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OBJECTIVES & AIMS

Rhinosinusitis is a significant and increasing health problem which results in a large financial burden on society. This pocket guide offers evidence-based recommendations on its diagnosis and treatment.
The full document on which this is based is intended to be a state-of-the-art review for the ENT and non ENT specialist as well as for the primary practitioner:
• to update their knowledge of rhinosinusitis and nasal polyposis
• to provide an evidence-based documented review of the diagnostic methods
• to provide an evidence-based review of the available treatments
• to propose a stepwise approach to the management of the disease
• to propose guidance for definitions and outcome measurements in research in different settings

CATEGORY OF EVIDENCE

Ia evidence form meta-analysis of randomised controlled trials
Ib evidence from at least one randomised controlled trial
IIa evidence from at least one controlled study without randomisation
IIb evidence from at least one other type of quasi-experimental study
III evidence from non-experimental descriptive studies, such as comparative studies, correlation studies, and case-control studies
IV evidence form expert committee reports or opinions or clinical experience of respected authorities, or both

STRENGTH OF RECOMMENDATION

A directly based on category I evidence
B directly based on category II evidence or extrapolated recommendation from category I evidence
C directly based on category III evidence or extrapolated recommendation from category I or II evidence
D directly based on category IV evidence or extrapolated recommendation from category I, II or III evidence
Clinical Definition of Acute and Chronic Rhinosinusitis with and without Nasal Polyps

Rhinosinusitis in adults
Rhinosinusitis in adults is defined as:

- inflammation of the nose and the paranasal sinuses characterised by two or more symptoms, one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
  - ± facial pain/pressure
  - ± reduction or loss of smell
and either
- endoscopic signs of:
  - nasal polyps, and/or
  - mucopurulent discharge primarily from middle meatus and/or
  - oedema/mucosal obstruction primarily in middle meatus
and/or
- CT changes:
  - mucosal changes within the ostiomeatal complex and/or sinuses

Rhinosinusitis in children
Rhinosinusitis in children is defined as:

- inflammation of the nose and the paranasal sinuses characterised by two or more symptoms, one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
  - ± facial pain/pressure
  - ± cough
and either
- endoscopic signs of:
  - nasal polyps, and/or
  - mucopurulent discharge primarily from middle meatus and/or
  - oedema/mucosal obstruction primarily in middle meatus
and/or
- CT changes:
  - mucosal changes within the ostiomeatal complex and/or sinuses

Duration of the disease

Acute: < 12 weeks complete resolution of symptoms.
Chronic: ≥12 weeks symptoms without complete resolution of symptoms.
(may also be subject to exacerbations)
To evaluate the total severity, the patient is asked to indicate on a VAS the answer to the question:

How troublesome are your symptoms of rhinosinusitis?

Not troublesome             10 cm             Worst thinkable troublesome

A VAS > 5 affects the patient QOL

Severity of the disease in adults and children

The disease can be divided into MILD, MODERATE and SEVERE based on total severity visual analogue scale (VAS) score (0 - 10 cm):

- MILD = VAS 0-3
- MODERATE = VAS >3-7
- SEVERE = VAS >7-10

Acute rhinosinusitis (ARS) in adults

Acute rhinosinusitis in adults is defined as:

- sudden onset of two or more of the symptoms:
  - nasal blockage/obstruction/congestion
  - or nasal discharge (anterior/posterior nasal drip)
  - ± facial pain / pressure
  - + reduction or loss of smell

For < 12 weeks;

With symptom free intervals if the problem is recurrent; with validation by telephone or interview.

Acute rhinosinusitis (ARS) in children

Acute rhinosinusitis in children is defined as:

- sudden onset of two or more of the symptoms:
  - nasal blockage/obstruction/congestion
  - or discoloured nasal discharge
  - or cough (daytime and night-time)

For < 12 weeks;

With symptom free intervals if the problem is recurrent; with validation by telephone or interview.

Questions on allergic symptoms (i.e. sneezing, watery rhinorrhea, nasal itching, and itchy watery eyes) should be included. ARS can occur once or more than once in a defined time period. This is usually expressed as episodes/year but there must be complete resolution of symptoms between episodes for it to constitute genuine recurrent ARS.

