

# Scarlet fever

**Scarlet fever**, *scarlatina*, is a infectious exanthema disease caused by beta-hemolytic group A streptococcus - *Streptococcus pyogenes*, which most often affects preschool and school children age. It is a streptococcal sore throat with a sore throat rash.

Burn occurs in a child susceptible to a given streptococcal serotype and its pyrogenic exotoxin. <sup>[1]</sup> The resulting exanthema is the result of an interaction between exotoxin. and antibody me at the capillary level.

## Originator

*Streptococcus pyogenes* – group A beta-hemolytic streptococcusgroup A beta-hemolytic streptococcus;



- according to the structure of the M protein, it has about 80 serotypes;
- consists of 3 types of **pyrogenic exotoxin** (A, B, C) - formerly referred to as *burn*, ie *erythrogenic toxin* (functionally superantigen).

## Epidemiology

- **Source:** patient or exotoxin-producing streptococcal carrier;
- **transmission:** droplets;
- **entrance road:** nosohltan, but also broken skin ("morning sleep");
- **incidence in the Czech Republic** (2000–2009): 3000–4500/year, ie. 28-43 patients per 100 000 population and year.;<sup>[2]</sup>
- most often aged 3-10 years;
- **incubation period:** 2-5 days.

## Clinical picture

- **Streptococcal angina with a spinal rash;**
- fever, vomiting, abdominal pain;<sup>[3]</sup>
- rash is mainly in the lower abdomen, groin, inner thighs, armpits and elbows;
- the skin is rough to the touch ("goosebumps" symptom);
- in the face is **diffuse erythema with circumoral fading** ("Filat's symptom");
- **raspberry tongue, on the palate petechiae**, edematous uvula;<sup>[3]</sup>
- small papules in the area of the nail beds and on the arches ("Šrámek's flag");<sup>[4]</sup>
- mild **lymphadenopathy** of the anterior cervical nodes;<sup>[3]</sup>
- currently **the course is light:**
  - angina is bluetongue, low fever;
  - rash few, lasts a short time;
  - Complications are rare.



Raspberry tongue

## Diagnostics

- **Cultivation** almond swab;
- blood count: leukocytosis, left shift, mild eosinophilia;
- serological evidence of antistreptococcal antibody (ASLO) rise in convalescent serum (*antistreptolysin* and *antideoxyribonuclease*).

## Differential diagnostics

- They can cause scarlatiform rash:
  - staphylococci;
  - *Arcanobacterium haemolyticum*;
  - *Corynebakterium ulcerans*;
  - *Mycoplasma pneumoniae*;
  - enteroviruses;
  - adenoviruses;
  - allergies.

## Therapy

The drug of choice is **penicillin** for at least 10 days, for allergies macrolides, cephalosporins and erythromycin. However, erythromycin resistance is becoming more common.<ref name="Goering2">

- isolation of the patient (in the infection department or at home).

## Complication

- peritonsillar abscess
- retropharyngeal abscess
- acute glomerulonephritis
- rheumatic fever <sup>[3]</sup>

## Prevention

- if present, tonsils are swabbed at contacts → in case of a positive finding of streptococcus A treatment penicillin
- **subject to report**

## Links

### related articles

- **Rod Streptococcus:** Streptococcus pyogenes • Streptococcus agalactiae • Streptococcus pneumoniae • Streptococcus mutans • Oral streptococci
- **Streptococcal infections:** Group A streptococcal infection • Scarlet fever • Sleep angina • Erysipel • Impetigo • Infections caused by virulent streptococci • Complications and treatment of streptococcal infections • Rheumatic fever

### External links

- DermNet Scarlet fever (<https://www.dermnetnz.org/bacterial/scarlet-fever.html>,)
- Pediatrie pro praxi: Virové exantémy dětského věku (<http://www.pediatriepropraxi.cz/pdfs/ped/2008/06/03.pdf>)
- Pediatrie pro praxi: Infekční exantémová onemocnění v dětském věku (<http://www.pediatriepropraxi.cz/pdfs/ped/2009/03/09.pdf>)

### Reference

- <http://www.szu.cz/tema/prevence/spala-manual-iv>
- STATE HEALTH INSTITUTE „, et al. Selected infectious diseases in the Czech Republic in the years 2000-2009 [online]. © 2010. [feeling. 2010-08-15]. < <http://www.szu.cz/publikace/data/vybrane-infekcni-nemoci-v-cr-v-letech-1998-2007-absolutne> >.
- TASKER, Robert C., Robert J. MCCLURE and Carlo L. ACERINI. Oxford Handbook by Pediatrics. 1st edition. New York: Oxford University Press, 2008. pp. 685. ISBN 978-0-19-856573-4 .
- ROTTENBERG, Jan. Differential diagnosis, therapy and complications of acute tonsillitis [online] . In solen.cz. Spring and summer in the surgery and pharmacy . 1st edition. Olomouc: Solen, 2010. 138 pp. 48-57. Also available from <[www.solen.cz](http://www.solen.cz)>. ISBN 978-80-87327-32-6
- GOERING, Richard V and Hazel M DOCKRELL. Mims' medical microbiology. 5th edition. Prague: Triton, 2016. 568 pp. 351. ISBN 978-80-7387-928-0 .

1. <http://www.szu.cz/tema/prevence/spala-manual-iv>
- 2.
- 3.
- 4.