

Appropriate Use of Antibiotics for Acute Respiratory Infections

ACUTE SINUSITIS	Pediatric Guidelines			Adult Guidelines		
Most cases of acute sinusitis are VIRAL.	<ul style="list-style-type: none"> If symptoms (purulent nasal discharge, nasal obstruction, facial pain) present <10 days, observe and provide symptomatic treatment. If symptoms persist for >10 days OR are worsening after initial improvement, consider antibiotic therapy. 					
	<ul style="list-style-type: none"> The FDA does not recommend over-the-counter cold and cough medicines for children <6 years of age. Treat symptoms with over-the-counter pain relievers. 			<ul style="list-style-type: none"> Provide symptomatic treatment (e.g., decongestant, pain reliever, nasal corticosteroids, saline nasal lavage). 		
	1st choice	Recent antibiotic use*	Penicillin allergic	1st choice	Recent antibiotic use*	Penicillin allergic
	<ul style="list-style-type: none"> Amoxicillin 80-90 mg/kg/d 	<ul style="list-style-type: none"> Amox/clav 90/6.4 mg/kg/d Cephalosporins[†] 	<ul style="list-style-type: none"> Macrolides Cephalosporins[†] 	<ul style="list-style-type: none"> Amoxicillin 	<ul style="list-style-type: none"> Amox/clav Fluoroquinolones 	<ul style="list-style-type: none"> Trimethoprim-sulfamethoxazole Macrolides
	<p><i>*Within the past 4-6 weeks</i> <i>†Cephalosporins: cefdinir, cefpodoxime, cefuroxime (unless severe or anaphylactic reaction to penicillin)</i></p>					
ACUTE BRONCHITIS	Pediatric Guidelines			Adult Guidelines		
Most cases of acute bronchitis are VIRAL.	<ul style="list-style-type: none"> Confirm uncomplicated situation (e.g., absence of vital sign and physical exam abnormalities consistent with pneumonia). Consider chest X-ray if abnormal vital signs or physical exam findings consistent with pneumonia. Presence of sputum, regardless of color, is not predictive of bacterial cause. 					
	1st choice	2nd choice	Penicillin allergic	1st choice	2nd choice	Penicillin allergic
	No antibiotic			No antibiotic		
	<ul style="list-style-type: none"> The FDA does not recommend over-the-counter cold and cough medicines for children <6 years of age. Treat symptoms (pain, fever, cough). Consider pertussis testing for severe or prolonged cough or possible pertussis exposure. 			<ul style="list-style-type: none"> Treat symptoms (pain, fever, cough). Consider over-the-counter, albuterol, or prescription cough medications. Consider pertussis testing for severe or prolonged cough or possible pertussis exposure. Consider COPD in recurrent bronchitis. 		
ACUTE PHARYNGITIS	Pediatric Guidelines			Adult Guidelines		
Most cases of acute pharyngitis are VIRAL.	<ul style="list-style-type: none"> Test only those with consistent clinical and epidemiological findings (fever, lymphadenopathy, exudates, absence of cough, or known Strep exposure). Test using rapid antigen detection test (RADT). Consider confirming negative RADT with culture, especially in children. Treat symptoms with over-the-counter pain relievers. 					
	Group A Strep Pharyngitis (LAB CONFIRMED)			Group A Strep Pharyngitis (LAB CONFIRMED)		
	1st choice	2nd choice	Penicillin allergic	1st choice	2nd choice	Penicillin allergic
	<ul style="list-style-type: none"> Penicillin VK 25-50 mg/kg/d Amoxicillin 40-50 mg/kg/d 	<ul style="list-style-type: none"> Cephalexin 	<ul style="list-style-type: none"> Macrolides 	<ul style="list-style-type: none"> Penicillin VK Amoxicillin 	<ul style="list-style-type: none"> Cephalexin 	<ul style="list-style-type: none"> Macrolides
For all conditions, encourage a smoke-free environment. Advise smokers to quit and refer to the Colorado QuitLine (1-800-784-8669) or www.coloradoquitline.org.						

