

Indian Academy of Pediatrics (IAP)



## GUIDELINES FOR PARENTS

# Care of Children with Febrile Seizure



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### 10 FAQs on CARE OF CHILDREN WITH FEBRILE SEIZURE

1. What is a febrile seizure?
2. Why does my child develop febrile convulsion?
3. My elder daughter also had a similar convulsion following fever when she was 3 years old. Does it mean it is a genetic problem?
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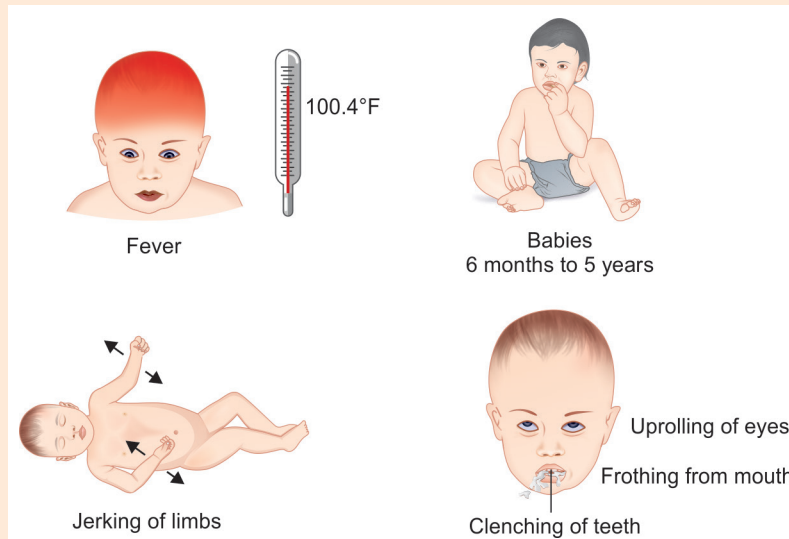
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# Care of Children with Febrile Seizure

## Q1

### What is a febrile seizure?

- Febrile seizure is a convulsion that occurs among children aged between 6 months and 5 years (peak age 12–18 months) who develops fever with a body temperature above 100.4°F (38°C).
- During the convulsion, your baby might have unresponsiveness, uprolling of eyeballs, clenching of teeth, frothing from the mouth, or tightening or jerky movements of limbs. Most of these episodes are brief and last for <5 minutes and stop on their own.
- It is the most common type of seizure that is triggered by fever.
- It is *not* epilepsy, and it will not affect the development of your child's brain and intelligence.
- Most febrile seizures stop by the age of 5 years.

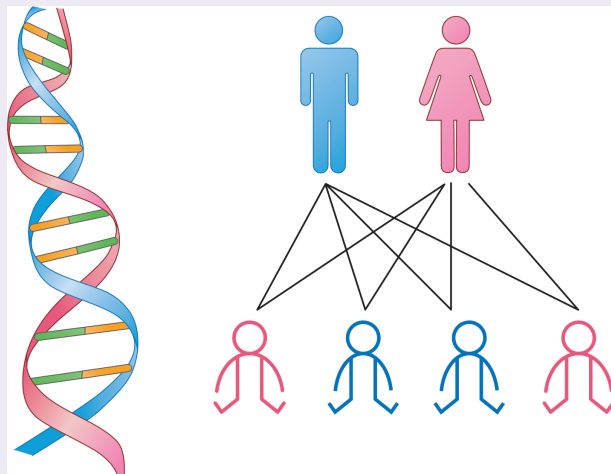


**Q2**
**Why does my child develop febrile convulsion?**

- It is not clear why some children have a febrile seizure.
- It usually occurs when the child develops fever because of viral or bacterial infections such as common cold or flu-like illness, ear infection, or urinary tract infection.
- Some children may have one or more affected family members with febrile seizures or epilepsy. But this is not always essential.
- Convulsion occurs due to abnormal increased electrical activity in the brain. Usually, the brain systematically generates electric currents and transmits it through a network of nerves in a well-coordinated fashion to carry out various body functions.
- During a febrile convulsion, due to the rapid rise of fever, sudden and dysregulated increase in electric discharges in the brain lead to unconsciousness with shaking of the limbs.

