

Sinusitis—Child
EVIDENCE TABLE

| Reference | Study Type | Patients/ Events | Study Objective (Purpose of Study) | Study Results | Strength of Evidence |
|--|--------------------|---------------------|---|--|-------------------------|
| 1. American Academy of Pediatrics. Subcommittee on Management of Sinusitis and Committee on Quality Improvement. Clinical practice guideline: management of sinusitis. <i>Pediatrics</i> 2001; 108(3):798-808. | 15 | N/A | Guidelines. (Recommendations regarding diagnosis, evaluation and management of sinusitis in children ages 1-21). | N/A | N/A |
| 2. De Cleyn KM, Kersschot EA, De Clerck LS, et al. Paranasal sinus pathology in allergic and non-allergic respiratory tract diseases. <i>Allergy</i> 1986; 41(5):313-318. | 13 | 270 | Prospectively study on patients with rhinitis and/or asthma for sinus pathology using standard radiographs and tomograms. | <ul style="list-style-type: none"> • Asthma was associated with sinus Radiograph abnormalities (65.1%) than rhinitis and/or chronic cough (44.4%). • Loss of translucency of the cavities is more frequent in children. • 32.5% of the patients with mucosa thickening could be detected on standard radiographs. | 2 |
| 3. Fireman P. Diagnosis of sinusitis in children: emphasis on the history and physical examination. <i>J Allergy Clin Immunol</i> 1992; 90(3 Pt 2):433-436. | 12 | N/A | To review diagnosis of sinusitis in children. | Diagnosis is possible based on careful history and physical examination. Radiography is recommended for confirmation of clinical impression or documentation of disease. | 4 |
| 4. Gungor A, Corey JP. Pediatric sinusitis: a literature review with emphasis on the role of allergy. <i>Otolaryngol Head Neck Surg</i> 1997; 116(1):4-15. | 7 | N/A | Review literature to assess the role of allergy in pediatric sinus disease. Recommendations for method, duration and therapeutic interventions are presented. | Allergies and viral upper respiratory infections are among the most common predisposing factors for sinus disease. | 3 |
| 5. Jannert M, Andreasson L, Helin I, Pettersson H. Acute sinusitis in children--symptoms, clinical findings and bacteriology related to initial radiologic appearance. <i>Int J Pediatr Otorhinolaryngol</i> 1982; 4(2):139-148. | 9 | 175 | Prospective study comparing signs or symptoms of sinusitis with bacteriology and radiography to enable accurate diagnosis of sinusitis. | Main symptoms predicting radiologic changes were upper respiratory tract infection, purulent nasal secretion and pain. In 75% of the patients, the presence of two or three of these symptoms was co-existent with major radiological changes. | 2 |
| 6. Nguyen KL, Corbett ML, Garcia DP, et al. Chronic sinusitis among pediatric patients with chronic respiratory complaints. <i>J Allergy Clin Immunol</i> 1993; 92(6):824-830. | 15 (prevalence) | 91 | To examine incidence of chronic sinusitis in children with respiratory symptoms of ≥ 3 months. | Combining symptoms of moderate to severe rhinorrhea and cough with minimum sneezing had specificity of 95% and sensitivity of 38% in predicting presence of chronic sinusitis. Age ($r=0.30$, $P=0.004$) in pediatric patients with chronic respiratory symptoms was the single risk factor significantly associated with abnormalities on sinus CT scan. 73% of children 2 to 6 years of age, 74% of children 6 to 10 years of age, and 38% of children older than 10 had chronic sinusitis. | 2 |
| 7. Parsons DS. Chronic sinusitis: a medical or surgical disease? <i>Otolaryngol Clin North Am</i> 1996; 29(1):1-9. | 7 | N/A | To review the role of surgery vs medical therapy of chronic sinusitis in the pediatric population. | Chronic sinusitis is a medical problem and the functional endoscopic surgery is an effective tool for medically recalcitrant sinusitis. | 3 |

