



# Lecture 9

## Subject Medication Administration Part 2

Theoretical

Prepared by

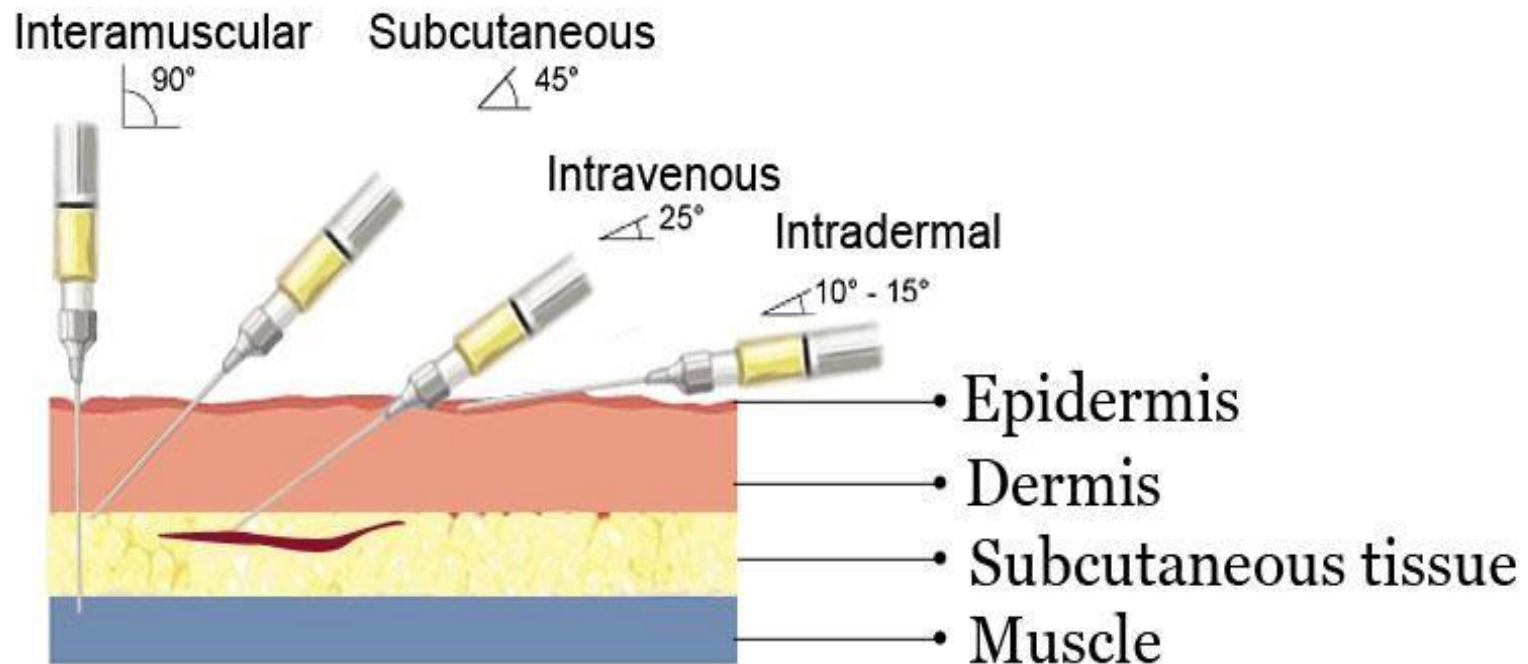
**Dr. Anmar Salah Nadum**

**Dr. Rania abd Elmohsen**

# Parenteral medications

Parenteral administration of medications is a common nursing procedure. Nurses give parenteral medications **intradermally (ID)**, **subcutaneously**, **intramuscularly (IM)**, or **intravenously (IV)**.

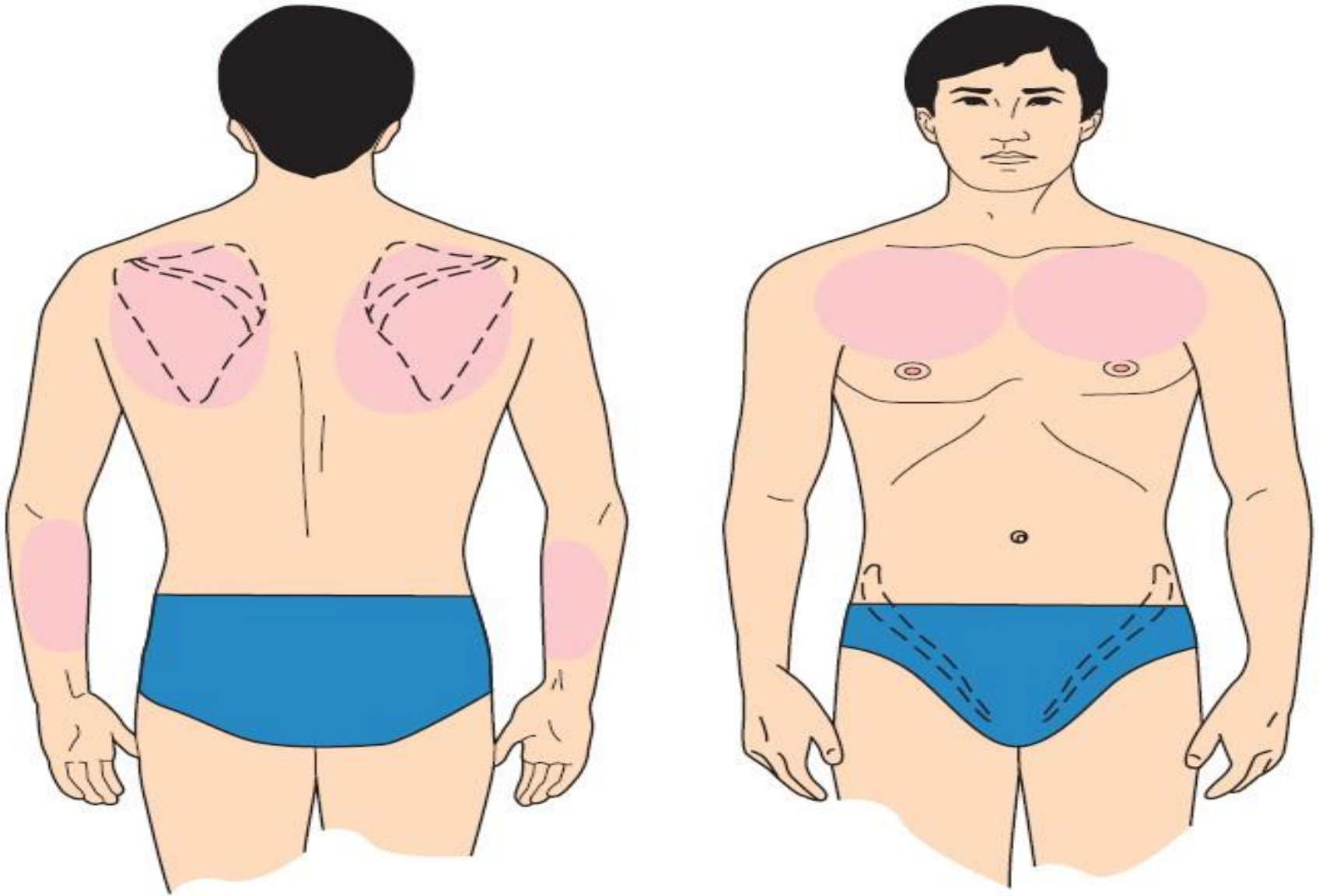
## Types of Parenteral Routes of Administration



