**celecoxib** (sél-e-kok'ib)

**Classification**
Therapeutic: anti-inflammatories, nonsteroidal anti-inflammatory agents
Pharmacologic: COX-2 inhibitors

**Pregnancy Category C**

**Indications**
Relief of signs and symptoms of osteoarthritis, rheumatoid arthritis, ankylosing spondylitis and juvenile rheumatoid arthritis. Management of acute pain including primary dysmenorrhea.

**Action**
INHIBITS the enzyme COX-2. This enzyme is required for the synthesis of prostaglandins. Has analgesic, anti-inflammatory, and antipyretic properties.

**Pharmacokinetics**
**Absorption:** Bioavailability unknown.
**Distribution:** 97% bound to plasma proteins; extensive tissue distribution.
**Metabolism and Excretion:** Mostly metabolized by the hepatic CYP2C9 isoenzyme; the CYP2C9 enzyme system exhibits genetic polymorphism; poor metabolizers may have significantly decreased plasma levels. 3% excreted unchanged in urine and feces.
**Half-life:** 11 hr.

**TIME/ACTION PROFILE (pain reduction)**

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>24–48 hr</td>
<td>unknown</td>
<td>12–24 hr†</td>
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</tbody>
</table>

†After discontinuation.

**Contraindications/Precautions**
Contraindicated in: Hypersensitivity; Cross-sensitivity may exist with other NSAIDs, including aspirin; History of allergy-type reactions to aspirin or other NSAIDs, including aspirin trial (G burr, nasal polyposis, and severe hypersensitivity reactions to aspirin). Advanced renal disease. Severe hepatic dysfunction. Postoperative pain from coronary artery bypass graft (CABG) surgery. Should be used in late pregnancy (may cause premature closure of the ductus arteriosus).

**Use Cautiously in:** Cardiovascular disease or risk factors for cardiovascular disease (may increase risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke, especially with prolonged use). Chronic kidney disease or history of congestive heart failure, hypertension, or dehydration. Renal insufficiency. Severe dehydration (correct deficits before administering). Patients who are known or suspected to be poor CYP2C9 metabolizers (should be used with caution in these patients). History of peptic ulcer disease or GI bleeding. Patients with peripheral edema, heart failure, or liver or renal disease. Concurrent therapy with corticosteroids or anticoagulants, concurrent diuretic or ACE inhibitor therapy (risk of renal impairment); History of stroke, transient ischemic attack, or unstable angina pectoris. Severe dehydration (correct deficits before administering). Patients who are known or suspected to be poor CYP2C9 metabolizers (should be used with caution in these patients). History of peptic ulcer disease or GI bleeding.

**Adverse Reactions/Side Effects**

**CNS:** Dizziness, headache, insomnia.
**CV:** Myocardial infarction, stroke, thrombosis, edema.
**GI:** GI bleeding, abdominal pain, diarrhea, dyspepsia, flatulence, nausea.
**Derm:** Exfoliative dermatitis, Stevens-Johnson syndrome, toxic epidermal necrolysis, rash.

**Drug Interactions**
**Drug-Drug:** CYP2C9 inhibitors may Increase celecoxib levels. May Decrease the effectiveness of ACE inhibitors, diuretics, and anticoagulants. Fluconazole may Increase celecoxib levels (use lowest recommended dosage). May Decrease risk of bleeding with warfarin and aspirin. May Increase serum lithium levels. Does not inhibit the cardioprotective effect of low-dose aspirin.

**Route/Dosage**
**PO (Adults):**
- Osteoarthritis: 200 mg once daily or 100 mg twice daily.
- Rheumatoid arthritis: 100–200 mg twice daily.
- Ankylosing spondylitis: 200 mg once daily or 100 mg twice daily; dose may be increased to 400 mg daily after 6 wk.
- Acute pain, including primary dysmenorrhea: 400 mg initially, then a 200-mg dose if needed on the first day, then 200 mg daily (not extended beyond 6 mo).

**Hepatic Impairment**
**PO (Adults):**
- Moderate hepatic impairment (Child-Pugh Class B): Dose by 50%.

**Overdosage**
**Symptoms:** Overdosage: Severe hemorrhage, Peptic ulcer disease, GI bleeding.
**Treatment:** Supportive care and symptomatic relief. Measurement of vital signs and laboratory values; continuous cardiac monitoring. Gastric lavage. Activated charcoal. Sedation. Hemodialysis. Monitors with severe GI toxicity may require exchange transfusion, surgery.

**Other Information**
**Storage:** Store at controlled room temperature.

**Generic Implication**
COSTART Index: 310000
**Canadian drug name.**
**Genetic Implication.** CAPI TALS indicate if life-threatening, underline indicate most frequent. Strikethrough indicates discontinued.
PO (Children ≥ 2 yrs, ≤ 10 kg; juvenile rheumatoid arthritis — 50 mg twice daily).

PO (Children ≥ 10 kg, ≤ 25 kg; juvenile rheumatoid arthritis — 100 mg twice daily).

NURSING IMPLICATIONS

Assessment
- Assess range of motion, degree of swelling, and pain in affected joints before and periodically throughout therapy.
- Assess patient for allergy to sulfonamides, aspirin, or NSAIDs. Patients with these allergies should not receive celecoxib.
- Assess patient for skin rash frequently during therapy. Discontinue at first sign of rash; may be life-threatening. Stevens-Johnson syndrome may develop. Treat symptomatically; may recur once treatment is stopped.
- Lab Test Considerations: May cause Δ AST and Δ ALT levels.
- May cause hypophosphatemia and ↑ BUN.

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

Implementation
- Do not confuse with Celexa (citalopram) or Cerebyx (fosphenytoin).
- PO: May be administered without regard to meals. Capsules may be opened and sprinkled on applesauce and ingested immediately with water. Mixture may be stored in the refrigerator for up to 6 hr.

Patient/Family Teaching
- Instruct patient to take celecoxib exactly as directed. Do not take more than prescribed dose. Increasing dose does not appear to increase effectiveness. Use lowest effective dose for shortest period of time.
- Advise patient to notify health care professional promptly if signs or symptoms of GI toxicity (abdominal pain, black stools), skin rash, unexplained weight gain, edema, or chest pain occurs. Patients should discontinue celecoxib and notify health care professional if signs and symptoms of hepatotoxicity (nausea, fatigue, lethargy, pruritus, jaundice, upper right quadrant tenderness, fulminant hepatitis) occur.
- Advise patient in multi-ethnic care professional if pregnancy is planned or suspected.

Evaluation/Desired Outcomes
- Reduction in pain in patients with osteoarthritis.
- Reduction in joint tenderness, pain, and joint swelling in patients with rheumatoid arthritis and juvenile rheumatoid arthritis.
- Decreased pain with dysmenorrhea.

Why was this drug prescribed for your patient?