Children < 16 years old – Primary Care

Ear, Nose & Throat (ENT) Infections

Acute Sore Throat & Scarlet Fever

Duration: dependent on indication and agent used – see treatment tables below.

1st Line Agents	Indication					
	Acute Sore Throat			Scarlet Fever		
	Duration	Age	Dose	Duration	Age	Dose
Phenoxy-methylpenicillin (Penicillin V)	**5 days,** if fever continues on day 5 offer additional 5 days	1-11 months	62.5mg 6 hourly **or** 125mg 12 hourly	**10 days**	1-11 months	62.5mg 6 hourly ***No 12hourly dosing***
		1-5 years	125mg 6 hourly **or** 250mg 12 hourly		1-5 years	125mg 6 hourly ***No 12hourly dosing***
		6-11 years	250mg 6 hourly **or** 500mg 12 hourly		6-11 years	250mg 6 hourly ***No 12hourly dosing***
		12 years and above	500mg 6 hourly **or** 1000mg 12 hourly		12 years and above	500mg 6 hourly ***No 12hourly dosing***
Clarithromycin **1st line choice for penicillin allergic children**	**5 days**	1 month -11 years Weight up to 8kg	7.5mg/kg 12 hourly	**10 days**	1 month -11 years Weight up to 8kg	7.5mg/kg 12 hourly
		1 month -11 years Weight 8-11 kg	62.5mg 12 hourly		1 month -11 years Weight 8-11 kg	62.5mg 12 hourly
		1 month -11 years 12-19kg	125mg 12 hourly		1 month -11 years 12-19kg	125mg 12 hourly
		1 month -11 years 20-29kg	187.5mg 12 hourly		1 month -11 years 20-29kg	187.5mg 12 hourly
		1 month -11 years 30-40kg	250mg 12 hourly		1 month -11 years 30-40kg	250mg 12 hourly
		12 years and above	250-500mg 12 hourly		12 years and above	250-500mg 12 hourly

2nd Line agents	Indication					
	Acute Sore Throat			Scarlet Fever		
	Duration	Age	Dose	Duration	Age	Dose
Amoxicillin	**5 days,** if fever continues on day 5 offer additional 5 days	1-11 months	125mg 8 hourly	**10 days**	1-11 months	125mg 8 hourly
		1-4 years	250mg 8 hourly		1-4 years	250mg 8 hourly
		5-11 years	500mg 8 hourly		5-11 years	500mg 8 hourly
		12 years and above	500mg 8 hourly		12 years and above	500mg 8 hourly
Erythromycin **(2nd line choice for penicillin allergic children)**	**5 days**	1-23 months	125mg 6 hourly	**10 days**	1-23 months	125mg 6 hourly
		2-7 years	250mg 6 hourly		2-7 years	250mg 6 hourly
		Over 8 years old	250-500mg 6 hourly **or** 500-1000mg 12 hourly		Over 8 years old	250-500mg 6 hourly ***No 12hourly dosing***

Clarithromycin or Erythromycin should **not be prescribed concurrently with Ciclosporin, Sirolimus and Tacrolimus.

NOTES

If trismus, stridor or breathing difficulties are present, arrange for urgent hospital transfer and do not examine the throat as this can cause acute airway obstruction in epiglottitis.

Pharyngitis is usually a viral infection (50-80%). Streptococcal infection is most likely in children from 5 to 15 years and less likely in younger or older patients. In >90% of cases, resolution of symptoms occurs within 7 days without any antibiotic treatment.

Group A Streptococci are universally penicillin susceptible.

Use the **FeverPAIN** Score to assess need for antimicrobial prescription (1 point each):

- **Fever** in last 24h
- **P**urulent tonsillar exudate
- **A**ttending after duration of symptoms <3 days
- Severely **I**nflamed tonsils
- **N**o cough or coryza

FeverPAIN score	Likelihood of *S. pyogenes*	Prescription strategy
0-1	13-18%	antimicrobial not advised
2-3	34-40%	delayed prescription (3 days)
>4	62-65%	Immediate treatment if severe, or 48hr delayed prescription

