

Pediatric Pearls

Care of the pediatric patient with a fever/febrile seizure

Gigi Rodriguez, RN, BSN, CPEN, MICN
Pediatric Emergency Care Coordinator
LLU Children's Hospital-Emergency Department

What is fever?

- Fever is defined as a core body temperature greater than 100.5°F (38°C).
- One of the most common chief complaints seen in pediatric ED's.
- Accounts for up to 20% of visits to pediatric ED's a year.
- Most accurate way to obtain core temperature is rectal.





Fever

Higher clinical importance in neonates and infants <3 months.

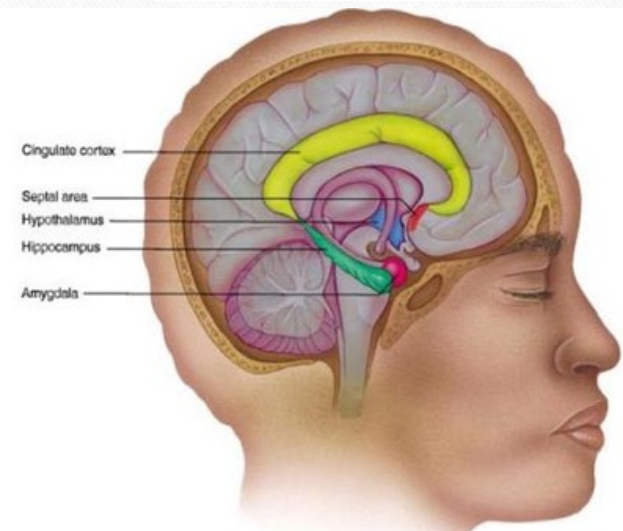
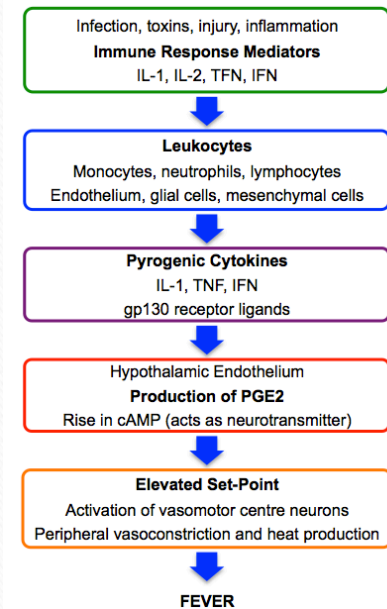
- Because they are immunologically immature.
- They are incompletely vaccinated.

Assessing this population is difficult due to the absence of traditional signs and symptoms of severe disease such as:

- Tachycardia
- Tachypnea
- Change in mentation
- Low BP

Continued: Fever

- Body temperature is regulated by the hypothalamus gland.
- The hypothalamus has a set-point much like a thermostat...
- Microbes such as viruses and bacteria that enter the body release toxins that trigger the hypothalamus to turn up the thermostat (fever) to help the body fight infection.



Why is Fever so Scary?

- They shunt perfusion to their core, making their extremities mottled and cool to touch
- They have increased work of breathing (including tachypnea), which is a compensatory response
- They are tachycardic
- They appear irritable or listless
- Parents/caregivers are anxious and upset!!!

Facts About Fever...

- **Fever reflects a good immune response**
- Fever revs up the body's immune system activating it to fight off viral or bacterial pathogens.
- It raises the body temperature slowing down the growth of the microbes giving the body a chance to fight it.
- Studies show brain damage has **NOT** been associated with high fever.
- The fever itself is not the disease, only a sign that the body's defenses are trying to fight an underlying infection.



Treating a Fever

- Passive cooling- Removal of blankets and clothing can be done by the medic or the family
- Expose the patient to fully assess skin signs and respiratory effort
- Use cooling measures such as cool towels on the head
- Maintain modesty whenever possible



What is febrile seizure?

- A febrile seizure is abnormal electrical activity in a child's brain that is triggered by a fever.
- Febrile seizures are an age-dependent phenomenon generally occurring between 6 months and 5 years of age. The Incident drops off rapidly after age 5.
- Occur in young, healthy children who have normal development and haven't had any neurological symptoms before.