* See Last Page for Key

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| 8. Slavin RG, Spector SL, Bernstein IL, et al. The diagnosis and management of sinusitis: a practice parameter update. <i>J Allergy Clin Immunol</i> 2005; 116(6 Suppl):S13-47. | 15 | N/A | Guideline. | N/A | N/A |
| 9. Wagenmann M, Naclerio RM. Anatomic and physiologic considerations in sinusitis. <i>J Allergy Clin Immunol</i> 1992; 90(3 Pt 2):419-423. | 7 | N/A | Review of anatomy and mechanisms of sinusitis. | Ostial obstruction is a primary pathophysiologic mechanism in sinusitis. Anatomy and physiology have major impact on the therapeutic approach to sinus disease. | 3 |
| 10. Wald ER. Sinusitis in children. <i>N Engl J Med</i> 1992; 326(5):319-323. | 12 | N/A | Review anatomy and physiology; signs and symptoms; diagnosis and treatment of sinusitis in children. | CT scans are better than radiographs in defining sinus abnormalities but not necessary in children with uncomplicated acute sinusitis. Antibiotic therapy and surgical drainage are usually required for successful treatment. | 3 |
| 11. Wald ER, Milmoie GJ, Bowen A, Ledesma-Medina J, Salamon N, Bluestone CD. Acute maxillary sinusitis in children. <i>N Engl J Med</i> 1981; 304(13):749-754. | 9 | 30 | To correlate clinical, radiographic, and bacteriologic findings in maxillary sinusitis in children who had both upper-respiratory-tract symptoms and abnormal maxillary radiographs. | Bacterial colony counts ≥ 10 (4) colony-forming units per milliliter were found in 34 of 47 sinus aspirates obtained from 23 children. Study shows that children with both upper respiratory tract symptoms and abnormal sinus radiographs are likely to harbor bacteria in their sinuses. | 3 |
| 12. Arruda LK, Mimica IM, Sole D, et al. Abnormal maxillary sinus radiographs in children: do they represent bacterial infection? <i>Pediatrics</i> 1990; 85(4):553-558. | 15 (prevalence) | 33 | To evaluate abnormal maxillary sinus radiographs in children. | Children with complete radiologic opacification of maxillary sinus had bacterial infection in almost 70% of the cases with symptoms that did not prompt their physicians to consider the diagnosis of sinusitis. | 3 |
| 13. Diamant MJ, Senac MO, Jr., Gilsanz V, Baker S, Gillespie T, Larsson S. Prevalence of incidental paranasal sinuses opacification in pediatric patients: a CT study. <i>J Comput Assist Tomogr</i> 1987; 11(3):426-431. | 15 (prevalence) | 137 | Prospective evaluation of incidence of paranasal sinuses in patients referred for cranial CT. | Half of patients <13 years of age had some degree of maxillary or ethmoid sinus opacification. Both clinical signs and symptoms and radiographic findings must be considered for the diagnosis of sinusitis. | 2 |
| 14. Duvoisin B, Agrifoglio A. Prevalence of ethmoid sinus abnormalities on brain CT of asymptomatic adults. <i>AJNR Am J Neuroradiol</i> 1989; 10(3):599-601. | 15 (prevalence) | 145 | Prospective evaluation of ethmoid disease in adults without sinus symptoms. Brain CT scans were analyzed. | The ethmoid labyrinth showed abnormalities in 17 cases (10.9%). In most of these cases (88%) the ethmoid disease was localized to 4 or fewer cells. | 2 |

