

# Risk factors for carrying pneumonia-causing bacteria revealed

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New research has uncovered the risk factors for Fijians carrying a pneumonia-causing bacteria. Credit: Don Mammoser

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The collaborative study, led by the Murdoch Children's Research Institute (MCRI) and the Fiji Ministry of Health and Medical Services, will help determine further public health interventions to prevent people carrying and transmitting the bacteria.

MCRI's Eleanor Neal said *Streptococcus pneumoniae* was a leading cause of childhood illness and death around the world.

An estimated 9.18 million cases of illness and 318,000 deaths in children under five years in 2016 were caused by [pneumococcal disease](#), an infection caused by *Streptococcus pneumoniae*.

Ms Neal said because carrying pneumococci could progress to a serious infection, reducing community transmission was crucial.

"Mostly, people carry the bacteria around harmlessly at the back of the nose without any symptoms. But it has the real potential to cause disease by invading the bloodstream, resulting in severe infections such as meningitis and bloodstream infection (sepsis), and can cause pneumonia," Ms Neal said.

"Control of pneumococcal carriage is considered a key aspect of controlling disease, as it is the means of transmission and a prerequisite of disease."

The study of 8,109 participants analysed data from four annual (2012-2015) Fijian cross-sectional surveys, before and after the introduction of the ten-valent pneumococcal conjugate vaccine (PCV10) in October 2012.

Ms Neal said before this study it was largely unknown what the impact of PCV10 was on the [risk factors](#) for pneumococcal carriage in low and [middle income countries](#) in the Asia-Pacific region.

Senior researcher on the study, MCRI's Professor Fiona Russell, said the study found PCV10 helped to reduce overall and PCV10 pneumococcal carriage in Fiji.

But she said iTaukei ethnicity, which made up 56.8 per cent of the Fijian population, young age, urban residence, living with two or more children under five years, low family income, and upper respiratory tract [infection](#) symptoms were still associated with pneumococcal carriage.

The study found toddlers and children aged 2-6 years, and symptoms of upper respiratory tract infections were also positively linked to a higher burden of pneumococcal [bacteria](#).

**More information:** Eleanor F. G. Neal et al, Factors associated with pneumococcal carriage and density in children and adults in Fiji, using four cross-sectional surveys, *PLOS ONE* (2020). [DOI: 10.1371/journal.pone.0231041](#)

Provided by Murdoch Children's Research Institute

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