Low molecular weight heparin (LMWH) is an anti-coagulant that is given by injection under the skin. Anticoagulants are medicines that treat and prevent abnormal blood clots. There are three LMWHs available in Canada: enoxaparin (Lovenox®), tinzaparin (Innohep®) and dalteparin (Fragmin®).

Why are LMWHs used?
- To **prevent** an abnormal blood clot from developing.
- To **treat** an abnormal blood clot in the legs or lungs.

What dose of LMWH will be prescribed?
The dose of LMWH will depend on whether it is being given to prevent or to treat a blood clot, and will also be based on the child’s body weight.

1. enoxaparin (Lovenox®) is most often used in children and is given once or twice a day.
2. tinzaparin (Innohep®) is given once a day.
3. dalteparin (Fragmin®) is given once or twice a day.

- Your care provider will determine your LMWH dose which will be based on your weight and on the results of blood tests.
- LMWH should be given at the same time(s) every day.
- LMWH may come in a prefilled syringe or a multi dose vial which will depend on your dose.
- The length of time you will require LMWH will be determined by the reason for anticoagulation.
- Patients should not change the dose or stop taking this medication unless instructed by the doctor.

Do I need blood work?
- Blood work is required to ensure the amount of LMWH you are taking is correct.
- Heparin levels must be drawn 4 hours after the morning injection or two hours after the morning injection if you are younger than 5 years of age AND on Tinzaparin.
- Blood is usually drawn once a month but may be more often if your LMWH dose changes.
How to inject LMWH

1. Wash your hands.
2. The skin needs to be clean and dry, alcohol swabs are not needed at home.
3. Injections will be given in the thighs and in the backs of arms in infants > 3.5 kg. It is very important to use all sites.
4. Pick a place to give the injection.
5. Avoid any areas with:
   • lumps
   • bumps under the skin
   • near a surgical scar
   • near a bruise from a previous injection
6. Rotate sites and sides for each injection.
7. Get comfortable; you need to be in a position where you can comfortably be able to pinch up the skin on thighs or the backs of arms. The tummy should NOT be used in infants or children.
8. Remove the cap from the needle by pulling it straight off the syringe.
9. Hold the syringe in the hand you write with. With the other hand, pinch-up the selected area between your thumb and forefinger to make a fold in the skin.
10. Insert the entire length of the needle into the pinched up skin at a 90° angle. Do not release the pinched skin fold while injecting.
11. While continuing to hold the skin fold, slowly push the plunger down all the way to inject all of the medicine.
12. After all of the medicine has been injected, pull the needle straight out.
13. Let go of the pinched skin fold.
14. Apply pressure (without rubbing) for 5 minutes to the site to prevent bruising.
15. With some LMWH syringes, when you push the plunger all the way in, a protective sleeve will automatically come out and cover the needle.
16. Do not put syringes in the garbage. Put the syringes in a container made for needles provided by your health provide or pharmacist. They will also provide you with instructions on correct disposal of the container.
Practical tips for taking LMWH

- Do not inject into muscle. The best way to avoid this is to pinch up enough of the skin.
- Do not use LMWH if it is past the expiry date on the box or syringe.
- Always select a different site for each injection.
- Take the LMWH at around the same time every day.

How is LMWH stored?

- Store the LMWH syringes at room temperature (not in the refrigerator).
- Do not leave the syringes in direct sunlight.

What if a dose of LMWH is missed?

- It is important to take LMWH regularly as prescribed and to ensure that the prescription is refilled on time (*3 days notice*). If a dose is missed:
  - Take your missed dose as soon as you remember and then call your doctor for further instruction.
  - If you cannot reach your doctor right away, take your next injection 12 or 24 hours from when you had it last, depending on how often you have been giving yourself the injections.
  - Do not take 2 injections at once in order to make up for an injection that was missed.

Are there side effects?

- The most common side effects are pain, redness, bruising, or swelling where the injection is given.
- These side effects can usually be minimized by rotating skin injection sites.
- The most important side effect of LMWH is bleeding.
- All anticoagulants increase the risk of bleeding. Bleeding can be minor or major.
  - Minor bleeding stops on its own, and does not last long. Examples of minor bleeding include: nose bleeding, gum bleeding, bruising, etc.
  - Major bleeding (see page 4) is more serious, requires medical attention, and stopping the LWMH at least temporarily. Most people taking LMWH do not experience major bleeding.
When should you contact your doctor urgently?

If you have any of the following symptoms of bleeding:

- Blood in the bowel movements or black/tarry bowel movements or urine (red coloured).
- Menstrual bleeding that is much more than usual.
- Coughing or vomiting up blood.
- Any bleeding that won’t stop.
- Physical injury such as head injury, broken bone, car accident.
- If an injection site becomes red, painful, warm, ooze. These could be signs of infection and you should contact your doctor.
- New rashes.
- Unusual bruising for unknown reasons.

Tips to reduce your chances of bleeding:

- Use a soft toothbrush and waxed dental floss if there is frequent gum bleeding.
- Avoid contact sports (e.g., boxing, martial arts).

Can I still have my immunizations and Flu shots while on LMWH?

- It is strongly recommended that you receive your immunizations and flu shots.
- Immunizations are safe while on LMWH.
- We suggest you get your immunization done before the next LMWH dose is given if possible.
- Apply firm pressure to the site for 10 minutes following the injection.

KEY MESSAGE BOX:

- Remember to take LMWH around the same time every day.
- Do your blood work as instructed.
- Call your care provider or KIDCLOT if you have any procedures or surgery scheduled.
- Call your doctor or go to the emergency room if you have unusual or major bleeding.

HOW TO CONTACT KIDCLOT ©

Hotline: (780) 248-5640 – Messages will be answered before 4pm, business days.
- After hours (urgent matters only) - 780-407-8822 (ask for the KIDCLOT physician on call).
- Email: kidclot@albertahealthservices.ca.