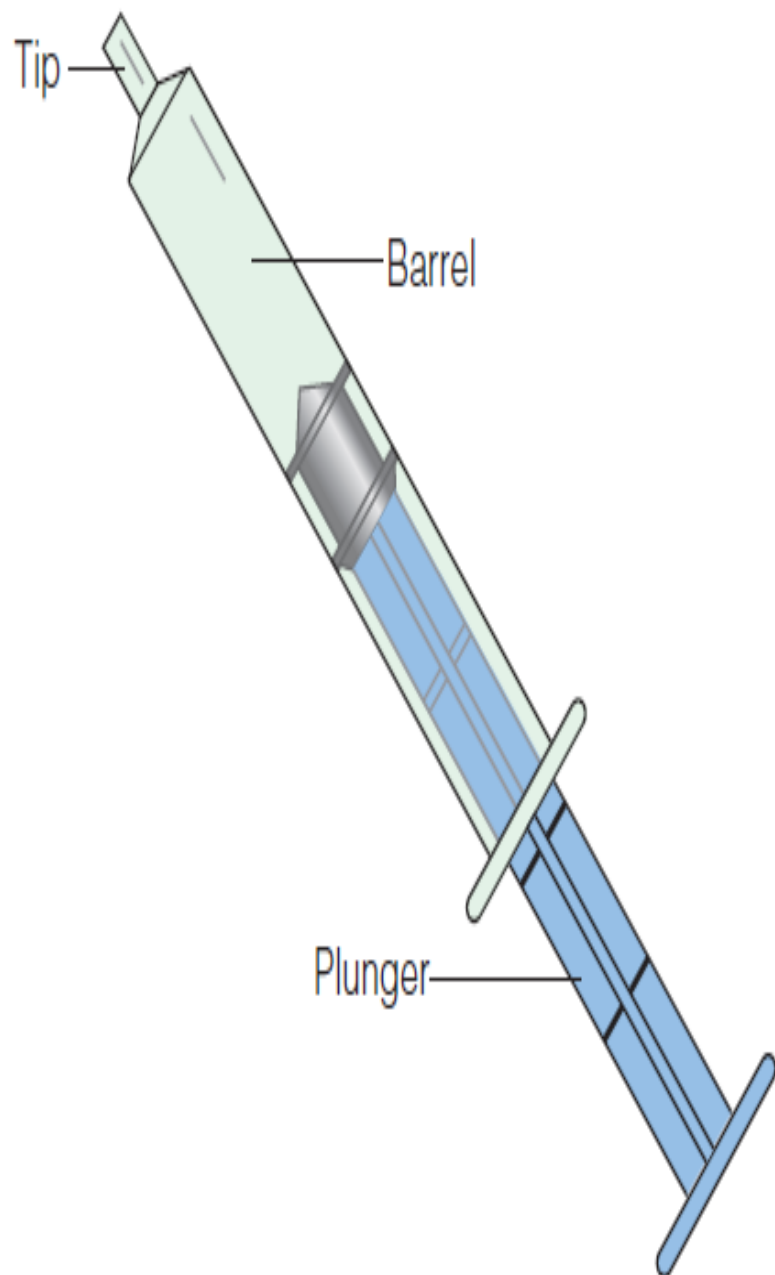
# 1- Intradermally (ID)

- ❖ Intradermal (ID): injection into the dermis just below the epidermis.
- ❖ The angle of injection is from 5 to 15 degrees.
- ❖ Used a small amount of liquid, for example, 0.1 mL.
- ❖ Used for allergy testing and tuberculosis (TB) screening.
- ❖ The test result appears after 10 minutes for allergy and 48 – 72 hours for (TB) test .
- ❖ The common sites for injection are the anterior aspect of the forearm, the upper chest, and the back beneath the scapulae

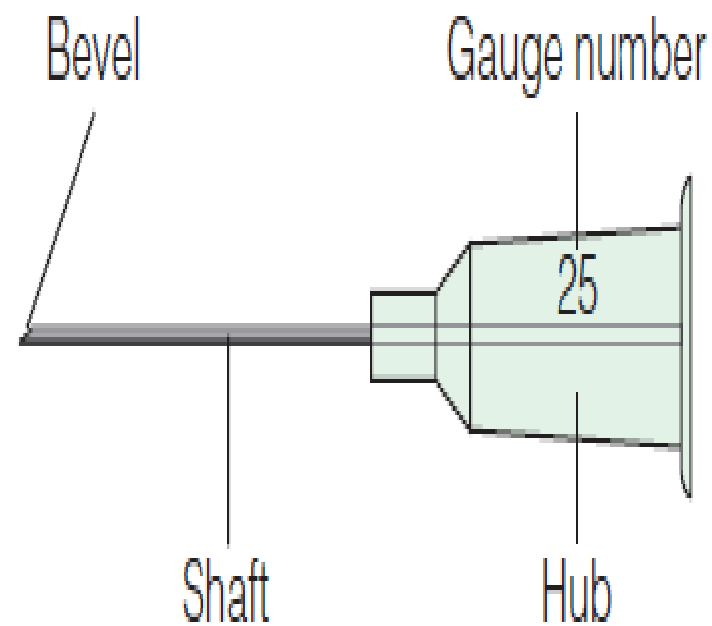
# Site of intradermal injection



**Figure 35-32** ■ Body sites commonly used for intradermal injections.



**Figure 35-14** ■ The three parts of a syringe.



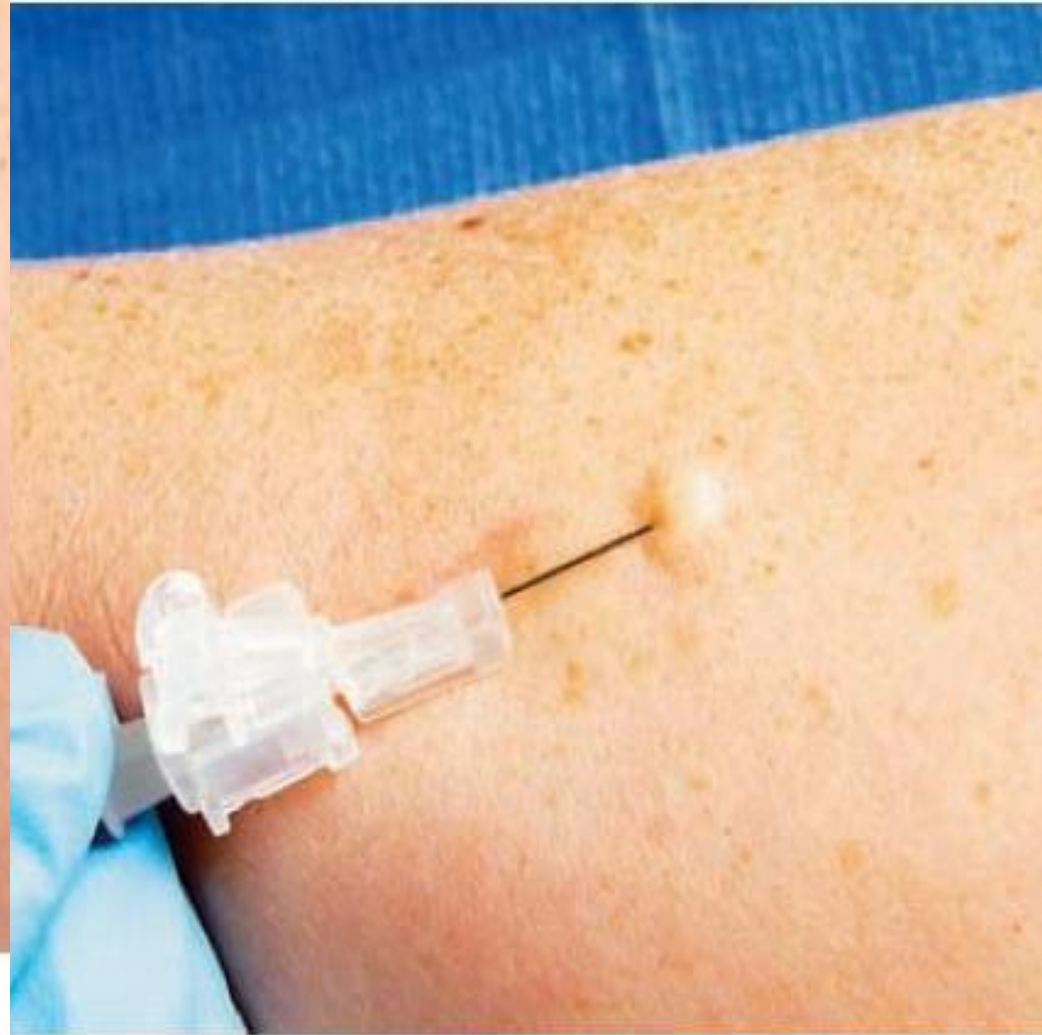
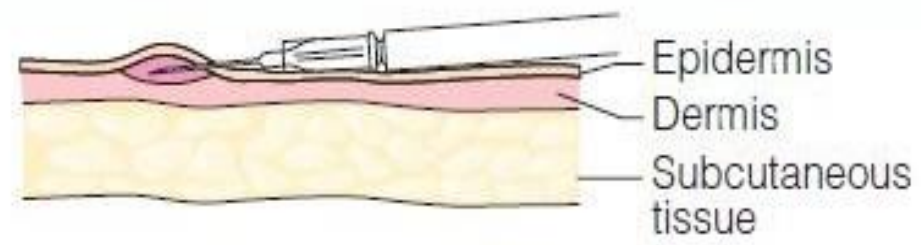
**Figure 35-22** ■ The parts of a needle.