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| 15. Glasier CM, Mallory GB, Jr., Steele RW. Significance of opacification of the maxillary and ethmoid sinuses in infants. <i>J Pediatr</i> 1989; 114(1):45-50. | 15 (prevalence) | 100 | Prospective study to evaluate the incidence and significance of opacification in infants. CT of the maxillary/ethmoid sinuses was performed with routine cranial CT. | Positive correlation of CT findings between the maxillary and ethmoid sinuses in 80% of infants older than 2 months but in only 49% of the younger infants. Radiographic sinus opacification is of uncertain significance and is not diagnostic of upper respiratory tract infection. | 2 |
| 16. Gordts F, Clement PA, Destryker A, Desprechins B, Kaufman L. Prevalence of sinusitis signs on MRI in a non-ENT paediatric population. <i>Rhinology</i> 1997; 35(4):154-157. | 15 (prevalence) | 100 | To evaluate the prevalence of sinusitis signs in MRI studies done for non sinus reasons. | Overall prevalence of sinusitis signs on MRI is 45%. For children, overall prevalence increases in the presence of a history of nasal obstruction (prevalence: 50%) and recent upper respiratory tract infection (prevalence: 81%) as well as when bilateral mucosal swelling (prevalence: 80%) or purulent secretions (prevalence: 100%) are seen on anterior rhinoscopy. | 2 |
| 17. Holbrook EH, Brown CL, Lyden ER, Leopold DA. Lack of significant correlation between rhinosinusitis symptoms and specific regions of sinus computer tomography scans. <i>Am J Rhinol</i> 2005; 19(4):382-387. | 9 | 94 | To examine the correlation between sinus CT scans and rhinosinusitis symptoms. | No correlation of sinus CT scores, opacification of individual sinuses with clinical scores. Sinus CT cannot be used to predict symptoms or to localize pain. CT is necessary for preoperative planning. | 2 |
| 18. Kovatch AL, Wald ER, Ledesma-Medina J, Chiponis DM, Bedingfield B. Maxillary sinus radiographs in children with nonrespiratory complaints. <i>Pediatrics</i> 1984; 73(3):306-308. | 15 (prevalence) | 112 | To determine the frequency of abnormal maxillary sinus radiographs in children having diagnostic skull radiographs performed for indications unrelated to respiratory infection. | 53% had current or recent respiratory symptoms. Abnormal maxillary sinus radiographs were common in 50 subjects <1 year of age. 8/14 children (57%) aged 1 to 16 years with both symptoms and signs of respiratory inflammation had abnormal maxillary radiographs, compared with only two of 31 children (7%) with neither symptoms nor signs (P<.005). | 2 |
| 19. Lesserson JA, Kieserman SP, Finn DG. The radiographic incidence of chronic sinus disease in the pediatric population. <i>Laryngoscope</i> 1994; 104(2):159-166. | 15 (prevalence) | 142 | Review CT scans to estimate the radiographic incidence of chronic sinus disease in children. | Fifty-eight (41%) scans showed some mucosal thickening or opacification in at least one sinus. | 2 |
| 20. Manning SC, Biavati MJ, Phillips DL. Correlation of clinical sinusitis signs and symptoms to imaging findings in pediatric patients. <i>Int J Pediatr Otorhinolaryngol</i> 1996; 37(1):65-74. | 9 | 60 | To determine correlation between signs and symptoms of upper respiratory tract disease and sinus images in pediatric patients undergoing cranial CT or MRI for non-sinus diagnoses. | 47% had abnormalities of their sinus images. Significant (P<0.05) correlation was found between the presence or absence of respiratory signs and symptoms and the presence or absence of abnormalities of sinus images. | 2 |

