Parenteral Products

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Specialized Parenteral Routes

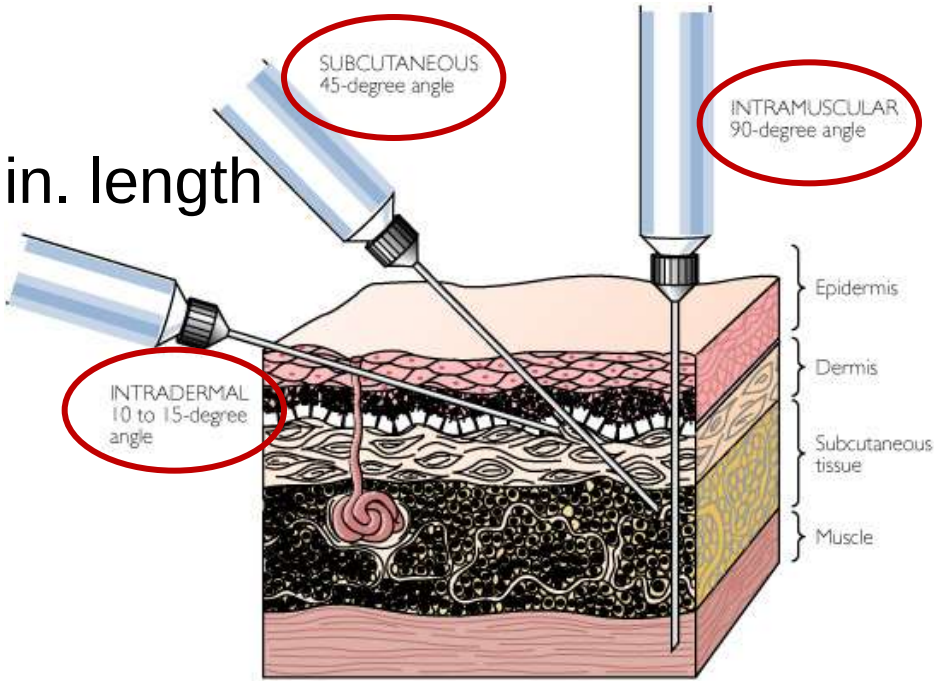
Intracutaneous (IC) or intradermal injections (ID)

Are made into the dermis

Volume: 0.1 to 0.2 ml.

Needle: beveled, 26 gauge, 3/8 in. length

Angle of insertion: 15^{o}



Indications:

- **Diagnostic purpose**

  testing allergy against drugs

- **Immunization:** vaccination against smallpox.

Specialized Parenteral Routes

Intra- Arterial Injections:

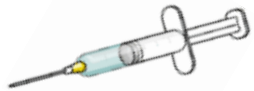
Injection into an artery which leads directly to the target organ.

Indications:

Diagnostic purposes (injecting radiopaque substances for roentgenographic studies of the vascular supply of various organs or tissues).

Organ-specific chemotherapy to avoid serious systemic reactions if chemotherapeutic agents are injected intravenously (malignant melanomas of the lower extremities),.

Specialized Parenteral Routes



Intra-Abdominal (Intraperitoneal) injections

Are made directly into the peritoneal cavity into an abdominal organ, such as the liver, kidney, or bladder.

Indications:

- Treatment of local or widespread intra-abdominal disease.
- Peritoneal dialysis: To dialyse and remove various cumulative toxic substances from the body when severe renal failure prohibits removal.

Specialized Parenteral Routes

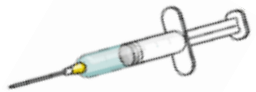
Intracardiac injections

Are made directly into chambers of the heart

Indications:

in emergency situations, such as cardiac arrest, in which drugs may have to reach the myocardium immediately.

Specialized Parenteral Routes



Intra-Articular injections

Are made into the synovial sacs of joints.

Indications:

For the treatment of infections, pain or inflammation locally in a joint (rheumatoid arthritis or trauma).

