Aim: All group A streptococcal (GAS) pharyngitis in high rheumatic fever risk patients are treated

**High Risk for Rheumatic Fever**

High risk if personal, family or household history of rheumatic fever or have 2 or more criteria:
- Māori or Pacific
- Aged 3–35 years
- Living in crowded circumstances or lower socioeconomic area
If only 1 criterion see green box.

If group A streptococci (GAS) positive:
- Consider swabbing all symptomatic household members.
- Consider isolating at home for 24 hours after starting 10 days of antibiotics.
- Swab all household members (symptomatic or not), if:
  - ≥ 3 cases of GAS pharyngitis in household in the last 3 months, or
  - Personal, family or household history of rheumatic fever and promptly treat all GAS positive cases
See Algorithm in Guideline for Household Sore Throat Management.

If GAS negative:
- Stop antibiotics.

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**Low Risk for Rheumatic Fever**

Assess severity of symptoms and occupational risk of spreading GAS.

1. Unwell patients have potential to develop local supplicative complications.
2. Throat swabbing and/or antibiotic treatment may not be routinely required for mild symptoms unless the patient is at increased risk of spreading GAS e.g. healthcare and residential care workers, food handlers, school and early childhood teachers and students. Instead consider analgesia.

Reasons to Throat Swab in Those at High Risk of Rheumatic Fever
- To identify GAS pharyngitis in index case
- To discontinue antibiotics in GAS negative cases
- To initiate antibiotic therapy (check and reinforce 10 day adherence) in following up GAS positive results
- To allow household contact tracing and initiate appropriate treatment
- To reduce unnecessary antibiotic prescribing
- To allow for surveillance of GAS pharyngitis resistant to antibiotics
- To provide education when following up throat swab results
Consider not throat swabbing and instead start empiric antibiotics if follow-up may be problematic.

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Footnotes
1. In family households, more than half of secondary cases of serologically proven GAS pharyngitis were in 5–12 year old children. Risk of secondary GAS infection was 1.8 times greater than that of primary infection in the community. Adults are at lesser risk of developing rheumatic fever but given their household contact status, they may spread GAS.
2. The Writing Group recommends that for workers who are at increased risk of spreading GAS (healthcare workers, food handlers, teachers and childcare workers) isolation should be considered for 24 hours after starting antibiotics. Legislation allows Medical Officers of Health to enforce 7 days isolation for pupils, teachers and food handlers.
3. >70% of sore throats will be viral and do not need antibiotic treatment.
4. Start empiric antibiotics if results of throat swab are likely to be delayed.

References


## Antibiotics for Routine Group A Streptococcal (GAS) Pharyngitis

Standard treatment for a patient’s first or second case of confirmed group A streptococcal (GAS) pharyngitis.

### Antibiotic Table

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Route</th>
<th>Dose</th>
<th>Duration</th>
<th>IDSA GRADE 2012(^*,a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penicillin V†</td>
<td>PO</td>
<td>Children &lt;20kg: 250mg two or three times daily&lt;br&gt;Adolescents &amp; Adults ≥20kg: 500mg two or three times daily</td>
<td>10 days</td>
<td>Strong, high</td>
</tr>
<tr>
<td>Amoxicillin†</td>
<td>PO</td>
<td>Once daily: 50mg/kg dose once daily (Max daily dose 1000mg)&lt;br&gt;OR:&lt;br&gt;Weight &lt;30kg: 750mg once daily&lt;br&gt;Weight ≥30kg: 1000mg once daily&lt;br&gt;Twice daily: 25mg/kg dose twice daily (Max daily dose 1000mg)</td>
<td>10 days</td>
<td>Strong, high</td>
</tr>
<tr>
<td>Benzathine penicillin‡</td>
<td>IM</td>
<td>Children &lt;30kg: 450mg (600,000 U)&lt;br&gt;Adults &amp; Children ≥30kg: 900mg (1,200,000 U)</td>
<td>Single dose</td>
<td>Strong, high</td>
</tr>
</tbody>
</table>

If concern about allergic (IgE mediated\(^b\) or anaphylactic) response to beta lactams, use:

<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>Route</th>
<th>Dose</th>
<th>Duration</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roxithromycin II Pending Pharmac decision</td>
<td>PO</td>
<td>Children: 2.5mg/kg dose twice daily&lt;br&gt;Adults: 300mg once daily&lt;br&gt;OR: 150mg twice daily</td>
<td>10 days</td>
<td>Unavailable in the USA</td>
</tr>
<tr>
<td>Erythromycin ethyl succinate(^{II, 1})</td>
<td>PO</td>
<td>Children &amp; Adults: 40mg/kg/day in 2–3 divided doses (Max adult daily dose 1000mg)</td>
<td>10 days</td>
<td>**</td>
</tr>
</tbody>
</table>

For people on benzathine penicillin IM prophylaxis who are GAS positive:

- Treat with a 10 day course of oral penicillin or amoxicillin.
- Check adherence to prophylaxis programme. Serum penicillin levels will be falling by week three and four post IM long acting benzathine penicillin injection.\(^h\)

### Footnotes

* The Infectious Diseases Society of America (IDSA) used the GRADE (Grading of Recommendations Assessment, Development and Evaluation) system (see Guideline Update 2014 for description)\(^a\)
  - Amoxicillin can be taken with food whereas oral penicillin V is best absorbed on an empty stomach. Both are equally effective in eradicating GAS.\(^b,c\) Lower frequency of antibiotic dosing has been shown to improve adherence.\(^d,e\) Amoxicillin is relatively palatable.\(^f\)
  - Benzathine penicillin can be given with lignocaine to reduce injection site pain (see Guideline Update 2014). It may be marginally more effective than oral penicillin V or amoxicillin in eradicating GAS pharyngitis.\(^g\)
  - IgE-mediated reactions include ANY bronchospasm, angioedema, hypotension, urticarial or pruritic rash.
  - Always check for drug interactions before prescribing. In particular, care should be taken when prescribing macrolides to patients taking warfarin and carbamazepine.
  - The erythromycin currently funded by Pharmac is erythromycin ethyl succinate. There are other erythromycins available with different pharmacokinetic profiles.

** Erythromycin is not recommended in 2012 The Infectious Diseases Society of America (IDSA) Guideline.\(^h\)
  - In 2002 the IDSA recommended erythromycin based on a different grading system for clinical guideline recommendations (see Guideline Update 2014)

### References

d. Llor C et al. The higher the number of daily doses of antibiotic treatment in lower respiratory tract infection the worse the compliance. J Antimicrob Chemother. 2009; 63: 396-399.
h. Kaplan EL et al. Pharmacokinetics of benzathine penicillin G: Serum levels during the 28 days after intramuscular injection of 1,200,000 units. J Pediatr. 1989; 115: 146-150.

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Source: Modified from Table Two in the IDSA Guideline 2012\(^*\). © by permission of Oxford University Press, 2014.