	What to Do	Example
You remember your missed dose on the <b>same</b> day.	Take the missed dose when you remember. Take the next dose 12 hours later. This will be your new schedule.	If you take your medicine at 8 a.m. and 8 p.m. but forget your 8 a.m. dose and remember at 10 a.m., take your dose immediately. Then,

Situation	What to Do	Example
		your new dose time is 10 a.m. and your next dose is 12 hours later at 10 p.m. Going forward, your new dose schedule is 10 a.m. and 10 p.m.

If you are scheduled to take **heparin 2 to 3 times a day (every 8 to 12 hours)** and miss a dose, follow these instructions.

Situation	What to Do	Example
You miss your dose of heparin	Skip that dose and inject the next dose at the normal dose time.	If you take heparin at 8 a.m. and 8 p.m. but forget your 8 a.m. dose. Skip that dose and take the next dose at 8 p.m. Go back to your normal dose schedule the next day of 8 a.m. and 8 p.m.



**Do not** double up on your dose.

## Self-Injection Procedure

Your doctor will send you home with an injectable anticoagulant which you will inject under your skin. This is called a subcutaneous injection. Follow the steps in this document that outlines the procedure you should follow when giving yourself or someone else the subcutaneous injection. Inject this medicine only as directed by your doctor. **Do not** inject this medicine more or less often than prescribed.



**Never re-use needles. Never share needles. Always throw away needles after each use.**

Your nurse will show you how to use the syringe. If you have any questions, make sure to ask the nurse before giving yourself the injection.

### Supplies Needed

- Pre-filled syringe of enoxaparin (Lovenox), fondaparinux (Arixtra), dalteparin (Fragmin) or heparin
- Alcohol swabs
- Cotton ball
- Sharps container (such as a plastic detergent container, milk jug, coffee can).

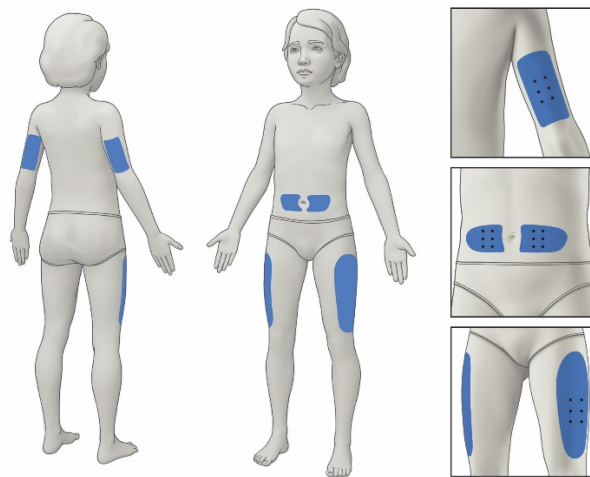
### Instructions

1. Wash your hands with soap and water for 20 seconds. Rinse well and dry your hands.



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2. Sit or lie in a comfortable position and find the place where you will give yourself the injection. For adults, these injections can be given in:
- Your stomach at least 2 inches from your belly button. This is the preferred location.
  - The outer third of the top of your thigh
  - The center of the back of your upper arm
- For infants and smaller children, the injection is often given on the outer thigh. Ask the child's doctor about the best place to give the injection.



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3. Cleanse the area of your skin with an alcohol swab and let the injection site dry.

### Exceptions:



#### **For heparin only:**

Remove the syringe from the plastic tube. While the tip cap is still on, push the plunger rod slightly to break the stopper loose. Twist off the tip of the cap and throw away. Connect the syringe to the needle. Twist it on.

#### **For partial dose or dose from a multidose vial enoxaparin (Lovenox):**

See next section on how to prepare the dose.

4. Firmly pull the needle cap and throw away.
5. To make sure you receive the full dose, **do not** push out the air bubble from the syringe before the injection.
6. Gently pinch up the skin surrounding the site of injection and hold firmly until the injection is given.
7. For adults, insert the needle at a 90-degree angle into the fold of skin. Push the whole length of the needle into the skin.



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Thinner patients and children can inject at a 45-degree angle.

8. When the needle is in the site, push the plunger slowly with your thumb or forefinger until the syringe is empty. Then pull the needle straight out and let go of the skin fold.
9. Place cotton ball on injection site if bleeding. **Do not** rub the injection site.
10. Your syringe may have a safety shield. If there is a safety shield, push the plunger down after removing the needle until you hear a click. The safety shield covers the needle.
11. Dispose of the needle in the red sharps container or a puncture resistant container, such as an empty bleach or detergent container or a metal container with a screw on or tightly secured lid.
12. Be sure to change the location on your stomach where you give yourself the injection. You can use the injection site log below to document each injection.

