

# Acute Rhinosinusitis in Children and Adolescents

## Key points

- Most cases of acute rhinosinusitis are due to viral infections
- Purulent yellow or green nasal discharge alone is not predictive of bacterial infection
- Antibiotic therapy for acute viral sinusitis will not shorten duration of illness or prevent bacterial infection
- Use the strict criteria below for diagnosis of bacterial sinusitis

## Possible signs and symptoms of acute rhinosinusitis (present <4 weeks):

- |                            |                             |
|----------------------------|-----------------------------|
| 1) Nasal discharge         | 5) Fever                    |
| 2) Nasal congestion        | 6) Cough                    |
| 3) Facial pressure or pain | 7) Ear pressure or fullness |
| 4) Maxillary dental pain   | 8) Anosmia                  |

Clinical picture suggestive of acute rhinosinusitis?  
(clinical diagnosis – radiographs are not necessary)

Yes

No

Present for more than 10 days and not improving  
OR  
Worsening after initial improvement  
OR  
Severe symptoms (temperature  $\geq 39$  C or 102.2 F with purulent discharge, facial pain/tenderness, periorbital swelling)

Consider alternative etiologies

If severe, consider further evaluation/hospitalization

No

Yes

Likely viral etiology,  
antibiotic therapy  
not indicated

Bacterial etiology  
more likely, initiate  
antibiotic therapy and  
nasal saline washes

Antibiotic treatment  
within last 4-6 weeks OR  
Severe symptoms OR  
Daycare attendee

Yes

No

Start therapy to relieve obstruction  
and alleviate symptoms

- NSAIDs or acetaminophen
- Nasal saline washes

**1<sup>st</sup> line:**  
**Amoxicillin-clavulanate** 90/6.4 mg/kg/day divided BID (max 875mg BID) OR  
**Cefpodoxime** 10mg/kg/day divided BID (max 400mg BID) OR  
**Cefuroxime** 30mg/kg/day divided BID (max 500mg BID)

Duration: **7-10 days**

**1<sup>st</sup> line:**  
**Amoxicillin** 80-90mg/kg/day divided BID or TID (max 1gm BID) for **7-10 days**

**If immediate hypersensitivity PCN allergy:**  
Azithromycin 10mg/kg on day 1 (max 500mg), then 5mg/kg (max 250mg) days 2- 5

Initiate antibiotic therapy as above

Absence of clinical response within 7 days

**Change antibiotic therapy if drug-resistant infection suspected**

Consider drug-resistant infection, ongoing sinus obstruction, alternative etiologies, or complications\*

**Note:** This is intended only as a guide for evidence-based decision-making; it is not intended to replace clinical judgment. Assess for antibiotic allergies and use alternative agents as appropriate. Suggested antibiotic doses are for normal renal function; adjust for renal impairment when necessary.

**References:** American Academy of Pediatrics Clinical Practice Guideline: Management of Sinusitis. *Pediatrics* 2001; 108:798-808; <http://www.cdc.gov/getsmart/campaign-materials/info-sheets/child-rhin-vs-sinus.html> (accessed 12/30/09)

\*Consider complications of acute sinusitis: may include meningitis, orbital cellulitis, osteomyelitis of sinus bones, invasive fungal superinfection