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ACUTE OTITIS MEDIA	Pediatric Guidelines			
<p><i>Most cases of AOM are VIRAL and will resolve spontaneously.</i></p> <p><i>Treat symptoms with OTC pain relievers.</i></p>	<i>Diagnosis</i>			
	<p>AOM diagnosis requires three elements:</p> <ol style="list-style-type: none"> Recent onset of symptoms <ul style="list-style-type: none"> Otalgia (ear pain) Fever Presence of middle-ear effusion <ul style="list-style-type: none"> Tympanic membrane bulging Limited or absent mobility of tympanic membrane Air fluid level behind tympanic membrane Otorrhea Signs and symptoms of middle-ear inflammation <ul style="list-style-type: none"> Tympanic membrane erythema Otalgia that interferes with normal activity or sleep 			
	<i>Optional Observation Period 48-72 hours</i>			
	<ul style="list-style-type: none"> Consider observation period for select patients over 6 months of age. Consider option of providing a delayed prescription for antibiotics with instructions to fill the prescription if symptoms do not improve after 48-72 hours. Treat symptoms with acetaminophen, or ibuprofen (if >6 months), and/or topical anesthetic agent (if >5 years). 			
	<i>When to Consider Antibiotics</i>			
	AGE	CERTAIN DIAGNOSIS	UNCERTAIN DIAGNOSIS	
	<6 months	Antibiotics		
	6 months - 2 years	Antibiotics	Observation unless severe [♦]	
	≥2 years	Observation unless severe [♦]	Observation	
	<i>Antibiotic Recommendations</i>			
	Observation failure [‡] <i>OR</i> Initial treatment with antibiotics		Antibiotic treatment failure [‡]	
	1st choice	Penicillin allergic	1st choice	Penicillin allergic
Non-severe [❖]	<ul style="list-style-type: none"> Amoxicillin 80-90 mg/kg/d 	<ul style="list-style-type: none"> Macrolides Cephalosporins[†] 	<ul style="list-style-type: none"> Amox/clav 90/6.4 mg/kg/d 	<ul style="list-style-type: none"> Ceftriaxone 3d Clindamycin
Severe [♦]	<ul style="list-style-type: none"> Amox/clav 90/6.4 mg/kg/d 	<ul style="list-style-type: none"> Ceftriaxone 1d or 3d 	<ul style="list-style-type: none"> Ceftriaxone 3d 	<ul style="list-style-type: none"> Refer to ENT
<p>[♦] Severe illness = moderate to severe otalgia or fever ≥39°C</p> <p>[❖] Non-severe illness = mild otalgia and fever <39°C in past 24 hours</p> <p>[†] Cephalosporins: cefdinir, cefpodoxime, cefuroxime (unless severe or anaphylactic reaction to penicillin)</p> <p>[‡] After 48-72 hours</p>				
Consider ENT referral for persistent or recurrent otitis media.				

<i>Patient Education Tips for Acute Respiratory Infections</i>
APPROPRIATE ANTIBIOTIC USE
<ol style="list-style-type: none"> Only prescribe antibiotic therapy when likely to be beneficial to the patient. Prescribe the narrowest spectrum possible for the appropriate dose and duration to target likely pathogens. Educate patients on potential adverse events. Encourage patients to complete antibiotic prescription regardless of symptomatic relief.
PROMOTING PATIENT SATISFACTION
<ol style="list-style-type: none"> Take time to explain the diagnosis and answer questions. Provide written instructions for symptomatic treatment. Encourage increasing fluid intake and humidifier use. Develop specific plan with patient if symptoms worsen or fail to improve. Educate patients and provide educational materials on appropriate antibiotic use and symptomatic treatment. (For free materials, go to www.getsmartcolorado.com.)
PREVENTING RESPIRATORY ILLNESS
<ol style="list-style-type: none"> Wash hands often. Cover your mouth and nose with a tissue or your sleeve when coughing or sneezing. Avoid touching your eyes, nose or mouth. Avoid close contact with people who are sick. Avoid sharing cups and utensils. Provide influenza vaccine to eligible children and adults. Ensure all patients have received other recommended immunizations (www.immunize.org).
PREVENTING AOM
<ol style="list-style-type: none"> Encourage breastfeeding for at least six months. Advise against bottle propping. Encourage a smoke-free environment.

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Antibiotic	Brand Name(s)	Pediatric Dose	Adult Dose
Penicillins* (duration 10 days)			
Amoxicillin	Amoxil®	Dosed based on amox component Usual dose: 80-90 mg/kg/day (Q12H) Low dose: 40-50 mg/kg/day is ONLY recommended for pharyngitis For amox/clav: prefer 600 mg/ml	1.5-4 g/day (divided BID-TID)
Amoxicillin-Clavulanic Acid	Augmentin®		
Penicillin VK	Veetids®	25-50 mg/kg/day (Q6H)	250-500 mg BID-QID
Cephalosporins* (duration 10 days)			
Cefdinir - 3rd generation	Omnicef®	14 mg/kg/day (Q12H or Q24H)	300 mg BID or 600 mg once daily
Cefpodoxime - 3rd generation	Vantin®	10 mg/kg/day (Q24H)	200 mg BID
Ceftriaxone - 3rd generation	Rocephin®	IM 50 mg/kg/day (Q24H) x 1 or 3 days	IM/IV 1-2 g/day x 5 days
Cefuroxime - 2nd generation	Ceftin®	30 mg/kg/day (Q12H)	250-500 mg BID
Cephalexin - 1st generation	Keflex®	25-50 mg/kg/day (Q6H or Q12H)	500 mg BID-QID
Fluoroquinolones*			
Levofloxacin	Levaquin®	N/A	500 mg once daily x 10 days 750 mg once daily x 5 days
Moxifloxacin	Avelox®	N/A	400 mg once daily
Macrolides			
Azithromycin	Zithromax®, Tripak®, Zmax®	10 mg/kg/day x 1 day, then 5 mg/kg/day daily days 2-5 OR 10 mg/kg/day x 3 days OR 30 mg/kg/day x 1 day	500 mg x 1 day, then 250 mg daily days 2-5 OR 500 mg once daily x 3 days OR 2 g x 1 dose
Clarithromycin	Biaxin®, Biaxin XL®	15 mg/kg/day (Q12H)	500 mg BID x 10 days 500 mg XL, 2 tabs once daily
Erythromycin	E-mycin®, Ery-tab®, EryPed®	pharyngitis: 20-40mg/kg/day; pertussis: 40-50 mg/kg/day (Q6H)	500 mg QID, 333 mg TID
<i>*Consider renal dosing if appropriate</i>			