

# Pneumococcal vaccination for children (2023)

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## Executive summary

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Health Council of the Netherlands

A pneumococcal infection can cause serious illness in young children. There are over 90 different types of pneumococcus, referred to as serotypes. Since 2011, children have been vaccinated against pneumococcal disease with the PCV10 vaccine, which protects against 10 of these serotypes. Due to years of vaccination, the serotypes covered by PCV10 have gradually disappeared from society, which means the vaccine has been effective. Other types have taken their place and now cause most cases of illness among children. Until there is a universal vaccine that protects against all serotypes, periodically adjusting the vaccination strategy will remain an inherent part of pneumococcal vaccination. Some of the types that currently cause the majority of cases of illness among children are covered by the PCV13 vaccine and the new PCV15 vaccine, but not by PCV10. The State Secretary for Health, Welfare and Sport asked the Health Council to issue advice on the desirability of using these vaccines in the National Immunisation Programme.

The Health Council's Committee on Vaccinations has considered this question.

### **Illness caused by pneumococcal infection**

Young children in particular carry pneumococci. The bacteria can spread through the air and through direct contact. A pneumococcal infection can cause serious invasive illness such as septicaemia, meningitis or invasive pneumonia (in which the bacteria enter the bloodstream). Following a decline in 2020, the number of cases of this so-called invasive pneumococcal disease (IDP) has been back on the rise among children under the age of five. The incidence was 8.8 cases per 100,000 children in 2021 and 2022, representing the highest level of the past ten years. Most cases of IPD (98%) were caused by types of pneumococcus not covered by PCV10.

### **Potential protection afforded by available vaccines**

In addition to PCV10, which is now being offered to children, PCV13 and PCV15 are also

available for use in children. PCV20, which is already available for adults, is not (yet) available for children.

Because vaccination with PCV10 has been effective, the types of pneumococcus covered by that vaccine have virtually disappeared. Based on the data regarding which serotypes have caused IPD over the past four years, it can be assumed that PCV10 could still provide protection against 2.5% of IPD cases. PCV13 could provide protection against 41% of IPD cases (n=47 cases in four years) and PCV15 could protect against 47% (n=110 cases in four years). At the moment, PCV13 and PCV15 therefore offer more health benefits than PCV10.

### **Efficacy, safety, acceptability and cost effectiveness**

PCV13 and PCV15 have similar efficacy and both vaccines require three doses (as does the current RVP vaccine PCV10). Side effects are generally mild and short-lived. The benefit-risk ratio is comparable, and the Committee

considers both vaccination with PCV13 and vaccination with PCV15 to be acceptable.

There is no recent data on the cost effectiveness of either vaccine, but the Committee expects that there is little difference between them.

The price of both vaccines is the same.

### **Advice**

The Committee recommends offering children pneumococcal vaccination with PCV13 or PCV15. These vaccines currently provide the most protection against IPD in children. PCV15 may yield slightly more health benefits, but this difference is not large. The Committee is therefore unable to express a preference for either of the vaccines.

The Committee notes that PCV20 is likely to yield even greater health benefits in children than PCV13 or PCV15, but this vaccine is not yet available for them. Once the vaccine has been registered, the Health Council will once again issue advice on pneumococcal vaccination of children. Until then, the

recommendation is to offer PCV13 or PCV15 to children.

The Health Council of the Netherlands, established in 1902, is an independent scientific advisory body. Its remit is “to advise the government and Parliament on the current level of knowledge with respect to public health issues and health (services) research...” (Section 22, Health Act).

The Health Council receives most requests for advice from the Ministers of Health, Welfare and Sport, Infrastructure and Water Management, Social Affairs and Employment, and Agriculture, Nature and Food Quality. The Council can publish advisory reports on its own initiative. It usually does this in order to ask attention for developments or trends that are thought to be relevant to government policy.

Most Health Council reports are prepared by multidisciplinary committees of Dutch or, sometimes, foreign experts, appointed in a personal capacity.

The reports are available to the public.

This publication can be downloaded from [www.healthcouncil.nl](http://www.healthcouncil.nl).

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