



Medications Administration

Prepared by

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Lecture: 8

- **Pharmacology** is the science of drugs.
- **A medication** is a chemical substance used to diagnose, cure, treat, or prevent disease.



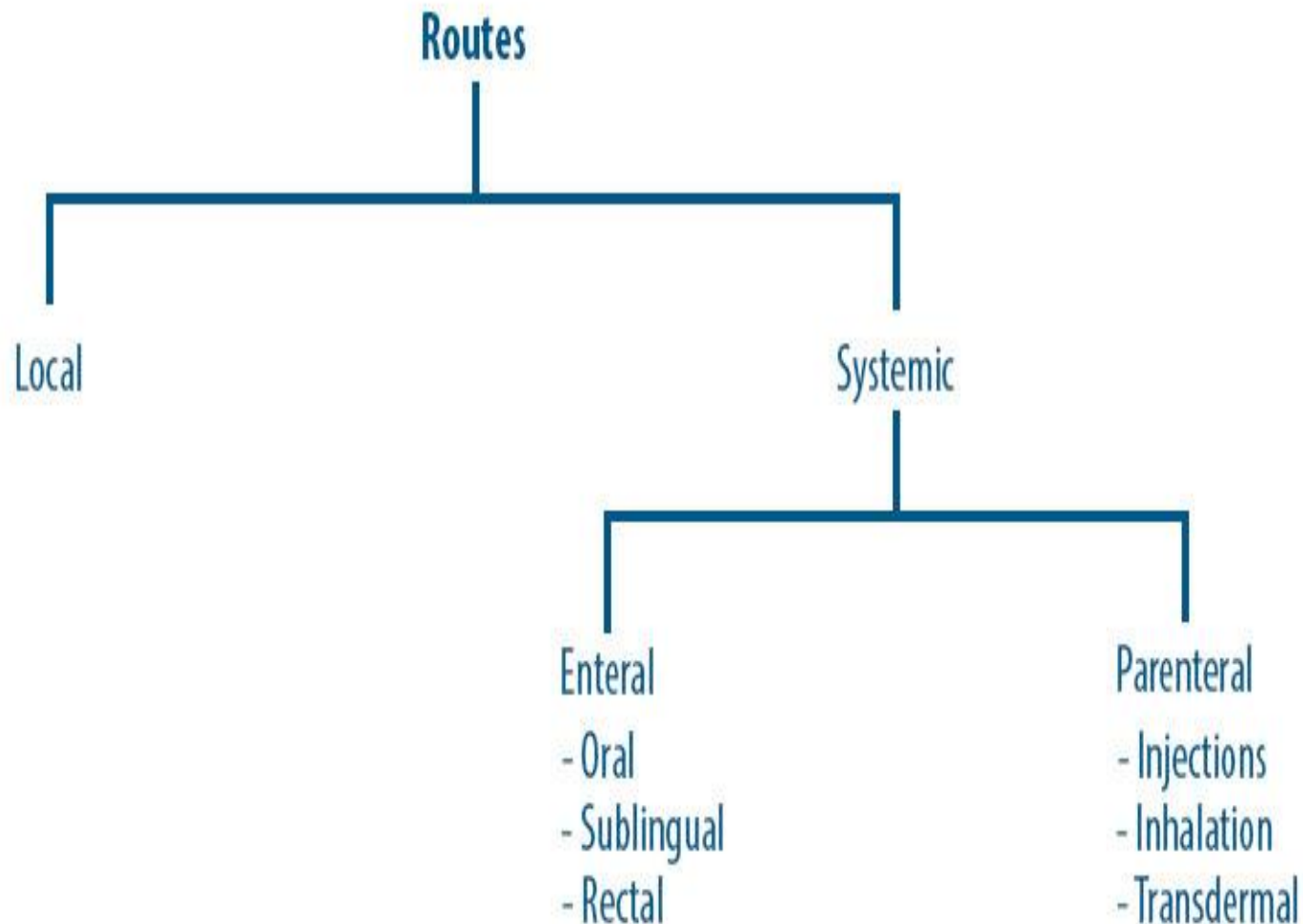
- **Dose:** is amount of medication given
- **Absorption:** is process by which medications travel through body tissues to bloodstream.

- **Administration of medication** is the process by which a patient takes a medicine may be enteral (by mouth), parenteral (into the blood stream)



- Six rights of medication administration
 - Right patient
 - Right medication
 - Right dose
 - Right route
 - Right time
 - Right documentation

Routes of Administration



- **Enteral route**
- **1- Oral route**
- The most common route
- Least expensive
- Drug is swallowed.
- Most convenient route for most patients
- A safe method.



