Aerobic Gram-Positive Microorganisms:
Staphylococcus aureus (including beta-lactamase-producing strains)
Streptococcus pneumoniae
Streptococcus pyogenes

Aerobic Gram-Negative Microorganisms:
Escherichia coli
Haemophilus influenzae (including beta-lactamase-producing strains)
Haemophilus parainfluenzae
Klebsiella pneumoniae
Moraxella catarrhalis (including beta-lactamase-producing strains)
Neisseria gonorrhoeae (including beta-lactamase-producing strains)

Spirochetes:
Borrelia burgdorferi

Cefuroxime has been shown to be active in vitro against most strains of the following microorganisms; however, the clinical significance of these findings is unknown. Cefuroxime exhibits in vitro minimum inhibitory concentrations (MICs) of 4.0 mcg/mL or less (systemic susceptible breakpoint) against most (≥90%) strains of the following microorganisms; however, the safety and effectiveness of cefuroxime in treating clinical infections due to these microorganisms have not been established in adequate and well-controlled trials.

Aerobic Gram-Positive Microorganisms:
Staphylococcus epidermidis
Staphylococcus saprophyticus
Streptococcus agalactiae

NOTE: *Listeria monocytogenes* and certain strains of enterococci, e.g., Enterococcus faecalis (formerly Streptococcus faecalis), are resistant to cefuroxime. Methicillin-resistant staphylococci are resistant to cefuroxime.

Aerobic Gram-Negative Microorganisms:
Morganella morganii
Proteus inconstans
Proteus mirabilis
Providencia rettgeri

NOTE: *Pseudomonas* spp., *Campylobacter* spp., *Acinetobacter calcoaceticus*, *Legionella* spp., and most strains of *Serratia* spp. and *Proteus vulgaris* are resistant to most first- and second-generation cephalosporins. Some strains of *Morganella morganii*, *Enterobacter cloacae*, and *Citrobacter* spp. have been shown by in vitro tests to be resistant to cefuroxime and other cephalosporins.

Anaerobic Microorganisms:
Peptococcus niger

NOTE: Most strains of *Clostridium difficile* and *Bacteroides fragilis* are resistant to cefuroxime.

Pharmacokinetics:
Cefuroxime axetil is absorbed from the gastrointestinal tract and is rapidly hydrolysed in the intestinal mucosa and blood to cefuroxime; absorption is enhanced in the presence of food. Peak plasma concentrations are reported to about 2 to 3 hours after an oral dose. Up to 50% of cefuroxime in the circulations is bound to plasma proteins. The plasma half-life is about 70 minutes and is prolonged in patients with renal impairment and in neonates.

Cefuroxime is widely distributed in the body including pleural fluid, sputum, bone, synovial fluid and adequate humour, but only achieves therapeutic concentrations in the CASF when the meninges are inflamed. It crosses the placenta and has been detected in breast milk.
Cefuroxime is excreted unchanged, by glomerular filtration and renal tubular secretion, and high concentrations are achieved in the urine.

Probenicid competes for renal tubular secretion with cefuroxime resulting in higher and more prolonged plasma concentrations of cefuroxime. Small amounts of cefuroxime are excreted in bile.

Plasma concentrations are reduced by dialysis.

Food Effect on Pharmacokinetics:
Absorption of the tablet is greater when taken after food (absolute bioavailability of Cefuroxime Axetil tablets increases from 37% to 52%). Despite this difference in absorption, the clinical and bacteriologic responses of patients were independent of food intake at the time of tablet administration in 2 studies where this was assessed.

Renal Excretion:
Cefuroxime is excreted unchanged in the urine; in adults, approximately 50% of the administered dose is recovered in the urine within 12 hours. The pharmacokinetics of cefuroxime in the urine of pediatric patients have not been studied at this time. Until further data are available, the renal pharmacokinetic properties of Cefuroxime Axetil established in adults should not be extrapolated to pediatric patients.

Drug Interactions
Concomitant administration of probenecid with cefuroxime axetil tablets increases the area under the serum concentration versus time curve by 50%. The peak serum cefuroxime concentration after a 1.5-g single dose is greater when taken with 1 g of probenecid (mean= 14.8 mcg/mL) than without probenecid (mean= 12.2 mcg/mL). Drugs that reduce gastric acidity may result in a lower bioavailability of cefuroxime compared with that of fasting state and tend to cancel the effect of postprandial absorption.

In common with other antibiotics, cefuroxime axetil may affect the gut flora, leading to lower estrogen reabsorption and reduced efficacy of combined oral estrogen/progesterone contraceptives.

Adverse Effects and Precautions:
Gastrointestinal disturbances, including diarrhea, nausea, and vomiting, have occurred in some patients receiving cefuroxime axetil. There have been rare reports of erythema multiforme, Stevens-Johnson syndrome, and toxic epidermal necrolysis. Mild to moderate hearing loss has been reported in some children receiving cefuroxime for the treatment of meningitis.

In clinical trials of cefuroxime axetil, diarrhea and pseudomembranous colitis appeared to be dose-related and therefore it is recommended that higher doses should be reserved for severe infections.

Cefuroxime is considered to be unsafe in patients with porphyria although there is conflicting experimental evidence of porphyrinogenicity.

Contraindications:
Cefuroxime is contraindicated in patients with known allergy to the cephalosporin group of antibiotics.

Caution:
Foods, Drugs, Devices and Cosmetics Act prohibits dispensing without prescription.