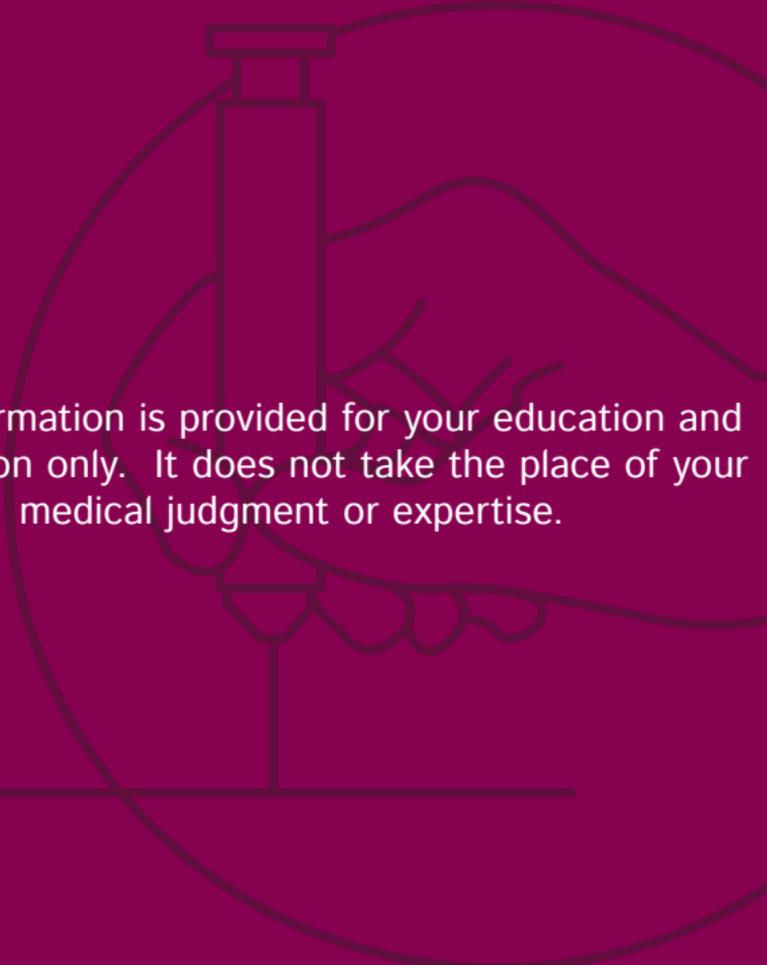


Recommendations for large-volume intramuscular injections

This information is provided for your education and information only. It does not take the place of your medical judgment or expertise.

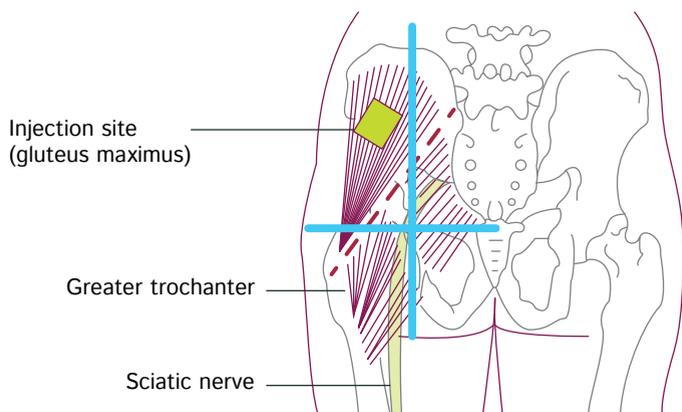


There are 2 possible injection sites when administering large-volume intramuscular injections

Dorsogluteal

Traditionally, nurses have been trained to inject large volumes into the dorsogluteal site, and have greater familiarity with administering injections at this site than at others.¹

