

Intramuscular Injections

Introduction:

An intramuscular injection is the administration of up to 5 ml of medication into one muscle or a muscle group. Because there are few nerve endings in deep muscles, irritating medications are commonly given intramuscularly. Except for medications injected directly into the bloodstream, absorption from an intramuscular injection occurs more rapidly than parenteral routes.

Injection Sites

There are five common injection sites, named for the muscles into which the medications are injected: dorsogluteal, ventrogluteal, vastus lateralis, rectus femoris, and deltoid.

Equipment:

- Medication administration record (Medication kardex and card).
- Medication vial or ampule.
- Sterile, 5ml syringe and needle (1-2 inches, 20 to 23-gauge for adult).
- Disposable gloves
- Alcohol swab

Z-track Technique:

When administering intramuscular injections, a 90° angle is used for piercing the skin.

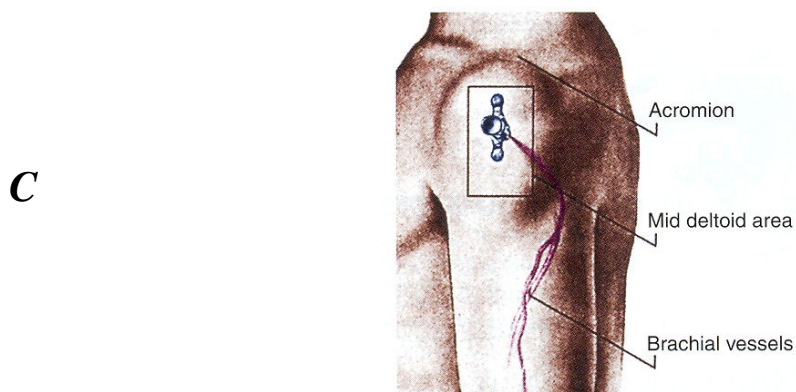
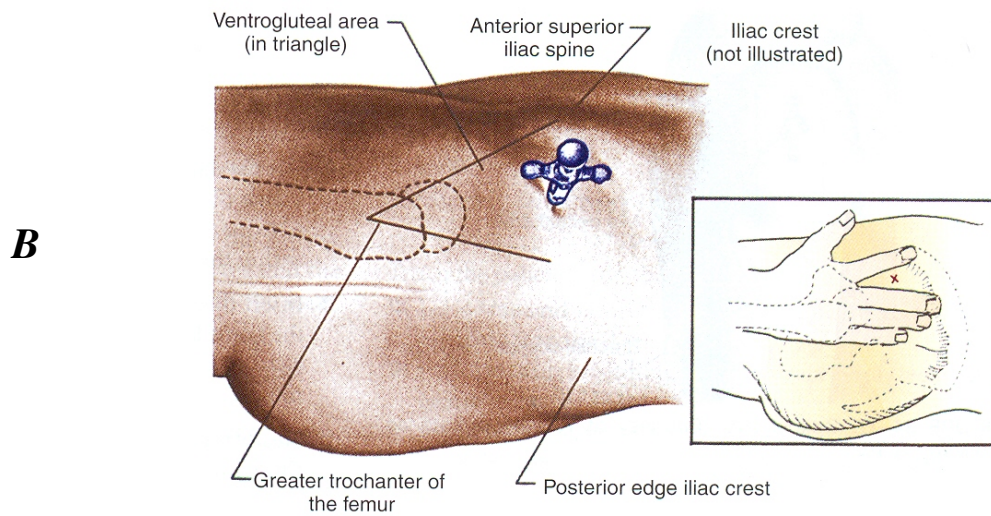
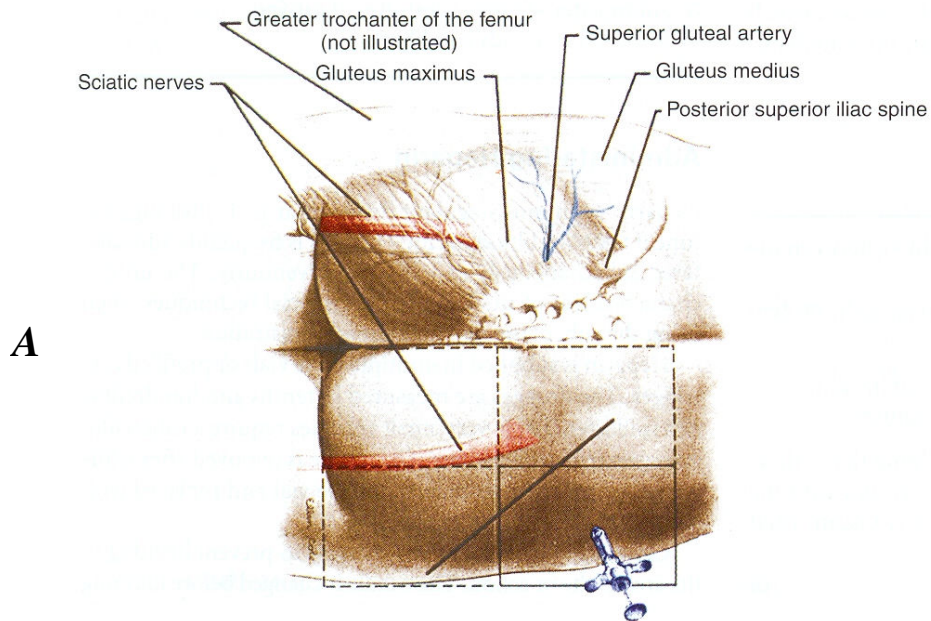
Drugs that may be irritating to the upper levels of tissue may be administered by the Z-track technique (technique for manipulating the tissue to seal medication, especially an irritant, in the muscle.) sometimes called the zig-zag technique, the maneuver resembles the letter "Z".

