

### What is a subcutaneous injection?

A method of giving a medication in the fatty layer of tissue just under the skin.

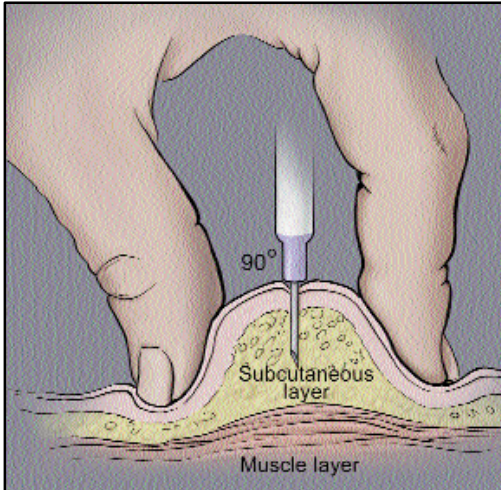


Diagram 1: A subcutaneous injection into the fatty layer of tissue under the skin (NIH CC Med Arts)

### Preparing to give medication by syringe

Avoid areas where skin is burned, scarred, hardened, inflamed, swollen, or damaged by a previous injection.

1. Wash your hands thoroughly. This is the best way to prevent infection.
2. Assemble your equipment:

#### Medication

Your medication may come in a powder form; follow the manufacturer's instructions for mixing the powder and liquid together.

#### Needle and syringe sizes

The appropriate size of the needle and syringe are important for the type of medication. In general, use a small, short needle. Your healthcare provider will discuss appropriate needle and syringe sizes with you.

#### Other supplies needed

Medication log

Container for syringe and needle disposal

Sterile 2 x 2-inch gauze pad

Alcohol pads

### Drawing up medication

1. Check the label for correct medication.
2. Remove the soft metal or plastic cap protecting the top of the vial.
3. If the medication vial can be used for more than one dose, then record the date and time on the label.
4. Clean the exposed top of the vial using an alcohol swab.
5. Remove the syringe from the plastic or paper cover. If necessary, attach the needle securely. Avoid touching the needle.
6. With the needle capped, pull back the plunger, filling the syringe with air equal to the amount of medication to be administered.
7. Remove the cap covering the needle, and set it on its side to keep it clean.
8. With the vial in an upright position, push the needle down through the cleansed center of the top of the vial, being careful not to bend the needle.
9. Inject the air in the syringe into the vial.
  - If too little or no air is injected, withdrawing the medication may be difficult.
  - If too much air is injected, the plunger may be forced out of the barrel causing the medication to spill.
10. Turn the vial upside down, with the needle remaining in the vial, making sure that the tip of the needle is completely covered by the medication.
11. Pull back on the plunger to fill the syringe with the correct dose of medication. You may go slightly over the amount needed. If you see a lot of air in the syringe, you may push all of the medication back into the vial and withdraw again slowly, making sure the needle tip stays in the solution.
12. Take the needle out of the vial.
13. Point the needle and syringe straight upwards and tap the syringe to move any bubbles to the top. *(Continued on next page.)*

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14. Once the bubbles are at the top of the syringe, gently push on the plunger to force the bubbles out of the syringe.
15. Check to make sure that you have the correct amount of medication in the syringe. If the dose is not correct, then repeat the steps beginning at number 8.

*Note:* It is important to eliminate large air bubbles, because they take up space needed for the medication, and they may cause pain or discomfort when injected.

### Locating injection sites

Subcutaneous injections can be given in the arms, legs, or abdomen. Your nurse or doctor will help you select the best sites to administer your medication.

To locate injection sites on the arms, use the areas shown on Diagrams 2 and 3, from just below the shoulder and just above the elbow. Avoid scars and moles.

