# Bupivacaine (byoo-pi-va-kane)

**Classification:** Epidural, Local Anesthetics, Anesthetics (Topical/Local)

**Pregnancy Category:** C

## Indications

Local or regional anesthesia or analgesia for surgical, obstetric, or diagnostic procedures.

## Action

Local anesthetics inhibit initiation and conduction of sensory nerve impulses by altering the influx of sodium and efflux of potassium in neurons, slowing or stopping pain transmission.

**Therapeutic Effects:** Decreased pain or induction of anesthesia; low doses have minimal effect on sensory or motor function; higher doses may produce complete motor blockade.

## Pharmacokinetics

**Absorption:** Systemic absorption follows epidural administration, but amount absorbed depends on dose.

**Distribution:** If systemic absorption occurs, this agent is widely distributed and crosses the placenta.

**Metabolism and Excretion:** Small amounts that may reach systemic circulation are mostly metabolized by the liver; 6% excreted unchanged in the urine.

**Half-life:** 1.5–5 hr (after epidural use).

## Time/Action Profile (Analgesia)

<table>
<thead>
<tr>
<th>Route</th>
<th>Onset</th>
<th>Peak</th>
<th>Duration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Epidural</td>
<td>10–30 min</td>
<td>Unknown</td>
<td>2–8 hr†</td>
</tr>
<tr>
<td>Caudal</td>
<td>15–30 min</td>
<td>Unknown</td>
<td>2–8 hr†</td>
</tr>
</tbody>
</table>

†Duration of anesthetic block.

## Contraindications/Precautions

- **Contraindicated in:** Hypersensitivity, cross sensitivity with other amide local anesthetics may occur (mepivacaine, lidocaine, mepivacaine, prilocaine). Contains bisulfites and should be avoided in patients with known intolerance.

- **Hematological:** Used in patients with known urinary melena: GI: Obstructive pericardial block anesthetics.

- **Used Cautionily in:** Concurrent use of other local anesthetics; Liver disease; Concurrent use of anticoagulants (including low-dose heparin and low-molecular-weight heparins heparins); 7. Risk of spinal/epidural hematoma; Pedi: Children >12 yr (safety not established).

## Adverse Reactions/Side Effects

- **CNS:** SEIZURES, anxiety, dizziness, headache, irritability.

- **EENT:** Blurred vision, tinnitus.

- **CV:** Cardiovascular collapse, arrhythmias, bradycardia, hypotension.

- **GI:** Nausea, vomiting.

- **GU:** Urinary retention.

- **Derm:** Pruritus.

- **F and E:** Metabolic acidosis.

- **Neuro:** Circumoral tingling/numbness, tremor. Miotic allergic reactions, fever.

## Interactions

**Drug-Drug:** Additive toxicity may occur with concurrent use of other amide local anesthetics (including lidocaine, mepivacaine, prilocaine). Use of solutions containing epinephrine with MAO inhibitors may cause hypertension.

**Route/Dosage**

Solutions containing preservatives should not be used for caudal or epidural blocks.

**Epidural (Adults and Children ≥12 yr):** 10–20 mL of 0.25% (partial to moderate block), 0.5% (moderate to complete block), or 0.75% (complete block) solution. Administer in increments of 3–5 mL allowing sufficient time to detect toxic signs/symptoms of inadvertent IV or IT administration. A test dose of 2–4 mL of 0.5% with epinephrine solution is recommended prior to epidural blocks.

**Caudal block (Adults and Children ≥12 yr):** 15–30 mL of 0.25% or 0.5% solution. A test dose of 2–3 mL of 0.5% with epinephrine solution is recommended prior to caudal blocks.

**Peripheral nerve block (Adults and Children ≥12 yr):** 5 mL of 0.5% or 0.25% solution.

**Sympathetic nerve block (Adults and Children ≥12 yr):** 20–50 mL of 0.25% solution.

**Dental block (Adults and Children >12 yr):** 1.8–3.6 mL per site of 0.5% with epinephrine solution.

**Local infiltration (Adults and Children >12 yr):** 0.25% solution infiltrated locally (maximum dose = 175 mg).
NURSING IMPLICATIONS

Assessment
- **Systemic Toxicity:** Assess for systemic toxicity (circumoral tingling and numbness, paresthesia in ears, metallic taste, dizziness, blurred vision, tinnitus, slow speech, incoordination, regulating, seizures, cardiac dysrhythmias). Report to physician or other health care professional.
- Monitor BP, HR, and respiratory rate continuously while patient is receiving this medication.
- Monitor for return of sensation after procedure.

Potential Nursing Diagnoses
- Acute pain (Indications)
- Impaired physical mobility

Implementation
- See Route and Dosage section.

Patient/Family Teaching
- Instruct patient to notify nurse if signs or symptoms of systemic toxicity occur.
- Advise patient to request assistance during ambulation until orthostatic hypotension and motor deficits are ruled out.

Evaluation/Desired Outcomes
- Decrease in postoperative pain without unwanted sensory or motor deficits.

Why was this drug prescribed for your patient?