



## Seasonal Influenza (Flu)

### Seasonal Influenza (Flu)

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## Febrile Seizures Following Childhood Vaccinations, Including Influenza and Pneumococcal Vaccinations

### Questions & Answers

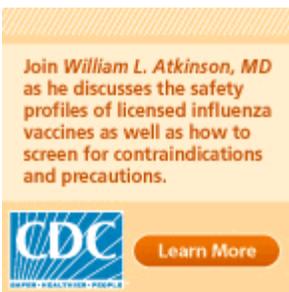
#### What is a febrile seizure?

Febrile means "having a fever." A seizure is a convulsion or fit of uncontrolled body movements. A "febrile seizure" refers to a seizure/convulsion in a child associated with a fever. In children younger than 5 years old, having a fever for any reason can bring on a febrile seizure. During a febrile seizure, a child often has spasms or jerking movements—large or small—and may lose consciousness. Febrile seizures usually last only a minute or two, and do not cause any permanent neurological damage. They are most common with body temperatures reaching 102°F (38.9°C) or higher, but also can occur at lower body temperatures or when a fever is going down.

#### What causes febrile seizures in children?

Febrile seizures can happen with any condition that causes a fever, including common childhood illnesses like a [cold](#), the [flu](#), an [ear infection](#), or [roseola](#). Since vaccinations may be associated with fever, febrile seizures sometimes happen after vaccination, although rarely.

#### How serious is a febrile



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## seizure?

Febrile seizures can be frightening for a child's caregivers and parents, but nearly all children who have a febrile seizure recover quickly and are healthy afterwards. Most children (greater than 90%) who have a febrile seizure will not go on to develop epilepsy. Genetic factors (i.e., family history) and other factors such as cerebral palsy, history of delayed development, or other neurological abnormalities increase a child's chance for developing epilepsy after a febrile seizure.

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## Who is most at risk for febrile seizures?

Febrile seizures are not uncommon. About 2-5% of young children will have at least one febrile seizure, generally associated with an illness, and 1 in 3 children who have one febrile seizure will have at least one more febrile seizure during childhood. Most febrile seizures occur in children between the ages of 6 months and 5 years. The peak age is 14–18 months, which overlaps with the ages when first doses of the MMRV, MMR, and varicella vaccines are recommended. Children in this age group are recommended to receive influenza vaccination annually and some may also be receiving the 4th dose of PCV13 vaccine. A child who has already had a febrile seizure is more likely to have another one. Also if a member of a child's immediate family (a brother, sister, or parent) has had febrile seizures, that child is more likely to have a febrile seizure.

## Is there an increased risk for febrile seizures after childhood vaccines?

CDC and the Food and Drug Administration (FDA) continually monitor the safety of vaccines recommended for adults and children. This includes monitoring to see whether, and how frequently, vaccines are associated with febrile seizures.

Studies have shown that there is a small increased risk for febrile seizures during the first to second week after vaccination with measles, mumps, rubella (MMR) vaccine and the first dose of measles, mumps, rubella, and varicella (MMRV) vaccine. DTP (whole cell pertussis) vaccine is no longer used in the United States, but when it was in use there was also a small increased risk for febrile seizures after DTP on the day the vaccine was given. Studies have not shown an increased risk for febrile seizures after the acellular pertussis vaccine, DTaP, or after varicella (chickenpox) vaccine.

During the past year, there was enhanced focus on monitoring for febrile seizures after influenza vaccine because in [Australia](#), during the 2010 Southern Hemisphere influenza season, one Australian influenza vaccine was found to increase the chance of febrile seizures in young children who received it. Because of this finding in Australia, this brand of vaccine is **not** recommended for children in the United States. CDC and FDA, in consultation with the Advisory Committee on Immunization Practices (ACIP), have reviewed vaccine safety data on febrile seizures in the United States following 2010-11 inactivated influenza (flu) and pneumococcal conjugate (PCV 13) vaccines. CDC conducted studies through its Vaccine Safety Datalink that followed more than 200,000 children 6 months through 4 years of age. The analyses showed that febrile seizures following flu and PCV 13 vaccines given at different visits to this age group did occur, but were rare. The febrile seizures were most common in children ages 12 through 23 months when the two

vaccines were given during the same healthcare visit. In this group, about one additional febrile seizure occurred among every 2,000 to 3,000 children vaccinated.

Further investigation is underway by CDC to determine the contribution, if any, of other childhood vaccines to febrile seizures. CDC and FDA will continue to monitor the safety of all recommended vaccines and will provide additional information as it becomes available.

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## What are the benefits of timely childhood vaccination?

Getting all age-appropriate recommended childhood vaccines during each healthcare visit has important benefits. On-time vaccinations keep children protected against many infectious diseases, and providing multiple vaccinations in a healthcare visit minimizes the number of healthcare visits that parents, caregivers, and children must make. Timely vaccination will prevent febrile seizures by protecting young children against measles, mumps, rubella, chickenpox, influenza, pneumococcal infections and other diseases which can cause fever and febrile seizures. In addition, vaccination protects children against more severe illness from vaccine preventable diseases, which may result in doctor office and emergency room visits or hospitalization.

After thoroughly evaluating the available information, CDC has determined that no changes in the childhood immunization schedule are necessary at this time. There is flexibility in the immunization schedule to accomplish on-time completion of recommended childhood vaccinations.

## Can febrile seizures after childhood vaccinations be prevented?

In general, febrile seizures cannot be prevented. Medicines such as acetaminophen and ibuprofen can lower fevers in children. However, there is no evidence from scientific studies that these fever-reducing medicines will prevent febrile seizures in children. Aspirin and aspirin containing products should not be used to reduce fever in children because of the increased risk for [Reye syndrome](#) . To avoid choking, children should not be given medication or anything else by mouth during a seizure.

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## Can febrile seizures after any childhood vaccination be reported to CDC and FDA?

Anyone can report an adverse event following vaccination to the [Vaccine Adverse Event Reporting System \(VAERS\)](#) . The National Childhood Vaccine Injury Act (NCVIA) requires health care providers to report any adverse event that is listed by the vaccine manufacturer as being a contraindication (reason for not giving the child any further doses of the vaccine). The NCVIA also requires health care providers to report any adverse event that is listed in the [VAERS Table of Reportable Events Following Vaccination](#)  [75 KB, 5 pages]  if that event occurs within a specified time period after the child is vaccinated.

Health care providers are encouraged to report clinically significant adverse events that follow immunization to VAERS

even if they are unsure whether the event was caused by vaccine.

There are three ways to report events to VAERS:

- Submit an online form via the [VAERS](#) secure web site; or
- Fax a completed VAERS form to 877-721-0366; or
- Mail a completed VAERS form to VAERS, P.O. Box 1100, Rockville, MD 20849-1100.

A [VAERS form](#) [99 KB, 2 pages] may be downloaded from the [VAERS](#) web site. A VAERS form may also be requested by sending an e-mail to [info@vaers.org](mailto:info@vaers.org), by calling toll-free 800-822-7967, or by sending a faxed request to 877-721-0366. For additional information on VAERS or vaccine safety, visit the [VAERS](#) web site or call 800-822-7967.

## Where can I learn more about febrile seizures?

To learn more about febrile seizures, visit the following sites:

- The National Institutes of Health (NIH), National Institute of Neurological Disorders and Stroke [Febrile Seizures Information Page](#)
- [The American Academy of Pediatrics](#) healthy children website, which offers additional information about febrile seizures.

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