# Administration Intradermal (ID) Medication

1. Perform hand hygiene.
2. Introduce self and explain procedure.
3. Explain to the client that the medication will produce a small wheal, sometimes called a bleb.
4. Provide for client privacy.
5. Select site (Avoid sites that are tender, inflamed, or swollen)
6. Apply gloves.
7. Expel any air bubbles from the syringe.

8. Cleanse the skin at the site using a firm circular motion starting at the center and widening the circle outward.
9. With the nondominant hand, pull the skin at the site until it is taut.
10. Insert the tip of the needle and inject the medication carefully and slowly.
11. Withdraw the needle quickly, Apply a bandage if indicated.  
Do not massage the area.
12. Dispose of the syringe and needle into the sharps container.
13. Documented all information.









**Figure 35–16** ■ Different insulin syringes based on the amount of insulin required. Note the difference in the number of units of insulin per line.



**Figure 35-23** ■ Dispose of used syringe and needle in a sharps container.

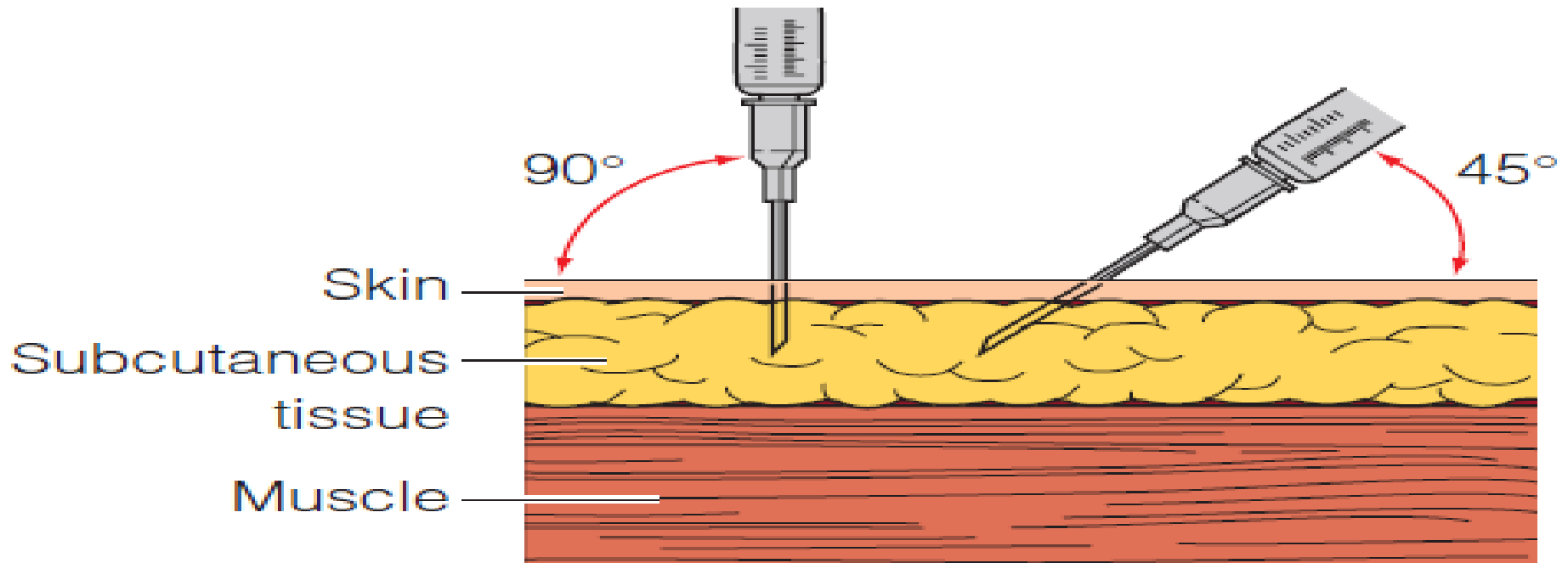


**Figure 35-25** ■ Recapping a needle using the one-handed scoop method.



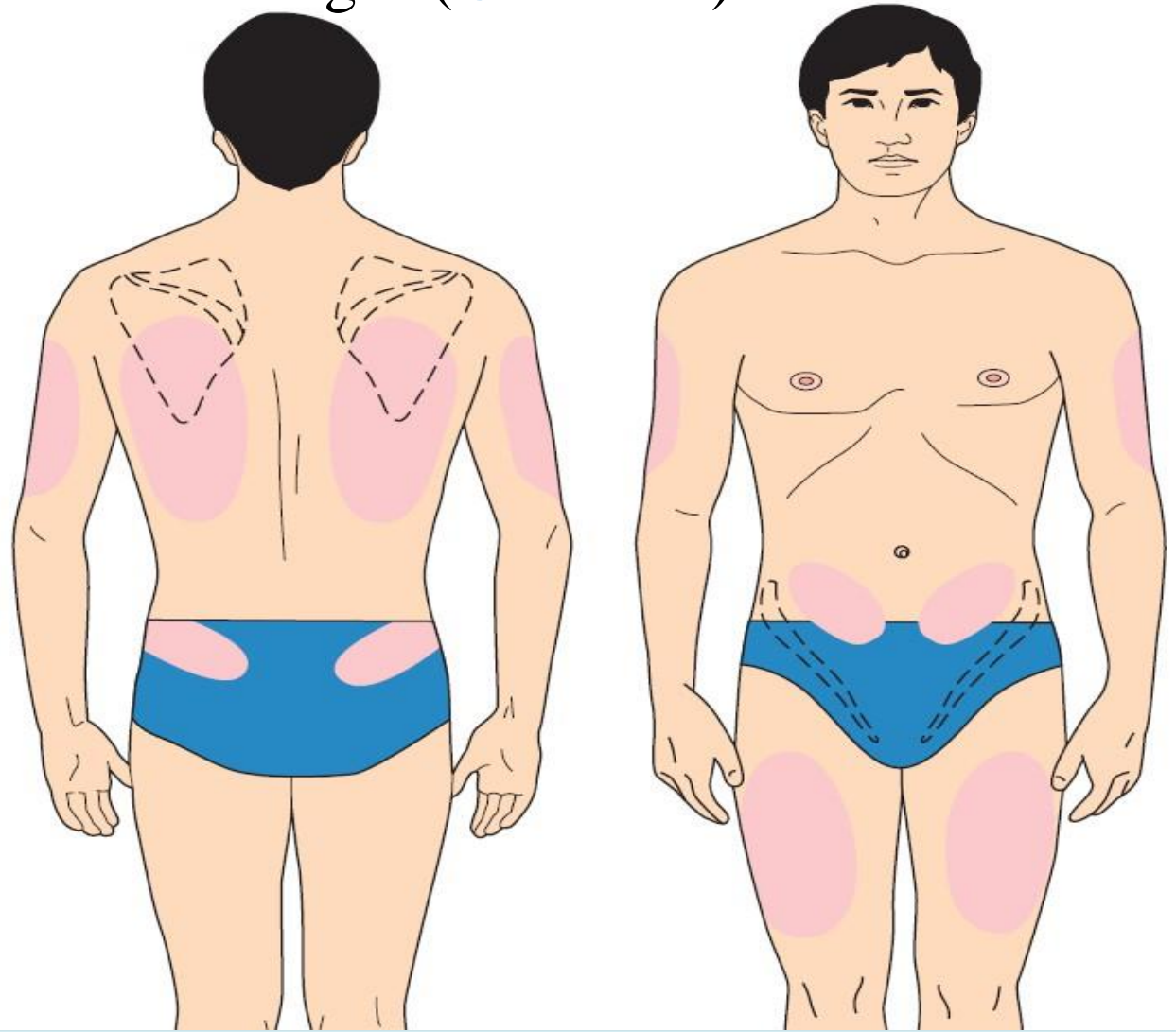
## 2- Subcutaneous Injections (SC)

