

Ceftriaxone is a powerful third-generation cephalosporin antibiotic used to treat a wide range of serious bacterial infections. It is administered via injection and is known for its broad-spectrum activity and once-daily dosing.

🧪 Chemical Composition

- **Active Ingredient:** Ceftriaxone sodium*
- **Molecular Formula:** $C_{18}H_{18}N_8O_7S_3$
- **Drug Class:** Third-generation cephalosporin (β -lactam antibiotic)
- **Formulations:**
 - Injectable powder for reconstitution: 250 mg, 500 mg, 1 g, 2 g
 - Brand Names: Rocephin, Cefaxone, Ceftriax

💊 Dosage & Administration

- **Route:** Intravenous (IV) or intramuscular (IM)
- **Typical Adult Dosage:**
 - *Mild to moderate infections:* 1-2 g once daily
 - *Severe infections:* Up to 4 g daily, divided into two doses
- **Pediatric Dosage:**
 - 50-75 mg/kg/day IV/IM, depending on severity
- **Special Uses:**
 - *Gonorrhea:* Single 250-500 mg IM dose
 - *Meningitis:* 2 g IV every 12 hours
- **Administration Tips:**
 - Reconstitute with sterile water or lidocaine (for IM)
 - Avoid mixing with calcium-containing solutions

🌱 Medical Uses

- **Primary Indications:**
 - Pneumonia and other respiratory infections
 - Meningitis
 - Septicemia
 - Urinary tract infections
 - Skin and soft tissue infections
 - Bone and joint infections
 - Gonorrhea and pelvic inflammatory disease
 - Surgical prophylaxis
- **Mechanism of Action:**
 - Inhibits bacterial cell wall synthesis by binding to penicillin-binding proteins
 - Effective against gram-positive and gram-negative bacteria, including resistant strains

⚠ Side Effects

****Common:****

- Diarrhea
- Rash
- Pain or swelling at injection site
- Nausea

****Serious:****

- Clostridium difficile-associated diarrhea
- Blood disorders (e.g., eosinophilia, thrombocytosis)
- Liver enzyme elevation
- Allergic reactions (anaphylaxis, angioedema)
- Gallbladder sludge (especially in children)

☈ Risks & Precautions

- **Contraindications:**
 - Allergy to cephalosporins or penicillins
 - Neonates with hyperbilirubinemia (risk of kernicterus)
- **Pregnancy & Breastfeeding:**
 - Generally considered safe; consult a physician
- **Drug Interactions:**
 - Avoid concurrent use with calcium-containing IV solutions
 - May interact with aminoglycosides and anticoagulants
- **Monitoring:**
 - Liver and kidney function during prolonged use
 - Watch for signs of superinfection or resistance

☺ Patient Feedback & Complaints

****Positive Feedback:****

- Highly effective for severe infections
- Convenient once-daily dosing
- Widely used in hospitals

****Common Complaints:****

- Pain at injection site
- Gastrointestinal upset
- Allergic reactions in sensitive individuals
- Cost concerns for branded versions

📊 Summary Table

Category	Details

Drug Name	Ceftriaxone
Active Ingredient	Ceftriaxone sodium
Use	Severe bacterial infections
Dosage	1–2 g IV/IM once daily; up to 4 g/day for severe cases
Common Side Effects	Diarrhea, rash, injection site pain
Serious Risks	C. difficile infection, liver issues, allergic reactions
Patient Feedback	Effective; injection discomfort, GI upset, allergy risk
Contraindications	Allergy to cephalosporins, neonates with hyperbilirubinemia

Sources:

- [Practo – Ceftriaxone Overview](<https://www.practo.com/medicine-info/ceftriaxone-51-api>)
- [Medicover Hospitals – Ceftriaxone Uses and Risks](<https://www.medicoverhospitals.in/medicine/ceftriaxone>)
- [Verywell Health – Ceftriaxone Precautions](<https://www.verywellhealth.com/ceftriaxone-4847105>)