Common cold/ acute viral rhinosinusits is defined as: duration of symptoms for less than 10 days.

Acute post-viral rhinosinusitis is defined as: increase of symptoms after 5 days or persistent symptoms after 10 days with less than 12 weeks duration.
Acute Rhinosinusitis

Acute bacterial rhinosinusitis (ABRS)
Acute bacterial rhinosinusitis is suggested by the presence of at least 3 symptoms/signs of:
- Discoloured discharge (with unilateral predominance) and purulent secretion in the nasal cavity
- Severe local pain (with unilateral predominance)
- Fever (>38°C)
- Elevated ESR/CRP
- ‘Double sickening’ (i.e. a deterioration after an initial milder phase of illness).

Definitions

Chronic Rhinosinusitis (with or without NP) in adults is defined as:
Presence of two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
± Facial pain/pressure;
± Reduction or loss of smell;
for ≥12 weeks;
with validation by telephone or interview.
Questions on allergic symptoms (i.e. sneezing, watery rhinorrhea, nasal itching, and itchy watery eyes) should be included.

Chronic Rhinosinusitis with nasal polyps (CRSwNP): Chronic rhinosinusitis as defined above and bilateral, endoscopically visualised polyps in middle meatus.
Chronic Rhinosinusitis without nasal polyps (CRSsNP): Chronic Rhinosinusitis as defined above and no visible polyps in middle meatus, if necessary following decongestant.
This definition accepts that there is a spectrum of disease in CRS which includes polypoid change in the sinuses and/or middle meatus but excludes those with polypoid disease presenting in the nasal cavity to avoid overlap.
### Treatment Evidence and Recommendations for Adults with Acute Rhinosinusitis

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>antibiotic</td>
<td>Ia</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>topical steroid</td>
<td>Ia</td>
<td>A</td>
<td>yes mainly in post viral ARS</td>
</tr>
<tr>
<td>addition of topical steroid to antibiotic</td>
<td>Ia</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>addition of oral steroid to antibiotic</td>
<td>Ia</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>saline irrigation</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>antihistamine analgesic-decongestant combination</td>
<td>Ia</td>
<td>A</td>
<td>yes in viral ARS</td>
</tr>
<tr>
<td>ipratropium bromide</td>
<td>Ia</td>
<td>A</td>
<td>in viral ARS</td>
</tr>
<tr>
<td>probiotics</td>
<td>Ia</td>
<td>A</td>
<td>to prevent viral ARS</td>
</tr>
<tr>
<td>zinc</td>
<td>Ia</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>vitamin C</td>
<td>Ia</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>Echinacea</td>
<td>Ia</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>herbal medicine (Pelargonium sidoides, Myrtol)</td>
<td>Ib</td>
<td>A</td>
<td>yes, in viral and postviral ARS</td>
</tr>
<tr>
<td>aspirin / NSAID’s</td>
<td>Ib</td>
<td>A</td>
<td>yes, in viral and postviral ARS</td>
</tr>
<tr>
<td>acetaminophen (paracetamol)</td>
<td>Ib</td>
<td>A</td>
<td>yes, in viral and postviral ARS</td>
</tr>
<tr>
<td>oral antihistamine added in allergic patients</td>
<td>Ib (1 study)</td>
<td>B</td>
<td>no</td>
</tr>
<tr>
<td>steam inhalation</td>
<td>Ia(-)</td>
<td>A(-)**</td>
<td>no</td>
</tr>
<tr>
<td>cromoglycate</td>
<td>Ib(-)*</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>decongestant</td>
<td>no data for single use</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>mucolytics</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
</tbody>
</table>

*1b (-): 1b study with negative outcome

$^5$ Ia(-): Ia level of evidence that treatment is not effective.

