

Vaccination against chickenpox

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Executive summary

Health Council of the Netherlands



Chickenpox (varicella) is an infectious disease caused by the varicella zoster virus (VZV). It is widespread among young children. After an infection, the virus remains latent in the body. If, at a later age, the virus reactivates, it can cause shingles (herpes zoster). The Health Council of the Netherlands issued a negative recommendation in 2007 about vaccination against chickenpox because the disease burden was too low. The Council's Vaccinations Committee is now issuing new advice, on request by the State Secretary for Health, Welfare and Sport, about vaccination against chickenpox in the European and Caribbean parts of the Netherlands (the latter comprising Bonaire, Sint Eustatius and Saba).

Disease burden varies between regions

The disease burden of chickenpox is low in the European part of the Netherlands, including in comparison with other infectious diseases that

are common among children such as rotavirus and pertussis. Almost all children contract chickenpox before the age of five and the infection progresses in a large majority of cases without complications. Infections later in life – which are often more severe – only occur rarely. Serological studies have shown that 95% of the population have antibodies against the virus (showing that they have been infected in the past). This percentage is lower in the Caribbean part of the Netherlands, where 78% have antibodies. The virus is not constantly in circulation on the islands, resulting in regular outbreaks. This includes adolescents and adults falling ill. The risk of complications and a more serious clinical course of the disease is greater for them.

Vaccination is effective and safe

Vaccination against chickenpox using two doses of the vaccine is highly effective: it prevents

more than nine out of ten cases of chickenpox. Vaccination with a single dose also prevents the majority of severe cases of chickenpox, although mild breakthrough infections are then more common. The effect of vaccination against chickenpox on the occurrence of shingles later in life is unclear. Vaccination is sufficiently safe and is well-tolerated. There is a contraindication for people with weakened immune systems, though, and for women who are pregnant or intending to become pregnant, because it is an attenuated live vaccine. The cost-effectiveness of vaccination against chickenpox is difficult to assess because of the uncertainty about its potential effect on shingles. If only the effects of vaccination on chickenpox are included, the cost-effectiveness ratio of vaccination is favourable.



Recommendation: vaccinate in the Caribbean Netherlands

The committee recommends adding vaccination against chickenpox to the National Immunization Programme in the Caribbean part of the Netherlands but not in the European part. This is because of the differences in the disease burden, which is low in the European Netherlands. It is also possible that a negative effect could occur due to vaccination: if it means that there will be less of the virus circulating and the level of vaccination coverage is less than the optimum, more infections later in life could be the result. The disease burden could then be greater than in the current situation with milder infections at younger ages. The committee therefore believes that intervening in the existing situation is undesirable.

In the Caribbean Netherlands, the burden of disease is however high enough to consider vaccination. Because vaccination is effective and sufficiently safe, the committee recommends including it in the National Immunization

Programme for Bonaire, Sint Eustatius and Saba. A combined vaccine can then be used against mumps, measles, rubella and chickenpox so that the total number of injections per child remains unchanged. The committee further recommends offering residents of those islands who have not yet had an infection a one-off opportunity to be given a chickenpox vaccine (protecting solely against chickenpox, i.e. monovalent).



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.

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