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| 21. Odita JC, Akamaguna AI, Ogisi FO, Amu OD, Ugboadaga CI. Pneumatisation of the maxillary sinus in normal and symptomatic children. <i>Pediatr Radiol</i> 1986; 16(5):365-367. | 15 | 191 | To determine the pattern of pneumatisation and normal width of maxillary sinus in children (6 months to 14 years). | <ul style="list-style-type: none"> • 54% with no sinus infection had an opaque maxillary sinus. • 41.5% of suspected cases of sinusitis, acute and chronic middle ear disease had opaque sinuses. • Highest rate of sinus opacity was seen in children <2 years of age who were asymptomatic. Mean maximal width of the normally aerated sinus was 8.74 mm for children <2 years, 16.5 mm for 3-6 years, 21.5 mm for 7-11 years and 25 mm for children 12 years and above. Maxillary sinus opacity is an unreliable index for the diagnosis of sinusitis in children. | 2 |
| 22. Gwaltney JM, Jr., Phillips CD, Miller RD, Riker DK. Computed tomographic study of the common cold. <i>N Engl J Med</i> 1994; 330(1):25-30. | 15 | 31 | To define abnormalities caused by cold in the nasal passages and sinus cavities with CT scan. | Common cold is linked with frequent and variable anatomical involvement of the upper airways, including occlusion and abnormalities in the sinus cavities. | 2 |
| 23. Leopold DA, Stafford CT, Sod EW, et al. Clinical course of acute maxillary sinusitis documented by sequential MRI scanning. <i>Am J Rhinol</i> 1994; 8:19-28. | 12 | N/A | Prospective study to document course of sinusitis by serial MRI. | Mucosal changes in bacterial sinusitis can last months. | 3 |
| 24. Steele RW. Chronic sinusitis in children. <i>Clin Pediatr (Phila)</i> 2005; 44(6):465-471. | 7 | N/A | Review chronic sinusitis to develop specific recommendations and offer practical treatment options in children. | Endoscopic sinus surgery and antral irrigation have the highest probability of substantial symptom improvement in clinical ranking. | 3 |
| 25. Lusk RP, Lazar RH, Muntz HR. The diagnosis and treatment of recurrent and chronic sinusitis in children. <i>Pediatr Clin North Am</i> 1989; 36(6):1411-1421. | 12 | N/A | Review anatomy, diagnosis, surgery, and follow-up of chronic sinusitis in children. | No results. | 4 |
| 26. Aribandi M, McCoy VA, Bazan C, 3rd. Imaging features of invasive and noninvasive fungal sinusitis: a review. <i>Radiographics</i> 2007; 27(5):1283-1296. | 12 | N/A | To review imaging features of invasive and noninvasive fungal sinusitis. | Fungal sinusitis can be noninvasive or invasive with 5 major subtypes. The subtypes have different clinical and radiologic features with different treatment strategies and prognoses. Important for radiologist to know the subtypes and radiologic features. | 3 |

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| 27. Zinreich SJ, Kennedy DW, Malat J, et al. Fungal sinusitis: diagnosis with CT and MR imaging. <i>Radiology</i> 1988; 169(2):439-444. | 9 | 25 | To compare CT and MRI in diagnosis of fungal sinusitis. | 22/25 had foci of increased attenuation at CT. 19/22 (76%) met the CT criterion of this study (there was a 12% false-positive and a 12% false-negative diagnostic rate). 6/19 and one additional patient underwent MRI and all demonstrated remarkably hypointense signal characteristics on T2-weighted images. MRI is better in diagnosing fungal sinusitis. | 3 |
| 28. McAlister WH, Lusk R, Muntz HR. Comparison of plain radiographs and coronal CT scans in infants and children with recurrent sinusitis. <i>AJR</i> 1989; 153(6):1259-1264. | 10 | 70 | Prospective study to compare radiographs with coronal CT to determine if radiographs can be used to accurately diagnose and localize residual sinus disease. CT is gold standard. | Findings on slightly over 80% of the CT scans were abnormal. In about 75% of the patients, the findings on radiographs did not correlate with those on CT scans. About 45% of the patients had normal findings on radiographs of at least one sinus with an abnormality of that sinus shown on CT scans. Almost 35% of the patients had what was interpreted as an abnormality of at least one sinus on radiographs, but that sinus was normal on CT scans. Radiographs are unreliable. | 2 |
| 29. Laine FJ, Smoker WR. The ostiomeatal unit and endoscopic surgery: anatomy, variations, and imaging findings in inflammatory diseases. <i>AJR</i> 1992; 159(4):849-857. | 12 | N/A | To review anatomy, variations, and imaging findings in paranasal sinus inflammatory diseases. | CT has become an important complementary procedure to sinus endoscopy. | 3 |
| 30. Lazar RH, Younis RT, Parvey LS. Comparison of plain radiographs, coronal CT, and intraoperative findings in children with chronic sinusitis. <i>Otolaryngol Head Neck Surg</i> 1992; 107(1):29-34. | 9 | 300 | To compare radiographs, CT, and surgery in children with chronic sinusitis. | CT most reliable. Surgery should be determined by signs and symptoms plus CT. | 2 |
| 31. McAlister WH. Imaging of sinusitis in infants and children. In: Lusk RP, ed. <i>Pediatric Sinusitis</i> . New York, NY: Raven Press; 1992:15-42. | 15 | N/A | Book chapter. | N/A. | N/A |
| 32. Watt-Boolsen S, Karle A. The clinical use of radiological examination of the maxillary sinuses. <i>Clin Otolaryngol Allied Sci</i> 1977; 2(1):41-43. | 13 | 286 | To examine clinical use of radiological examination of the maxillary sinuses. | Children >12 years, radiologically normal sinuses contained fluid in 15.3% and when under that age in 39%. Radiological findings should not override one's clinical judgment, and the age of the patient should be considered when conclusions are to be drawn from the radiological findings. | 2 |

