



## **Clinical Indicators: Endoscopic Sinus Surgery, Pediatric**

<b><u>Procedure</u></b>	<b>CPT</b>	<b>Days<sup>1</sup></b>
Endoscopy with ethmoidectomy, partial (anterior)	31254	000
Endoscopy with ethmoidectomy, total (anterior & posterior)	31255	000
Endoscopy with maxillary antrostomy	31256	000
Endoscopy with maxillary antrostomy and removal of tissue from maxillary sinus	31267	000
Endoscopy with frontal sinus exploration, with or without removal of tissue from sinus	31276	000
Endoscopy with sphenoidotomy	31287	000
Endoscopy with sphenoidotomy & removal of tissue from sphenoid sinus	31288	000
Endoscopy with repair of cerebrospinal fluid leak, ethmoid region	31290	010
Endoscopy with repair of cerebrospinal fluid leak, sphenoid region	31291	010
Endoscopy with medial or inferior orbital wall decompression	31292	010
Endoscopy with medial and inferior orbital wall decompression	31293	010
Endoscopy with medial or inferior orbital wall decompression with optic nerve decompression	31294	010

### **Indications**

#### **1. History** (one or more required)

(The history must include specific symptoms and findings obtained by the otolaryngologist. A historical diagnosis labeled "sinusitis" by the patient or unsubstantiated symptoms alone is not sufficient documentation to establish this as a chronic illness).

- a) Failure of medical management for chronic rhinosinusitis or recurrent acute rhinosinusitis, possibly in addition to other disorders such as one or more of the following:
- Allergy
  - Day care exposure
  - Gastro-esophageal reflux contributing to rhinosinusitis
  - Adenoiditis and/or obstructive adenoid hypertrophy
  - Cystic fibrosis

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<sup>1</sup> RBRVS Global Days



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- Immune deficiency disorders
  - Ciliary dysfunction/dyskinesia
  - Progressively worsening asthma with opaque sinus(es)
  - Nasal polyposis with airway obstruction and/or sinusitis
  - Suspected neoplasm (eg, juvenile nasopharyngeal angiofibroma) (need to get tissue for diagnosis)
  - Adenoidectomy should be strongly considered a minimum of three months prior to performing pediatric sinus surgery for any of the above indications
- b) Intracranial complications
  - c) Cavernous sinus thrombosis
  - d) Mucocoeles and mucopyocoeles
  - e) Subperiosteal or orbital abscess/periorbital cellulitis
  - f) Traumatic injury to optic canal (decompression)
  - g) Dacryocystitis from rhinosinusitis
  - h) Allergic or invasive fungal rhinosinusitis
  - i) Meningocephaloceles
  - j) Cerebrospinal fluid leaks
  - k) Tumors of the nasal cavity, paranasal sinuses, orbit or skull base
  - l) Recurrent acute rhinosinusitis (RARS)

### 2. Physical Examination

- a) Complete anterior and posterior nasal examination (rhinoscopy after mucosal decongestion), as possible for patient's age—(required)
- b) Nasal endoscopic examination, obtained following medical therapy – (optional)

### 3. Tests

- a) For surgical planning, coronal CT scan is **required** in all cases following medical therapy.
- b) Complete axial CT scan... **recommended** in cases with complex disease.
- c) MRI – **optional** in cases with suspected intracranial pathology.
- d) Culture and sensitivity-**optional**
- e) Allergy testing-**optional**

### 4. Optimal Medical Therapy: (prior to obtaining sinus CT scan, nasal endoscopy, and surgery)

- a) Evaluation and management for all medical conditions listed above.



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- b) Treatment of rhinitis medicamentosa, when present.
- c) Parental education of environmental factors including allergens, irritants, or secondhand tobacco smoke.
- d) Antibiotic therapy consisting of four to six consecutive weeks of appropriate antibiotic drugs.
- e) Appropriate topical and/or systemic steroids when indicated.

**5. Surgical Procedure and Findings**

- a) Must be compatible with clinical status, CT findings, and nasal endoscopic findings that is, only patients with significant persistent sinus symptoms and pathology should undergo surgery.
- b) Extensive sinus surgery is rarely indicated in the pediatric age group. Anterior ethmoidectomy and/or maxillary antrostomy may be all that is required.

