

What is a normal temperature?

The body's average temperature is around 98.6°F (37°C), but it normally fluctuates during the day. Many variables determine a child's "normal" temperature. Mild elevation (100.4° to 101.3°F [38° to 38.5°C]) can be caused by exercise, excessive clothing, a hot bath, or hot weather. Warm food or drink can also raise the oral temperature. In addition, a child's temperature may vary depending on the time of day it is taken (higher at night) and the age of the child (younger children generally have somewhat higher temperatures than school-age children).

What is a fever?

Fever is a symptom, not a disease. It is the body's normal response to fighting infections. The elevated temperature turns on the body's immune system and makes it more difficult for bacteria and viruses to grow. **A fever is defined as any temperature above 100.4°F.** The usual fevers (100.4° to 104°F [38° to 40°C]) that all children get are not harmful.

How should I take my child's temperature?

The most accurate way to take your child's temperature is rectally with a digital thermometer. Studies have shown that both oral and axillary (in the armpit) temperatures correlate with rectal temperatures. We recommend that rectal temperatures be taken in any child under the age of 2 months to obtain the most accurate reading. Oral temperatures may be taken in any cooperative child. All other children should have their temperature taken under their armpit. **You do not need to add or subtract a degree from the thermometer reading to compensate for how you took your child's temperature, regardless of the thermometer's instructions.**

Other types of thermometers like ear (tympanic), forehead (temporal), or pacifier thermometers are okay to take quick, screening temperatures in most children, but are not very accurate (especially in children under 2 years of age). **If you are worried about the height of your child's fever or how long he/she has had it, always confirm it with an oral, axillary, or rectal temperature reading.**

Other tips for taking your child's temperature:

- Don't bundle your baby too tightly before taking the temperature.
- Never leave your child alone while taking his or her temperature.
- **Taking rectal temperatures:** Coat the tip of the thermometer and the opening of the anus with petroleum jelly (Vaseline). Gently insert it ¼ to ½ inch into the rectum (inserting until the silver tip disappears is about ½ inch). Never try to force it past any resistance. (Reason: it could cause perforation of the bowel.) Hold the thermometer still for 2 minutes. Never let go of it.
- **Taking oral temperatures:** Be sure your child has not taken a cold or hot drink within the last 30 minutes. Place the end of the thermometer under the tongue and leave it there for 2-3 minutes. Don't let your child bite on the thermometer.
- **Taking axillary temperatures:** Place the tip of the thermometer in a dry armpit. Close the armpit by holding the elbow against the chest for 2-3 minutes. You may miss detecting a fever if the thermometer is removed before 3 minutes.
- After you're done, wash the thermometer in cool, soapy water.

What is the expected course of a fever?

Most fevers with viral illnesses range between 101° and 104°F (38.3° to 40°C) and last for 3 to 5 days. In general, the height of the fever does not relate to the seriousness of the illness. **How sick your child acts is what counts.** Fever causes no permanent harm until it reaches 107°F (41.7°C). Fortunately, the brain's thermostat keeps untreated fevers below this level. Although all children get fevers, only 4% develop a brief febrile convulsion. Since this type of seizure is generally harmless, it is not worth worrying excessively about. If your child has had high fevers without seizures, he/she is likely safe.

What should I do when my child has a fever?

Encourage your child to drink extra fluids, but do not force him/her to drink. Popsicles and iced drinks are helpful. Body fluids are lost during fevers because of sweating. Clothing should be kept to a minimum because most heat is lost through the skin. Do not bundle up your child; it will cause a higher fever. Keep the room temperature at about 65° - 70°F. Keep your child rested, quiet and comfortable. During the time your child feels cold or is shivering ("the chills"), give him/her a light blanket.

When should I give medication to lower my child's fever?

Fever is a sign that the body is fighting an infection. **The main reason to treat your child is to make him/her feel better.** When your child is achy and fussy, you may want to give him/her some medicine. Two kinds of over-the-counter medications are recommended for lowering fever in children: acetaminophen (Tylenol) and ibuprofen (Motrin, Advil). Both medicines are effective in lowering fever and work in about 30 to 60 minutes. Neither is recommended for children under 2 months of age, and only acetaminophen is recommended for children 2 to 6 months.

