

The last item to prepare for injection is the syringe, which holds the fluid to be administered. A syringe has the following parts: barrel, tip, and plunger (Fig. 10-24). The barrel is the hollow part of the syringe that holds the liquid medication and through which the plunger passes. The needle is attached to the tip of the syringe. Finally, the plunger is the part that pushes the medication through the barrel and the needle to deliver the medication to its intended site.

The three basic types of syringe are tuberculin (TB), insulin (Fig. 10-25), and standard hypodermic (see Fig. 10-24). For TB testing or other ID injections, little fluid is injected, and therefore a narrow, finely **calibrated** (divided into accurate measurements) syringe known as a **tuberculin** syringe is used. Tuberculin syringes are calibrated to a hundredth of a milliliter (0.01 mL). These syringes are frequently used for newborns and children because doses of medicine for these patients are small.

An insulin syringe is calibrated in units instead of milliliters (Fig. 10-26). It can hold no more than 1 mL. The standard U-100 insulin syringe has 100 units calibrated on the barrel, and each line usually equals 2 units. Insulin syringes are also available with 30- and 50-unit capacity, used primarily for small children or when small amounts of insulin are needed. Because this insulin syringe has less capacity, each mark equals 1 unit, not 2. All insulin syringes are used solely for insulin because an error in measurement can be fatal. No other syringe should ever be used to administer insulin. Regardless of manufacturer, these syringes generally have orange in the coloring (usually the needle cap) to identify them as insulin syringes. Facilities may have a policy that all insulin doses must be checked by two people before the injection is administered.

Standard, or **hypodermic**, syringes are available in sizes ranging from 3 to 60 mL. Even if the needle is attached or packaged together with the syringe, a different gauge or length needle may be necessary, especially if the patient is small or is a child. Prepackaged needles can be replaced with smaller needles in most cases. The calibration of these syringes depends on the size. Syringes holding 3 mL are calibrated in 0.1-mL increments, whereas larger syringes are calibrated in 0.2-mL increments.

Syringes can be purchased without needles, so separate needles can be attached according to the length and gauge desired for the specific task. Syringes are available without needles to deliver medication into the mouth. The various types of syringes are summarized in Table 10-1. Table 10-2 summarizes the different types of injections and the needles and syringes used for them. Procedure Box 10-12 explains how to draw up medication by using the information you have learned regarding ampules, vials, needles, and syringes.

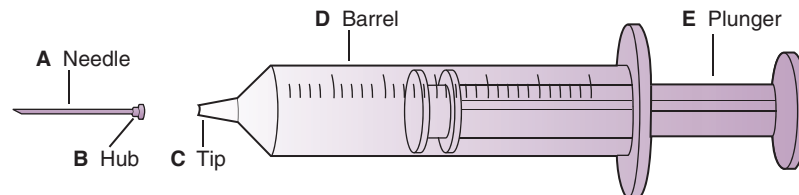


FIGURE 10-24: Parts of a syringe: (A) needle, (B) hub, (C) tip, (D) barrel, (E) plunger.

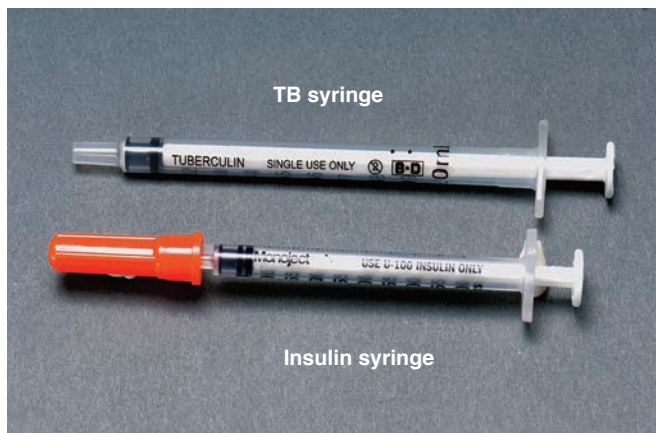


FIGURE 10-25: (A) tuberculin syringe (TB), (B) insulin syringe.