Disadvantages of oral route

- Unpleasant taste of the drugs,
- Irritation of the gastric mucosa
- Irregular absorption from the GI tract
- Slow absorption
- In some cases, harm to the client's teeth. For example (iron) can stain the teeth.

- **Contraindicated of oral medication**
- 1- Vomiting
- 2- Has gastric or intestinal suction
- 3- Unconscious and unable to swallow
- 4- Orders for “nothing by mouth” (the Latin is *nil per os*: **NPO**).

- **2- Sublingual route**
- Administration a drug is placed under the tongue, where it dissolves.
- Short time absorbed into the blood vessels
- Such as: Nitroglycerin



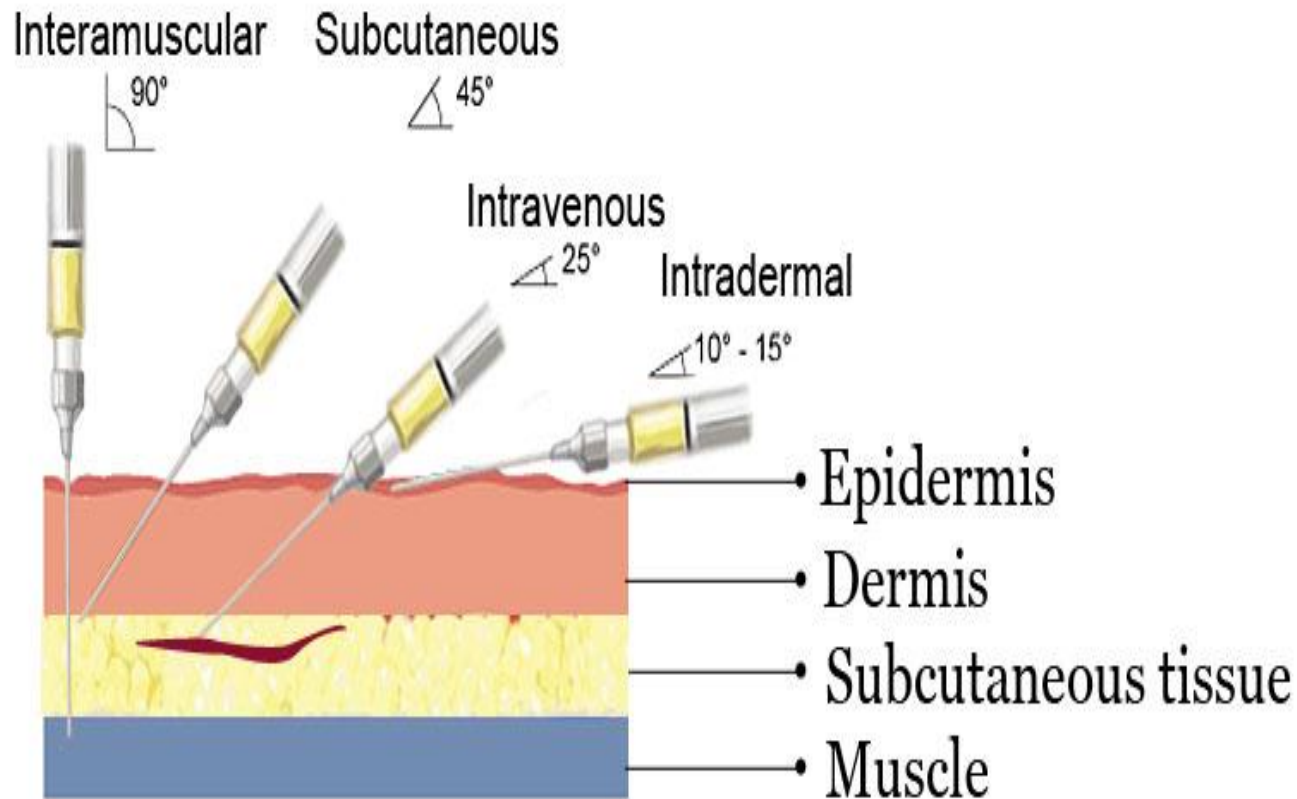
- **Buccal**
Buccal means “refer to to the cheek.



- **Rectal Route**
- Insertion of medications into the rectum in the form of suppositories .

