

Spinal vs Epidural

Spinal (Intrathecal) Anesthesia:

- **Works by even spread of local anesthetic (LA) in cerebrospinal fluid (CSF).**
- **Bilateral and predictable block** from the highest level downward.
- **A T4 block covers all pain from visceral/peritoneal manipulation (C-fiber) and T10 is needed for sharp pain from incision (A-delta fibers).**
- Since LA spreads freely in CSF, assessing a spinal block just requires checking the highest sensory level.

Epidural Anesthesia:

- **Works by diffusing LA through the epidural space, reaching nerve roots individually.**
- **Spread is not always even** due to fat, vessels, and connective tissue in the epidural space.
- Patients can have "**windows**" of pain where certain dermatomes are not blocked.
- **A T10-L1 block is needed for contraction pain, and S2-S4 is required for pudendal nerve pain during pushing.**
- **High volume, low concentration boluses** help improve spread by forcing LA into channels that reach each nerve root.

Clinical Takeaways:

- **Spinal anesthesia = reliable, even block.**
- **Epidural anesthesia = variable, needs assessment of dermatomes.**
- Epidural patients may experience **one-sided pain or incomplete coverage**, requiring **dose adjustments and careful troubleshooting.**
- **Patient feedback is crucial**—they will report if a dermatome isn't covered!



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