

Practice Brief: Skin Injection 101*

Skin injection involves delivering the correct medication, in the correct amount, to the correct anatomy, using the correct technique. To achieve these objectives, clinicians use a variety of needle and syringe sizes depending on the medication type, patient characteristics, and target anatomy.

The three basic injection techniques, also called “routes” of administration, are described below:

- A. Intramuscular injections (IM) target highly vascularized muscle tissue to promote rapid uptake of the medication. IM injections are commonly used for vaccines and other medications that require fast uptake for therapeutic effectiveness, and/or that may cause injection site irritations if not absorbed quickly. IM injections are generally performed with 1ml or 3ml syringes with 22G – 25G needles, 1” to 1-1/2” in length, and target anatomy usually includes large muscles in the thigh or upper arm. For IM injections, the needle is inserted at a 90° angle.
- B. Subcutaneous injections (sub-Q) target fatty tissue between the dermis and the muscle, and are used for medications that require slower absorption. Examples of medications that are administered via the sub-Q route include insulin, some vaccines, growth hormone, epinephrine, and other substances. Sub-Q injections are generally performed with 1ml or 3ml syringes with 25G – 27G needles, 1/2” - 5/8” in length, and target anatomy usually includes fatty tissues in the arms, legs, and stomach. For sub-Q injections, the needle is inserted at a 45° angle.
- C. An intradermal injection (ID) is the injection of a small amount of fluid into the dermal layer of the skin. It is frequently done as a diagnostic measure, such as for tuberculin testing and allergy testing (placing very small amounts of the suspected antigen or allergen under the skin). The intradermal injection is made in skin areas of the body that are soft and yielding, usually the inner forearm. In general, ID injections are performed using 1ml fixed needle tuberculin syringes with 26 or 27 gauge needles that are 1/4” to 1/2” in length. The needle is inserted a 15° - 20° angle (a.k.a. low angle) and the fluid is injected at to create a small welt or "wheal" just under the surface of the skin and between its layers.

This message is courtesy of Terumo Medical Products. T-SHARP™ Technology is Terumo’s proprietary manufacturing process that produces needles of superior sharpness.

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*References:

1. CDC “Pink Book”, *Appendix D – Injection Techniques*, 2011
2. NIH Patient Education, *Patient Education - Giving A Subcutaneous injection*, http://www.cc.nih.gov/cc/patient_education/pepubs/subq.pdf
3. Brookside Associates Website, *Administer Intramuscular, Subcutaneous, and Intradermal Injections*, http://www.brooksidepress.org/Products/Administer_IM_SQ_and_ID_Injections/lesson_2_Section_1.htm