Parenteral route

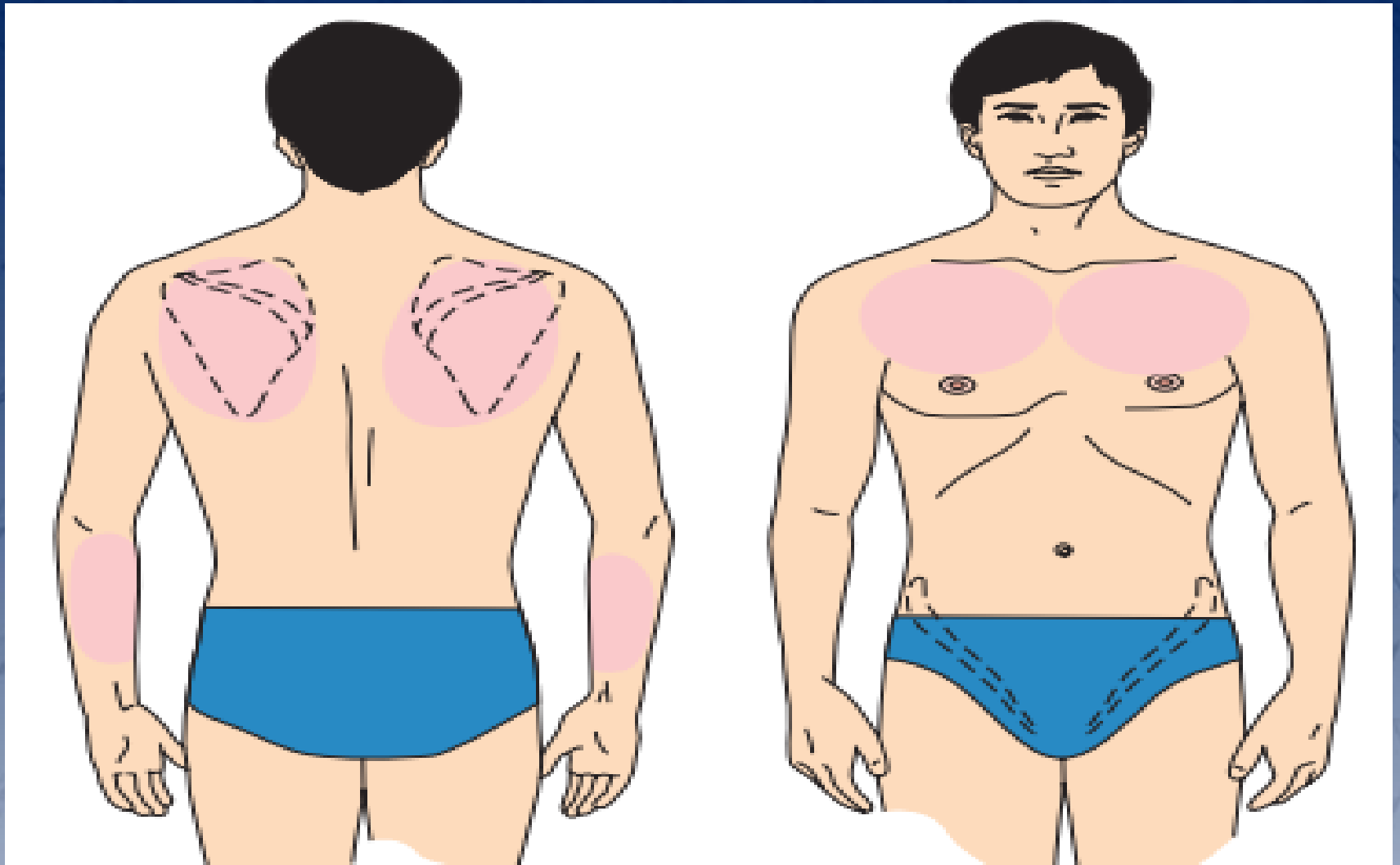
Types of Parenteral Routes of Administration



source : wikipedia.org

- **1- Intradermal Injections(ID).**
- Administration of a drug into the dermal layer of the skin (10-15 Degree).
- A small amount of liquid is used (0.1mL).
- Allergy testing and tuberculosis (TB) screening.

- **Common sites for intradermal injections**
- Inner lower arm
- Upper chest,
- Back beneath the scapulae





Administering an Intradermal Injection for Skin Tests—continued



1 A

1 For an intradermal injection: A, the needle enters the skin at a 5° to 15° angle; B, C, the medication forms a bleb or wheal under the epidermis.



1 B



1 C

- **2- Subcutaneous Injections**
- Under the skin (45 degree)
- These areas are convenient and normally have good blood circulation.
- Doses (0.5 to 1 mL) of medication

Such as: vaccines, insulin, and heparin.

