Routes of Administration Part Two (Parenteral)

Parenteral administration always means that the medication will be injected. This route of administration allows for a higher concentration of the drug to enter into the blood stream, initially bypassing the GI and liver, and avoiding the first pass effect. Some parenteral administrations are only to be administered by a trained specialist, but a nurse may still need to monitor the patient after administration.



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Parenteral Administration

Intradermal
In-skin
Intradermal (ID) injections are administered just under the epidermis. The most common ID injection is the Mantoux tuberculin skin test used when screening for tuberculosis exposure.

Subcutaneous
Sub-q-tips
Subcutaneous (SubQ) injections are given into the tissue just under the dermis. Subcutaneous tissue absorbs agents at a slower rate than intramuscular or intravenous administration, and this may be necessary for management of certain, risky drugs like insulin and heparin. If an insulin needle is not being used, a 22G or smaller needle can be used with an injection angle of 45-60 degrees ½-1 inches into areas of subcutaneous tissue concentration like the periumbilical region.

Intramuscular (IM)
In-muscle
Intramuscular (IM) injections are administered directly into the muscle. Common locations are the lateral deltoid, dorsogluteal or ventrogluteal or vastus lateralis muscles. Administration is based on medication to be administered, depth and presence of subcutaneous tissue over the muscle, the location, and body habitus of the patient. Generally, an IM injection uses a 1-2-inch-long needle with 18- 22G diameter at a 90-degree angle is the preferred supply and technique for most IM injections.

Intravenous
In-veins
Intravenous (IV) injections are administered into a superficial vein with or without placement of an embedded intravenous catheter. Medication administration onset is expedited, bypassing the first pass effect, and is a preferred method during resuscitation or for emergent response.

Epidural
E-pick-drill
Epidural catheters are placed in the epidural space of the spinal cord by a specialist or trained professional. Epidural catheters can be placed temporarily to provide regional analgesia prior to a procedure. Medication provided via continuous infusion into the epidural space requires dedicated monitoring and training.

Intrathecal
In-thimble
Intrathecal catheters are surgically placed into the subarachnoid space or within a ventricle of the brain. This administration is sometimes used to administer chemotherapeutic agents and requires dedicated monitoring and specialized training for management of such procedures.

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Intraosseous

In-bone

Intraosseous (IO) are used in emergency situations when venous access is unable to be obtained in a timely manner. A needle is punctured directly into the patient's bone marrow, usually using a special tool or administration device, and medication can garner access to the bloodstream from this location.

Intraperitoneal

In-parrot-toe

Catheter access intraperitoneally can facilitate medication administration into the peritoneal cavity. This requires careful placement of the catheter through surgery and administered medication or procedures using this special catheter include peritoneal dialysis, chemotherapy, and/or administration of antibiotics.

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