- ❖ Many kinds of drugs administered subcutaneously (vaccines, insulin, and heparin).
- ❖ Only small doses (0.5 to 1 mL) of medication.
- ❖ The angle of injection is  $45^{\circ}$  and in some area and cases  $90^{\circ}$



## ❖ Common sites for injections are:-

1. the outer aspect of the upper arms (**Common**) (why??)
2. the anterior aspect of the thighs. (**Common**)
3. the abdomen
4. the scapular



# Administering a Subcutaneous Injection

1. Perform hand hygiene and wear clean gloves.
2. Provide for client privacy.
3. Introduce your self to the client.
4. Explain the purpose of the medication.
5. Select a site free of tenderness, hardness, swelling, scarring, itching, burning, or localized inflammation.
6. Clean the site with an antiseptic swab, start at the center of the site and clean in a widening circle to about 5 cm.
7. Prepare the syringe for injection.



8. Inject the medication at 45° angle insertion or a 90° angle insertion.
9. Remove the needle.
10. If bleeding occurs, apply pressure to the site with dry sterile gauze until it stops.
11. Document the medication given, dosage, time, route, and any assessments.

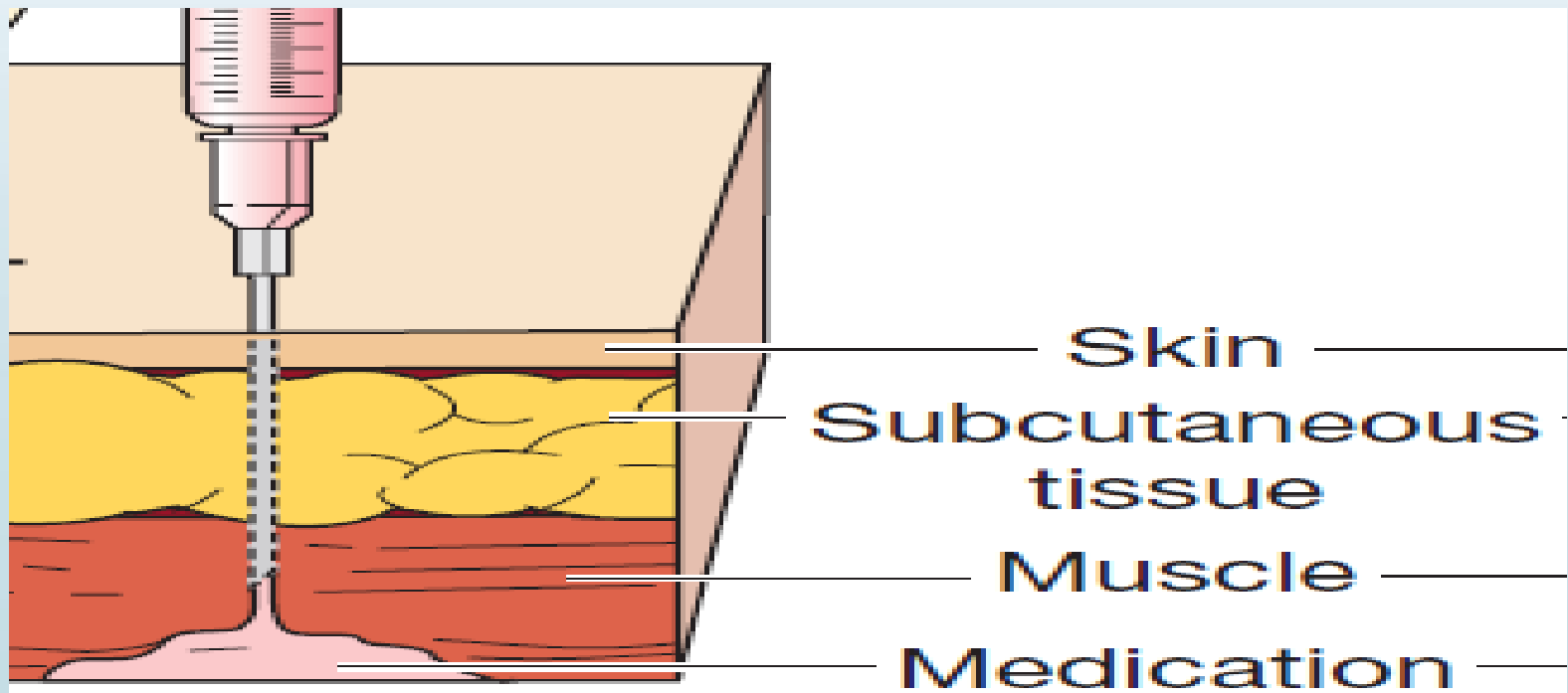


② Administering a subcutaneous injection into pinched tissue.



