

Regional Anesthesia Techniques

Regional anesthesia involves blocking sensation in specific parts of the body while the patient remains awake or sedated. It is classified into several main categories based on the anatomical target and technique.

1. Neuraxial Anesthesia

Spinal Anesthesia

- **Injection Site:** Into the subarachnoid space (cerebrospinal fluid)
- **Use:** Cesarean sections, pelvic and lower limb surgeries
- **Onset:** Rapid
- **Duration:** Single dose, limited duration

Epidural Anesthesia

- **Injection Site:** Epidural space, outside the dura mater
- **Use:** Labor analgesia, abdominal or thoracic surgeries
- **Onset:** Slower than spinal
- **Duration:** Can be continuous with a catheter

Caudal Anesthesia

- **Injection Site:** Via the sacral hiatus into the epidural space
- **Use:** Pediatric surgeries, anorectal procedures

2. Peripheral Nerve Blocks

Upper Extremity Blocks

- **Interscalene Block:** For shoulder and upper arm
- **Supraclavicular Block:** For arm and forearm
- **Infraclavicular/Axillary Blocks:** For elbow, forearm, hand

Lower Extremity Blocks

- **Femoral Nerve Block:** Anterior thigh and knee
- **Sciatic Nerve Block:** Posterior thigh, lower leg, and foot
- **Adductor Canal Block:** Knee surgery, spares quadriceps function

3. Truncal Blocks

TAP Block (Transversus Abdominis Plane)

- **Use:** Analgesia for abdominal wall incisions
- **Technique:** Local anesthetic between internal oblique and transversus abdominis

Rectus Sheath Block

- **Use:** Midline abdominal surgeries

PECS Block (Pectoral Nerve Block)

- **Use:** Breast and chest wall surgeries

ESP Block (Erector Spinae Plane Block)

- **Use:** Thoracic, abdominal, and spinal surgeries
- **Injection Site:** Deep to erector spinae muscle

4. Imaging and Guidance

- **Ultrasound Guidance:** Enhances safety and accuracy by visualizing nerves and anatomical structures
- **Nerve Stimulation:** Sometimes used alongside ultrasound to confirm correct nerve localization

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