- **Sites of subcutaneous injections:**
- Outer aspect of the upper arms
- Anterior aspect of the thighs.
- Abdomen
- Scapular areas of the upper back,
- Upper ventrogluteal and dorsogluteal areas

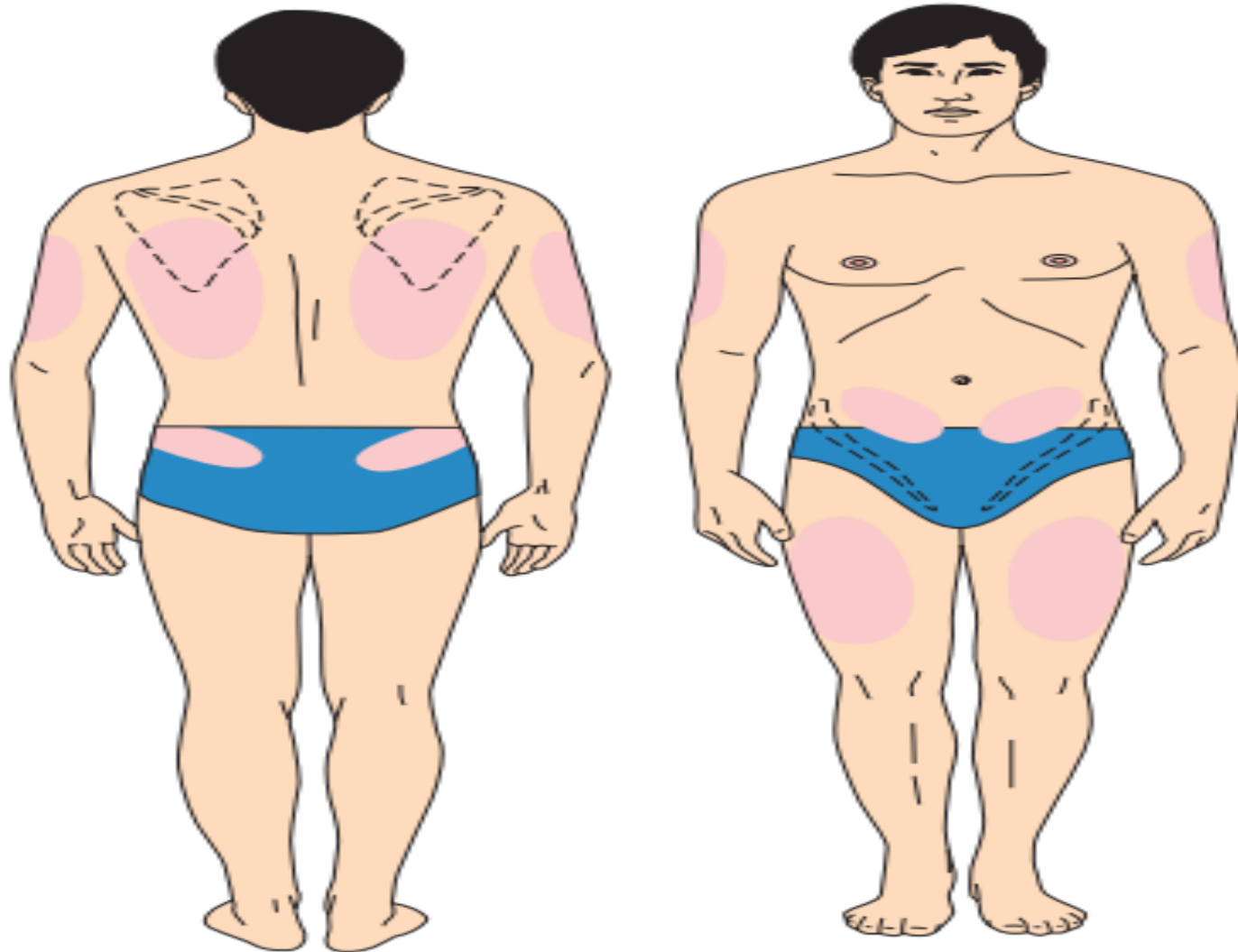


Figure 35–33 ■ Body sites commonly used for subcutaneous injections.