**Postoperative Observations**

- a) Bleeding, eyelid ecchymosis; notify surgeon
- b) Pain- severe headache; notify surgeon
- c) Follow-up endoscopy under anesthesia may be indicated for epistaxis, packing removal, or lysis of adhesions
- d) Vision- if there is loss of vision or noted to have double vision, notify surgeon immediately
- e) Swelling - is there evidence of facial edema? If hematoma, notify surgeon
- f) Mental status - is patient alert and oriented? If not, notify surgeon

**Associated ICD-9 Diagnostic Codes**

- 160.2 Malignant Neoplasm, Maxillary sinus
- 160.3 Malignant Neoplasm, Ethmoid sinus
- 160.4 Malignant Neoplasm, Frontal sinus
- 160.5 Malignant Neoplasm, Sphenoid sinus
- 212.0 Benign Neoplasm, Nasal cavity/sinus
- 349.81 Cerebrospinal fluid rhinorrhea
- 376.01 Orbital cellulitis, abscess
- 461.0 Acute maxillary sinusitis
- 461.1 Acute frontal sinusitis
- 461.2 Acute ethmoidal sinusitis
- 461.3 Acute sphenoidal sinusitis
- 461.8 Other acute sinusitis
- 461.9 Acute sinusitis, unspecified



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- 471.1 Polypoid sinus degeneration
- 471.8 Nasal sinus polyp NEC
- 473.0 Chronic maxillary sinusitis
- 473.1 Chronic frontal sinusitis
- 473.2 Chronic ethmoidal sinusitis
- 473.3 Chronic sphenoidal sinusitis
- 473.8 Chronic sinusitis NEC; pansinusitis
- 473.9 Unspecified sinusitis
- 478.1 Cyst or mucocoele of sinus
- 242.00 Graves disease/exophthalmopathy without thyrotoxicosis
- 242.01 Graves disease/exophthalmopathy with thyrotoxicosis
- 376.32 Orbital hemorrhage
- 376.33 Orbital edema
- 921.2 Contusion of orbital tissues

### **Patient Information**

Endoscopic sinus surgery is performed through an intranasal approach. The decision regarding the appropriate sinuses for treatment depends on radiographic and endoscopic findings combined with the patient's clinical status following appropriate medical evaluation and therapy. This surgery is performed only after it has been determined that comprehensive medical management has been unsuccessful. Surgical risks in the pediatric age group include post-operative bleeding, orbital complications (visual impairment), intracranial extension (brain damage or infection), persistent or recurrent nasal obstruction due to failure to manage polyps / allergic inflammation, recurrent nasal or sinus infections, and the possibility of interference with facial growth patterns.

### **Definitions**

- **Acute rhinosinusitis (ARS):** ARS is a clinical condition characterized by inflammation of the mucosa of the nose and paranasal sinuses with associated sudden onset of symptoms of purulent nasal drainage accompanied by nasal obstruction, facial pain/pressure/fullness, or both of up to 4 weeks duration.
- **Recurrent acute rhinosinusitis (RARS):** RARS is characterized by 4 or more recurrent episodes of ARS with complete clearing of symptoms between episodes over a one year period.
- **Chronic rhinosinusitis (CRS):** CRS is a clinical disorder characterized by inflammation of the mucosa of the nose and paranasal sinuses with associated signs and symptoms of 12 week consecutive duration. CRS is characterized by 2 or more symptoms, one of which is nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip), with or without facial pain/pressure and reduction or loss of smell with endoscopic evidence of mucopurulence, edema, and/or polyps and/or CT presence of mucosal thickening or air-fluid levels in the sinuses.



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- **Chronic rhinosinusitis with polyposis:** CRS with polyposis represents a subgroup of CRS patients with endoscopic evidence of unilateral or bilateral polyps in the middle meatus.
- **Functional endoscopic sinus surgery (FESS):** FESS is a minimally invasive, mucosal-sparing surgical technique utilized to treat medically refractory CRS with or without polyps or recurrent acute rhinosinusitis. Rigid endoscopes are employed to visualize the surgical field to achieve one or more of the following goals: (1) to open the paranasal sinuses to facilitate ventilation and drainage from the paranasal sinuses; (2) to remove polyps and/or osteitic bony fragments to reduce the inflammatory load; (3) to enlarge the sinus ostia to achieve optimal instillation of topical therapies; and (4) to obtain bacterial or fungal cultures and tissue for histopathology.

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