

Policy: P017 – **Intramuscular (IM) Injection**

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I. **Purpose:**

An appropriate injection technique reduces discomfort and complications for the person receiving intramuscular medications. Necessary skills for good injection technique include knowledge of anatomy and physiology, pharmacology, suitable injection sites, proper techniques, and effective communication.

II. **Policy:**

- a. Clinicians administering IM medications must adhere to strict infectious disease practices.
- b. Review and understand standing orders prior to preparing any medication(s).
- c. Improper placement of needle can cause complications and/or injury to patient.

III. **Procedure:**

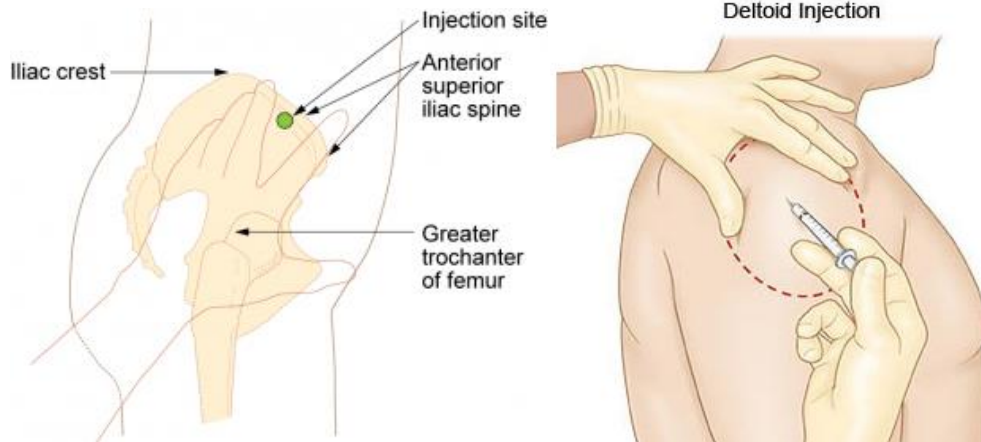
- a. Adhere to Affiliated Physicians Hand Hygiene policy. **[refer to P001]**
- b. Adhere to Affiliated Physicians PPE policy. **[refer to P007]**
- c. Station setup
 - i. Important to have a clean and organized work station when administering vaccines.
 - ii. Arrange supplies neatly on clean drape/chux.
 - iii. Place SHARPs container near treatment space for easy disposal of syringes/needles after use.
 - iv. Dominant hand should be closest to SHARPs container when conducting vaccinations to avoid having to cross body to dispose of needle.
- d. Prepare medication
 - i. Open syringe package in front of patient so can witness new unused syringe being used.
 - ii. Sanitize vial tops. Vial caps are strictly dust covers and vial stoppers require sanitizing prior to puncturing with sterile needles.
 1. Multi-dose vials - sanitize prior to each draw.
 2. Single-dose vials - sanitize once and discard after drawing up of vaccine.
 - iii. Confirm needle is tightly secure to syringe prior to vaccine draw.
 - iv. Follow Vaccine Policy(s) for preparation steps. **[refer to P009 and P015]**
- e. **How to Administer a Deltoid Intramuscular (IM) Injection:**
 - i. Upper arm muscle (deltoid muscle) is preferred IM injection site.
 - ii. Expose the upper arm.
 - iii. Cleanse site with isopropyl alcohol prep pad and let dry.
 - iv. Feel for the bone that goes across the top of the upper arm (acromion process). The bottom of it will form the base of an imaginary triangle.

- v. Vaccines administered with improper placement of needle can cause Shoulder Injury Related to Vaccine Administration (SIRVA).
- vi. The point of the triangle is directly below the middle of the base at about the level of the armpit.
- vii. Give the injection in the center of the imaginary upside down triangle.
- viii. The correct area to give an injection is in the center of the triangle, 1 to 2 inches below the acromion process, into the deltoid muscle. If person receiving the injection is very thin or the deltoid muscle is very small, the vastus lateralis (lateral thigh muscle) should be used instead.
- ix. Insert needle straight in at a right angle to the skin (90 degrees).
- x. No need to aspirate to check for blood return.
- xi. Inject prescribed therapy.
- xii. Discard needle and syringe into designated SHARPs container immediately after use. DO NOT recap needles. [refer to P008] If safety mechanism available, activate prior to placing in SHARPs container.
- xiii. **If recapping is necessary, use ‘the one-hand scoop technique’ to avoid needle stick injury.**



- xiv. Needle length used for IM injections usually 1 – 1 ½”.

