# Sinusitis

## *Executive summary*

## Introduction

Sinusitis is an acute inflammatory condition of one or more of the paranasal sinuses. Infection plays an important role in this affliction. Sinusitis often results from infections of other sites of the respiratory tract since the paranasal sinuses are contiguous to, and communicate with, the upper respiratory tract. Acute sinusitis is commonly viral but a bacterial cause is likely if it persists for 7-10 days or worsens within 10 days after initial relief.

*Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis* are the commonest bacterial aetiology for acute sinusitis. Chronic sinusitis is commonly a mixed infection of aerobic and anaerobic organisms.

Sinusitis is classified as:

* Acute: an infection lasting 7-30 days.
* Subacute: the inflammation lasts 4-12 weeks.
* Recurring: there are >3 significant acute episodes in a year lasting ≥10 days with no intervening symptoms.
* Chronic: symptoms persist for >90 days (these may be caused by irreversible changes in the mucosal lining of the sinuses), with or without acute exacerbations.

## Target users

* Doctors
* Nurses

## Target area of use

* Gate clinic
* Outpatient department
* Ward

## Key areas of focus / New additions / Changes

This guidelines addresses the diagnosis and management of sinusitis.

## Limitations

None

**Presenting symptoms and signs**

* The maxillary and ethmoid sinuses are most commonly involved in sinusitis. The frontal sinuses are less often involved and the sphenoid sinuses are rarely affected.
* Facial pain, sensation of pressure and tenderness over the affected sinus are present.
* Purulent nasal discharge
* Fever, fatigue and headache
* Postnasal discharge
* Persistent coughing
* Hyposmia or anosmia
* Ear pressure or fullness
* Halitosis
* Maxillary dental pain

### Sinusitis in children

There is some controversy as to whether this diagnosis can be made in young children who have very poorly developed sinuses - radiographic evidence of sinuses is only visible from about 9 years of age. Current consensus is that it can occur in children over the age of 1 year. Symptoms may vary a little from those of adults and can include **irritability, lethargy, snoring, mouth breathing, feeding difficulty and hyponasal speech.**

**Examination findings**

The most helpful examination technique is simple palpation, as this is quick and easy to perform. Percussion and transillumination are also described although these are not reliable.

All but the sphenoidal sinuses can be palpated for tenderness:

* **Frontal sinus** - press upward beneath the medial side of the supraorbital ridge.
* **Maxillary sinus** - press against the anterior wall, below the inferior orbital margin.
* **Ethmoidal sinus** - press medially against the medial wall of the orbit.

Other examination findings include

* Oedematous and hyperaemic nasal mucosa
* Purulent nasal secretions
* Purulent posterior pharyngeal secretions
* Periorbital oedema
* Air-fluid levels on transillumination of the sinuses

## Investigations

Diagnosis is clinical. Investigations are not necessary but may be done in the case of diagnostic uncertainty.

**X-ray findings**: Thickening of the sinus mucosa and a fluid level are usually seen in x-ray films or magnetic resonance imaging. X-rays are not needed to make a diagnosis.

Diagnosis of acute bacterial sinusitis should be suspected if

1. Presence of symptoms or signs for 10 days or more
2. Worsening of symptoms or signs after an initial improvement.

## Management

* Paracetamol (1 g TDS/QDS) or ibuprofen (200-600 mg TDS) for pain/fever.
* Intranasal decongestant (oral is not recommended for sinusitis) for a maximum of a week.
* Nasal irrigation with warm saline solution.
* Warm face packs may provide localised pain relief.
* Adequate fluids and rest.
* Antibiotics: for suspected bacterial sinusitis

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| **1st line antibiotics** |  |
| Amoxicillin | 1 g orally TDS or 80-90 mg/kg/day for 5 days |
| Penicillin V | 1 to 11 months, 62.5 mg QDS for 5 days  1 to 5 years, 125 mg QDS for 5 days  6 to 11 years, 250 mg QDS for 5 days  ≥12 years, 500 mg QDS for 5 days |
| Doxycycline | PO 200 mg BD for 5-7 days  NB: contraindicated in pregnancy and children less than 8 years |
| Erythromycin (recommended in pregnancy) | PO 400 mg QDS for 10-14 days (may increase to 4 g/day depending on severity) or  30-50 mg/kg/day; can give 60-100 mg/kg/day in severe infection |
| Azithromycin | PO 500 mg/day for 3 days or 2 g once  Paeds: 10 mg/kg/day for 3 days |
| **2nd line antibiotics** |  |
| Co-amoxiclav | 500 mg of amoxicillin TDS for 5 - 10 days or 40 mg/kg/day |
| Ciprofloxacin | PO 500 mg BD or IV 400 mg BD for 10 days |

Admit patient if there is severe systemic infection, complications of sinusitis and immunocompromised patients.

**Complications are rare**. They occur more commonly in children. They include orbital cellulitis, meningitis, brain abscess, osteomyelitis (known as Pott's puffy tumour when the frontal bone is affected) and cavernous sinus thrombosis. Acute sinusitis can become chronic.

**Refer for urgent ENT review if**:

* there are unilateral symptoms (eg, mass, bloodstained discharge, crusting, non-tender facial pain, facial swelling or unilateral nasal polyps or unilateral nasal polyps).
* persistent infections (three or more attacks per year) or
* persistent symptoms despite an adequate course of second-line antibiotics.

**Prognosis**

Symptoms are likely to be relatively slow to resolve (2-3 weeks, regardless of whether antibiotics are taken or not) but over two-thirds of patients experience improvement or resolution of symptoms without antibiotic treatment.

## References

Colledge, Nicki R., Brian R. Walker, Stuart Ralston, and Stanley Davidson. 2010. Davidson's principles and practice of medicine. Edinburgh: Churchill Livingstone/Elsevier.

Henderson R (2014). Sinusitis. Certified by The Information Standard. Retrieved from <https://patient.info/doctor/sinusitis-pro> on 23/02/19.

Kliegman, Robert., et al. Nelson Textbook of Pediatrics. 20th Edition. Philadelphia, PA: Elsevier, 2016.

Sinusitis (acute): antimicrobial prescribing. NICE. Retrieved from <https://www.nice.org.uk/guidance/ng79/documents/consultation-document> on 23/02/19.

Standard Treatment Guidelines, 6th Edition, 2010. ISBN 978-9988-1-2538-7

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