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| 33. Williams JW, Jr., Roberts L, Jr., Distell B, Simel DL. Diagnosing sinusitis by X-ray: is a single Waters view adequate? <i>J Gen Intern Med</i> 1992; 7(5):481-485. | 9 | 95 | To determine whether a single Waters' view radiograph could be substituted for a four-view sinus series for diagnoses of sinusitis, and to determine the interobserver and intraobserver variability's for sinus radiography. | Agreement between the Waters' view and the four-view sinus series was moderate to substantial (simple agreement = 75%-84%, kappa = 0.5-0.68). Intraobserver agreement (kappa = 0.72-0.84) was superior to interobserver agreement (kappa = 0.49-0.59) for the four-view sinus series. Substituting a single Waters view for a four-view sinus series may be an acceptable strategy for diagnosing maxillary sinusitis. | 1 |
| 34. Konen E, Faibel M, Kleinbaum Y, et al. The value of the occipitontental (Waters') view in diagnosis of sinusitis: a comparative study with computed tomography. <i>Clin Radiol</i> 2000; 55(11):856-860. | 10 | 134 | To evaluate the diagnostic accuracy of a single Waters' view in the diagnosis of paranasal sinusitis using high resolution CT as gold standard. | Mean sensitivity for diagnosis of any abnormality in the maxillary sinus was 67.7%, specificity 87.6%, accuracy 78.6%, PPV 82.5% and NPV 76.9%. Waters' view has limited value in the diagnosis of maxillary sinusitis and is less sensitive for abnormalities in the other sinuses. Low-dose high-resolution CT study of the paranasal sinuses is highly recommended. | 1 |
| 35. April MM, Zinreich SJ, Baroody FM, Naclerio RM. Coronal CT scan abnormalities in children with chronic sinusitis. <i>Laryngoscope</i> 1993; 103(9):985-990. | 15 (prevalence) | 74 | Retrospective review of CT scans to evaluate the distribution of disease and anatomical abnormalities in pediatric patients with sinus disease in comparison with adult. | Bone abnormal same as adults. Greater frequency of disease in pediatric patients. | 2 |
| 36. Arjmand EM, Lusk RP, Muntz HR. Pediatric sinusitis and subperiosteal orbital abscess formation: diagnosis and treatment. <i>Otolaryngol Head Neck Surg</i> 1993; 109(5):886-894. | 15 (pattern) | 22 | To examine diagnosis and treatment of children with subperiosteal orbital abscess. | Endoscopic ethmoidectomy and abscess drainage have some advantages over external ethmoidectomy and abscess drainage. | 3 |
| 37. Aygun N, Uzuner O, Zinreich SJ. Advances in imaging of the paranasal sinuses. <i>Otolaryngol Clin North Am</i> 2005; 38(3):429-437. | 12 | N/A | Reviews the advancements in imaging of the paranasal sinuses. | Miniaturization of large and bulky cross-sectional imaging equipment will gradually become popular in clinical practice. | 4 |
| 38. Babbel RW, Harnsberger HR, Sonkens J, Hunt S. Recurring patterns of inflammatory sinonasal disease demonstrated on screening sinus CT. <i>AJNR Am J Neuroradiol</i> 1992; 13(3):903-912. | 15 (pattern) | 500 | Retrospective review to define recurring patterns of inflammatory sinonasal disease demonstrated on screening sinus CT. | Identification of patterns allows grouping patients into nonsurgical (normal CT), routine (infundibular, ostiomeatal unit, and most sporadic patterns) and complex (sinonasal polyposis and sphenoethmoidal recess patterns) surgical groups. Pattern allows direct endoscopic surgery. | 2 |