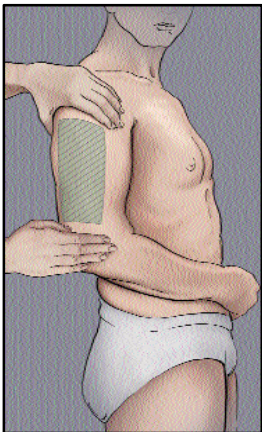


Diagram 2: Injection sites on the side of the arm (NIH CC Med Arts)

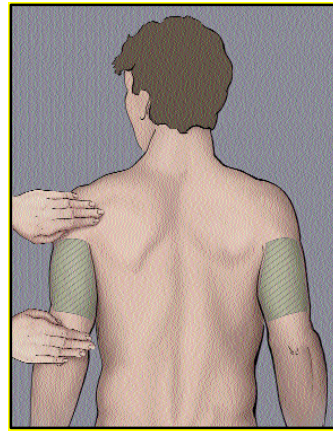


Diagram 3: Injection sites on the back of the arms (NIH CC Med Arts)

To locate injection sites on the abdomen, use the area shown in Diagram 4, avoiding the belly button, ribs, and hip bones, scars or moles.

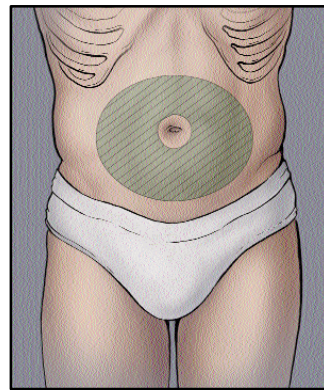


Diagram 4: Injection sites on the abdomen (NIH CC Med Arts)

To locate injection sites on the thighs use the outer areas, shown in Diagram 5, below the groin and above the knee. Avoid scars and moles.

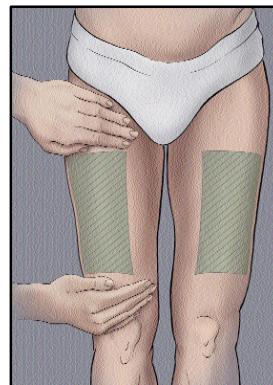


Diagram 5: Injection sites on the thighs (NIH CC Med Arts)

## Rotating injection sites

It is extremely important to rotate sites to keep the skin healthy. Repeated injections in the same spot can cause scarring and hardening of fatty tissue that will interfere with uptake of medication. Each injection should be about 1 inch apart.

## Safe needle disposal

- Please refer to the Clinical Center pamphlet “Handling Sharp Objects Safely at Home.”
- Place the syringe in a hard plastic or metal container with a tightly secured lid.
- Do not re-cap needles after use.
- Keep the container out of the reach of children or pets.
- Check your local doctor’s office or hospital for disposal container for used needles and syringes.

## Giving the injection by pen

1. Wash your hands thoroughly.
2. Assemble equipment and supplies.
3. Record the date and time on the label of the first time the pen is used.
4. Follow the manufacturer’s directions for expiration date.
5. Attach the needle to the pen by cleaning the top of the pen with alcohol and screwing on the needle.
6. Dial in your prime volume (usually 0.02 mL) using the manufacturer’s directions.

7. With pen needle pointed up, push the injection button completely. You should see a drop or stream of liquid. If you do not, repeat priming steps 6 & 7 until this occurs.
8. Dial in prescribed dose of medication.
9. Cleanse your skin with a back-and-forth motion using an alcohol swab.
10. See the section on locating and rotating injection sites.
11. Take the cover off of the needle. Be careful not to contaminate the needle. Place the cover on its side.
12. Quickly insert the needle all of the way into the skin at a 90 degree angle. For small children and persons with little subcutaneous fat, you may be taught to use a 45-degree angle.
13. Do not press down on the top of the plunger while piercing the skin.
14. After the needle is completely inserted into the skin, press down on the plunger or injection button to release medication into the subcutaneous layer in a slow, steady pace.
15. After medication is released, count 10 seconds before removing the needle and pen from the skin.
16. Pull needle out of the skin, gently press a 2 x 2 gauze onto the insertion site, and apply Band-Aid if desired.
17. Massaging or rubbing the area is not necessary unless instructed to do so.
18. Untwist the needle on the pen, and safely dispose of the needle.
19. Replace pen cap, and store as instructed. See section on safe needle disposal.

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