

Antibiotic management of Group A *Streptococcus* (GAS, *Strep. pyogenes*) infection in children age 18 and under

The Scottish Antimicrobial Prescribing Group (SAPG) endorses the use of the [Group A *Streptococcus* \(GAS\) in children interim clinical guidance summary](#) developed by NHS England's GAS Clinical Reference Group and the UK Health Security Agency's Incident Management Team.¹ This interim guidance is valid until end of January 2023 and will be reviewed with epidemiology of infections and emerging evidence.

Given the current high prevalence of GAS, and the increased likelihood of it as a cause of sore throat in children, **it is recommended to review patients face to face whenever possible and to prescribe antibiotics to children with a FeverPAIN score of three or more instead of four.** Continue to follow clinical judgement as usual. Adult guidance remains in place.

FeverPAIN criteria²

1. **F**ever (during previous 24 hours)
2. **P**urulence (pus on tonsils)
3. **A**ttend rapidly (within 3 days after onset of symptoms)
4. **S**everely **I**nflamed tonsils
5. **N**o cough or coryza (inflammation of mucus membranes in the nose)

FeverPAIN scoring

Each of the FeverPAIN criteria score 1 point (maximum score of 5)

Due to high numbers of clinical presentations, it is appreciated that it will be difficult to see all patients in-person and phone consultations will be common. Where possible, SAPG recommends that all children aged under 5 years are seen face to face and, where in-person review is not possible, remote technology is used to support clinical decision-making.

Therapy recommendations

Due to unprecedented demand on antibiotic supply, the recommendations for some alternative antibiotics (eg flucloxacillin), which are known to have activity against Group A *Streptococcus*, may fall outside their usual recommendations in the British National Formulary for children (BNFC).³

First line therapy	Penicillin allergy or second line therapy when first line is unavailable	Third line therapy when other agents are unavailable
<p>Preferred order of choice is:</p> <ol style="list-style-type: none"> 1. Phenoxymethylpenicillin (penicillin V) 2. Amoxicillin 3. Flucloxacillin 	<p>Preferred order of choice is:</p> <ol style="list-style-type: none"> 1. Clarithromycin 2. Erythromycin 3. Azithromycin 	<p>Preferred order of choice is:</p> <ol style="list-style-type: none"> 1. Cefalexin (DO NOT USE in severe penicillin allergy) 2. Co-amoxiclav (DO NOT USE in penicillin allergy) 3. Co-trimoxazole

Antimicrobial resistance

- The resistance rate for macrolides (clarithromycin and erythromycin) in 2021 for children aged under 16 years was 12.4% and in 4.7% in 2022.⁴
- Cefalexin, co-amoxiclav and co-trimoxazole are broad-spectrum agents; their use may promote the development of antimicrobial resistance, particularly in enteropathogens.

Referral to Secondary care

Given the unusually high level of GAS and viral co-circulation in the community, health care professionals are asked to have a low threshold for prompt referral to secondary care for any children presenting with **persistent or worsening symptoms** after initiation of treatment with antibiotics.

- Urgent referral is needed for any child with signs or symptoms of empyema
- Refer all patients showing signs of illness compatible with bacterial pneumonia, where there is concurrent or a recent history of GAS infection or scarlet fever

Early signs and symptoms of invasive GAS infection

- High fever
- Severe muscle aches
- Localised muscle tenderness
- Pain in one area of the body
- Redness at the site of a wound
- Rash

Therapy duration

For the treatment of children with sore throat with FeverPAIN score of three or more

- A **5 day course** of penicillin V is appropriate for many children, at the discretion of the treating clinician.
- 5 days of penicillin V gives a similar cure rate and compliance is likely to be better than 10 days. Microbiological cure, ie ongoing carriage after clinical improvement, may be lower with shorter courses of penicillin.
- **If clinical concern remains after 5 days, or if there is no improvement, the patient should re-present and a further 5-day supply should be considered.**
- For macrolide antibiotics (clarithromycin, erythromycin or azithromycin) and co-trimoxazole 5 days of treatment is recommended.

Safety netting advice for parents is important and can be found [here](#)⁵

Treatment of scarlet fever

- **Give 10-day course of antibiotics**, except for azithromycin, which is 5 days.
- **Penicillin is first line**, with second and third line as listed in the above table.
- **Refer child for inpatient assessment** if systemically unwell or unable to take oral antibiotics or there is no improvement at 48 hours.

Advice on managing supply antibiotics

Reserve supplies of liquid antibiotics for patients where doses cannot be measured using a whole tablet or capsule. Where tablets or capsules can be used, then they should be considered the first line option

Refer to **Specialist Pharmacy Service** resource for guidance on using solid oral dosage forms in children – advice can be found [here](#)⁶

Assess all patients aged 5 years and over for ability to swallow solid oral dosage forms before opening, crushing or dispersing tablets or capsules

Further advice on swallowing pills along with practical information for parents and carers can be found [here](#)⁷

References

1. NHS England. Group A *Streptococcus* in children Interim clinical guidance summary, 2022. Available [online](#) [accessed 14/12/22].
2. National Institute for Health and Care Excellence (NICE). Sore throat (acute) in adults: antimicrobial prescribing NICE guideline [NG84]. Published: 26 January 2018. Available [online](#) [accessed 14/12/22].
3. National Institute for Health and Care Excellence (NICE). British National Formulary for Children (BNFC). 2022. Available [online](#) [accessed 14/12/22].
4. Antimicrobial Resistance and Healthcare Associated Infection (ARHAI) Scotland. Scottish Surveillance data. 2022. National Services Scotland.
5. Royal College of Paediatrics and Child Health. Group A *strep* and scarlet fever. 2022. Available [online](#) [accessed 14/12/22].
6. Specialist Pharmacy Service. Using solid oral dosage form antibiotics in children. 2022. Available [online](#) [accessed 14/12/22].
7. NHS North East and North Cumbria. Swallowing pills. 2022. Available [online](#) [accessed 14/12/22].