

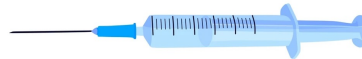


Injection Techniques

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Injection techniques:

- An **injection**, also known as **shot**, is a way of administering a liquid to a person using a needle and syringe.
- It is the **art of giving medications**:
 - to the desired therapeutic effect and
 - the patient's safety and comfort.



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Importance of injection:

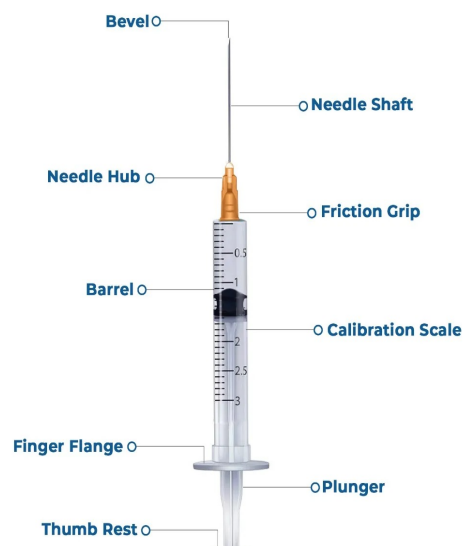
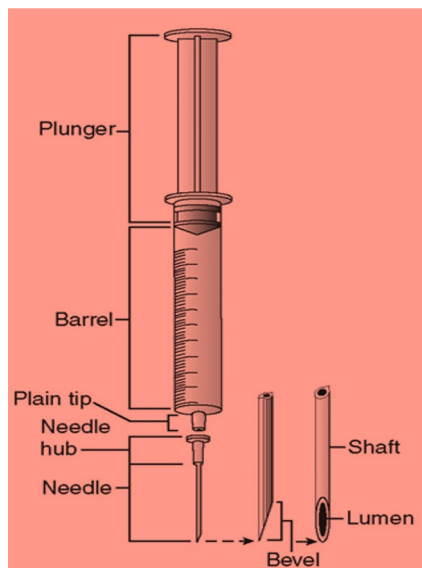
▪ Injections are usually used:

- when a rapid action is required.
- if the drug is altered by intestinal sections or cannot be absorbed by the alimentary tract.
- when the patient is unable to take the medication orally or the drug is not available in an oral form.



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Parts of a Syringe:



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What is the purpose of injecting?

- A healthcare professional can use injections to administer vaccines and other types of drugs into a person's **vein, muscle, skin, or bone**.
- Several different types of injections exist, depending on the purpose of the medication or substance in the shot.



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Size of Needle (Needle Gauge (G)):

- **The needle gauge size indicates:**
 - ✓ the diameter of the lumen (opening) of a needle.
- Diameter range of needle: **6 G - 32 G**.
- **▲**needle G-number = **▼** diameter of the needle.
- Insertion of higher G-number needle, has less pain.



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Equipment needed for injection:

- Gloves,
- Alcohol wipe,
- Ampoule and/or medication,
- Appropriate sized Needles,
- Self-adhesive bandage
- Sharps bin.



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General rules for injections:

- **Apart from the specific technique of injection, there are a few general rules that you should keep in mind:**

- ① **Expiry dates:**
- ② **Drug:**
- ③ **Sterility:**
- ④ **No bubbles:**
- ⑤ **Prudence:**
- ⑥ **Waste:**

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General rules for injections:

① Expiry dates:

- Check the expiry dates of each item including the drug. If you make house calls, check the drugs in your medical bag regularly to make sure that they have not passed the expiry date.



② Drug:

- Make sure that the vial or ampoule contains the right drug in the right strength.



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General rules for injections:

③ Sterility:

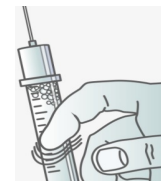
(During the whole preparation procedure)

- Materials should be kept sterile.
- Wash your hands before starting to prepare the injection.
- Disinfect the skin over the injection site.



④ No bubbles:

- Make sure that there are no air bubbles left in the syringe. This is more important in intravenous (IV) injections.



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General rules for injections:

⑤ Prudence :

- Once the protective cover of the needles is removed extra care is needed.
- Do not touch anything with the unprotected needle.
- Once the injection has been given take care not to prick yourself or somebody else.



⑥ Waste:

- Make sure that contaminated waste is disposed of safely

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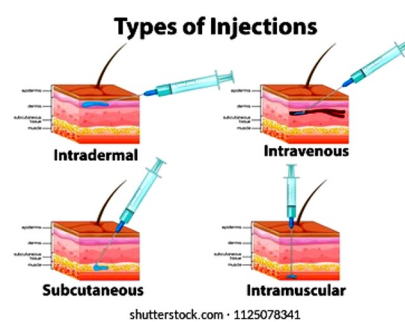
What are the 5-Rights of medication?