**A(-): grade A recommendation not to use
Evidence-based management scheme for adults with acute rhinosinusitis for primary care and non-ent specialists

Diagnosis
Symptom-based, no need for imaging (plain x-ray not recommended)

Symptoms for less than 12 weeks:
sudden onset of two or more symptoms, one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
± facial pain/pressure
± reduction/loss of smell

Examination: anterior rhinoscopy: swelling, redness, pus
X-ray/CT-scan not recommended unless additional problems such as:
• very severe diseases,
• Immunocompromised patients;
• signs of complications
with symptom free intervals if the problem is recurrent
with validation by telephone or interview asking questions on allergic symptoms, ie, sneezing, watery rhinorrhea, nasal itching and itchy watery eyes
# Treatment Evidence and Recommendations for Children with Acute Rhinosinusitis

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of Recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>antibiotic</td>
<td>Ia</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>topical steroid</td>
<td>Ia</td>
<td>A</td>
<td>yes mainly in post viral ARS studies only done in children 12 years and older</td>
</tr>
<tr>
<td>addition of topical steroid to antibiotic</td>
<td>Ia</td>
<td>A</td>
<td>yes in ABRS</td>
</tr>
<tr>
<td>mucolytics (erdosteine)</td>
<td>1b (-)*</td>
<td>A(-)**</td>
<td>no</td>
</tr>
<tr>
<td>saline irrigation</td>
<td>IV</td>
<td>D</td>
<td>yes</td>
</tr>
<tr>
<td>oral antihistamine</td>
<td>IV</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>decongestant</td>
<td>IV</td>
<td>D</td>
<td>no</td>
</tr>
</tbody>
</table>

*1b (-): 1b study with negative outcome

**A(-): grade A recommendation **not** to use

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**Acute rhinosinusitis in adults and children management scheme for ENT specialist**

- **referral from primary care and paediatricians**
  - **moderate symptoms**
    - no improvement after 14 days of treatment
      - reconsider diagnosis
      - nasal endoscopy
      - consider imaging
      - consider culture
      - nasal corticosteroids
      - oral antibiotics
  - **severe symptoms**
    - no improvement after 48 hours of treatment
      - consider hospitalization
      - nasal endoscopy
      - culture
      - imaging
      - nasal corticosteroids
      - consider i.v. antibiotics
      - consider oral steroids
      - consider surgery
  - **complications**
    - hospitalization
    - nasal endoscopy
    - culture
    - imaging
    - i.v. antibiotics and/or surgery
**Evidence-based Management Scheme for Children with Acute Rhinosinusitis for Primary Care and Non-ENT Specialists**

**Diagnosis**

**Symptoms**
sudden onset of two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
± facial pain/pressure;
± cough

**Signs (if applicable)**
- nasal examination (swelling, redness, pus);
- oral examination: posterior discharge;
exclude dental infection.

Not recommended: plain x-ray.
CT-Scan is also not recommended unless additional problems such as:
- very severe diseases,
- immunocompromised patients;
- signs of complications

Paediatric acute rhinosinusitis management scheme for Primary Care

- **Symptoms less than 5 days or improving thereafter**
  - common cold
  - symptomatic relief: analgesics, nasal saline irrigation, decongestants, selected herbal compounds

- **Symptoms persistent after 10 days or increasing after 5 days**
  - moderate (post viral)
  - + topical steroids
  - no effect after 10 days of treatment
  - no effect after 14 days of treatment
  - consider referral to specialist

- **Severe** *(including bacterial)*
  - topical steroids consider antibiotics
  - effect in 48 h
  - no effect in 48 h
  - refer to specialist

- **Immediate referral:**
  - periorbital oedema/erythema
  - displaced globe;
  - double vision;
  - ophthalmoplegia
  - reduced vision acuity;
  - severe unilateral or bilateral frontal headache;
  - frontal swelling;
  - signs of meningitis or neurologic signs

* = at least 3 of: discoloured discharge severe local pain fever elevated ESR/CRP double sickness
**TREATMENT EVIDENCE AND RECOMMENDATIONS FOR ADULTS WITH CHRONIC RHINOSINUSITIS WITHOUT NASAL POLYPS**

