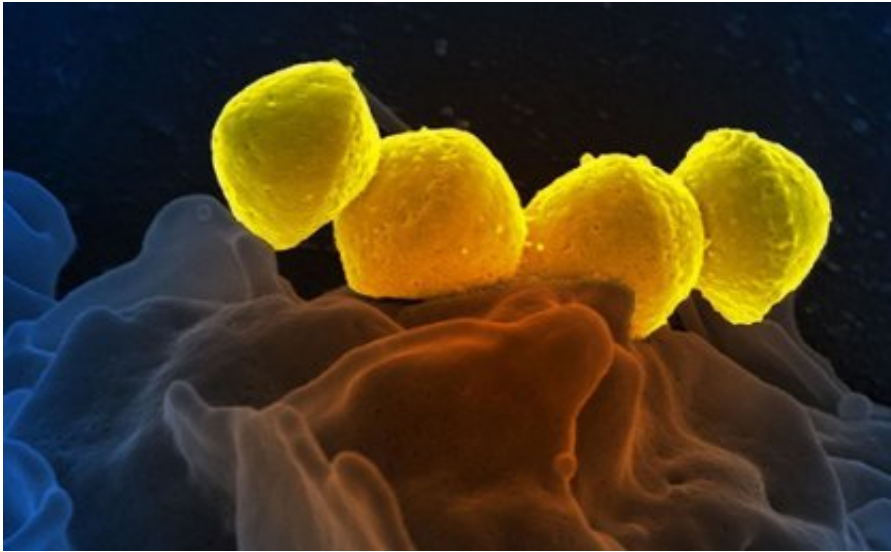


# Scarlet fever making a comeback

November 4 2015

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Scanning electron micrograph of Group A Streptococcus bacteria on primary human neutrophil. Credit: NIAID

An international study led by University of Queensland (UQ) researchers has tracked the re-emergence of a childhood disease which had largely disappeared over the past 100 years.

Researchers at UQ's Australian Infectious Diseases Centre have used genome sequencing techniques to investigate a rise in the incidence of scarlet fever-causing bacteria and an increasing resistance to antibiotics.

UQ School of Chemistry and Molecular Biosciences researcher Professor Mark Walker said the [disease](#) had re-emerged in parts of Asia

and the United Kingdom.

"We have not yet had an outbreak in Australia, but over the past five years there have been more than 5000 cases in Hong Kong (a 10-fold increase) and more than 100,000 cases in China.

"And an outbreak in the UK has resulted in 12,000 cases since last year," he said.

Scarlet fever, which mainly affects children under 10, is spread by Group A Streptococcus (strep throat bacteria) known as GAS.

Symptoms include a red rash on the skin, sore throat, fever, headache and nausea.

Serious illness can be treated with antibiotics.

UQ School of Chemistry and Molecular Biosciences researcher Dr Nouri Ben Zakour said the research results were "deeply concerning".

"We now have a situation which may change the nature of the disease and make it resistant to broad-spectrum treatments normally prescribed for [respiratory tract infections](#), such as in scarlet fever.

She said penicillin continued to provide an excellent treatment for patients who were not allergic to it.

Dr Ben Zakour said the rise in scarlet fever could pre-empt a future rise in [rheumatic heart disease](#), which causes permanent heart damage.

"With this heightened awareness, we can now swiftly identify scarlet fever-associated bacteria and antibiotic resistance elements, and track the spread of scarlet fever-causing GAS strains," she said.

Dr Ben Zakour said the evolutionary forces driving the outbreaks were unknown, but bacterial causes, the immune status of people contracting [scarlet fever](#), and environmental factors such as temperature and rainfall could all play a significant role.

"Only a continued study of the patterns, causes and effects of health and diseases will determine the full impact these recent gene changes will have on the global GAS disease burden," she said.

The research is published in *Scientific Reports*.

**More information:** Nouri L. Ben Zakour et al. Transfer of scarlet fever-associated elements into the group A Streptococcus M1T1 clone, *Scientific Reports* (2015). [DOI: 10.1038/srep15877](https://doi.org/10.1038/srep15877)

Provided by University of Queensland

Citation: Scarlet fever making a comeback (2015, November 4) retrieved 20 April 2024 from <https://medicalxpress.com/news/2015-11-scarlet-fever-comeback.html>

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