Intramuscular injection	Infants, 1–12 months	22–25-gauge 1 inch (25 mm)	Vastus lateralis muscle of anterolateral thigh
	Toddlers, 1–2 years	22–25-gauge 1–1.25 inches (25–32 mm)	Vastus lateralis muscle of anterolateral thigh ³
		22–25-gauge 5/8 ² –1 inch (16–25 mm)	Deltoid muscle of arm
	Children, 3–10 years	22–25-gauge 5/8 ² –1 inch (16–25 mm)	Deltoid muscle of arm ³
		22–25-gauge 1–1.25 inches (25–32 mm)	Vastus lateralis muscle of anterolateral thigh
	Children, 11–18 years	22–25-gauge 5/8 ² –1 inch (16–25 mm)	Deltoid muscle of arm ^{3,5}
Adults, 19 years and older	22–25-gauge 1 inch (25 mm) ⁴ 1 inch (25 mm) 1–1.5 inches (25–38 mm) 1–1.5 inches (25–38 mm) 1.5 inches (38 mm) 1.5 inches (38 mm)	Deltoid muscle of arm ^{3,5}	
	<ul style="list-style-type: none"> ■ 130 lbs (60 kg) or less ■ 130–152 lbs (60–70 kg) ■ Men, 152–260 lbs (70–118 kg) ■ Women, 152–200 lbs (70–90 kg) ■ Men, 260 lbs (118 kg) or more ■ Women, 200 lbs (90 kg) or more 		



f. Giving an IM injection into the vastus lateralis muscle:

- i. To find the thigh injection site, make an imaginary box on the upper leg.
 1. One hand's width below the groin is the upper border of the box.
 2. One hand's width above the top of the knee is the lower border of the box.
- ii. Stretch the skin to make tight.
- iii. Cleanse site with isopropyl alcohol prep pad and let dry.
- iv. Insert needle straight in at a right angle to the skin (90 degrees).
- v. Up to 2mL of fluid may be given into the vastus lateralis muscle. **[refer to standing orders for specific dosing]**

Intramuscular (IM) Injection Guidelines:

Injection Route: Shows a needle at a 90° angle penetrating the dermis, subcutaneous tissue, and muscle.

Injection Sites:

- Deltoid:** The injection site is located between the acromion process and the axilla, 2.5-5cm below the lower edge of the acromion process of the scapula over the midaxillary line.
- Vastus lateralis:** The injection site is in the lateral middle third of the thigh between the greater trochanter and the knee. When injecting, lift the vastus lateralis muscle away from the bone.
- Ventrogluteal:** Place the palm over the greater trochanter, form a 'V' with the middle finger toward the iliac crest and the index finger toward the anterior superior iliac spine. Inject within the center of the 'V' below the anterior superior iliac crest.
- Dorsogluteal:** The injection site is above an imaginary line between the greater trochanter and the posterior superior iliac crest. The injection is administered laterally and superior to this imaginary line.

Injection Procedure:

- Spread the skin taut, (except in vastus lateralis which requires lifting the muscle) and insert the needle at a 90° angle.
- Pull back plunger slightly. If blood appears, remove needle, dispose properly and prepare a new injection.
- If no blood is present inject medication slowly.

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g. Complications associated with injections

- i. Most complications are associated with incorrect site, inappropriate depth or rate of injection (Malkin 2008).
 1. Pain (minor discomfort for a short time after an injection is normal)

2. Nerve damage, tissue necrosis, intramuscular hemorrhage, abscess, allergic reaction, needle phobia
 3. Vaccines administered with improper placement of needle can cause Shoulder Injury Related to Vaccine Administration (SIRVA).
 4. Cellulitis
 5. Medication errors
- h. Reporting Adverse Events
- i. Follow Incident Reporting and Management Policy. **[refer to OP001]**
- IV. Resources:**
- a. [MPS HY Intramuscular-injection-guidelines-poster IM EN.pdf](#)
 - b. [Microsoft PowerPoint - Best Practices for Giving Injections.ppt \[Read-Only\] \(who.int\)](#)
 - c. [Vaccine Administration: Needle Gauge and Length \(cdc.gov\)](#)
 - d. [Incorrect injection technique can result in serious shoulder injuries | American Pharmacists Association](#)

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