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>steroid – topical</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>nasal saline irrigation</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>bacterial lysates (OM-85 BV)</td>
<td>Ib</td>
<td>A</td>
<td>unclear</td>
</tr>
<tr>
<td>oral antibiotic therapy short term</td>
<td>II</td>
<td>B</td>
<td>during exacerbations</td>
</tr>
<tr>
<td>&lt; 4 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>oral antibiotic therapy long term</td>
<td>Ib</td>
<td>C</td>
<td>yes, especially if IgE is not elevated</td>
</tr>
<tr>
<td>≥12 weeks**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>steroid – oral</td>
<td>IV</td>
<td>C</td>
<td>unclear</td>
</tr>
<tr>
<td>mucolytics</td>
<td>III</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>proton pump inhibitors</td>
<td>III</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>decongestant oral / topical</td>
<td>no data on single use</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>allergen avoidance in allergic patients</td>
<td>IV</td>
<td>D</td>
<td>yes</td>
</tr>
<tr>
<td>oral antihistamine added in allergic patients</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>herbal medicine</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>immunotherapy</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>probiotics</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antimycotics – topical</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antimycotics - systemic</td>
<td>no data</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antibiotics – topical</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
</tbody>
</table>

* Some of these studies also included patients with CRS with nasal polyps

% Acute exacerbations of CRS should be treated like acute rhinosinusitis

# Ib (-): Ib study with a negative outcome

$ A(-)$: grade A recommendation not to use

** Level of evidence for macrolides in all patients with CRSsNP is Ib, and strength of recommendation C, because the two double blind placebo controlled studies are contradictory; indication exists for better efficacy in CRSsNP patients with normal IgE so the recommendation is A. No RCTs exist for other antibiotics
EVIDENCE-BASED MANAGEMENT SCHEME FOR ADULTS WITH CHRONIC RHINOSINUSITIS WITH OR WITHOUT NASAL POLYPS FOR PRIMARY CARE AND NON-ENT SPECIALISTS

**Diagnosis**
Symptoms present equal or longer than 12 weeks
two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
± facial pain/pressure,
± reduction or loss of smell;

Signs (if applicable)
- nasal examination
- oral examination: posterior discharge;
exclude dental infection.

Additional diagnostic information
- questions on allergy should be added and, if positive, allergy testing should be performed.

Not recommended: plain x-ray or CT-scan

**CRS in adults management scheme for Primary Care and non-ENT-specialists**

- two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge: anterior/posterior nasal drip;
- facial pain/pressure,
- reduction or loss of smell;
- examination: anterior rhinoscopy
- X-ray/CT not recommendend

- endoscopy not available

- examination: anterior rhinoscopy
- X-ray/CT not recommendend

- topical steroids
- nasal irrigation

- re-evaluation after 4 weeks

- improvement
- continue therapy

- no improvement
- refer to ENT-specialist

- endoscopy available

- follow ENT scheme for CRSsNP or CRSwNP

- refer to ENT-specialist if operation is considered

- urgent investigation and intervention

- consider other diagnosis
- unilateral symptoms
- bleeding
- crusting
- cacosmia
- orbital symptoms:
  - peri-orbital oedema/erythema
  - displaced globe
  - double or reduced vision
  - ophthalmoplegia
- severe frontal headache
- frontal swelling
- signs of meningitis
- neurological signs
## Treatment Evidence and Recommendations Postoperative Treatment for Adults with Chronic Rhinosinusitis Without Nasal Polyps *

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>topical steroids</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>oral steroids</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>oral antibiotics short term &lt; 4 weeks</td>
<td>II</td>
<td>B</td>
<td>during exacerbations</td>
</tr>
<tr>
<td>nasal saline irrigation with sodium hypochlorite</td>
<td>IIb</td>
<td>B</td>
<td>yes, especially if IgE is not elevated</td>
</tr>
<tr>
<td>oral antibiotic therapy long term ≥12 weeks**</td>
<td>Ib</td>
<td>C</td>
<td>yes, especially if IgE is not elevated</td>
</tr>
<tr>
<td>nasal saline irrigation with babyshampoo</td>
<td>III</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>steroids – oral</td>
<td>IV</td>
<td>C</td>
<td>unclear</td>
</tr>
<tr>
<td>antibiotics – topical</td>
<td>Ib(-)</td>
<td>A(-)§</td>
<td>no</td>
</tr>
</tbody>
</table>

