

Why do children need polio vaccine boosters?

October 24 2022, by Dr Sabine L. van Elsland



Credit: AI-generated image ([disclaimer](#))

Unfortunately, in recent months, vaccine-derived poliovirus has been detected in sewage in north and east London. Following this, the Joint Committee on Vaccination and Immunization (JCVI) are advising that children aged one to nine years old in London are offered a polio vaccine booster dose.

Dr. Sabine van Elsland spoke to [polio](#) experts Dr. Isobel Blake (IB) and

Prof Nicholas Grassly (NG) from Imperial College London to find out more.

Why is this booster campaign rolled out?

NG: "Testing of sewage confirms that vaccine-derived poliovirus is spreading in London. If it continues to spread, it will result in cases of paralysis in unvaccinated individuals. It is therefore of paramount importance that children are up to date with their polio vaccines. The vaccination campaign in London targeting children zero to nine years old will help achieve this, in addition to limiting the spread of the virus.

"The poliovirus circulating in London is genetically linked to that detected in sewage in Israel and in a paralytic case in New York. The international spread of poliovirus is considered a [public health emergency](#) by the World Health Organization. The national public health authorities in the U.K. are therefore taking [urgent action](#) to vaccinate Londoners against this virus and to enhance surveillance in other cities."

Is the vaccine used in the UK the same as the one that caused spread in London?

IB: "The majority of lower- and [middle-income countries](#) use the oral polio vaccine which induces a strong mucosal response and protects against infection and the success of restricting wild polio to a few countries is through use of this vaccine. The oral poliovirus vaccine is a live-attenuated vaccine. Very rarely it can lose its weakened mutations and become as transmissible and neurovirulent as wild polio and cause outbreaks."

NG: "The U.K. stopped using the oral polio vaccine in 2004 and now relies on an inactivated polio vaccine (IPV), an injectable vaccine that

contains a killed virus incapable of replication. With the oral polio vaccine, it's possible for the live-attenuated vaccine virus to be spread via someone's stool after they've been vaccinated, and very rarely this may result in the emergence and spread of a vaccine-derived poliovirus. With the injectable virus that we use in the U.K. it's not possible for the virus to spread in that way."

Why are all children invited even when their polio vaccination is up to date?

NG: "There are several reasons why all children aged between one and nine years old are being vaccinated. Firstly, and most importantly, it will protect children from paralysis if they are subsequently exposed to [polio virus](#) and are unvaccinated or lack immunity.

"Secondly, it will boost immunity and could help stop transmission even in children who are completely up to date with their vaccination schedule.

"Finally, as part of the maternal pertussis vaccination program introduced ten years ago, a dose of polio vaccine (dTaP/IPV) is given in pregnancy. This has saved babies' lives from pertussis (whooping cough) but vaccinated infants whose mothers received this vaccine during pregnancy may have insufficient protection against polio if they have not received their pre-school booster."

Is the booster vaccine different from the routine schedule?

NG: "The booster vaccine is the same as the vaccine given in the routine schedule, although different brands may be used."

How safe is the booster vaccine?

IB: "Very safe. Some children may experience short-lived tenderness at the vaccination site but there are no adverse events associated with the inactivated polio [vaccine](#)."

Provided by Imperial College London

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