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| 39. Clary RA, Cunningham MJ, Eavey RD. Orbital complications of acute sinusitis: comparison of computed tomography scan and surgical findings. <i>Ann Otol Rhinol Laryngol</i> 1992; 101(7):598-600. | 10 | 19 | Retrospective study to assess accuracy of CT in diagnosing orbital complications. CT was compared with surgical findings. | 15 of 19 CT scan interpretations indicated abscesses that were verified intraoperatively. CT effective in diagnosing orbital complications. | 3 |
| 40. Clayman GL, Adams GL, Paugh DR, Koopmann CF, Jr. Intracranial complications of paranasal sinusitis: a combined institutional review. <i>Laryngoscope</i> 1991; 101(3):234-239. | 15 (prevalence) | 649 | Retrospective review to determine incidence of intracranial complications of sinusitis. | 24 patients with complications from sinusitis are studied for an incidence of 3.7%. Aggressive medical and semi-emergent surgical intervention is required to prevent excessive morbidity and/or mortality. | 2 |
| 41. Oxford LE, McClay J. Complications of acute sinusitis in children. <i>Otolaryngol Head Neck</i> 2005; 133(1):32-37. | 15 (pattern) | 104 | Retrospective review of demographic, microbiologic, and outcome data for children with complications of acute sinusitis. | CT scan of the paranasal sinuses is recommended by many authors for evaluating a patient with a complication of acute sinusitis. Contrast-enhanced provides detailed bony anatomy and evaluation of soft tissue complications. | 2 |
| 42. Parsons DS, Phillips SE. Functional endoscopic surgery in children: a retrospective analysis of results. <i>Laryngoscope</i> 1993; 103(8):899-903. | 4 | 200 | Retrospective analysis of follow-up results from functional endoscopic sinus surgery (FESS) in children. | FESS is recommended in treating medically recalcitrant severe chronic sinusitis in children. | 2 |
| 43. Sonkens JW, Harnsberger HR, Blanch GM, Babbel RW, Hunt S. The impact of screening sinus CT on the planning of functional endoscopic sinus surgery. <i>Otolaryngol Head Neck Surg</i> 1991; 105(6):802-813. | 15 (pattern) | 500 | To determine the impact of screening sinus CT on the planning of functional endoscopic sinus surgery. | 5 radiologic patterns were identified: <ul style="list-style-type: none"> • Infundibular (129/500 or 26%). • Ostiomeatal unit (126/500 or 25%). • Sphenothmoidal recess (32/500 or 6%). • Sinonasal polyposis (49/500 or 10%). • Sporadia (unclassifiable) (121/500 or 24%). • 133 of the 500 patients (27%) had normal screening sinus CT. | 2 |
| 44. van der Veken PJ, Clement PA, Buisseret T, Desprechins B, Kaufman L, Derde MP. CT-scan study of the incidence of sinus involvement and nasal anatomic variations in 196 children. <i>Rhinology</i> 1990; 28(3):177-184. | 15 (prevalence) | 196 | To examine rhinosinusitis in the developing sinuses with CT. Children aged 3-14 years were included. | <ul style="list-style-type: none"> • Youngest age group—maxillary involvement in 63%, ethmoidal involvement in 58%, and sphenoidal sinus involvement in 29%. • Maxillary sinusitis was frequent in the oldest age group (65%). • Frontal involvement significant at the age of 7-8 years (7%) but never exceeds 15% (11-12 age group). • Septal deviations occurred in 16% of the youngest up to 72% in the oldest age group. | 2 |