* Some of these studies also included patients with CRS with nasal polyps

# Ib(-): Ib study with a negative outcome

§ A(-): grade A recommendation not to use

** Level of evidence for macrolides in all patients with CRSsNP is Ib, and strength of recommendation C, because the two double blind placebo controlled studies are contradictory; indication exist for better efficacy in CRSsNP patients with normal IgE the recommendation A. No RCTs exist for other antibiotics.
**Diagnosis**
Symptoms present longer than 12 weeks
Two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
± facial pain/pressure,
± reduction or loss of smell;

**Signs**
- ENT examination, endoscopy;
- review primary care physician’s diagnosis and treatment;
- questionnaire for allergy and if positive, allergy testing if it has not already been done.

**Treatment**
For treatment evidence and recommendations for CRSsNP.
Treatment should be based on severity of symptoms
- Decide on severity of symptomatology using VAS and endoscope.

Acute exacerbations of CRS should be treated like acute rhinosinusitis.

---

**CRSsNP in adults management scheme for ENT-specialists**

- **mild**
  - VAS 0-3
  - no serious mucosal disease at endoscopy

- **topical steroids nasal saline irrigation**
  - no improvement after 3 months
  - improvement
  - follow-up + nasal saline irrigation topical steroids consider long term antibiotics

- **moderate/severe**
  - VAS >3-10 mucosal disease at endoscopy

- **topical steroids nasal saline irrigation culture**
  - consider long term antibiotics (if IgE is not elevated)

- **CT scan**
  - if not done before
  - follow up + topical steroids nasal saline irrigation culture consider long term antibiotics

- **consider surgery**

- **urgent investigation and intervention**

- consider other diagnosis unilateral symptoms bleeding crusting cacosmia orbital symptoms: peri-orbital oedema/erythema displaced globe double or reduced vision ophthalmoplegia severe frontal headache frontal swelling signs of meningitis neurological signs
<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>topical steroids</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>oral steroids</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>oral antibiotics short term &lt;4 weeks</td>
<td>1b and 1b(-)</td>
<td>C&lt;sup&gt;‡&lt;/sup&gt;</td>
<td>yes, small effect</td>
</tr>
<tr>
<td>oral antibiotic long term ≥ 12 weeks</td>
<td>III</td>
<td>C</td>
<td>yes, especially if IgE is not elevated, small effect</td>
</tr>
<tr>
<td>capsaicin</td>
<td>II</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>proton pump inhibitors</td>
<td>II</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>aspirin desensitisation</td>
<td>II</td>
<td>C</td>
<td>unclear</td>
</tr>
<tr>
<td>furosemide</td>
<td>III</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>immunosuppressants</td>
<td>IV</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>nasal saline irrigation</td>
<td>Ib, no data in single use</td>
<td>D</td>
<td>yes for symptomatic relief</td>
</tr>
<tr>
<td>topical antibiotics</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>anti-IL5</td>
<td>no data</td>
<td>D</td>
<td>unclear</td>
</tr>
<tr>
<td>phytotherapy</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>decongestant topical / oral</td>
<td>no data in single use</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>mucolytics</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>oral antihistamine in allergic patients</td>
<td>no data</td>
<td>D</td>
<td>no</td>
</tr>
<tr>
<td>antimycotics – topical</td>
<td>Ia (-) **</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>antimycotics – systemic</td>
<td>Ib (-)#</td>
<td>A(-) $^5$</td>
<td>no</td>
</tr>
<tr>
<td>anti leukotrienes</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
<tr>
<td>anti-IgE</td>
<td>Ib (-)</td>
<td>A(-)</td>
<td>no</td>
</tr>
</tbody>
</table>

* Some of these studies also included patients with CRS with nasal polyps

‡ short term antibiotics shows one positive and one negative study. Therefore recommendation C.

