



Group A streptococcus Frequently Asked Questions

1. What is group A streptococcus?

Group A streptococcus (also called GAS or group A strep) are bacteria commonly found in humans and the environment. Many individuals carry GAS in their throat or on their skin without being aware of it and this is called asymptomatic (without symptoms) carriage. GAS can cause a variety of diseases, from mild infections to serious, potentially life-threatening diseases. Occasionally GAS has been referred to as a “flesh-eating bacteria”.

2. What diseases are caused by GAS?

GAS can cause infections affecting the skin and throat such as:

- acute pharyngitis (sore throat/Strep throat)
- scarlet fever (may occur in individuals with strep throat and is by a bright red rash covering the body)
- impetigo (superficial crusted sores on the skin that may have pus)
- wound infections (following injury or surgery)
- erysipelas (infection of the upper layers of the skin)
- cellulitis (infection in the deeper layers of the skin)

GAS can cause more serious life-threatening infections such as:

- toxic shock syndrome
- necrotising fasciitis (giving it the name of “flesh-eating bacteria”)

GAS infections that do not receive proper treatment can be followed by non-infectious complications such as:

- acute rheumatic fever with/without rheumatic heart disease
- post-streptococcal glomerular nephritis (which is damage to the kidney)

3. Who can get GAS disease?

Infections with GAS occur everywhere in South Africa. Individuals of all ages can get GAS disease. GAS pharyngitis is most common in children 5-15 years of age. GAS skin infections can occur at any age, but are more common in young children and the elderly.

People living in crowded places are at a higher risk of developing GAS infections, these include children in day-care centres, persons living in prisons, university students in dormitories, homeless shelters or homes for the elderly. Complications of GAS such as rheumatic heart disease may only develop many years after the acute infection.

4. How is GAS spread?

GAS bacteria are very contagious. GAS is spread from person-to-person through respiratory droplets and/or direct contact with skin sores caused by GAS. Respiratory droplets are often spread through coughing and/or sneezing. Washing your hands very often and covering your mouth/nose when coughing or sneezing (especially when you are sick) can help prevent the spread of GAS.

5. Does GAS disease affect animals?

GAS causes disease almost exclusively in humans. Very few cases in animals have been reported.

6. What are the signs and symptoms of GAS disease?

Sign and symptoms depend on the disease the individual has.

- Acute pharyngitis/ Strep throat
 - Fever
 - Sore throat
 - Headache
 - Nausea
 - Abdominal pain
 - Discomfort and extreme tiredness
- Scarlet fever
 - Bright red rash covering the body (image below)
 - Covering of the tongue by a white coat with red bumps, giving it a white strawberry-like appearance
- Superficial skin infections (impetigo)
 - Reddish sores, normally around the nose, mouth, hands and feet, which eventually burst and form a honey-coloured crust
- Erysipelas
 - Itchy skin
 - Sores on cheeks and nose
 - Fever
 - Extreme tiredness
- Cellulitis
 - Fever
 - Extreme tiredness
 - Pain or tenderness in the affected area
 - Affected area on the skin appears swollen, tight and shiny
- Necrotising fasciitis
 - Broad and rapidly spreading death of tissue of the skin and underlying structures.
- Streptococcus toxic shock syndrome
 - Fever
 - Low blood pressure
 - Vomiting/diarrhoea

- Confusion
- Muscle aches
- Seizures
- Acute rheumatic fever (occurs weeks to months following Strep throat)
 - Multiple joints affected by arthritis
 - Jerky uncontrollable movements
 - Patchy red rash and bumps and lumps on the skin
 - Inflammation of the heart valves and tissue
- Acute post streptococcal glomerulonephritis
 - Discomfort and extreme tiredness
 - Headache
 - Swelling
 - Hypertension,
 - Blood and elevated levels of protein in the urine.

7. How is GAS disease diagnosed?

Depending on the disease the individual has, a health practitioner may collect:

- a respiratory specimen (swab taken from the nose or throat, sputum sample, or fluid suctioned from the trachea in patients who are ventilated),
- a pus/wound swabs for skin or wound infections
- blood, cerebrospinal fluid (CSF) or pleural fluid for more severe invasive infections.

Laboratory technicians may attempt to grow (culture) the organism from the specimen collected, or it can be detected by molecular techniques such as polymerase chain reaction (PCR).

Testing for antibodies to GAS (serology testing) may be used when a prior infection with GAS is suspected in a patient that has symptoms suggestive of acute rheumatic fever or acute post streptococcal glomerulonephritis.

The diagnosis of acute rheumatic fever is a clinical diagnosis based on specific criteria, referred to as the Jones Criteria. Acute rheumatic fever is a category 1 notifiable medical condition (NMC). This means that within 24 hours of diagnosis, a written or electronic notification of the episode needs to be submitted to the Department of Health (DoH) by the health care provider.

For more information on acute rheumatic fever and how to notify cases:

<https://www.nicd.ac.za/diseases-a-z-index/acute-rheumatic-fever/>

8. How is GAS disease treated?

Acute GAS disease is treated with antibiotics, with penicillin and penicillin-based antibiotics recommended as the first option. Patients who are allergic to penicillin antibiotics can be treated with other types of effective antibiotics. For more serious severe GAS disease, a combination of clindamycin and penicillin is recommended for treatment.

9. How is GAS disease prevented?

Currently there is no vaccine available to prevent GAS disease. All persons with Strep throat (GAS pharyngitis) should be given antibiotics to prevent acute rheumatic fever. In those with a history of acute rheumatic fever, it is recommended that long-term penicillin prophylaxis be administered as an attempt to prevent further episodes.

10. Where can I find out more information?

NICD website at www.nicd.ac.za under the 'Diseases A-Z' tab.

For healthcare workers:

- Medical/clinical related queries: Contact the NICD hotline (080 021 2552, **for use by healthcare professionals only**) after hours and in emergency situations
- Laboratory related queries: Centre for Respiratory Diseases and Meningitis: Linda de Gouveia: +27 11 555 0327, lindad@nicd.ac.za; Mignon du Plessis: +27 11 555 0387, mignond@nicd.ac.za.