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| 45. Wolf G, Anderhuber W, Kuhn F. Development of the paranasal sinuses in children: implications for paranasal sinus surgery. <i>Ann Otol Rhinol Laryngol</i> 1993; 102(9):705-711. | 15 classification | 102 | To study development of the paranasal sinuses in children and relate clinical anatomy to sinus surgery. | Knowledge of anatomy and pneumatization of children's sinuses is an important prerequisite to understanding the pathogenesis of sinusitis and its complications. Useful for interpreting of radiographs and for sinus surgery. | 3 |
| 46. Yousem DM. Imaging of sinonasal inflammatory disease. <i>Radiology</i> 1993; 188(2):303-314. | 12 | N/A | Review anatomy of the sinonasal cavity, discuss imaging of uncomplicated and complicated sinusitis, and analyze current role of imaging modalities (radiography, MRI, CT). | CT has become the primary imaging modality while MRI is limited to evaluation of complicated sinusitis, intraorbital and intracranial manifestations of aggressive sinusitis, and sinonasal neoplasms. | 3 |
| 47. Hein E, Rogalla P, Klingebiel R, Hamm B. Low-dose CT of the paranasal sinuses with eye lens protection: effect on image quality and radiation dose. <i>Eur Radiol</i> 2002; 12(7):1693-1696. | 15 | 127 | To assess effect of lens protection on image quality and radiation dose to the eye lenses in CT of the paranasal sinuses. | Shield reduced skin radiation from 7.5 to 4.5 mGy. Utilization of a radioprotection to the eye lenses in paranasal CT is an effective means of reducing skin radiation by 40%. | 2 |
| 48. Mulkens TH, Broers C, Fieuws S, Termote JL, Bellnick P. Comparison of effective doses for low-dose MDCT and radiographic examination of sinuses in children. <i>AJR</i> 2005; 184(5):1611-1618. | 9 | 69 radiography 125 MDCT | To examine the effect of lowering the dose in CT of the sinuses to an effective dose that is comparable to the effective dose of a radiographic examination in children. | Low-dose CT of the sinuses can yield diagnostic image quality using an effective dose comparable to that used for standard radiography. | 2 |
| 49. Som PM, Shapiro MD, Biller HF, Sasaki C, Lawson W. Sinonasal tumors and inflammatory tissues: differentiation with MR imaging. <i>Radiology</i> 1988; 167(3):803-808. | 9 | 160 | To determine if MRI can be used to distinguish tumor from sinonasal inflammatory disease. In 53 patients, MRI was compared with CT. | 95% of sinonasal tumors have an intermediate T2 signal, while 5% have bright T2 signals. MRI was more accurate than CT. | 2 |
| 50. Younis RT, Anand VK, Davidson B. The role of computed tomography and magnetic resonance imaging in patients with sinusitis with complications. <i>Laryngoscope</i> 2002; 112(2):224-229. | 9 | 82 | Retrospective review comparing the role of CT with MRI in patients with sinusitis with complications. | <ul style="list-style-type: none"> • For patients with orbital complications, the diagnostic accuracy was 82% for clinical assessment compared with 91% for CT. • For patients with intracranial complications, meningitis was common diagnosis and MRI was more accurate (97%) in determining diagnoses than CT (87%) or clinical findings (82%). | 2 |
| 51. American College of Radiology. <i>Manual on Contrast Media</i> . Available at: http://www.acr.org/SecondaryMainMenu/Categories/quality_safety/contrast_manual.aspx . | 15 | N/A | Guidance document on contrast media to assist radiologists in recognizing and managing risks associated with the use of contrast media. | N/A | 3 |

Evidence Table Key

Study Type Key

Numbers 1-7 are for studies of therapies while numbers 8-15 are used to describe studies of diagnostics.

1. Randomized Controlled Trial — Treatment
2. Controlled Trial
3. Observation Study
 - a. Cohort
 - b. Cross-sectional
 - c. Case-control
4. Clinical Series
5. Case reviews
6. Anecdotes
7. Reviews

8. Randomized Controlled Trial — Diagnostic
9. Comparative Assessment
10. Clinical Assessment
11. Quantitative Review
12. Qualitative Review
13. Descriptive Study
14. Case Report
15. Other (Described in text)

Strength of Evidence Key

- Category 1 - The conclusions of the study are valid and strongly supported by study design, analysis and results.
- Category 2 - The conclusions of the study are likely valid, but study design does not permit certainty.
- Category 3 - The conclusions of the study may be valid but the evidence supporting the conclusions is inconclusive or equivocal.
- Category 4 - The conclusions of the study may not be valid because the evidence may not be reliable given the study design or analysis.