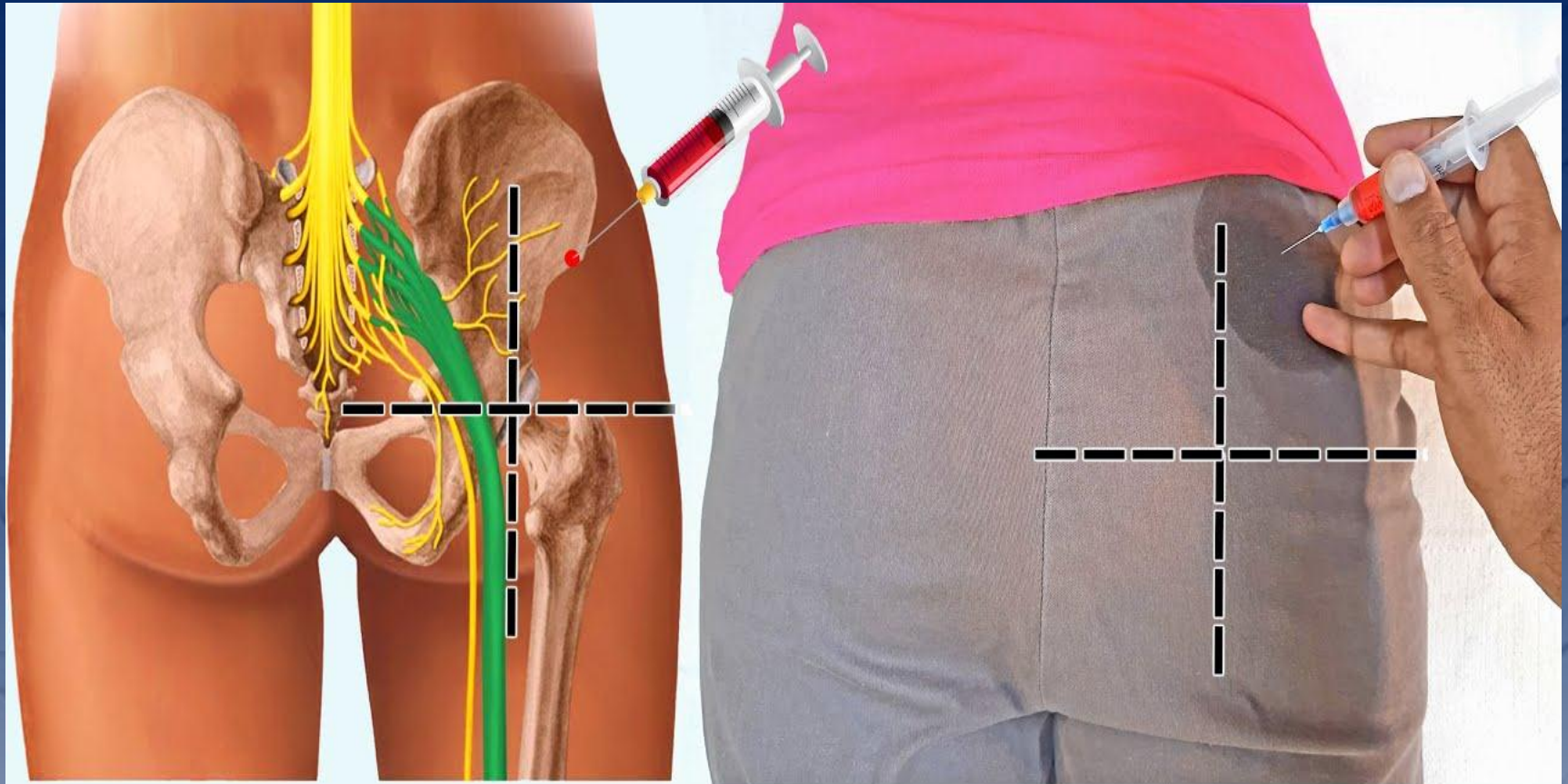
- **3- Intramuscular (IM)**
- Into a muscle (90 Degree)
- Absorbed more quickly than subcutaneous injections.
- Take a larger volume of fluid
- Advantages
 - Quick, easy access without using vein
 - Stable blood flow to muscles
- Disadvantages
 - Use of a needle
 - Patients may fear pain or injury.

- **Site of intramuscular injection**
- Ventrogluteal Site
- Dorsogluteal Site
- Vastus Lateralis Site
- Rectus Femoris Site
- Deltoid Site