Any intramuscular injection can be given by the Z-track technique. Patients report slightly less pain during and the next day after a Z-track injection compared with the usual intramuscular injection technique.

Technique:

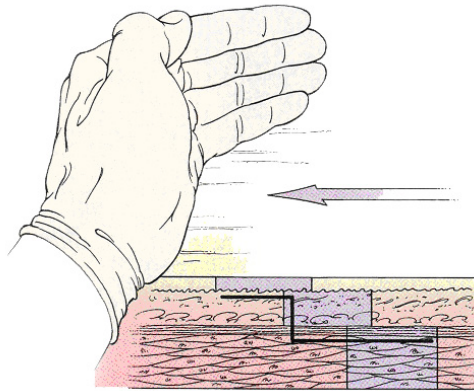
1. Fill the syringe with the prepared drug, then change the needle.
2. Attach a needle that is at least 1.5 to 2 inches long.
3. Add a 0.5-ml bubble of air in the syringe, to flushes all the medication from the syringe during the injection.

- ε. Select a large muscular injection site, such as the ventrogluteal site, to provide a location with a large capacity where the drug can be deposited and absorbed.
- ο. Wash your hands and don gloves.

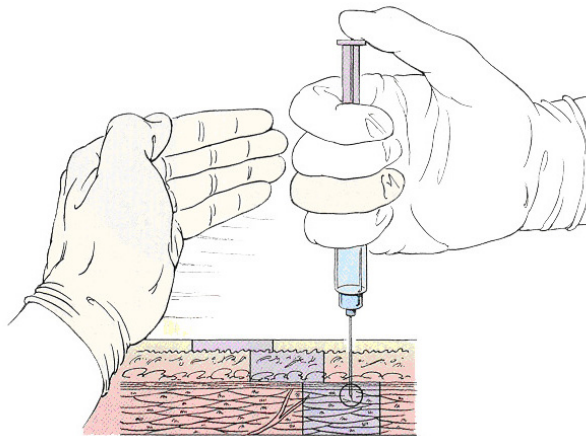


Injection sites: (A): Dorsogluteal site. (B): Ventrogluteal site. (C): Deltoid site

- vi. Cleanse the area with an alcohol swab using a circular motion outward from the site where the needle will pierce the skin.
- vii. Allow the skin to dry.
- viii. Use the side of the hand to pull the tissue laterally about 1 inch (2.5 cm) until it is taut.



- ix. Insert the needle at a 45° angle while continuing to hold the tissue laterally.



- x. Steady the barrel of the syringe with the fingers and use the thumb to manipulate the plunger.
- xi. Aspirate for a blood return, to determine whether the needle is in a blood vessel.
- xii. Instill the medication by depressing the plunger with the thumb, to deposit the medication into the muscle.

13. Wait 10 seconds with the needle still in place and the skin still held taut, to provides time for the medication to be distributed in a larger area.
14. Withdraw the needle and immediately release the taut skin. This prevents leaking into the cutaneous and dermal layers of tissue.



15. Apply pressure, but do not massage the site.
16. Discard the syringe without recapping the needle.
17. Remove gloves and wash your hands.
18. Document the medication administration.

Complications:

- Accidental injection of concentrated or irritating medications into subcutaneous tissue or other areas where they can't be fully absorbed can cause sterile abscesses result to develop. These abscesses result from the body's natural immune response in which phagocytes attempt to remove the foreign matter.
- Failure to rotate sites in patients who require repeated injections medications. These deposits can reduce desired pharmacologic effect and may lead to abscess formation or tissue fibrosis.

Checklist for IM Injection

1. Mentions hand washing
2. Assembles correct equipment in the tray
3. Introduces oneself to the patient and checks patient's name
4. Explains procedure to the patient and gets verbal consent
5. Selects a large muscular injection site, such as the ventrogluteal site
6. Wears gloves
7. Uses alcohol swab to clean skin
8. Uses the side of the hand to pull the tissue laterally about 1 inch (2.5 cm) until it is taut
9. Inserts the needle at a 90° angle while continuing to hold the tissue laterally
10. Steadies the barrel of the syringe with the fingers and uses the thumb to manipulate the plunger
11. Aspirates for a blood return
12. Instills the medication by depressing the plunger with the thumb
13. Waits 10 seconds with the needle still in place and the skin still held taut
14. Withdraws the needle and immediately releases the taut skin
15. Applies pressure, but does not massage the site
16. Discards the syringe without recapping the needle.
17. Removes gloves and washes hands.
18. Documents the medication administration
19. Thanks and listens to the patient's questions