

## amoxicillin and clavulanate potassium

Augmentin, Augmentin ES-600, Augmentin XR, Clavulin\*

**Pharmacologic class:** Aminopenicillin

**Therapeutic class:** Anti-infective

**Pregnancy risk category** B

### Action

Amoxicillin inhibits transpeptidase, preventing cross-linking of bacterial cell wall and leading to cell death. Addition of clavulanate (a beta-lactam) increases drug's resistance to beta-lactamase (an enzyme produced by bacteria that may inactivate amoxicillin).

### Availability

**Oral suspension:** 125 mg amoxicillin with 31.25 mg clavulanic acid/5 ml, 200 mg amoxicillin with 28.5 mg clavulanic acid/5 ml, 250 mg amoxicillin with 62.5 mg clavulanic acid/5 ml, 400 mg amoxicillin with 57 mg clavulanic acid/5 ml

**Tablets (chewable):** 125 mg amoxicillin with 31.25 mg clavulanate, 200 mg amoxicillin with 28.5 mg clavulanate, 250 mg amoxicillin with 62.5 mg clavulanate, 400 mg amoxicillin with 57 mg clavulanate

**Tablets (extended-release):** 1,000 mg amoxicillin with 62.5 mg clavulanate

**Tablets (film-coated):** 250 mg amoxicillin with 125 mg clavulanate, 500 mg amoxicillin with 125 mg clavulanate, 875 mg amoxicillin with 125 mg clavulanate

### Indications and dosages

➤ Lower respiratory tract infections, otitis media, sinusitis, skin and skin-structure infections, and urinary tract

infections (UTIs) caused by susceptible strains of gram-negative and gram-positive organisms

**Adults and children weighing more than 40 kg (88 lb):** 250 mg P.O. based on amoxicillin component q 8 hours, or 500 mg q 12 hours. For severe infections, 500 mg P.O. q 8 hours, or 875 mg P.O. q 12 hours.

➤ Serious infections and community-acquired pneumonia

**Adults and children weighing more than 40 kg (80 lb):** 875 mg P.O. q 12 hours or 500 mg P.O. q 8 hours

**Infants and children ages 3 months and older weighing less than 40 kg (88 lb):** 20 to 40 mg/kg/day in divided doses q 8 hours, or 20 to 45 mg/kg/day P.O. in divided doses q 12 hours, based on severity of infection and amoxicillin component (125 mg/5 ml or 250 mg/5 ml suspension)

**Infants younger than age 3 months:** 30 mg/kg/day P.O. divided q 12 hours based on amoxicillin component (125 mg/5 ml oral suspension is recommended)

➤ Recurrent or persistent acute otitis media caused by *Streptococcus pneumoniae*, *Haemophilus influenzae*, or *Moraxella catarrhalis* in children ages 2 and younger and in children who received antibiotic therapy within last 3 months

**Children ages 3 months to 12 years:** 90 mg/kg/day of Augmentin ES-600 P.O. q 12 hours for 10 days

### Dosage adjustment

- Renal impairment
- Hemodialysis

### Contraindications

- Hypersensitivity to penicillin or clavulanate
- Phenylketonuria
- History of cholestatic jaundice or hepatic dysfunction associated with drug use

## Administration

⚠️ Ask about history of allergies to penicillin or cephalosporins before giving.

- Give with or without food.
- Refrigerate oral suspension when possible, or store at room temperature for up to 7 days.

Route	Onset	Peak	Duration
P.O.	Unknown	1-2.5 hr	6-8 hr
P.O. (extended)	Unknown	1-4 hr	Unknown

## Adverse reactions

**CNS:** lethargy, hallucinations, anxiety, confusion, agitation, depression, dizziness, fatigue, hyperactivity, insomnia, behavioral changes, **seizures** (with high doses)

**GI:** nausea, vomiting, diarrhea, abdominal pain, stomatitis, glossitis, gastritis, black “hairy” tongue, furry tongue, enterocolitis, **pseudomembranous colitis**

**GU:** nephropathy, vaginitis, **interstitial nephritis**

**Hematologic:** anemia, **thrombocytopenia, thrombocytopenic purpura, leukopenia, hemolytic anemia, agranulocytosis, bone marrow depression, eosinophilia**

**Hepatic:** **cholestatic hepatitis**

**Respiratory:** wheezing

**Skin:** rash

**Other:** superinfections (oral and rectal candidiasis), fever, **anaphylaxis**

## Interactions

**Drug-drug.** *Allopurinol:* increased risk of rash

*Chloramphenicol, macrolides, sulfonamides, tetracycline:* decreased amoxicillin effect

*Hormonal contraceptives:* decreased contraceptive efficacy

*Probenecid:* decreased renal excretion and increased blood level of amoxicillin

**Drug-food.** *Any food:* delayed or reduced drug absorption

**Drug-herb.** *Khat:* decreased antimicrobial effect

## Precautions

Use cautiously in:

- severe renal insufficiency, infectious mononucleosis
- pregnant patients
- children.

## Patient monitoring

• Monitor patient carefully for signs and symptoms of hypersensitivity reaction.

⚠️ Monitor for seizures when giving high doses.

• Check patient’s temperature and watch for other signs and symptoms of superinfection, especially oral or rectal candidiasis.

## Patient teaching

• Instruct patient to immediately report signs or symptoms of hypersensitivity reaction, such as rash, fever, or chills.

• Tell patient he can take drug with or without food.

• Inform patient that drug lowers resistance to some types of infections. Instruct him to report new signs or symptoms of infection, especially of mouth or rectum.

• Teach patient to minimize GI upset by eating small, frequent servings of food and drinking plenty of fluids.

• Tell patient taking hormonal contraceptives that drug may reduce contraceptive efficacy; suggest that she use alternative birth control method.

• Inform parents they may give liquid form of drug directly to child or may mix it with food or drink.