Drugs such as antibiotics, lidocaine, and corticosteroid esters may be administered into bodily joints

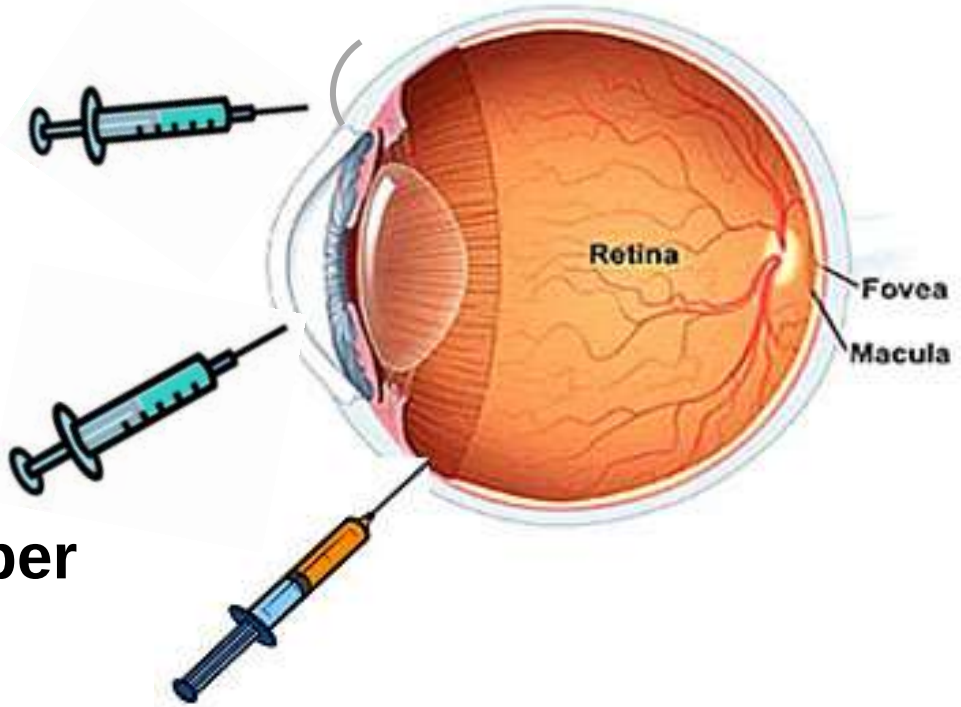
Specialized Parenteral Routes

Intraocular injections

Are made into or around the eye ball.

Retrobulbar

Subconjunctival



Anterior chamber

Intravitreal

Specialized Parenteral Routes

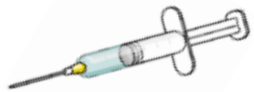
Intraocular injections

Are made into or around the eye ball.

Indications:

Treatment of infections and inflammatory diseases of the eye which are not treated effectively by topical or systemic drug administration.

Specialized Parenteral Routes



Intraspinal injections

Are made into particular areas of the spinal column

- Intrathecal (I.T.) or Subarachnoidal
- Epidural
- Peridural (P.D)
- Intracisternal

Specialized Parenteral Routes

Intraspinal injections

Are made into particular areas of the spinal column

Intrathecal :
Injected into the space under the arachnoid membrane of the brain or spinal cord.

Epidural
An injection into the epidural space of the spinal cord to produce epidural anaesthesia of the lower body or to deliver some drugs

Peridural
around or external to the dura mater.

Intracisternal
Within one of the subarachnoid cisternae; usually refers to the introduction of a cannula into the cerebellomedullary cistern for aspiration of cerebrospinal fluid or the injection of air into the ventricles of the brain.

Specialized Parenteral Routes

Intraspinal injections

Are made into particular areas of the spinal column

Indications:

- Spinal anesthesia
- Diagnosis
- Treatment

Specialized Parenteral Routes

Intraventricular injections

Are made into the lateral ventricles of the brain.

Indications:

Treatment of infections or malignancies.

Advantages of Parenteral Routes

1. Quick onset of action.

2. Suitable for the drugs which are not administered by oral route.

3. Useful for unconscious or vomiting patients.

4. To ensure delivery of adequate concentrations of the drug to target areas of the body

4. Duration of action can be prolonged by modifying formulation

5.To produce a local effect

6. Rapid correction of fluid and electrolyte imbalances and of supply short- or long-term nutritional needs.

Disadvantages of Parenteral Routes

1. The frequent pain and discomfort of injections.

2. It is harder or impossible to counteract incorrect drug or dose (particularly through I.V. route).

3. Restriction of parenteral use to hospitals or with specialized personnel in most cases.