**Q3**
**My elder daughter also had a similar convulsion following fever when she was 3 years old. Does it mean it is a genetic problem?**

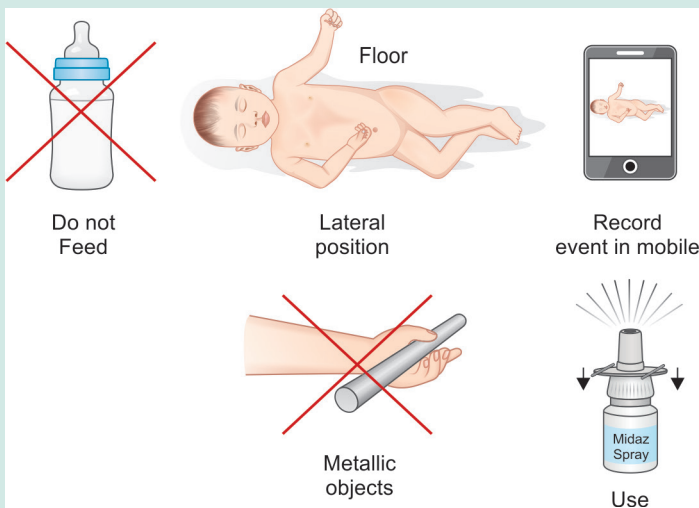
- Febrile seizure is *not* a genetic disease, but yes, children with febrile seizures may have one or more family members with febrile seizures or epilepsy.
- Genetic predisposition to febrile seizures has long been recognized, although the exact mode of inheritance is not known in most cases. Few reports mention autosomal dominant inheritance, and few say multifactorial. There is a large number of genes that are associated with a febrile seizure.
- Among first-degree relatives of children with febrile convulsion, 10–20% of parents and siblings may have a febrile seizure.
- It is considered that there is a higher chance of having repeat (recurrence) episodes of febrile seizure if one or more of the family members also has a febrile seizure.
- Although febrile seizure is *not* epilepsy, those who have a family history of epilepsy have a 2–3% risk of subsequent epilepsy. These children may have seizures even without a fever. They may have other types of seizures such as head drops, prolonged episodes of staring, or unresponsiveness. They are called genetic epilepsy with febrile seizures plus (GEFS+).



## Q4

### What should I do when my child develops a fever next time? Are there any precautions that I need to take?

- If your child develops a fever next time, record the temperature using a digital thermometer.
- Common bacterial and viral infections usually cause fever. The cause of fever must be identified and appropriately treated.
- To prevent discomfort to the child, avoid overdressing, and choose clothes appropriate for the climatic condition.
- Ensure adequate intake of fluids to prevent dehydration.
- Tepid sponging at a temperature of 28–30°C may be considered.
- Paracetamol must be administered in the dosage recommended by your pediatrician. Paracetamol would help to decrease the temperature, and it will not reduce the risk of febrile seizures.
- Do not substitute paracetamol drops with syrup as the concentrations are different.
- Clobazam may be administered in selected cases for 2–3 days of fever as per recommendations from your pediatrician. However, it may not prevent occurrence of seizures.



## Q5

### What should I do when my child develops convulsion?

- When your child develops convulsion, do not get frightened.
- Observe the type of seizure and try to video record the event if possible. This will help your doctor to understand the type of seizure better.
- The child should be placed in a lateral position on the floor or a safe hard surface.
- Clothes around the neck must be loosened to prevent airway obstruction.
- Do not feed anything, including medications by mouth during the convulsion as the children may aspirate the medications.
- Do not attempt to place any metallic objects in the child's hands as a measure to control convulsion as children would be harmed by injury with sharp objects.
- Most of the convulsions are controlled spontaneously due to an increase in the inhibitory neurotransmitter level in the brain. If convulsion is not controlled within 3–5 minutes, administer midazolam nasal spray in the dosage advised by your pediatrician and make necessary arrangements to transfer the child to the nearest hospital for further monitoring and management.