### 3- Intramuscular Injections (IM)

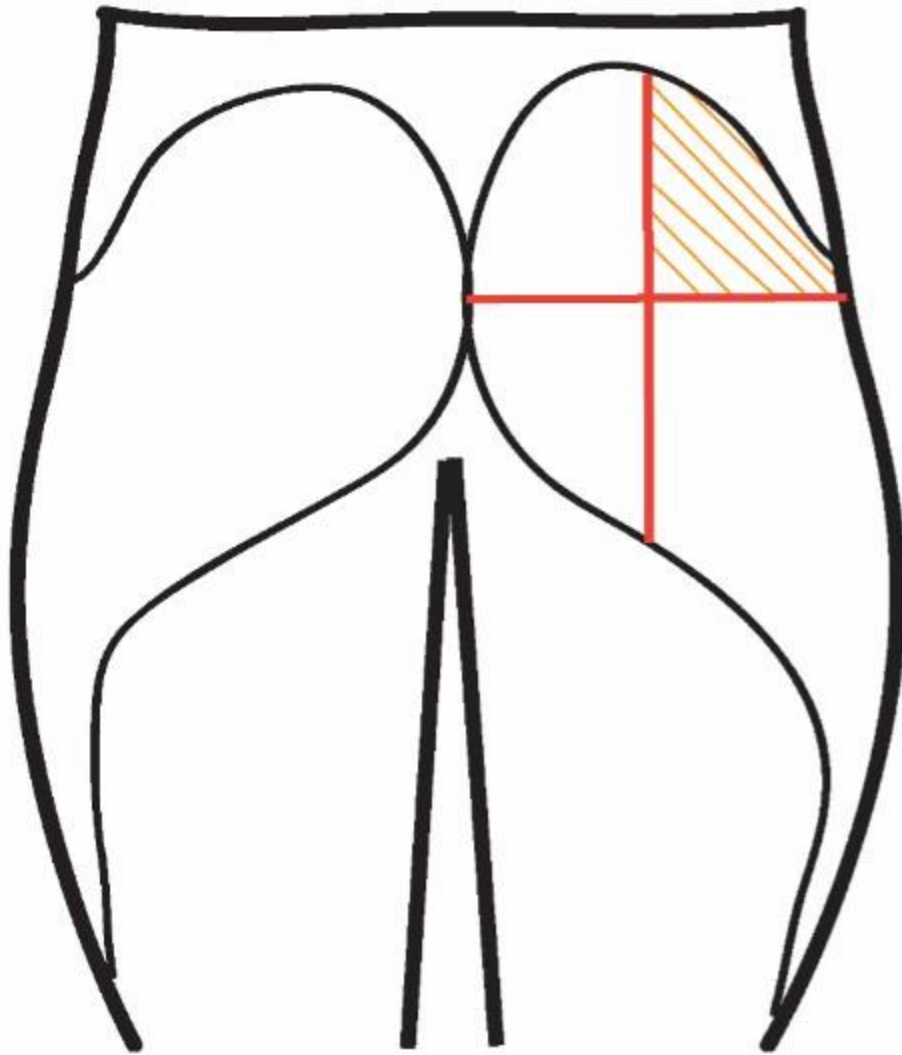
- ❖ Injections into muscle tissue, are absorbed more quickly than subcutaneous injections because of the greater blood supply.
- ❖ Take a larger volume of fluid (1 – 5 ml).
- ❖ The angle of injection is 90 degree.



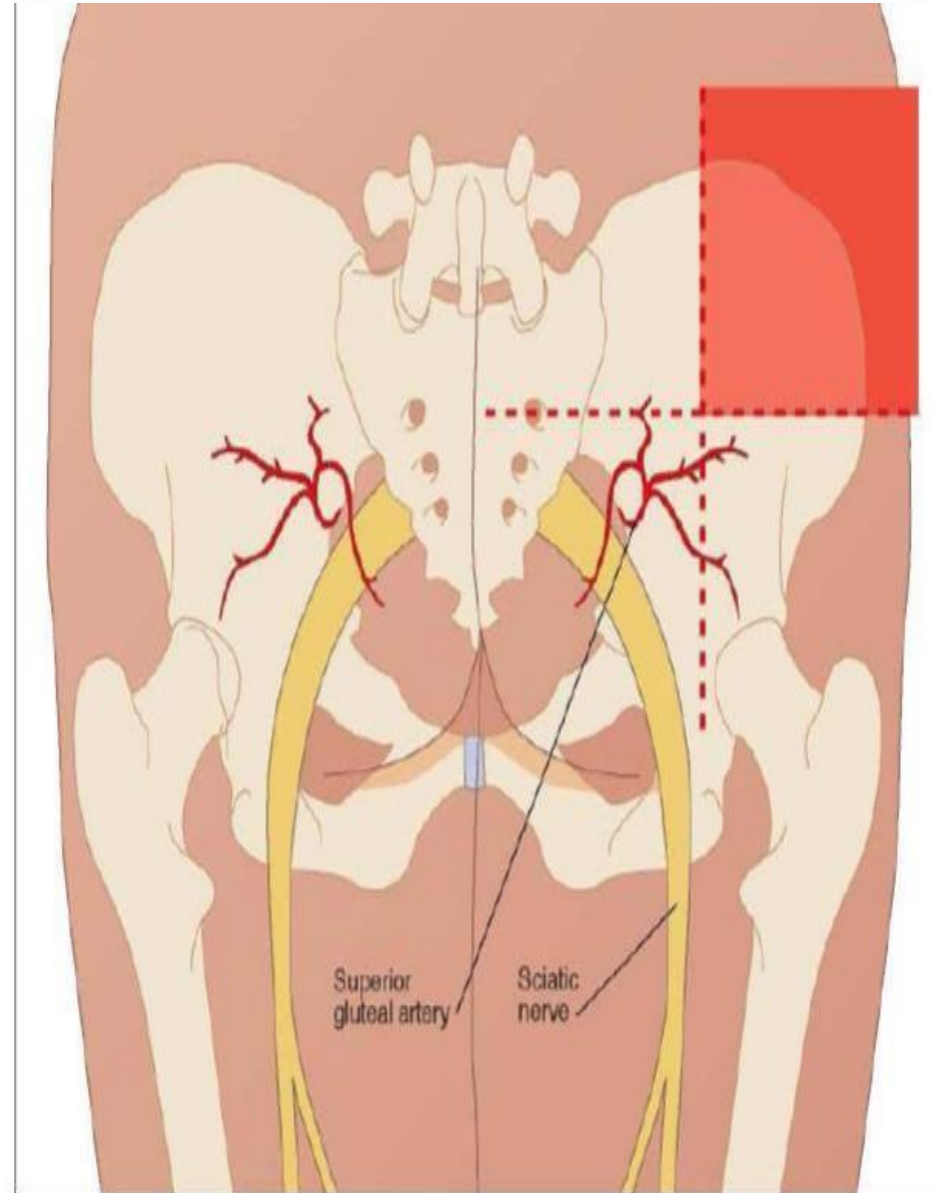
# Sites of intramuscular injection

- A. The dorsogluteal muscle site.
- B. The ventrogluteal muscle site.
- C. The vastus lateralis muscle site.
- D. The rectus femoris muscle site.
- E. The deltoid muscle site.

