



**Bacterial infection caused by Group A streptococcal (GAS) with a characteristic diffuse, erythematous, "sandpaper-like" rash**

## PATHOPHYSIOLOGY

- Group A beta-hemolytic streptococcus releases bacterial exotoxins, also known as erythrogenic toxins
- Leads to immune activation
  - causes erythematous exanthem and enanthem
- Typically follows tonsillitis or pharyngitis but can occur with other sources of GAS infection such as burns and wounds.

## DIAGNOSIS

Diagnosis is mainly **clinical**

- Confirm presence of GAS with rapid GAS testing +/- throat cultures
- May consider ASOT to confirm recent GAS infection



<https://dermnetnz.org/topics/scarlet-fever>

## PRESENTATION

### HISTORY

- Typically, school-aged children & adolescents (5-15 yo)
- Prodrome often includes sore throat, malaise, fevers/chills,
- 12-48 hours after fever usually marks the onset of a characteristic rash



<https://www.nhs.uk/conditions/scarlet-fever/>

### PHYSICAL EXAM

#### Skin

- Blanchable erythema beginning on the neck, trunk, groin, axillae with subsequent diffuse involvement including the extremities
- Overlying small papules (sandpaper-like texture)
- Pastia's lines (petechial streaks caused by papules at pressure points in skin folds)
- Flushed cheeks with perioral pallor
- Desquamation in 7-10 days as rash resolves

#### Oropharyngeal/HEENT

- Tender cervical adenopathy
- Strawberry tongue (initial white coating, bright red papillae, edematous)
- Tonsillar erythema and exudate
- Palatal petechiae

## DIFFERENTIAL DIAGNOSIS

- Other bacterial infections such as impetigo, erysipelas, and staphylococcal scalded skin syndrome (SSSS), toxic shock syndrome
- Kawasaki disease
- Viral exanthem (such as measles, chickenpox, hand foot mouth disease) all have which have specific clinical findings unique from scarlet fever
- Drug eruption

### Potential complications of Group A Streptococcus infection include:

- **Suppurative:** peritonsillar abscess, otitis media, pneumonia & meningitis
- **Non-suppurative:** acute rheumatic fever, post-streptococcal reactive arthritis, acute post-streptococcal glomerulonephritis (PSGN)



## MANAGEMENT

Antibiotics are the mainstay of treatment to help prevent suppurative complications and acute rheumatic fever

- **1<sup>st</sup> line:** penicillin or amoxicillin
- **Penicillin allergy:** 1<sup>st</sup> gen. cephalosporin or macrolide (ex: azithromycin)
- Duration of therapy: 10-14 days, 5 days for azithromycin
- Expect a response within 24-48 hours of starting antibiotics

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