- Do not take throat swabs routinely, even if the sore throat persists. Throat swabs have poor specificity and sensitivity.
- Scarlet fever is a **notifiable infectious disease** caused by toxin producing strains of Group A streptococcus (*S. pyogenes*). Group A Streptococci are universally penicillin susceptible. Notification to the Health Protection Team should be made based on clinical suspicion.
- The primary site of infection is usually the throat and the initial symptoms of Scarlet fever are those of streptococcal pharyngitis. **A faint red rash, which feels like sand-paper**, develops after 12-48hrs. Sparing of the area around the mouth is typical. As the rash fades, the skin of the fingertips, toes and groin peels off. The tongue first shows a white coating, then peels a few days later and looks red and swollen ('strawberry tongue').
- Consider admission for any patient with valvular disease or significant immunocompromise or if you suspect a complication of streptococcal infection such as acute rheumatic fever or a deep neck space infection. **'Septic' or 'toxic' scarlet fever** is associated with invasive Group A streptococcal disease. Patients develop a high fever and marked systemic toxicity, and may have symptoms such as diarrhoea and vomiting, arthralgia and jaundice. **This is a medical emergency with a high mortality that should be admitted immediately.**
- **Scarlet fever is a clinical diagnosis** and throat swabs to identify *S. pyogenes* may not be helpful, due to poor specificity and sensitivity.
- **Advise the patient to stay away from school or work for at least 1 day after starting antibiotic treatment**, wash their hands frequently, avoid sharing eating utensils and towels, dispose of handkerchiefs promptly, and avoid contact with anyone at particular risk of infection (e.g. people with valvular disease or who are immunocompromised). Advise to return for follow up if symptoms have not improved or have worsened after 7 days.

Acute Otitis Media

Duration: 5 - 7 days

First line: **60% of cases resolve within 24h without antibiotics**; consider a 2 or 3-day delayed antibiotic prescription.

Second line: **Amoxicillin PO** dosed as per BNF for Children

or **Clarithromycin PO** dosed as per BNF for Children

Clarithromycin should **not** be prescribed concurrently with ciclosporin, sirolimus and tacrolimus.

NOTES

- Acute Otitis Media is characterised by unilateral ear ache and a bulging, inflamed tympanic membrane, and with fluid in the middle ear. It may result in perforation of the tympanic membrane, resulting in purulent discharge.
- Meningitis and mastoiditis are rare complications and if these are suspected the patient should be referred for inpatient treatment. Consider referral for admission for children < 3 months of age with a temperature of 38°C or more, and children 3 - 6 months of age with a temperature of 39°C or more.
- If there is purulent discharge in the ear canal, take a swab for culture.
- Offer an immediate antibiotic prescription to patients with purulent otorrhoea and to patients <2 years of age with bilateral AOM, a bulging tympanic membrane or symptom score >8 for:
    - fever
    - tugging ears
    - crying
    - irritability
    - difficulty sleeping
    - less playful
    - eating less

    (0= not present, 1= a little, 2= a lot)

Acute Rhinosinusitis

Duration: 5 days

First line: **80% of cases resolve in 14 days without any antimicrobial treatment**.

Patients with untreated bacterial disease rarely develop severe infection or complications.

Second line: **Amoxicillin PO** dosed as per BNF for Children
or **Clarithromycin** dosed as per BNF for Children

Clarithromycin should **not** be prescribed concurrently with ciclosporin, sirolimus and tacrolimus.

NOTES

- **Acute rhinosinusitis is a viral infection** associated with the common cold and resolves in 7 to 10 days; **bacterial superinfection occurs in <2% of episodes.**
- Consider antibiotic treatment if a patient with an improving viral upper respiratory tract infection develops new symptoms of sinusitis **and** a fever, or if symptoms of sinusitis persist for 10 or more days without improvement.
- Suspect **orbital involvement** if there is peri-orbital oedema, a displaced globe, double vision, ophthalmoplegia, or reduced visual acuity.
- **Suspect intracranial involvement or Pott's Puffy Tumour** if there is a severe frontal headache, frontal swelling, symptoms or signs of meningitis, or focal neurological signs.

Investigations are not required in primary care. Nasal swabs for culture have poor diagnostic yield.

Otitis Externa

Duration: 7 days

First line: **Analgesia and localised heat (warm flannel)**

Second line: A proprietary preparation containing **acetic acid 2%** (EarCalm® spray) is on sale to the public. Note acetic acid 2% (EarCalm® spray) is licensed only for adults and children aged 12 years and above.

***Or* Betamethasone with neomycin eardrops** (Not licensed for use in children under 2 years)**:** Apply 2 - 3 drops 3 - 4 times a day.

If cellulitis is present, or disease extends outside the ear canal

Duration: 5 days

Therapy: **Flucloxacillin PO dosed as per BNF for Children**
***or* Clarithromycin PO dosed as per BNF for Children**

Clarithromycin should **not** be prescribed concurrently with ciclosporin, sirolimus and tacrolimus.

NOTES

If systemic antibiotics are thought to be required for treatment, **or** if there is cellulitis extending from the ear canal or the ear canal is occluded, seek advice from an ENT specialist.

NICE provide a Clinical Knowledge Summary on this topic.

- Symptoms of otitis externa are ear pain, pruritus, discharge, and hearing loss, often after water exposure (swimmer's ear), instrumentation (cotton buds) or use of occluding devices (bud ear phones).
- Aural toilet is an essential component of treatment; it facilitates healing and improves penetration of ear drops.
- If first line topical treatment has failed, consider taking an ear swab for bacterial and fungal culture. Review any culture results and ensure that an appropriate antibiotic has been prescribed.