Ventrogluteal Site

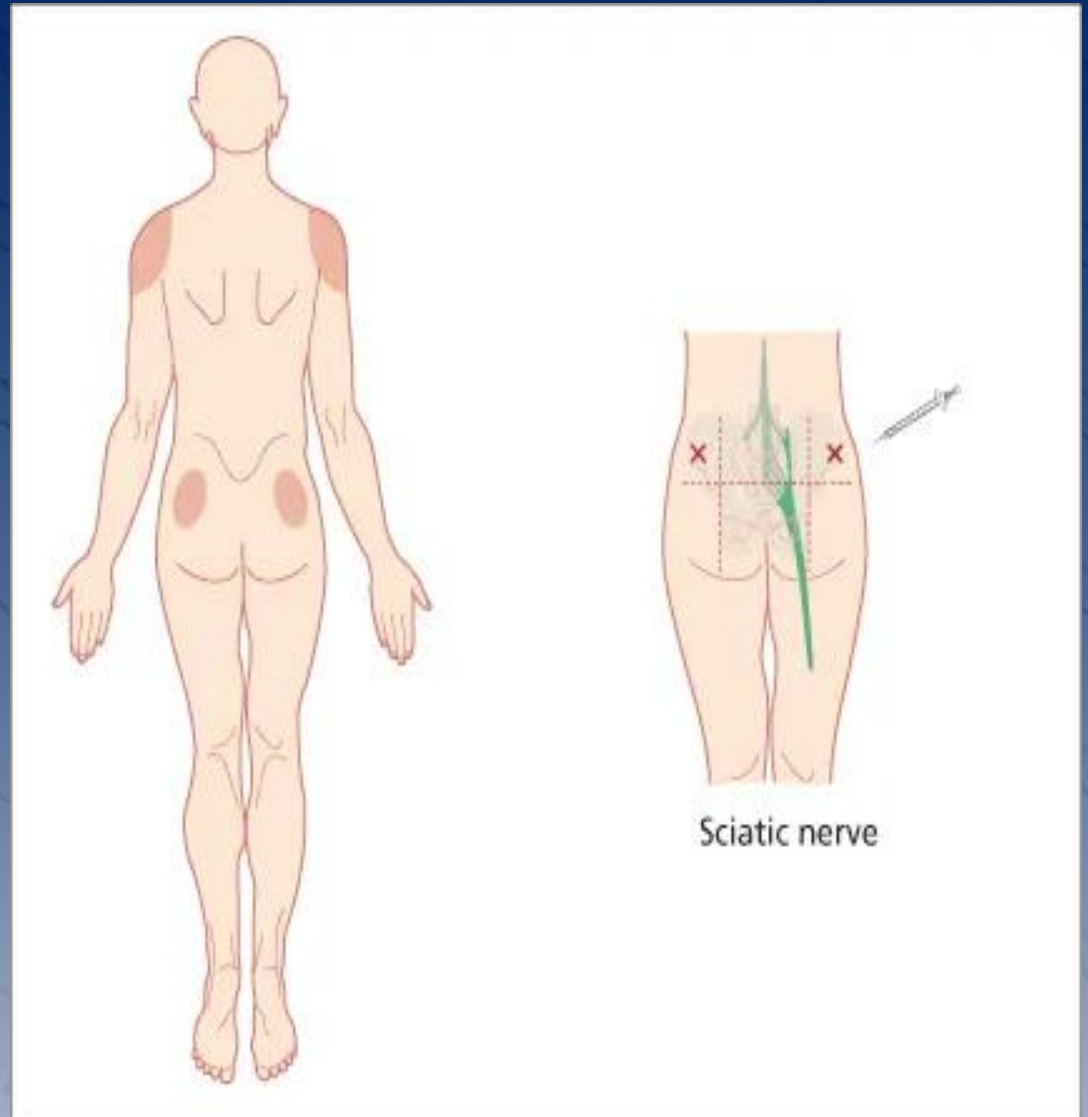
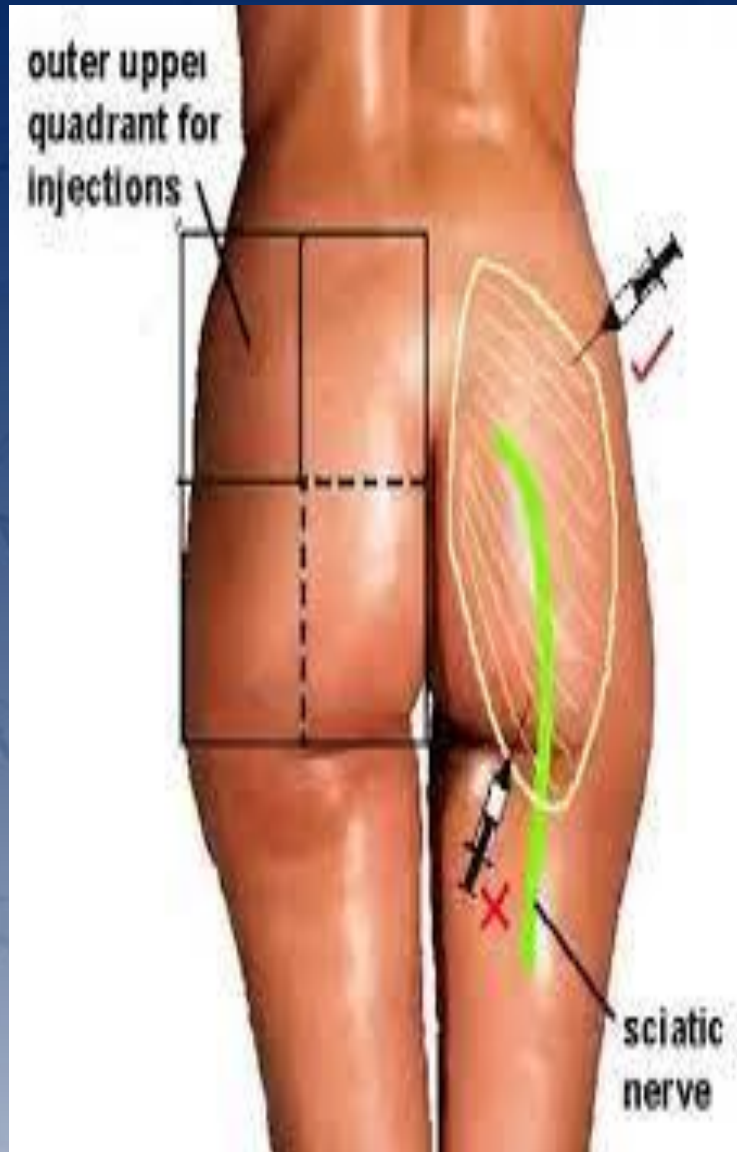


