

Selection of Needle Length

[Selection of Needle Lengths](#)

Needle size will depend on the patient's anatomy, amount and placement of adipose tissue, muscularity, and a variety of other factors. A child or thin adult may need a 1-inch needle while an obese individual may require a 3-inch needle. The gauge of the needle may depend on facility policies and supply, but it is recommended to administer injections with the smallest gauge needle of the appropriate length.

Aseptic Technique for Drawing Up

[A-aseptic-tank using Aseptic Techniques for Drawing Up](#)

In addition to wearing gloves and disinfecting the injection site, it is important to always clean the ampule, vial or other medication container with alcohol before inserting the needle or drawing up the medication. When withdrawing medication from a glass ampule, remember to use a filter needle to prevent any glass shards or debris from entering the medication, being certain to replace the filter needle with the correct injection needle prior to administration.

Z-Track

[Z-track pulling on skin](#)

The Z-track injection method is an important and preferred technique when administering intramuscular (IM) injections. After cleaning the injection site, place your nondominant hand below the site and pull the skin inferior and laterally to move the overlying skin and subcutaneous tissue about an inch. After needle insertion at a 90-degree angle, inject the medication, withdraw the needle, and release the skin. By manipulating the skin in this way prior to insertion, superficial dermis irritation is reduced and the medication becomes trapped inside muscle tissue instead of leaking into surrounding subcutaneous tissue.

90 Degree Angle

[90 Degree Angle](#)

Intramuscular (IM) injections are always injected at a 90-degree angle to insure that the needle is sufficiently penetrating through subcutaneous tissue and into muscle.

Max Amount (2-5 mL Adult, 1 mL Child)

[Max-amount-game for an Adult and Child](#)

In adults, muscle size, composition and maturity allows for 2 to 5 mL of medication administration in an intramuscular (IM) injection. However, larger volumes increase the likelihood of improper absorption. It is recommended that children and infants receive no more than 1 mL of medication via IM injection.

Techniques to Reduce Pain

[Using Technique to Reduce Pain-bolt](#)

In an effort to reduce pain associated with intramuscular (IM) injections, remember to inject the medication in a single, fluid, steadily progressive motion. Ask the patient to relax their muscle prior to inserting the needle. Once inserted, remembering to use the Z-track method, avoid moving the needle around inside the muscle tissue during injection. After injection, ask the patient to avoid rubbing the site, as this can cause more irritation inside the muscle. Hesitation, jerking, interrupted advancement of the needle to the level needed to reach muscle, excessive or inadequate skin pulling for the Z-track technique, improper landmark identification, larger needle gauge selection than necessary, excessive force or depth during insertion and improper angle of needle insertion are all common pitfalls to be avoided to improve patient tolerance of IM injections.