**Q6**

**Do I need to get magnetic resonance imaging (MRI) or electroencephalography (EEG) done for my child?**

- There is no need for an MRI brain or EEG in a child with simple febrile seizures, even if they are multiple.
- However, in selected cases such as children with prolonged febrile seizure, complex febrile seizure, suspected epilepsy syndromes such as GEFS+, MRI brain, and EEG might be required as decided by your physician.
- Uncooperative children may require sedation for MRI brain and EEG recording. So, your doctor might prescribe some medicines for sedation.

**Q7**

**What is the risk that my child will have another febrile seizure?**

- Roughly 40% of children with febrile seizures will have a recurrence of seizure.
- The chances of having recurrent episode are higher among those with one or more of the following:
  - Age at the onset before 18 months.
  - Duration of fever <1 hour before the seizure occurs.
  - The seizure occurs at a lower temperature.
  - One or more of first-degree relatives (parents and siblings) with a febrile seizure.

**Q8**

**My 4-year-old child has multiple episodes of febrile convulsions in the past 2 years. Do I need to start anticonvulsant medications?**

- If your child has brief episodes lasting for <15 minutes and the baby jerks all four limbs during the convulsion and it always occurs with fever, then your child has a simple febrile seizure. Simple febrile seizures, even if multiple episodes do not require any anticonvulsant medications.
- Your doctor may start anticonvulsant medications, if the episodes of seizures are prolonged (>30 minutes) or if the jerks involve only one side of the body. Your doctor may call them a complex febrile seizure.

**Q9**
**What is the risk of epilepsy if my child has had a febrile convulsion?**

- The risk of epilepsy with simple febrile seizures is 1%, similar to the risk of developing epilepsy in the general population. Hence, there is no additional risk of developing epilepsy following a simple febrile seizure.
- The risk of future epilepsy may increase among those with a complex febrile seizure.
- Children with a very prolonged febrile seizure are at a higher risk (nearly 30–40%) to develop scarring of hippocampi which predisposes them to develop epilepsy in future.
- Besides, if there is one or more first-degree relative with epilepsy (not febrile seizure), or if your child has a delay in attaining milestones, your child may have a higher risk of developing future epilepsy. Hence, your doctor may prescribe anticonvulsant medications to your child.

**Q10**
**My child has multiple episodes of febrile convulsion. Will it affect his school performance?**

- Febrile convulsions do not affect intelligence or school performance. Studies have shown that even those with multiple febrile seizure episodes have comparable intelligence to their siblings who do not have a febrile seizure.
- Children with prolonged febrile seizure episodes who are prone to future epilepsy may have mild difficulties in their school performance.

**Do's**

- Give paracetamol as prescribed by your doctor in the beginning of fever.
- If the child develops convulsions, place your child on the floor.
- Place the child on his/her side.
- Loosen the clothes near face and chest.
- Wipe off any secretions in the mouth.
- Remove any sharp objects near the child to avoid injury.
- Record the time the convulsion lasts.
- Record the event on a mobile phone so that you can show it your doctor.
- If the convulsion does not stop beyond 3–5 minutes, use midazolam nasal spray as advised by your doctor.
- Once the convulsions stop, use tepid sponging to reduce the fever.

**Don'ts**

- Do not panic.
- Do not feed anything or give any sips of water.
- Do not place any object in the mouth to prevent gagging.
- Do not pinch the nose of the child.
- Do not place any rod or metallic object in child's hand who is convulsing, he may injure himself.
- Do not make him/her smell any unusual objects to abort the convulsions.