Dorsogluteal Site

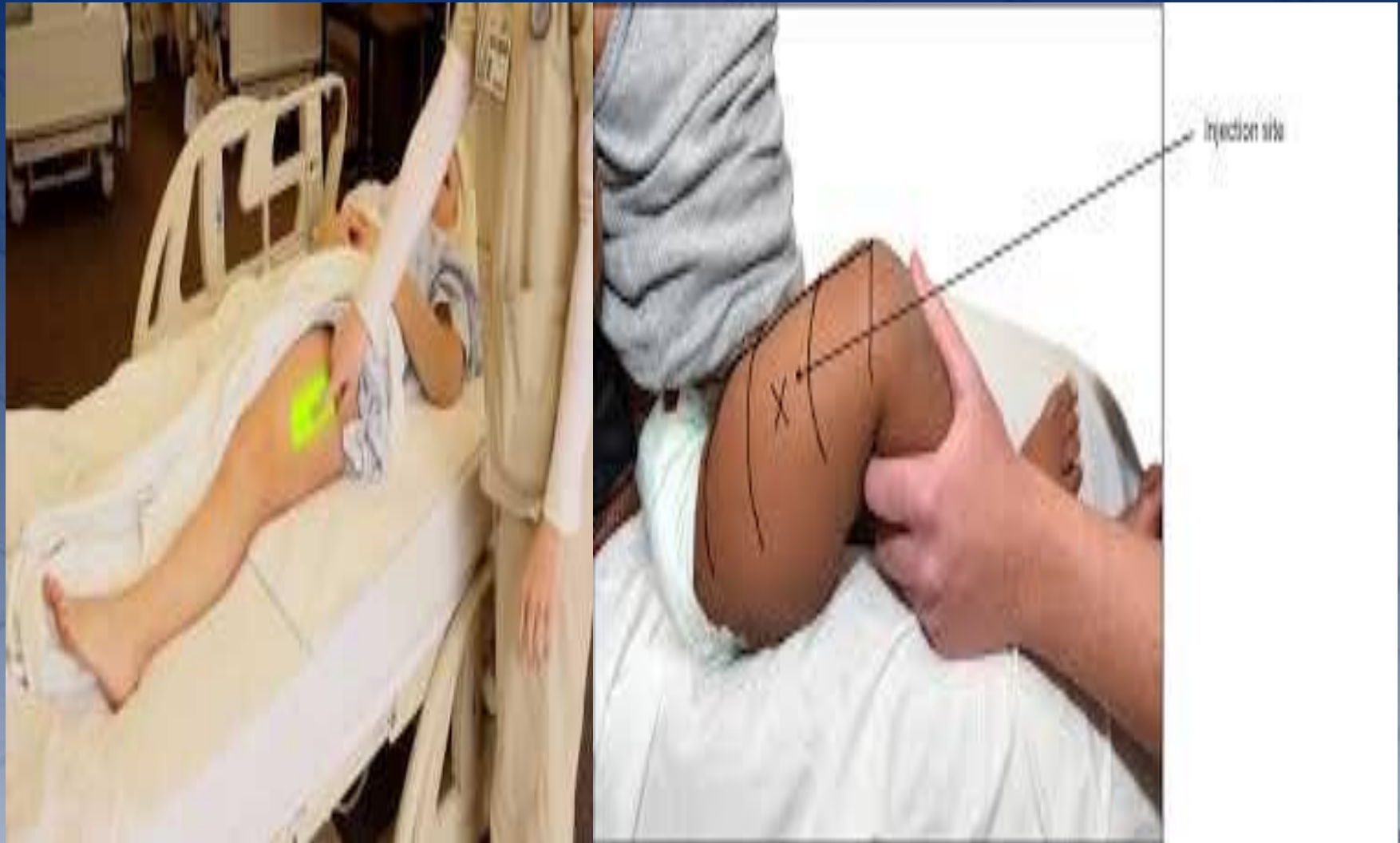


Dorsogluteal IM Buttock Injection

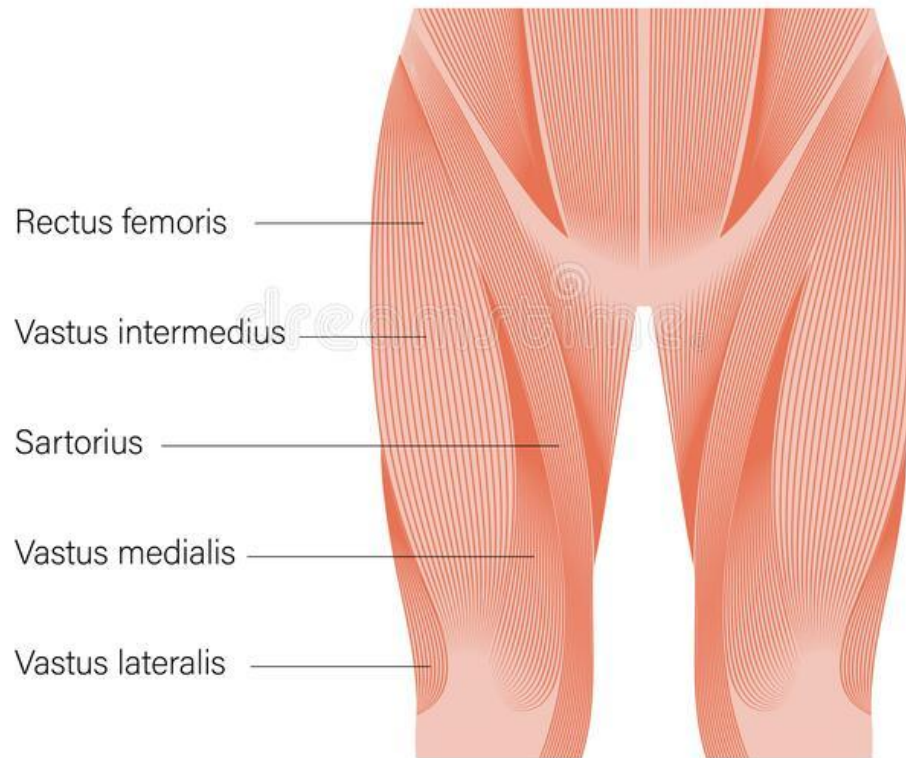
Dorsogluteal Site



Vastus Lateralis Site



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Deltoid muscle

volumes of medication 0.5 to 1 mL.



Figure 35–43 ■ Administering an intramuscular injection into the deltoid site.

- **Intravenous Medications(IV)**
- Medications enter the bloodstream directly by vein, they are appropriate when a rapid effect is required (25 degree).

	Syringe Size	Needle Size	Needle Length	Volume of Fluid	Aspiration?	Common Sites	Common Uses
Intradermal (ID)	TB syringe	#25–#27 gauge	1/4–5/8 inch	0.1 mL	No	<ul style="list-style-type: none"> • Inner lower arm • Upper chest • Back beneath scapulae 	<ul style="list-style-type: none"> • Allergy testing • TB screening
Subcutaneous	1- to 2-mL syringe Insulin syringe	#25 gauge #30 gauge for insulin	Adult of normal weight: 5/8 inch needle inserted at 45° angle OR 3/8 inch needle inserted at 90° angle Insulin needle: 4–6 mm	0.5–1 mL	No	<ul style="list-style-type: none"> • Outer aspect of upper arms • Anterior aspect of thigh • Abdomen 	<ul style="list-style-type: none"> • Vaccines • Insulin • Heparin
Intramuscular (IM)	Deltoid: 1-mL syringe Ventrogluteal: 3- to 5-mL syringes*	Deltoid: #23–#25 gauge Ventrogluteal: #21 or #22 gauge	Deltoid: 1 inch Ventrogluteal: 1.5 inches	Deltoid: 0.5–1 mL Ventrogluteal: 3 mL max for adult with well-developed gluteal muscle 1–2 mL for adults with less developed gluteal muscle	Deltoid: No Ventrogluteal: No scientific evidence confirming or rejecting aspiration	Deltoid Ventrogluteal	Deltoid: Immunizations Ventrogluteal: Medication that requires large muscle for absorption and/or volume greater than 1 mL

*Size depends on amount of medication being administered.

Less commonly used routes for parenteral administration

- **Intracardiac** (into the heart muscle),
- **Intraosseous** (into a bone),
- **Intrathecal** or **intraspinal** (into the spinal canal),
- **Intra-articular** (into a joint).

Sterile equipment and sterile drug solution are essential for all parenteral therapy. The main advantage is fast absorption

Thank

You

