

Vaccines have low risk of serious side effects, review study reports

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Credit: National Cancer Institute

Some childhood vaccines are linked to serious side effects, but they are quite rare and do not include autism, food allergies or cancer, said a review of scientific literature Tuesday.

A host of vaccines commonly given to children under age six were the focus of the [systematic review](#) of rigorously conducted studies,

published in the peer-reviewed US journal *Pediatrics*.

The report seeks to address a rising trend of [vaccine](#) hesitancy among parents in the United States and Europe, which has led to a resurgence of measles and whooping cough in some parts of the world.

"We found that serious adverse events that are linked to vaccines are really rare, and that when they do occur they are often not necessarily severe," said study co-author Courtney Gidengil, a pediatrician at Boston Children's Hospital and professor at Harvard Medical School.

"We think this adds to the body of evidence that the benefits really do seem to clearly outweigh the low risk of serious [side effects](#) from vaccines," she told AFP.

The study expands on a 2011 report by the Institute of Medicine that also pointed to some side effects linked to vaccines but found "few health problems are caused by or clearly associated with vaccines."

The *Pediatrics* report includes several vaccines that were not studied by the IOM, including those against hepatitis A, Haemophilus influenzae type b (Hib), polio, rotavirus and the [pneumococcal conjugate vaccine](#).

Side effects

Side effects of the measles, mumps and rubella (MMR) and [pneumococcal vaccines](#) included the potential for fever and seizures.

The MMR and hepatitis A vaccines were also linked to a side effect called purpura, when small blood vessels leak under the skin.

There was some evidence that immune-deficient children given the varicella vaccine against chicken pox could develop infections or have an

allergic reaction.

The rotavirus vaccines, RotaTeq and Rotarix, were associated with a risk of intussusception, a condition in which one part of the intestine slides into another part.

However, the risk of this condition was rare, amounting to between 1-5 in 100,000, the researchers said.

"Clinicians who immunize children regularly may have encountered these adverse events in their practices, particularly seizures associated with fever," said an accompanying editorial by Carrie Byington, vice chair for research in the pediatrics department at the University of Utah.

"Fortunately, the [adverse events](#) identified by the authors were rare and in most cases would be expected to resolve completely after the acute event."

No deaths

No fatalities were found in the research, which spanned from 2010 to 2013 and included a total of 67 studies, whittled down from more than 20,000 research papers.

Each study that made the final cut had a control or comparison group, and involved vaccines approved for the US market as of 2011.

The report found insufficient evidence to link the inactivated polio vaccine to food allergies, and showed no link between [childhood vaccines](#) and the onset of leukemia.

Furthermore, its review of research backed up the IOM conclusion that the "MMR vaccine is not associated with autism," the report said.

The systematic review excluded reports to the federal Vaccine Adverse Event Reporting System, which contains complaints filed by individuals or health care professionals if they suspect a vaccine may have caused a problem with a patient's health.

"We didn't use that data because there is no comparison group out there and there is no way to really assess the validity and reliability," said co-author Margaret Maglione, a policy analyst at RAND Corporation.

The paper described vaccines as "one of the greatest public health achievements of the 20th century for their role in eradicating smallpox and controlling polio, measles, rubella, and other infectious diseases in the United States."

Gidengil said that the latest study may not be enough to change the minds of parents who are skeptical of vaccines.

"Without this work there would be a lack of transparency around this issue, so by doing this important research in a thorough and systematic way, we acknowledge that there are rare but actual side effects," she said.

"And we can document those clearly for people, which we hope will just increase some trust in the vaccine process and the trust between parents and their health care provider."

More information: Review Article: Safety of Vaccines Used for Routine Immunization of US Children: A Systematic Review, Published online July 1, 2014. pediatrics.aappublications.org/...s.2014-1079.abstract

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