The dorsogluteal injection site¹

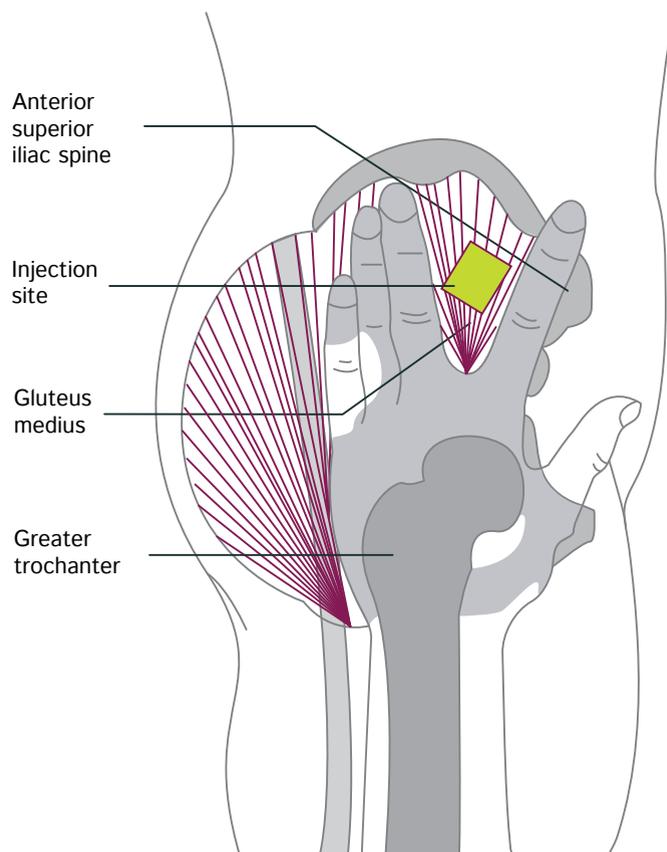


There are a number of concerns when injecting at the dorsogluteal site, and caution should be exercised because of the close proximity of the sciatic nerve and blood vessels.¹

Ventrogluteal

The ventrogluteal site is evolving as a safer intramuscular (IM) injection site, because it is easily accessed and is distant from major nerves and blood vessels. It has been suggested that the ventrogluteal site should be the primary site for anyone older than 7 months, noting that the only contraindications are muscle contraction, damage in the area, and administration of the hepatitis B vaccine.¹

The ventrogluteal injection site¹



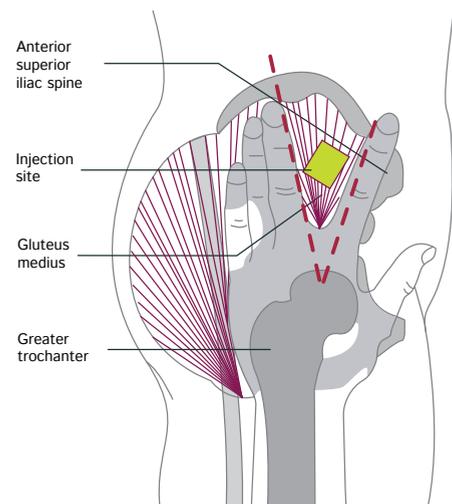
Compare the 2 injection sites¹

Injection Site	
Dorsogluteal	Ventrogluteal
Target Muscle	
Gluteus maximus	Gluteus medius
Advantages	
· Nurses' familiarity with procedure	· More consistent fat thickness · Free of nerves and blood vessels
Disadvantages	
· Proximity to major nerves and blood vessels · Thick layer of adipose tissue	· Nurses' unfamiliarity with procedure
Contraindications	
Inflamed skin, abscess, administering hepatitis B vaccine	Inflamed skin, abscess, muscle contraction, administering hepatitis B vaccine

Steps for administering an intramuscular injection at the ventrogluteal site^{1,2}

- 1 Instruct your patient to lie on his or her side and bend the knee of the leg chosen for injection. Alternatively, you may administer the injection with the patient in a seated position.
- 2 You may use simultaneous technique when administering 2 injections (ie, 2 nurses administer an injection into the gluteus medius simultaneously).
- 3 Prepare the syringe and explain the procedure to the patient.
- 4 Place the heel of your hand opposite to the leg being injected on the greater trochanter.
- 5 Place your index finger on the anterior superior iliac crest. Your thumb should be pointed toward the front of the leg.
- 6 Spread your index and middle fingers to form a "V." The injection site is in the middle of the "V" and should be level with the knuckles of your index and middle fingers.
- 7 If you have small hands, slide your hand up the leg until your index finger reaches the iliac crest.
- 8 To prevent a needlestick injury, remove your fingers before injecting.
- 9 Insert the needle fully in order to avoid subcutaneous injection.