### Partial Dose of Enoxaparin (Lovenox)

Enoxaparin (Lovenox) may be prescribed by your doctor in a partial dose. Partial doses may also be used if your doctor prescribes a sliding scale. This means a higher dose is given for a normal platelet count and a lower or partial dose is given for a low platelet count.

Some syringes may have markings that show the dose. For example, a 100 mg (1.0 mL) syringe may be dispensed. However, you may only need to take 90 mg (0.9 mL).

In this example, point the needle downward, open the cap and push the plunger down until the top of the liquid bubble reaches 90 mg or 0.9 mL.



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100 mg / 1.0 mL 90 mg / 0.9 mL

### Enoxaparin (Lovenox) Dose From Multidose Vial

- Remove the plastic cap from the vial. Then, clean the stopper of the vial with an alcohol swab and let it dry.
- Pull the syringe plunger back to the line of the dose prescribed. This draws air into the syringe.
- Remove the cap of the needle and insert it into the vial.
- Turn the vial upside down, push the air into the vial and pull the needle back so that only the tip remains in the stopper
- Pull the plunger back until the black line is at the dose prescribed
- Check for air bubbles. If you notice any, push the plunger back in to remove the air and draw out more medicine.
- Remove the needle from the vial. **Do not** touch the needle at any time.



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## Side Effects

Side effects may include minor pain and bruising near the injection site.

- **Bleeding and bruising**

- You may bruise and bleed more easily.
- Try not to cut or injure yourself. If you shave, always use an electric shaver.
- **Do not** take aspirin or any other pain reliever such as ibuprofen (Advil or Motrin) or naproxen (Naprosyn or Aleve) unless your doctor says it is OK. These medicines can affect how your platelets work. Your doctor will monitor your platelet count while on this medicine.

- **Pain and skin damage**

- Tell your health care team right away if your injection site or the area around it is painful, red, swollen, blistered or burning.
- Tell your health care team if you see a lump or change in skin color at the site of injection that does not go away after a few days or gets bigger.

These are the most common side effects. Other side effects may occur and should be reported to your doctor. **Do not** change your dose or schedule unless you are told to do so by your doctor or if you are having a serious bleeding problem. Report any problems to your doctor, nurse or pharmacist.

## Emergency Care

Talk with your doctor **right away** if you develop a skin rash, hives or itching or blistering or peeling of your skin.

**Call 911 or go to the nearest hospital emergency center** if you notice any of the following:



- Allergic reaction
  - Swelling of your face, mouth or tongue
  - Tightness in your chest or throat
  - Wheezing or shortness of breath
  - Fast or irregular breathing
  - Light-headedness, dizziness, fainting or confusion
- Unusual and serious bruising or bleeding anywhere on your body
- Bright red blood in your stool or dark tarry stools
- Blood in your urine (pink-tinged, red or dark brown)
- Coughing or vomiting of blood or coffee-ground-like substance
- Serious fall or hit to your head
- Chest pain or shortness of breath
- Irregular heartbeat
- A change in your mental status, confusion, very bad headache, drowsiness, slurred speech, sudden unexplained vomiting, numbness or weakness in a limb, change in vision or ability to walk
- Redness, swelling, warmth or pain in your arms or legs

- Any other serious symptoms or changes in your health

## Cost of Medicine

If needed, help is available to cover the cost of your medicines. If you had your prescription filled at an MD Anderson pharmacy, contact the pharmacy to determine if you qualify for an assistance program. If your prescription was filled outside of MD Anderson, contact your health care team to discuss other options for treatment.

If you have questions, send your team a message in MyChart. Expect a response within 1 business day. Each medical message goes to your doctor's nursing team to ensure messages are read in a timely manner. If your concern is urgent, call your center and ask to speak with a nurse. If you need to reach someone after hours or during weekends, call askMDAnderson at 877-632-6789 to talk with a nurse.

## Resources

For additional resources visit the MD Anderson Blood Clots and Anticoagulants website at <https://bit.ly/BloodClotsandAnticoagulants> or scan the QR code.



### How to Use QR Codes with a Smartphone or Tablet

- Make sure your mobile device has an internet signal or Wi-Fi connection.
- Open the camera app on your smartphone or tablet.
- Scan the QR code with the camera on your device.
- Tap the pop-up notification. The video will play in your web browser.



## Injection Log

Date	Time	Injection Site

## Anticoagulation Identification Card

Consider printing out this patient identification card. You can place it in your wallet in case of an emergency. This will let emergency medical providers know you are taking this medicine.

### Patient Identification Card

To anyone providing medical care:

\_\_\_\_\_  
(name)

is taking \_\_\_\_\_, an anticoagulant.

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In an emergency, call:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Doctor's name: \_\_\_\_\_

Doctor's phone: \_\_\_\_\_