5 The **right** patient
 The **right** drug
 The **right** dose
R The **right** route of administration
 The **right** time

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General Types of Injections:

- ① **Intradermal (ID) injection:**
- ② **Subcutaneous (SC) injection:**
- ③ **Intravenous (IV) injection:**
- ④ **Intramuscular (IM) injection:**



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① Intradermal (ID) injection:

- are given directly into the dermis.
- are **commonly** used for allergy testing.
- ID inj. is absorbed more slowly than IV, IM & SC inj.
- **The most common sites for an ID injection are:**
 - The inside or ventral aspect of the forearm
 - Upper back, under the shoulder blade.
- **Angle for ID injection is 10°-15°**
- **Needle: 26-28 gauge (G).**



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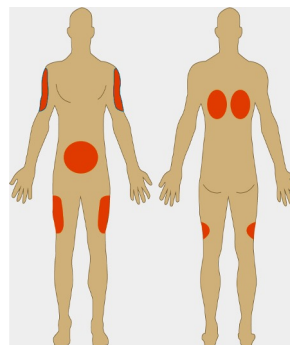
② Subcutaneous (SC) injection:

- SC inj. are injected into the innermost layer of the skin called the **subcutaneous or hypodermis**.
- **insulin** & **heparin** are the most often administered drugs.
- Drugs are injected subcutaneously when **slow absorption and long duration of action are desired**.
- SC inj. work more slowly than an IV or IM inj.
- Only 1-2 ml solution may be injected SC.
- Angle for SC injection = **45°**.
- Needle, 25 to 27 gauge, $\frac{3}{4}$ (0.75) to 1 inch.

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② Subcutaneous (SC) injection: *cont.....*

- **The most common sites for SC inj. are:**
 - the upper back, and the upper ventral gluteal area,
 - the outer lateral aspect of the upper arm,
 - the anterior upper thighs,
 - the abdomen.



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③ Intramuscular injection:

- IM injections are given directly & deep into a muscle.
- In IM injection the **medication is absorbed quickly**.
- Angle: **90° (perpendicular to the body)**.
- 20G or 22G needles.
- **1 or 1½ inch** long are usually best.



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③ Intramuscular injection: cont.....

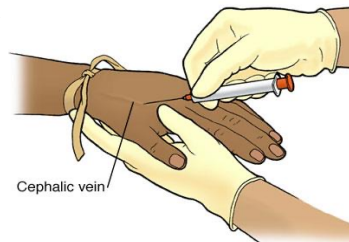
- **Sites for IM injection:**
 - **Gluteal muscles:**
 - **Deltoid muscle of the upper arm:**
 - **Vastus lateralis muscle of the thigh:**
 - It is the preferred injection site in **infants**.



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④ Intravenous (IV) injection:

- provides the most rapid and complete form of drug absorption.
- any prominent vein may be used.
- there is possibility to administer large volume.

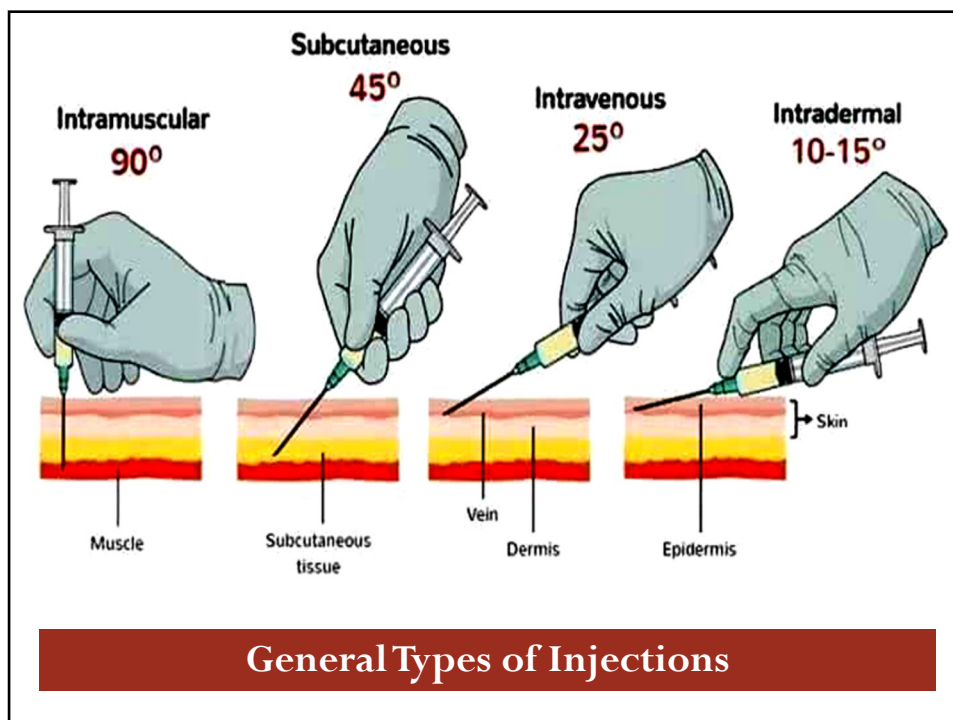


Contraindications:

- Dermatitis or cellulitis at the proposed injection site.
- Irritating medications should be given by **slow iv infusion**.
- Angle for IV injection at a 25°.



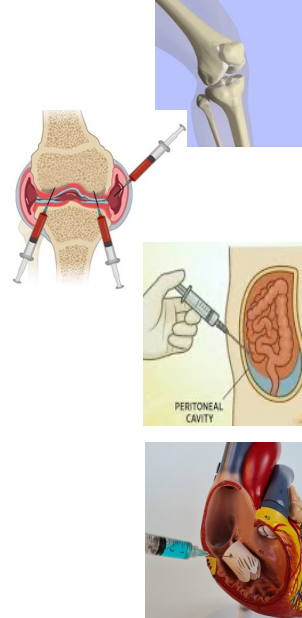
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Other types of injections include:

- **Intra-articular inj.**- into a joint
- **Peri-articular inj.**
 - into the soft tissue close to a joint
- **Intraosseous inj.**
 - into the bone marrow
- **Intraperitoneal inj.**
 - given within the abdominal cavity
- **Intracardiac inj.**
 - into the heart muscle or ventricles.



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Questions/Comments



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