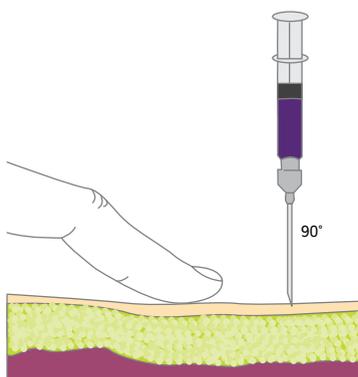
You may wish to select the ventrogluteal site when the dorsogluteal site presents a challenge.¹



Consider using the Z-track method

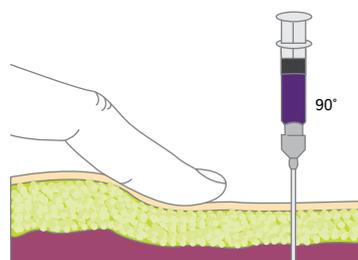
Tips to minimize injection site reactions

The Z-track method has been used to administer large-volume IM injections to reduce pain and dispersion into subcutaneous tissue. This technique prevents leakage of the medication into surrounding tissues and decreases the likelihood of localized irritation.³



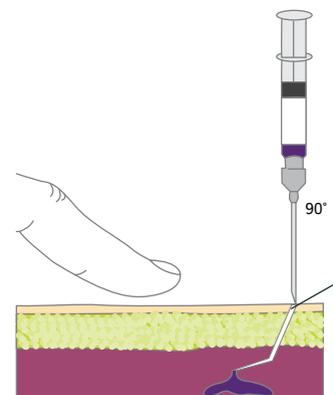
1

Pull or push the skin 2 to 3 cm away from the injection site with the nondominant hand.²



2

Pierce the skin at a 90-degree angle and depress the plunger slowly. If resistance occurs, pause, then resume depressing the plunger.²



3

Withdraw the needle, then release the skin.²

- Identifying bony anatomical landmarks and ensuring proper patient positioning offer a safe and effective means of IM delivery^{2,3}
- Consider rotating injection sites with repeated monthly injections²
- Apply manual pressure before needle insertion to stimulate nerve endings and reduce sensory input during injection²
- Some large-volume IM injections are highly viscous; consider warming the medication to room temperature before use²
- Administer injections at a slow rate (approximately 1 to 2 minutes per injection)²
- Consider using a longer needle in patients with excessive subcutaneous fat⁴
- Look for factors that may increase the risk of bruising or bleeding (eg, thrombocytopenia or anticoagulant use)²
- Consider using warm or cold compresses at the site to minimize pain²

Important information to consider when administering IM injections

- The most common reasons for unsuccessful IM injections are poor injection site selection and not advancing the needle to full length⁵
- Excessive fat thickness in some patients may influence needle penetration into the gluteal musculature^{2,6}
 - The ventrogluteal site provides the most consistent layer of adipose tissue, decreasing the need to determine the depth of subcutaneous fat. Injecting at this site allows the drug to reach the target muscle and prevents dispersion into the surrounding tissue

Key takeaways

- There is a need for ongoing education regarding large-volume IM injection techniques and prevention of injection site reactions¹
- Ensure that the patient is relaxed and positioned comfortably before injection²
- Let the vial warm up to room temperature and inject slowly²

References: 1. Greenway K. Using the ventrogluteal site for intramuscular injection. *Nurs Stand*. 2004;18(25):39-42. 2. Hopkins U, Arias CY. Large-volume IM injections: a review of best practices. *Oncol Nurse Advis*. 2013;4(1):32-37. 3. Carter-Templeton H, McCoy T. Are we on the same page?: a comparison of intramuscular injection explanations in nursing fundamental texts. *Medsurg Nurs*. 2008;17(4):237-240. 4. Nisbet AC. Intramuscular gluteal injections in the increasingly obese population: retrospective study. *BMJ*. 2006;332:637-638. 5. Mares JE, Dagohoy CG, Leary CC, et al. Gluteal intramuscular injections: CT evaluation of factors associated with success and failure (abstract presented at 2nd Annual Meeting of the North American NeuroEndocrine Tumor Society, 2009). *Pancreas*. 2010;39(2):275. 6. Burbridge BE. Computed tomographic measurement of gluteal subcutaneous fat thickness in reference to failure of gluteal intramuscular injections. *Can Assoc Radiol J*. 2007;58(2):72-75.