

Pediatric Chronic Rhinosinusitis



FAST FACTS

5.6 million

ambulatory visits each year due to CRS in patients 0–20 years

>50%

of children with CRS show significant improvement in sinusitis symptoms after adenoidectomy alone

80–90%

success rate of endoscopic sinus surgery in improving sinusitis symptoms in children with CRS

Chronic rhinosinusitis (CRS) in children occurs when there is persistent inflammation of the nasal cavity and paranasal sinuses. Symptoms—nasal obstruction/congestion, nasal drainage, chronic cough, and/or facial pain—are present for 12 weeks or longer without a symptom-free period.

ASSESSMENT

Perform a standard health history and physical exam (HPE) with detailed questions about presenting symptoms, duration of symptoms, and associated medical conditions. Ask about family history of allergic disease, asthma and CRS. During physical exam, look for evidence of mucosal edema, mucopurulent drainage, or nasal polyps. Use computed tomography (CT scan) and nasal endoscopy to look for objective signs of inflammation.

Diagnose CRS based on clinical presentation. Two or more of the following symptoms must be present, lasting 12+ weeks with no symptom-free period: nasal obstruction/congestion, purulent rhinorrhea and/or postnasal drainage, chronic cough, and/or facial pain or pressure.

HPE (HISTORY AND PHYSICAL EXAM) RED FLAGS

Patient History

- Adenoid hypertrophy/adenoiditis
- Allergic rhinitis
- Asthma
- Gastroesophageal reflux disease
- Cystic fibrosis (CF)
- Primary ciliary dyskinesia (PCD)

Physical Exam

- Anterior rhinoscopy
 - Mucopurulent drainage within nasal cavity from middle meatus, nasal polyps
- Oropharyngeal exam
 - Postnasal drainage
 - Posterior pharyngeal wall cobblestoning

MANAGEMENT/TREATMENT OF CRS

- Prescribe daily use of intranasal steroids with daily intranasal saline spray or irrigation
- For initial management, or for acute exacerbations of sinusitis, prescribe oral antibiotic therapy (21–28 days course) and oral steroids (7–14 day course) concurrently
- Consider oral/intranasal antihistamines or leukotriene receptor antagonists if concurrent allergic rhinitis is present
- Avoid intranasal decongestants
- Perform or refer for testing for allergies, immunodeficiency, CF, or PCD as appropriate
- Consider referral for surgical management in children with suspected adenoid hypertrophy or adenoiditis or whose symptoms of CRS continue after maximal medical therapy—includes adenoidectomy, maxillary sinus lavage, and endoscopic sinus surgery

WHEN TO REFER

Refer patient to Cincinnati Children's ENT when adenoid hypertrophy/adenoiditis is suspected or if maximal medical therapy for CRS is unsuccessful. When possible, complete a CT scan of the sinuses after a course of maximal medical therapy has been completed. The ENT surgeon may perform nasal endoscopy in clinic to determine presence of mucosal edema, mucopurulent drainage, nasal polyps, or other signs of inflammation or to obtain cultures for targeted antibiotic therapy.

If you have clinical questions about patients with chronic rhinosinusitis, email ENT@cchmc.org.

If you would like additional copies of this tool, or would like more information, please contact the Physician Outreach and Engagement team at Cincinnati Children's.

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Patient Presents

Standard Workup

- Situational History
- Family History
- Physical Exam

Diagnose CRS Based on Clinical Presentation

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Any Red Flags?

Yes

No

Refer to ENT Specialist

Medical Therapy

Daily intranasal steroid

- Children 2+ years old—Fluticasone furoate (Flonase sensimist), mometasone (nasonex), and triamcinolone (Nasacort).
- Children 4+ years old—Fluticasone propionate (Flonase)
- No evidence that one of these is more effective than another

Intranasal saline spray or irrigation (concurrent with intranasal steroid)

Oral antibiotic

- Begin with 21–28 day course of amoxicillin, amoxicillin/clavulanate, or cephalosporin, (or macrolide or clindamycin for penicillin-allergic patient)

- Consider culture-directed therapy in patients with refractory disease after initial treatment or for acute exacerbations of sinusitis
- There is limited evidence for prophylactic antibiotic therapy in CRS

Oral steroid

- Consider 7–14 day course concurrent with oral antibiotics for initial management and for acute exacerbations of sinusitis

Oral/intranasal antihistamines or leukotriene receptor antagonists if evidence of concurrent allergic rhinitis is present

Avoid intranasal decongestants, as there is no evidence supporting routine use

Reserve CT scans for patients with persistent symptoms refractory to maximal medical therapy, as these findings can guide further evaluation and surgical management.

Consider surgical management in children with refractory disease despite maximal medical therapy—includes adenoidectomy, maxillary sinus lavage, and endoscopic sinus surgery

Perform additional testing for allergies, immunodeficiency, CF, or primary ciliary dyskinesia as appropriate

Symptoms controlled following maximal medical therapy

Yes

No

Continue maintenance medical therapy with daily intranasal saline spray or irrigation and intranasal steroid spray.

Refer to ENT Specialist

Or when adenoid hypertrophy/adenoiditis is suspected

Prior to referral

- Perform CT scan of sinuses following a course of maximal medical therapy

For urgent issues, or to speak with the specialist on call 24/7, call the Physician Priority Link® at 1-888-987-7997.