

# Respiratory infections in children often treated unnecessarily with antibiotics

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Many childhood virus infections are mistaken for bacterial infection and risk being unnecessarily treated with antibiotics. A new thesis from Karolinska Institutet on respiratory infections in children shows that viruses are a more common cause of serious respiratory infection than previously believed. It is hoped that the research will help to reduce antibiotic use and contribute to new more effective drugs and diagnostic tests.

By comparing the viral flora of healthy children at child health centres and children in care for serious respiratory infections, doctoral student Samuel Rhedin has found that viruses are a more common cause of [respiratory infection](#) than previously thought. He also charted the incidence of different types of virus, which can facilitate the development of more effective treatments for viral infections.

"Our results suggest that we need better treatments for viruses," says Samuel Rhedin, physician and doctoral student at Karolinska Institutet's Department of Medicine in Solna. "They can help give the pharmaceutical industry the proper focus for the development of new antiviral drugs. Knowledge of which [virus](#) the child has can also give the parents better information on the condition's prognosis and transmissibility."

## Virus common cause of pneumonia

Owing to the difficulty of differentiating between viral and bacterial infections, there is a risk that doctors will err on the side of caution and given the children antibiotics, which merely exacerbates the problem of antibiotic resistance.

A total of around 1,300 children were studied from 23 child health centres, Sachs' Children's Hospital and Astrid Lindgren's Children's Hospital. The studies showed that viruses are the more common probable cause of respiratory infections in children, even in those with pneumonia, which has traditionally been considered a [bacterial infection](#).

The researchers used the routine diagnostic method PCR (polymerase chain reaction), which has revolutionised the ability to discover and isolate different viruses. The problem with PCR is that it can take days to get a result and that certain viruses are also found in healthy children. The solution to that problem was to take samples from healthy children at child health centres as controls.

## Evaluating a new blood test

"I hope that our results will help to reduce the use of antibiotics and provide incentives to develop new diagnostic tests that are better at distinguishing between viruses and bacteria," says Dr Rhedin.

He and his research group will shortly be starting an evaluation of a new blood test that can diagnose [viruses](#) much more quickly.

Samuel Rhedin defended his thesis on "Severe viral [respiratory tract infections](#) in [children](#)" on 12 May 2017. The individual studies have, however, already been frequently cited in the international scientific press.

**More information:** Severe viral respiratory tract infections in

children. [openarchive.ki.se/xmlui/handle/10616/45606](https://openarchive.ki.se/xmlui/handle/10616/45606)

Provided by Karolinska Institutet

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