

# Invasive group A streptococcal disease (iGAS)

Reviewed by SickKids Staff | Last updated: July 5th 2023

Invasive group A streptococcal disease (iGAS) is a serious infection that occurs when bacteria called group A beta-hemolytic streptococci (GAS) spread to different organs in the body.

## Key points

- A GAS infection causes common childhood illnesses that can be treated with antibiotics.
- In some cases, the GAS bacteria invade and infect other organs, such as the bloodstream, muscles, bones, joints, lungs and the brain. Children with invasive group A streptococcal disease can experience severe skin and muscle infection and damage (necrotizing fasciitis).
- The bacteria produce toxins that can have life-threatening effects and require intravenous (IV) antibiotics to treat the infection and other medications to minimize damage to vital organs.
- It is not known why some healthy children with no risk factors get more severe GAS infections than others.

## Who is at risk of getting an iGAS infection?

Group A streptococcal (GAS) infections most commonly cause [strep throat](#) in school-age children. It can also cause [scarlet fever](#) or [skin infections](#). These are easily treated with antibiotics at home. In rare cases, some strains of the same bacteria can cause severe disease by producing toxins and invading other organs. Invasive GAS (iGAS) disease can occur in people who are at higher risk. This includes infants, children and senior adults, anyone with a weak immune system, and anyone with a recent influenza or varicella (chicken pox) infection.



However, there has been an unexplained increase in the number of healthy children with no previous risk factors who have been diagnosed with iGAS infections.

## My child was diagnosed with strep throat. Will they get iGAS?

Children with strep throat do not appear to be at higher risk of developing iGAS. While the same bacteria (GAS) cause strep throat and iGAS, there are many different strains, or sub-types, of group A *Streptococcus*. Only certain strains cause invasive disease, and they may be different from the ones that cause common strep infections.

## How do I know if my child has iGAS?

Children with iGAS have a fever and are ill. Parents or caregivers should seek medical care if their child:

- has a change in behaviour: Behaviour changes include being less alert, not responding as usual, or having unusual movements or unusual speech.
- has a change in breathing: Breathing changes include fast breathing, difficulty speaking and breathlessness.
- is dehydrated: If your child is not drinking enough, has frequent vomiting or diarrhea, or is urinating less than every 8 hours they may be dehydrated.
- has a change in skin tone or colour: Children with cold, clammy skin, blue lips, gray skin colour or purple blotches should be seen by a health-care provider immediately.

## How can I protect my child?

If your child has been exposed to someone with a strep infection and develops similar symptoms (skin infection, sore throat, rash or fever), take them to their health-care provider to get a throat swab. Inform their health-care provider they have been exposed to someone with strep. If diagnosed with a strep infection, make sure your child completes the prescribed course of antibiotic.

Ensure that your child's [vaccinations](#) are up to date against all preventable infections, including varicella (chicken pox) and influenza.

## My child has been diagnosed with iGAS. Is the rest of my family safe?

Your local public health unit will investigate any child diagnosed with iGAS and provide counselling regarding the risk of exposure to household members. In some cases, the public health practitioner will recommend prophylaxis (preventative) oral antibiotics for people who had close contact with the ill child to reduce the risk of infection from exposure to the bacteria.

Toronto Public Health. (August 2010). Invasive Group A Streptococcal Disease Fact Sheet. Retrieved from <https://www.toronto.ca/community-people/health-wellness-care/diseases-medications-vaccines/invasive-group-a-streptococcal-disease-fact-sheet/>

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