Remember, fever is helping your child fight the infection. It is preferable to use drugs only if your child is uncomfortable or has a fever greater than 104°F (40°C). Ibuprofen and acetaminophen are similar in their abilities to lower fever, and their safety records are similar. One advantage of ibuprofen as compared to acetaminophen is a longer-lasting effect (6 to 8 hours instead of 4 to 6 hours). Two hours after they are given, these drugs will reduce the fever 2° to 3°F (1° to 1.5°C). Medicines do not bring the temperature down to "normal" unless the temperature was only mildly elevated before the medicine was given. Repeated dosages of the drugs will be necessary because the fever will go up and down until the illness runs its course. If your child is sleeping, it is not always necessary to awaken him/her for medicine.

Avoid aspirin. In rare cases aspirin can cause Reye's syndrome in children who have chickenpox or influenza (cold, cough, sore throat symptoms). Reye's syndrome is a serious illness that can lead to death. Because it may be hard to tell if a child has one of these infections, most pediatricians have stopped using aspirin for fevers associated with any illness.

When should I call the doctor?

IMMEDIATELY if:

- Your child is less than 2 months old with a rectal temperature over 100°F (37.7°C). Because of his/her immature immune system, a young infant will not handle infections well and may not show any other signs of a serious illness other than the fever.
- The fever is over 105°F (40.6°C) in any age child.
- Your child looks or acts very sick. More concerning symptoms include a stiff neck, trouble breathing, crying inconsolably, or difficulty waking the child.

Within 24 hours if:

- Your child is 3 to 6 months old with fever over 102°F (38.9°C).
- The fever is between 103° and 105°F (39.4° to 40.6°C), especially if your child is less than 2 years old.
- Your child has had a fever more than 48 hours without an obvious cause or location of infection.
- Your child has had a fever more than 5 days.
- Your child has other symptoms such as sore throat, ear pain, abdominal pain, or pain when urinating.
- Your child is drinking less fluid than usual and has urinated less than 2-3 times in the past 24 hours.
- You have other concerns or questions.

What are some common misconceptions about fever?

Even in an age of medical sophistication, there still exist fear and misunderstanding about fever in children. "Fever phobia" makes it difficult for parents to know when to be worried and when to stay calm when the thermometer starts to climb. Unwarranted fears about harmful side effects from fever cause lost sleep and unnecessary stress for many parents. Let the following facts help you put fever into perspective.

MYTH: All fevers need to be treated with fever-reducing medicine.

FACT: Fever is not an illness, but a symptom, and almost never harms a child. The only reason to lower a child's temperature is to make the child more comfortable or avoid a febrile seizure (in the seizure prone child). Most fevers are good for children and help the body fight infection. An elevated body temperature increases metabolism and produces infection-fighting cells. Also, some antibiotics work better in the presence of a fever. Therefore, lowering body temperature may prolong an illness. The best advice when dealing with fever is to "treat the child, not the thermometer." Use the following definitions to help put your child's level of fever into perspective:

100.4° - 102°F (38° - 38.9°C)	Low-grade fevers are beneficial. May need medication for comfort.
102° - 104°F (38.9° - 40°C)	Moderate-grade fevers are still beneficial. May need medication for comfort.
104° - 105°F (40° - 40.6°C)	High fevers cause discomfort but are harmless.
105° - 108°F (40.6° - 42.2°C)	Higher risk of bacterial infections with a very high fever.
> 108°F (> 42.2°C)	The fever itself can be harmful.

MYTH: Fevers cause brain damage, and fevers over 104°F (40°C) are dangerous.

FACT: Fevers with infections don't cause brain damage. Only body temperatures over 108°F (42.2°C) can cause brain damage. The body temperature only goes this high with high environmental temperatures (e.g., confined in a closed car).

MYTH: Anyone can have a febrile seizure.