# A- The dorsogluteal muscle site (1-5 ml).

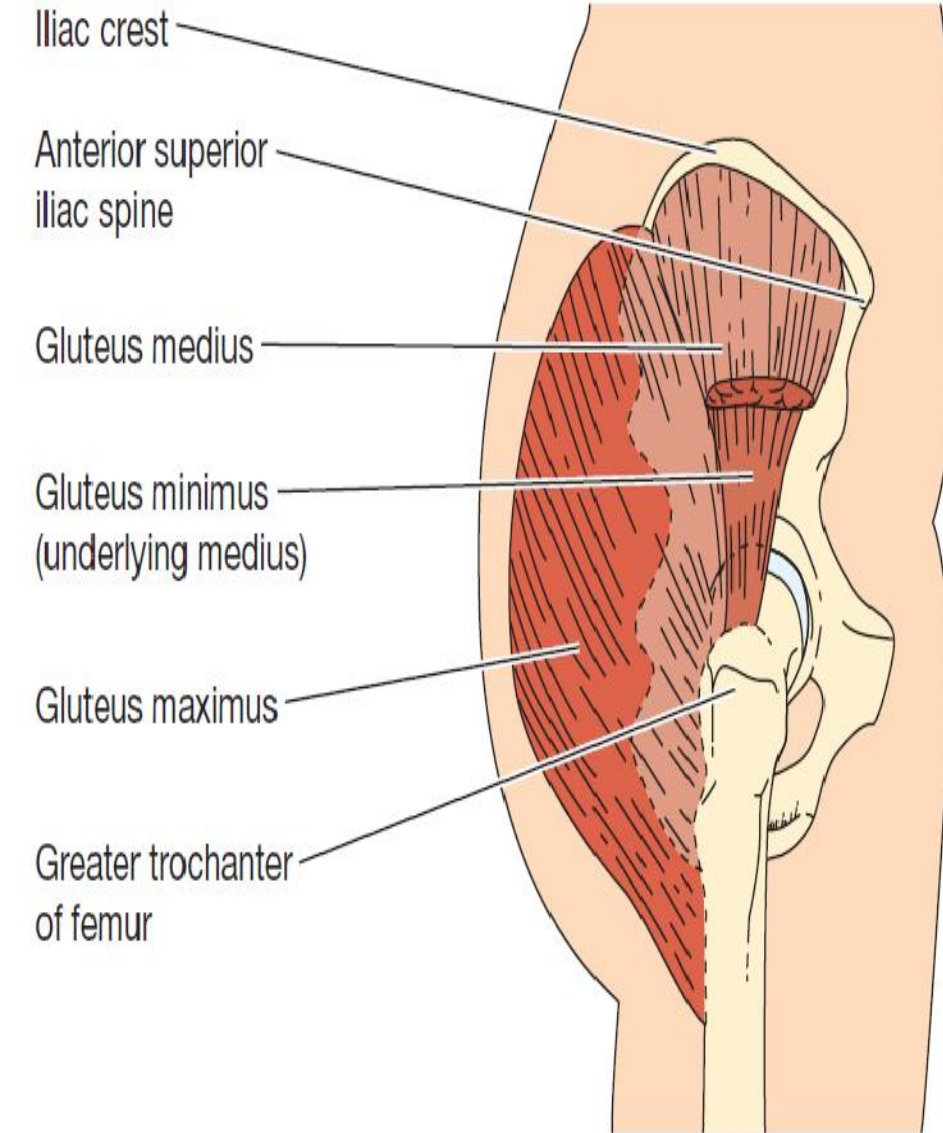


**Dorsogluteal site**





# B- The ventrogluteal site.

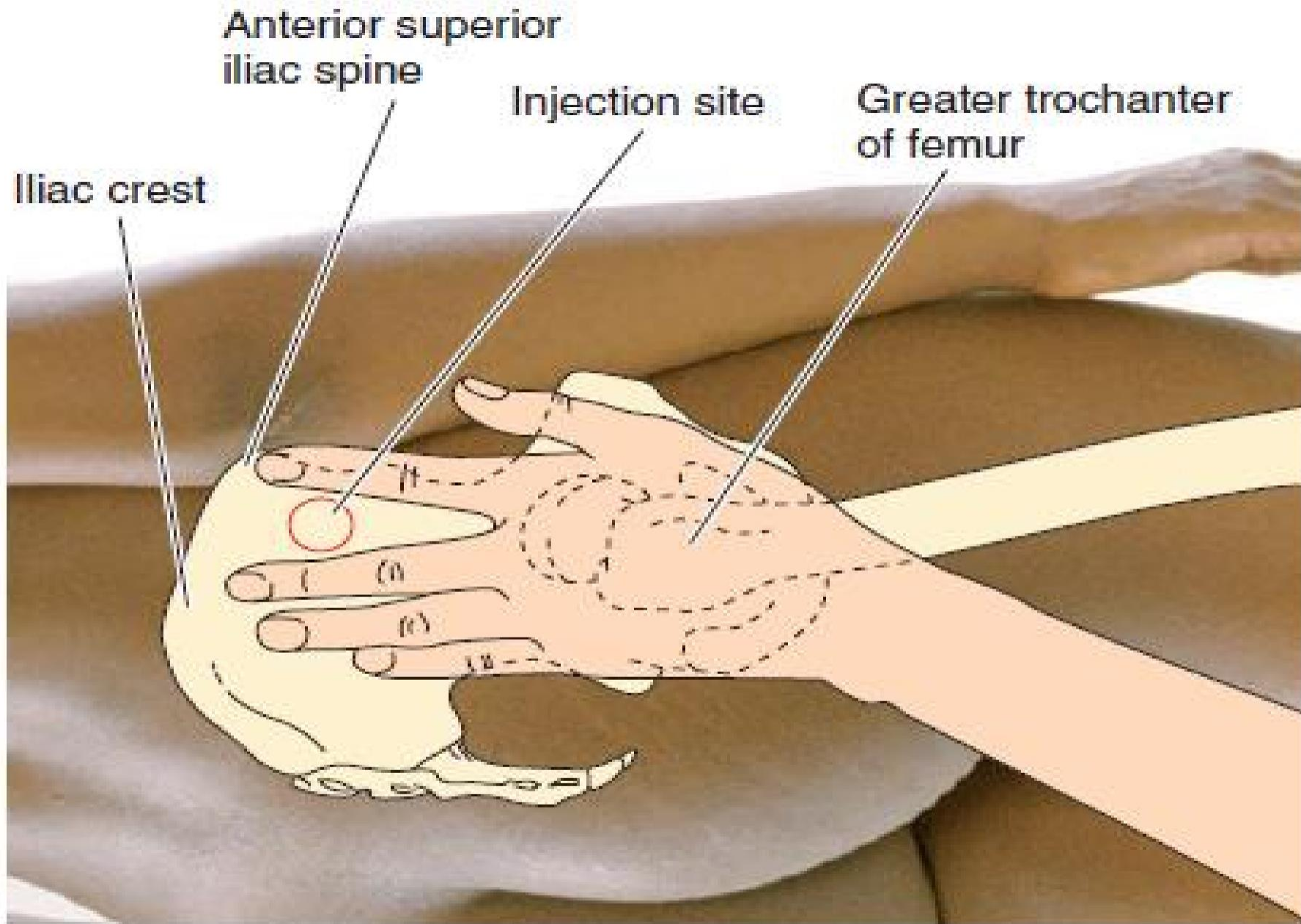


**Figure 35-34** ■ Lateral view of the right buttock showing the three gluteal muscles used for intramuscular injections.



