

# Subcutaneous injection considerations

For needle length and gauge selection\*

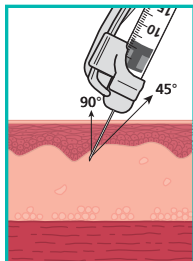
Subcutaneous (SubQ)	Location of injection	Needle length	Needle gauge	Needle angle	
Pediatric to adult	12 months (infants)	Anterolateral thigh,	1/2" – 5/8"	45° – 90°	
	12 months to 18 years	upper outer tricep area, upper buttocks, abdomen (avoid 2" radius around umbilicus)	5/32" – 1/2" (Diabetes Care)		26 – 31 G
	> 18 years		29 – 32 G (Diabetes Care)		

\* Adapted from *Fundamentals of Nursing: Human Health and Function*. R. Craven, C. Hirnle, 4th ed. Lippincott Williams & Wilkins 2003.

30G 29G 28G 27G 26G 25G 24G 23G 22G 21G 20G 19G 18G

ISO hub color standards for safety-engineered needles

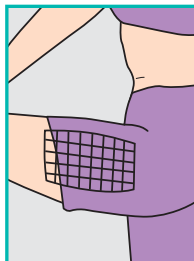
# Subcutaneous (SubQ) injection considerations:



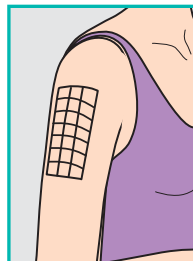
## Injection procedure

- Raise a fold of skin between the thumb and forefinger, and insert the needle at a 45° – 90° angle.
- Pull back plunger slightly. If blood appears in syringe, remove needle, dispose properly and prepare a new injection.\*

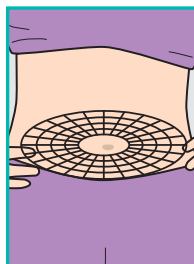
\* *It is not necessary to aspirate for blood return when administering insulin or heparin.*



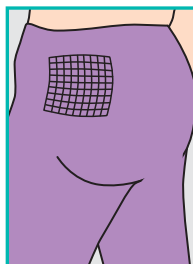
## Outer aspect of the upper thigh



## Outer aspect of the upper arm (not preferred site)



## Abdomen—avoid injecting within 2" around the umbilicus



## Upper buttocks

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# Intradermal injection considerations

For needle length and gauge selection\*

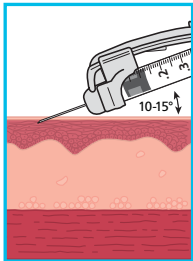
Intradermal (ID)		Location of injection	Needle length	Needle gauge	Needle angle
Pediatric to adult	12 months (infants)	Anterolateral aspect of forearm, upper chest, upper back, back of upper arm	3/8" – 3/4"	26 – 28 G	10° – 15°
	12 months to 18 years				
	> 18 years				

\* Adapted from *Fundamentals of Nursing: Human Health and Function*. R. Craven, C. Hirnle, 4th ed. Lippincott Williams & Wilkins 2003

30G 29G 28G 27G 26G 25G 24G 23G 22G 21G 20G 19G 18G

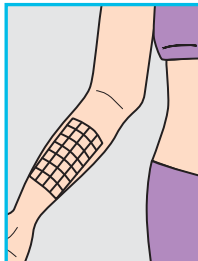
ISO hub color standards for safety-engineered needles

# Intradermal (ID) injection considerations:

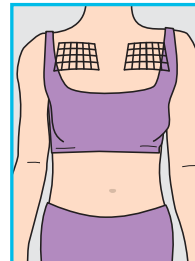


## Injection procedure

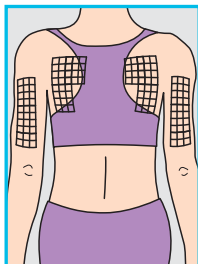
- Spread the skin taut, and insert the needle tip at a 10° – 15° angle.
- Inject medication slowly. **If a wheal does not appear, it was administered in the subcutaneous tissue.**



## Anterior aspect of the forearm



## Upper chest



## Upper back / back of arm

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# Intramuscular injection considerations

## For needle length and gauge selection\*

Intramuscular (IM)**		Location of injection	Needle length	Needle gauge	Needle angle
Pediatric	Infants < 18 months	Vastus lateralis muscle (≤0.5ml vol.)	7/8" – 1"	25 – 27 G	90°
	12 months to 18 years	Deltoid muscle, ventrogluteal site, dorsogluteal site (not recommended for <3 years), vastus lateralis muscle	7/8" – 1 1/4"	22 – 25 G	90°
Adult	> 18 years	Deltoid muscle, ventrogluteal site (may be best site for cachectic adults), dorsogluteal site (avoid in obese adults), vastus lateralis muscle	1" – 1 1/4" (up to 3" for large adults)	19 – 25 G	90°

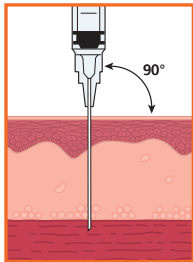
\* Adapted from *Fundamentals of Nursing: Human Health and Function*, R. Craven, C. Hirnle, 4th ed. Lippincott Williams & Wilkins 2003

\*\*Prior to administering an IM injection, refer to your procedure manual to determine the injection site utilizing body landmarks.

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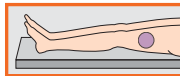
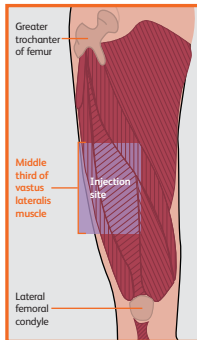
ISO hub color standards for safety-engineered needles

# Intramuscular (IM) injection considerations:

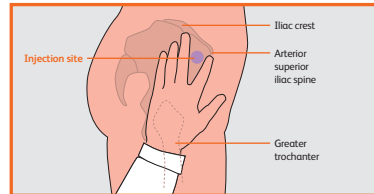


## Injection procedure

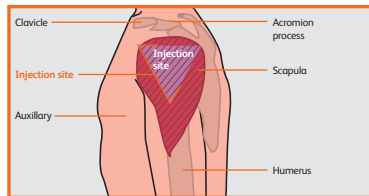
- Spread the skin taut (except the vastus lateralis which requires lifting the muscle) and insert the needle at a 90° angle.
- Pull back plunger slightly. If blood appears, remove needle, dispose of properly and prepare a new injection.
- If no blood is present, inject medication slowly.



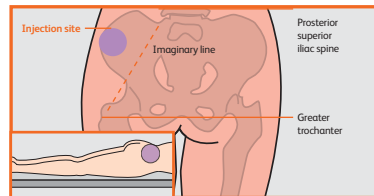
The **vastus lateralis site** is in the lateral middle third of the thigh between the greater trochanter and the knee. When injecting, lift the vastus lateralis muscle away from the bone.



The **ventrogluteal site**: 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.



The thickest part of the **deltoid muscle** is 2.5–4 cm (1–3 finger breadths) below the lower edge of acromion process of the scapula over the midaxillary line.



The **dorsogluteal 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.

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