

# Pneumococcal vaccination of the elderly (2023)

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## Executive summary

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Health Council of the Netherlands

Since 2020, vaccination against pneumococcal disease has been offered to elderly people between the ages of 60 and 80. The vaccination must be repeated every five years. Now that new vaccines have become available, the Health Council's Committee on Vaccinations has assessed whether and how these can be used for pneumococcal vaccination of elderly people.

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

The pneumococcus is a bacterium. Young children in particular carry this bacterium. The bacterium can spread through the air (via droplets) and through direct contact. An invasive pneumococcal infection can cause serious illness such as septicaemia, meningitis or invasive pneumonia (with bacteria in the bloodstream). Children, the elderly and medical risk groups are particularly susceptible to pneumococcal disease.

Vaccination against pneumococcal disease has been offered to medical risk groups and children for some time. Vaccination of children also

indirectly protects the elderly, as the serotypes against which children are vaccinated gradually disappear over time. However, other serotypes take their place, a phenomenon known as serotype replacement. Until there is a universal vaccine that protects against all serotypes, periodically adjusting the vaccination strategy will remain an inherent part of pneumococcal vaccination.

Since 2020, vaccination has also been offered to the elderly. Prior to 2020, there were between 1,500 and 2,000 cases of so-called invasive pneumococcal disease (IPD) annually among people aged 60 and over. This figure was lower in 2020 and 2021 (1,010 and 875, respectively), presumably as a result of coronavirus measures.

### **New vaccines**

There are various types of pneumococcal vaccines. For the elderly, a polysaccharide vaccine is now used that offers protection against 23 types of pneumococcus (PPV23). Vaccination with a polysaccharide vaccine offers

around five years of protection. After that time, a repeat dose is necessary.

Polysaccharide vaccines are not effective in young children. For children, a conjugate vaccine is used that protects against 10 types of pneumococcus (PCV10).

Conjugate vaccines are also suitable for adults and offer longer protection, possibly up to 15 years, meaning repeat doses are considered unnecessary for the time being. Another advantage of conjugate vaccines is that they are more effective than polysaccharide vaccines in preventing IPD and non-invasive pneumococcal pneumonia in people aged 60 and over. As with PPV23, the effectiveness of conjugate vaccines may decline with increasing age, but the effectiveness of conjugate vaccines remains higher than that of PPV23 even in older individuals.

The new vaccines are conjugate vaccines: one that protects against 15 types (PCV15) and one

that protects against 20 types (PCV20). PCV15 is also available for children, while PCV20 is not. Another conjugate vaccine is in development, which protects against 21 types (PCV21). This vaccine includes many serotypes that are not present in any other vaccine.

### **Possible vaccination strategies**

A single vaccination with PCV15 would give elderly people considerably less broad protection than the current vaccination with PPV23.

A single vaccination with PCV20 gives elderly people broader protection than PCV15, but not as broad as PPV23. By contrast, conjugate vaccines are more effective in protecting against IPD and non-invasive pneumococcal pneumonia than PPV23.

Once PCV21 is available for the elderly and PCV20 is available for children, the vaccination strategy may be adjusted again. The serotypes covered by PCV20 will eventually disappear as

children get this vaccine, and PCV21 covers serotypes that are not included in other vaccines and are likely to become more prevalent in the future.

### **Advice**

The Committee recommends a modified vaccination strategy in which people are offered a single pneumococcal vaccination with PCV20 at age 60. Vaccination with PCV20 will yield more health benefits in the elderly than vaccination with PPV23. The protection afforded by PCV20 is less broad (fewer serotypes), but slightly more effective against IPD and pneumococcal pneumonia. PCV20 also has a longer duration of protection than PPV23.

This means that PCV20 only needs to be given once for the time being, and not every five years as is the case with PPV23. Because there is uncertainty regarding the exact duration of protection, the Committee recommends continuing to monitor PCV20's effectiveness and offering a repeat dose if needed. A single vaccination with PCV20 is currently the most

cost-effective strategy with the most favourable benefit-risk ratio.

In addition, the Committee recommends offering PCV20 for everyone over the age of 60 who has already received a PPV23 vaccination.

Five years after their PPV23 vaccination, they should then be offered PCV20 (or possibly PCV21, in due course). The Committee further recommends launching a one-off catch-up campaign with PCV20 for people who were eligible for vaccination with PPV23 but did not get vaccinated, as well as for people who were not eligible for PPV23 vaccination (people who were 80 years of age or older in 2020, i.e. born before 1941), but who would like a pneumococcal vaccination.

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