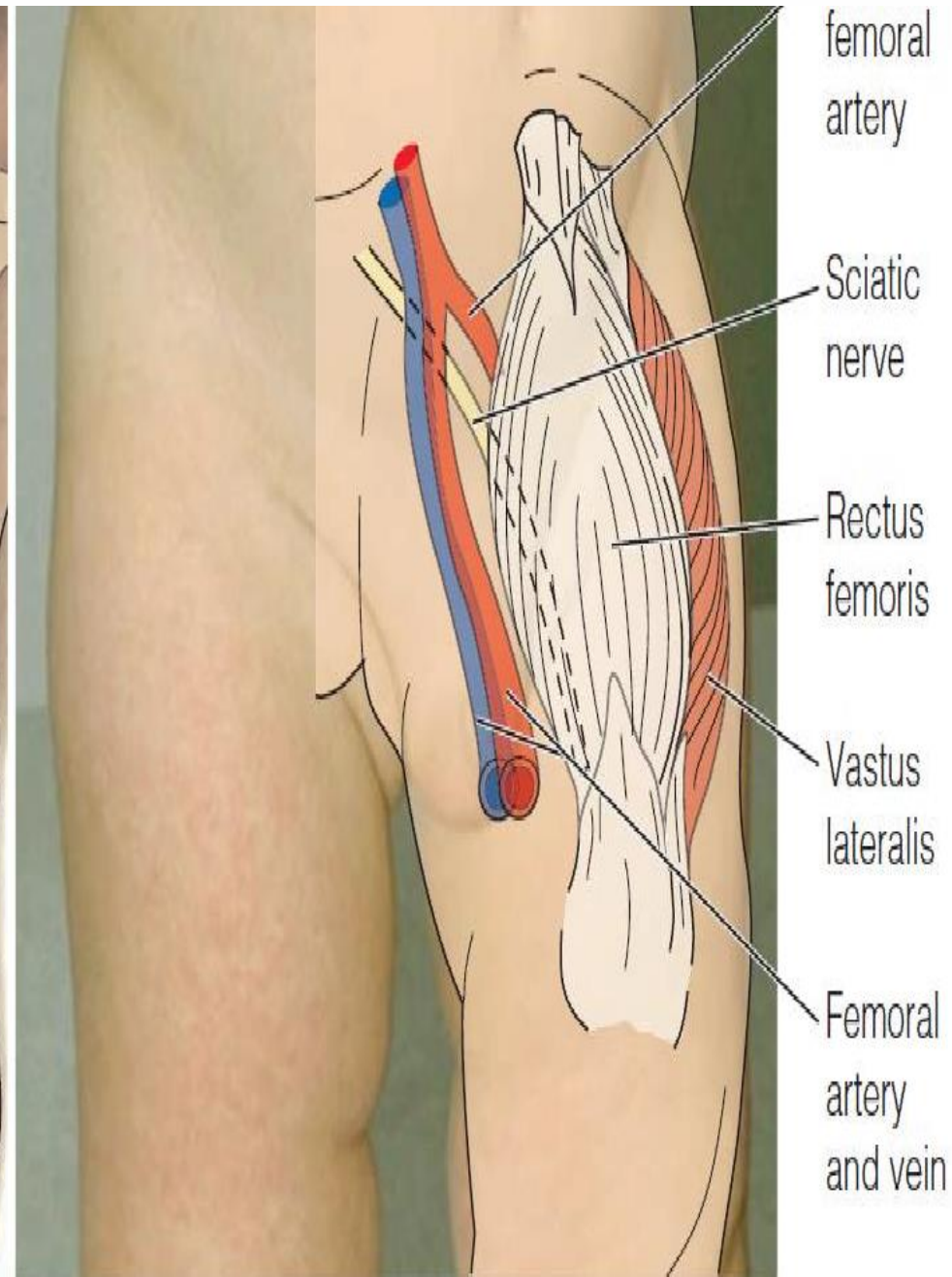
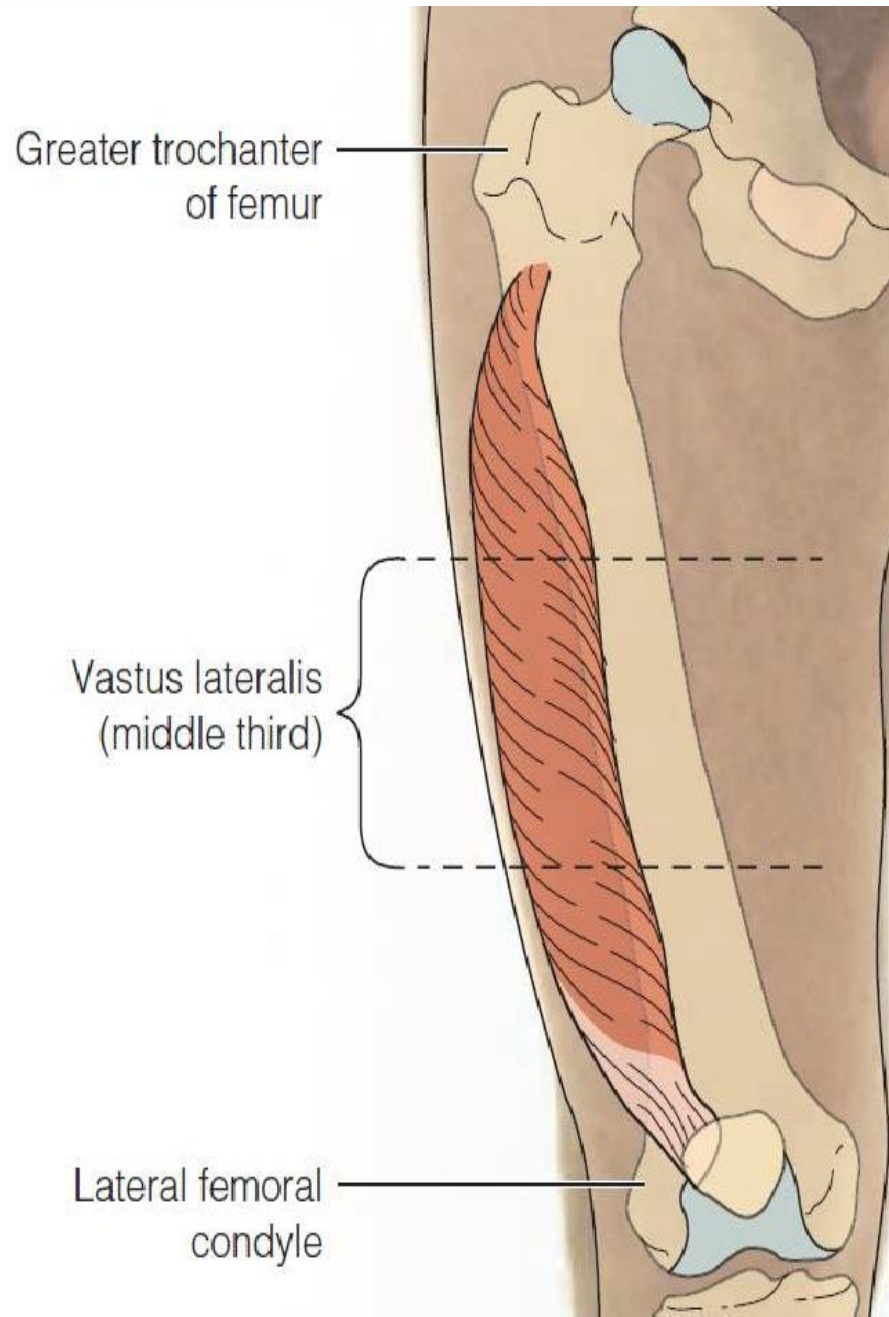
**Figure 35-36** ■ Administering an intramuscular injection into the ventrogluteal site using the Z-track method.





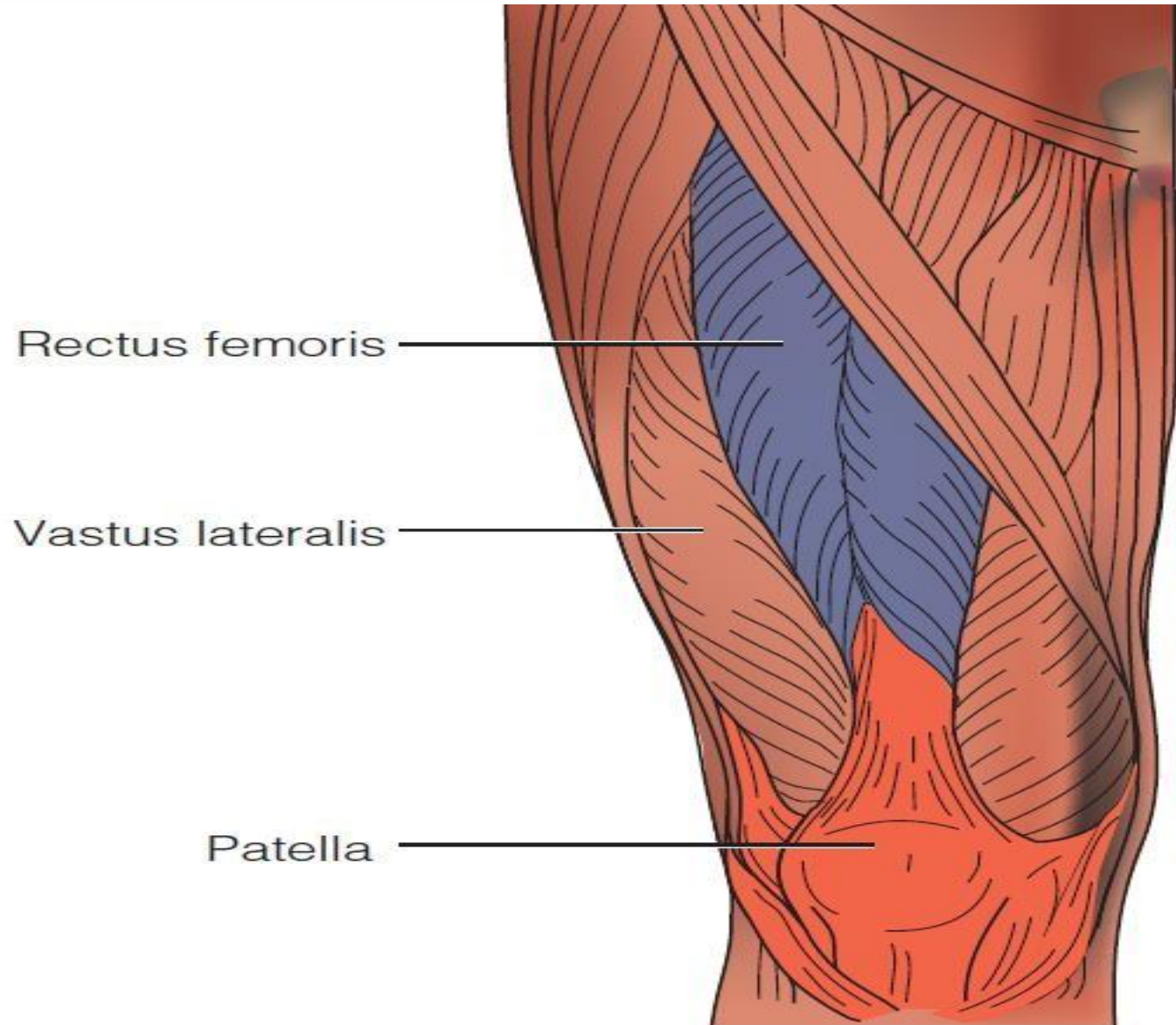
**Figure 35–35** ■ Landmarks for the ventrogluteal site for an intramuscular injection.