# Ib (-): Ib study with a negative outcome

** Ia(-): Ia level of evidence that treatment is not effective.

$^5$: A(-): grade A recommendation not to use
**EVIDENCE-BASED MANAGEMENT SCHEME FOR ADULTS WITH CHRONIC RHINOSINUSITIS WITH NASAL POLYPS FOR ENT SPECIALISTS**

**Diagnosis**
Symptoms present longer than 12 weeks
Two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
± facial pain/pressure,
± reduction or loss of smell;

**Signs**
- ENT examination, endoscopy;
- review primary care physician’s diagnosis and treatment;
- questionnaire for allergy and if positive, allergy testing if it has not already been done.

**Treatment**
For treatment evidence and recommendations for CRSwNP.

Treatment should be based on severity of symptoms
- Decide on severity of symptomatology using VAS and endoscope.

---

**CRSwNP management scheme for ENT-specialists**

1. **2 symptoms: one of which should be nasal obstruction or discoloured discharge**
   - ENT examination including endoscopy (size of polyps)
   - consider CT scan
   - consider diagnosis and treatment of co-morbidities

2. **mild VAS 0-3 no serious mucosal disease at endoscopy**
   - topical steroid spray
   - review after 3 months
   - improvement
   - continue with topical steroids
   - review every 6 months

3. **moderate VAS >3-7 mucosal disease at endoscopy**
   - topical steroid spray
   - consider increase dose
   - consider drops
   - consider doxycycline
   - no improvement
   - review after 1 month
   - improvement

4. **severe VAS >7-10 mucosal disease at endoscopy**
   - topical steroids
   - oral steroids (short course)
   - urgent investigation and intervention

   Consider:
   - other diagnosis
   - unilateral symptoms
   - bleeding
   - crusting
   - cacoena
   - orbital symptoms: peri-orbital oedema/erythema
   - displaced globe
   - double or reduced vision
   - ophthalmoplegia
   - severe frontal headache
   - frontal swelling
   - signs of meningitis
   - neurological signs

5. **follow up**
   - nasal irrigation
   - topical ± oral steroids
   - ± long term antibiotics
   - CT scan
   - surgery
## Treatment Evidence and Recommendations for Children with Chronic Rhinosinusitis

<table>
<thead>
<tr>
<th>Therapy</th>
<th>Level</th>
<th>Grade of recommendation</th>
<th>Relevance</th>
</tr>
</thead>
<tbody>
<tr>
<td>nasal saline irrigation</td>
<td>Ia</td>
<td>A</td>
<td>yes</td>
</tr>
<tr>
<td>therapy for gastro-oesophageal reflux</td>
<td>III</td>
<td>C</td>
<td>no</td>
</tr>
<tr>
<td>topical corticosteroid</td>
<td>IV</td>
<td>D</td>
<td>yes</td>
</tr>
<tr>
<td>oral antibiotic long term</td>
<td>no data</td>
<td>D</td>
<td>unclear</td>
</tr>
<tr>
<td>oral antibiotic short term &lt;4 weeks</td>
<td>Ib(-)*</td>
<td>A(-)*</td>
<td>no</td>
</tr>
<tr>
<td>intravenous antibiotics</td>
<td>III(-)**</td>
<td>C(-) **</td>
<td>no</td>
</tr>
</tbody>
</table>

* Ib (-): Ib study with a negative outcome  
  *A(-): grade A recommendation **not** to use  
**III(-): level III study with a negative outcome  
**C(-): grade C recommendation **not** to use
Evidence-based management scheme for children with chronic rhinosinusitis without nasal polyps for ENT specialists

**Diagnosis**
Symptoms present equal or longer than 12 weeks
two or more symptoms one of which should be either nasal blockage/obstruction/congestion or nasal discharge (anterior/posterior nasal drip):
± facial pain/pressure;
± cough;
Additional diagnostic information
• questions on allergy should be added and, if positive, allergy testing should be performed.

ENT examination, endoscopy if available;
Not recommended: plain x-ray or CT-scan (unless surgery is considered)

**Treatment**
For treatment evidence and recommendations for Chronic Rhinosinusitis in children.
This management scheme is for young children. Older children (in the age that adenoids are not considered important) can be treated as adults.

Acute exacerbations of CRS should be treated like acute rhinosinusitis.
Treatment should be based on severity of symptoms.