

Understanding Various Syringe Types

Many people avoid going to the doctor to get a shot of medicine due to a fear of needles. Unlike the needles of the early 1900's which were blunt, non-sterile, and thick, modern technology changed administering antibiotics and injections forever by developing needles that minimize pain and trauma.

A syringe is a simple pump consisting of a plunger that fits tightly in a tube to assist pushing liquids or solids into an object either through a needle, tubing, or a nozzle. The most common use of a syringe is to administer injections into the body. Syringes come in both a disposable all-in-one unit with the needle attached or with the plunger and tip separate. Syringes come in a number of designs in order to properly choose a tip that best suits the needed application. The common tip styles are luer lock, slip tip, catheter tip, and eccentric tip¹. Also the needles come in a variety of gauges or thicknesses, and lengths depending on what and where you will be administering.

The two common needle types you will come across are the polypropylene slip hub and the luer lock hub. The luer lock hub is specific to the luer lock syringe barrel as it uses threads to screw on and attach. The slip tip polypropylene hubs work with the rest of the other common types of syringes. These syringes slip over the barrel tip and compress for easy installation and removal.

These needles also have the option of having different thicknesses between 14 gauge to 30 gauge and lengths between ¼" and 2". Shorter needles are usually for injections for right under the skin, longer lengths for getting past muscles, finer gauges for less pain, and thicker gauges for long needles and thicker skinned individuals².

Some common syringe barrel types are the luer lock, normal slip tip, catheter tip and eccentric tip. Most needles will work with each type of syringe barrels as they use the polypropylene attachment as seen above. A regular slip tip syringe is very common as the needle installation and removal is quick and simple. A catheter tip is commonly used for injecting through tubing or where a regular slip tip needle is larger than the standard slip tip.

Eccentric tips are common when one needs to get very close to parallel with the skin. The tip is just about in line with the outer body of the barrel to give one that close needed access. This is common when one is trying to inject into a surface vein and you don't want to penetrate through both walls of that vein.

The final syringe type one will come across is the luer lock. As stated earlier, the barrel and the needle tip simply twist together to give a more permanent use as you can see in the above picture. These also have been designed to make a more leak free connection between the male end on the barrel and the female needle counterpart³.

The most common and recognized type of syringe is the U-100 insulin syringe. These insulin syringes are meant to be one time use only thus the low cost. The U-100 indicates the concentration of your insulin meaning there's 100 units of insulin in every 1 mL. The picture to the right shows a standard insulin syringe with a protective safety cap which has been removed. The needles are typically very thin and range between 23g to 25g to cause the least amount of trauma and bruising to patients. These syringes come in both permanently attached and removable needle types.

Safety should always be used when dealing with syringes. A sharps container is filled with used medical needles and any other sharp medical instruments such as IV catheters and surgical blades. You can read more through this blog. There are many general safety rules that everyone needs to abide by. You should never throw loose or used needles into the garbage, never flush used needles down the toilet, and never put needles in recycling containers. You should always use a specific container designed for the disposal of sharps and dispose of it properly⁴. Check out "[Sharp Thinking – The Point of Disposal](#)" for more information on sharp disposal.

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1. <http://en.wikipedia.org/wiki/Syringe>
2. <https://www.bd.com/us/diabetes/page.aspx?cat=7002&id=7427>
3. http://en.wikipedia.org/wiki/Luer_lock
4. <https://blog.allegromedical.com/?s=syringe>