# C- The vastus lateralis site.



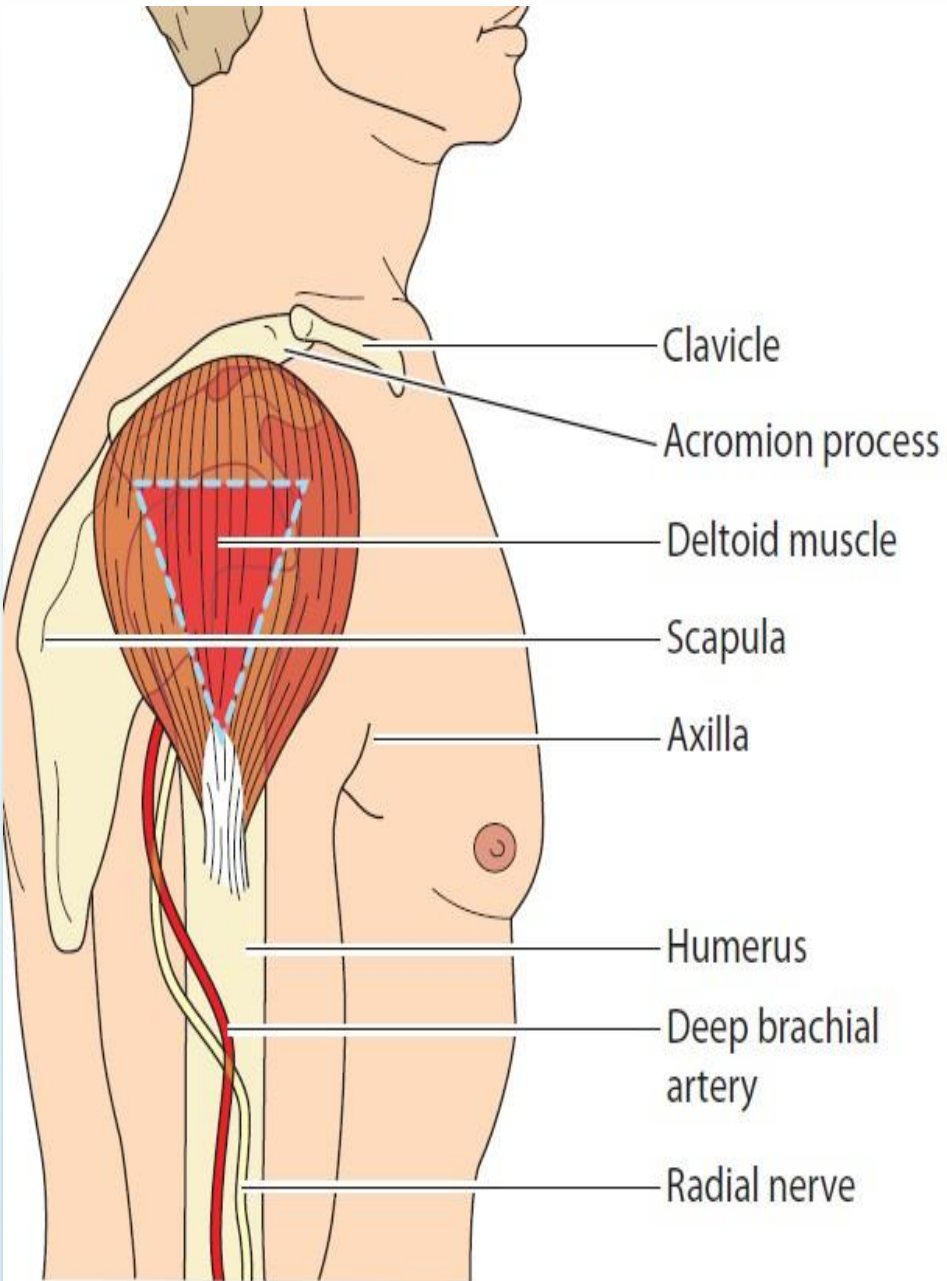


# D- The rectus femoris site.



**Figure 35–40** ■ Landmarks for the rectus femoris muscle of the upper right thigh, used for intramuscular injections.

# E- The deltoid muscle site (1 ml).



# Administering an Intramuscular Injection

1. Assess client allergies to medication(s).
2. Perform hand hygiene.
3. Prepare the medication from the ampule or vial.
4. Provide for client privacy and introduce your self.
5. Assist the client to a supine, lateral, prone, or sitting position, depending on the chosen site.
6. Select a site free of tenderness, hardness, swelling, scarring, itching, burning, or localized inflammation.



7. Clean the site with an antiseptic swab, start at the center of the site and clean in a widening circle to about 5 cm.
8. Prepare the syringe for injection.
9. Inject the medication using the Z-track technique.
10. Holding the syringe between the thumb and forefinger (as if holding a pen).





11. Hold the barrel of the syringe steady with your nondominant hand and aspirate for 5 to 10 seconds.
12. If blood does not appear, inject the medication steadily and slowly (approximately 10 seconds per milliliter).
13. Withdraw the needle smoothly at the same angle of insertion.
14. Apply gentle pressure (avoid massage) at the site with a dry sponge.
15. Activate the needle safety device.
16. Document all relevant information.





**Figure 35–23** ■ Dispose of used syringe and needle in sharps container.



**Figure 35–25** ■ Recapping a used needle using the one-handed scoop method.

# Complication of intramuscular injection

1. **Hematoma or hemorrhage:** a hematoma due to perforation of a blood vessel during entry, managed by light pressure on it.
2. **Nerve damage:** This occurs when choosing the wrong area for injection. It is the most dangerous complication
3. **Pain or discomfort:** We always notice, the pain may be severe with rapid injections, large quantities, and some types of medicines.
4. **Abscess formation:** as a result of not observing the correct sterilization rules, or an injection was made within the adipose tissue
5. **Fat necrosis:** Repeated injections in the same place lead to the occurrence of fat necrosis, where the skin is lowered, forming a hole.

# 4- Intravenous Medications

- ❖ Rapid effect.
- ❖ Avoids the discomfort.
- ❖ Large-volume infusion.
- ❖ Appropriate when medications are too irritating to tissues.
- ❖ Large volume of fluid causes hypervolemia.
- ❖ The angle of injection is  $25^{\circ}$