FACT: Only 4% of children ever have this type of seizure, which occurs more frequently if there is a family history of seizures with fever. Also of note, it is not the height of the fever that causes febrile convulsions but how quickly the temperature rises. They are unusual after the age of 3 years.

MYTH: Febrile seizures are harmful.

FACT: Febrile seizures are scary to watch, but they usually stop within 5 minutes. They cause no permanent harm. Children with febrile seizures have no higher incidence for developmental delays, learning disabilities, or seizures without fever.

MYTH: Without treatment, fevers will keep going higher.

FACT: Most fevers caused by infection top out at 105° or 106°F (40.6° or 41.1°C) or lower, because the brain's thermostat does not allow the body's temperature to exceed these levels.

MYTH: With treatment, fevers should come down to normal.

FACT: With treatment, fevers usually come down 2° or 3°F (1° - 1.5°C).

MYTH: If the fever doesn't come down (if you can't "break the fever"), the cause is serious.

FACT: Fevers that don't respond to fever medicine can be caused by viruses or bacteria. It doesn't relate to the seriousness of the infection.

MYTH: Temperatures between 98.6° and 100°F (37.0° and 37.8°C) are low-grade fevers.

FACT: The normal temperature changes throughout the day and peaks in the late afternoon and evening. A reading of 98.6°F (37°C) is just the average oral temperature. It normally can change from a low of 97.6°F (36.4°C) in the morning to a high of 100.3°F (37.9°C) in the late afternoon.

MYTH: Placing a hand on a child's forehead is an accurate way to read a fever.

FACT: Studies have shown that most parents could tell if their child did not have a fever by touch, but could not tell how high body temperature was if their child did have a fever. Fever makes the child's face hot and a 101°F temperature might feel the same as a 103°F temperature.

MYTH: The higher the temperature, the more serious the illness.

FACT: The number on the thermometer does not indicate the severity of the disease. A youngster can have walking pneumonia, an ear infection, or meningitis with a "low-grade fever" of 101°F. On the other hand, pediatricians see children many times a day with fevers over 104°F caused by a viral infection that will run its course without treatment. The general condition of the child is the main determining factor between a "very sick" and a "somewhat ill" youngster, not the youngster's temperature. A child whose temperature is 104°F but who seems active and normal probably is healthier than a child who is listless, refuses food or drink, and has a body temperature of 101°F. Fever is one sign of illness but it is certainly not the only or the best one.

MYTH: Sponging is always necessary to treat a fever.

FACT: Sponging is usually not necessary to reduce fever. Never sponge your child without giving him/her acetaminophen or ibuprofen first. Sponge immediately only in emergencies such as heatstroke, delirium, a seizure from fever, or any fever over 106°F (41.1°C). In other cases sponge your child only if the fever is over 104°F (40°C), the fever stays that high when you take the temperature again 30 - 60 minutes after your child has taken medication, and your child is uncomfortable. Until the acetaminophen or ibuprofen has taken effect (by resetting the body's thermostat to a lower level), sponging will just cause shivering, which is the body's attempt to raise the temperature. Often, a cool washcloth placed on the child's forehead or neck will make them more comfortable. If you do sponge your child, sponge her in luke-warm water (85° to 90°F [29° to 32°C]). (Use slightly cooler water for emergencies.) Sponging works much faster than immersion, so sit your child in 2 inches of water and keep wetting the skin surface. Cooling comes from evaporation of the water. If your child shivers, raise the water temperature or wait for the medication to take effect. Don't expect to get the temperature below 101°F (38.3°C). Don't use cold water or add rubbing alcohol to the water.

MYTH: An alcohol rub is a safe way to reduce a fever

FALSE: The alcohol rub now is considered dangerous because alcohol can be breathed in or absorbed through the skin and cause intoxication. The best ways to lower temperature include drinking extra fluids, limiting clothing, and medications (ibuprofen and acetaminophen).

MYTH: A child with a fever should not receive a routine immunization.

FALSE: Immunizations are only contraindicated when the illness causing the fever is severe. A mild illness (such as an ear infection) is not a reason to withhold a vaccine, even if the child has a fever.