Classifications of Febrile Seizures

- **Simple febrile seizures:**

- Most common type lasts from a few seconds to 15 minutes.
- Do not recur within a 24-hour period and are not specific to one part of the body.

- **Complex febrile seizures:**

- Last longer than 15 minutes, occurs more than once within 24 hours or is confined to one side of the child's body.

Causes of febrile seizures

A higher-than-normal or sudden elevation in body temperature.

Genetic predisposition

Family history –

About a third to one half of children who experience febrile seizures have a family history of fever-related seizure activity

Viral infections are the leading cause of febrile seizures, with influenza, parainfluenza, and adenovirus being the most common triggers.

Symptoms of Febrile Seizure

Staring, sudden pause in activity, not responding

Uncontrollable shaking, jerking, or stiffening in the arms or legs (may be the whole body or only part of the body)

For infants less than 4 months old - rhythmic movement of a hand or foot, lip smacking, fixed gaze to one side.

Eye rolling

Loss of bodily control (such as drooling, vomiting, urinating, or having a bowel movement)

Treating Febrile Seizure

- Make sure patient is in a safe place to prevent injury during the seizure
- Assessment priorities include airway, breathing, and circulation
- Maintain a patent airway and use a soft tip catheter for suction if needed
- Apply oxygen therapy as needed to keep oxygen saturations above 94%
- Provide passive cooling measures
- Check blood glucose and treat if needed
- Note the start time of the seizure, for suspected status epilepticus, for frequent or extended seizures, consider medicating.

To Medicate or Not to Medicate...

-
- If the patient is awake and able to communicate during movements, medication is not necessary
 - Note the start time of the seizure, for suspected status epilepticus, for frequent or extended seizures, consider medicating with Midazolam per ICEMA Reference #11010
 - Midazolam, 0.1 mg/kg IV/IO with maximum dose 2.5 mg. May repeat Midazolam in **five (5) minutes**, or
 - Midazolam, 0.2 mg/kg IM/IN with maximum dose of 5 mg. May repeat Midazolam in **10 minutes** for continued seizure.
 - Assess patient for medication related reduced respiratory rate or hypotension.
 - A **maximum** of three (3) doses using any combination of IV/IO/IM/IN may be administered for continued seizure activity.

Post-Seizure Care

The postictal phase is a period that begins when a seizure subsides and ends when the patient returns to baseline. A prolonged postictal phase maybe an indication of other etiology for the seizure.

During postictal phase:

Maintain patent airway
suctioning when necessary and
supporting respirations

Place on SPO₂, capnography
and cardiac monitor if
indicated

Monitor for medication
related reduced respiratory
rate or hypotension

Allow adequate time
between doses for the
medication to work
effectively

If movements or
symptoms are decreasing,
do not re-administer
medication

Assess and document
response to therapy

Pediatric Febrile Seizures: Key Takeaways

FEVER is our FRIEND!

- The goal of treatment for febrile seizures is timely seizure cessation while avoiding respiratory depression.
- **Common in Children:** Occurs between 6 months and 5 years, often with a family history.
- **Primary Cause:** Viral infections (influenza, parainfluenza, adenovirus).
- **Physiological Response:** Tachycardia, tachypnea, cool extremities, irritability.
- **Seizure Management:** Allow time for medications to work, and avoid re-dosing if symptoms are improving.
- **Post-Seizure Care:** Assess breathing, perfusion, and neurological status.



References

- <https://www.chop.edu/conditions-diseases/seizures-children>
- <https://www.ninds.nih.gov/health-information/disorders/febrile-seizures>
- <https://www.bcm.edu/sites/default/files/2014/c0/pediatric-prehospital-seizure-management.pdf>
- Eilbert, W., & Chan, C. (2022). Febrile seizures: A review. *Journal of the American College of Emergency Physicians Open*, 3(4), Article e12769. <https://doi.org/10.1002/emp2.12769>
- ICEMA –*Policy & Procedure Manual*
<https://icema.sbcounty.gov/resources/policies-and-protocols/> .
2025.

Thank
You!