

DEFINITION

Your child has a fever if any of the following apply:

- Rectal temperature is over 100.4°F (38.0°C).
- Oral temperature is over 99.5°F (37.5°C).
- Axillary (armpit) temperature is over 99.0°F (37.2°C).
- Ear (tympanic) temperature (taken in the ear) is over 100.4°F (38.0°C) (if set in rectal mode), or > 99.5°F (37.5°C) (if set in oral mode). (*Note:* Not reliable if your child is less than 6 months old.)
- Pacifier temperature is over 99.5°F (37.5°C). (*Note:* Not accurate in general. New digital ones are accurate. This mode is okay for screening if your child is over 3 months old.)
- Tactile fever (the impression that your child has a fever because he or she feels hot to the touch) is evident. Tactile fevers are more accurate than we used to think; however, if you're going to call your child's doctor about a fever, actually take his or her temperature.

The body's average temperature when it is measured orally is 98.6°F (37°C), but it normally fluctuates during the day. Mild elevation (100.4° to 101.3°F or 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. If you suspect such an effect on the temperature of your child, take his or her temperature again in one-half hour.

Causes

Fever is a symptom, not a disease. Fever is the body's normal response to infections and plays a role in fighting them. Fever turns on the body's immune system. The usual fevers (100° to 104°F [37.8° to 40°C]) that all children get are not harmful. Most are caused by viral illnesses; some are caused by bacterial illnesses. Teething does not cause fever.

Expected Course

Most fevers with viral illnesses range between 101° and 104°F (38.3° to 40°C) and last for 2 to 3 days. In general, the height of the fever doesn't 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, your child is probably safe.

HOME CARE

Treat All Fevers with Extra Fluids and Less Clothing. Encourage your child to drink extra fluids, but do not force him or 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. During the time your child feels cold or is shivering (the chills), give him or her a light blanket.

Acetaminophen Products for Reducing Fever. Children older than 2 months of age can be given any one of the acetaminophen products. All have the same dosage.

Remember that fever is helping your child fight the infection. Use drugs only if the fever is over 102°F (39°C) and preferably only if your child is also uncomfortable. Give the correct dosage for your child's age every 4 to 6 hours, but no more often.

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 not very 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, don't awaken him for medicines.

Caution: The dropper that comes with one product should not be used with other brands.

Dosages of Acetaminophen. See accompanying table.

Ibuprofen Products. All ibuprofen products are now available without a prescription. Give the correct dosage for your child's weight every 6 to 8 hours as needed. (See accompanying table.)

Ibuprofen and acetaminophen are similar in their abilities to lower fever, and their safety records are similar. One advantage that ibuprofen has over acetaminophen is a longer-lasting effect (6 to 8 hours instead of 4 to 6 hours). However, acetaminophen is still the drug of choice for controlling fever in most

ACETAMINOPHEN DOSAGE (FOR FEVER AND PAIN)

Child's weight (lb) more than	7	14	21	28	42	56	84	112
Total amount (mg)	40	80	120	160	240	325	458	650
Drops (80 mg per dropper)	½	1	1½	2	3	—	—	—
Syrup 160 mg/5 mL (1 tsp)	—	½	¾	1	1½	2	2½	4
Chewable 80-mg tablets	—	—	1½	2	3	4	5-6	8
Chewable 160-mg tablets	—	—	—	1	1½	2	3	4
Adult 325-mg tablets	—	—	—	—	—	1	1-1½	2

IBUPROFEN DOSAGE (FOR FEVER AND PAIN)

Child's weight (lb) more than	12	18	24	36	48	60	72	96
Total amount (mg)	50	75	100	150	200	250	300	400
Drops (50 mg per dropper)	1	1½	2	3	4	—	—	—
Liquid 100 mg/5 ml (1 tsp)	½	¾	1	1½	2	2½	3	4
Chewable 50-mg tablets	—	—	2	3	4	5	6	8
Adult 200-mg tablets	—	—	—	—	1	1	1½	2

conditions. Children with special problems requiring a longer period of fever control may do better with ibuprofen.

Avoid Aspirin. The American Academy of Pediatrics has recommended that children (through 21 years of age) not take aspirin if they have chickenpox or influenza (any cold, cough, or sore throat symptoms). This recommendation is based on several studies that have linked aspirin to Reye's syndrome, a severe encephalitis-like illness. Most pediatricians have stopped using aspirin for fevers associated with any illness.

ALTERNATING ACETAMINOPHEN AND IBUPROFEN

We don't recommend combining these medicines for the following reasons:

- No added benefit in reducing fever compared with either product used alone. (Reason: both drugs have the same mechanism of action.)
- Can cause dosage errors and poisoning (especially if you give one product too frequently).
- You don't need to control fever this closely.
- If you are instructed by your physician to alternate both products, do it as follows:
 - Use both if the fever is over 104°F (40°C) and unresponsive to one medicine alone.
 - Give a fever medicine every 4 hours (acetaminophen every 8 hours and ibuprofen every 8 hours).
 - Only alternate medicines for 24 hours or less, then return to a single product.

Sponging. Sponging is usually not necessary to reduce fever. Never sponge your child without giving her acetaminophen 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 minutes after your child has taken acetaminophen or ibuprofen, and your child is uncomfortable. Until acetaminophen 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.

If you do sponge your child, sponge her in lukewarm 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 acetaminophen to take effect. Don't expect to get the temperature below 101°F (38.3°C). Don't add rubbing alcohol to the water; it can be breathed in and cause a coma.



CALL OUR OFFICE

IMMEDIATELY if

- Your child is less than 3 months old.
- The fever is over 105°F (40.6°C).
- Your child looks or acts very sick.

Within 24 hours if

- Your child is 3 to 6 months old (unless the fever is due to a diphtheria-pertussis-tetanus (DPT) shot).
- The fever is between 104° and 105°F (40° to 40.6°C), especially if your child is less than 2 years old.
- Your child has had a fever more than 24 hours without an obvious cause or location of infection.
- Your child has had a fever more than 3 days.
- The fever went away for more than 24 hours and then returned.
- You have other concerns or questions.

FEVER PHOBIA: UNDERSTANDING THE MYTHS

Misconceptions about the dangers of fever are commonplace. 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 are bad for children.

FACT: Fevers turn on the body's immune system.

Fevers are one of the body's protective mechanisms.

Most fevers are good for children and help the body fight infection. Use the following definitions to help put your child's level of fever into perspective:

100°-102°F (37.8°-38.9°C)	Low-grade fevers are beneficial. Try to keep the fever in this range.
102°-104°F (38.9°-40°C)	Moderate-grade fevers are beneficial.
>104°F (>40°C)	High fevers cause discomfort but are harmless.
>105°F (>40.6°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 a febrile seizure.

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: All fevers need to be treated with fever medicine.

FACT: Fevers only need to be treated if they cause discomfort—usually fevers over 102° or 103°F (38.9° or 39.5°C).

MYTH: Without treatment, fevers will keep going higher.

FACT: Fevers from infection top out at 105° or 106°F (40.6° or 41.1°C) or lower, because of the brain's thermostat.

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: If the fever is high, the cause is serious.

FACT: If your child looks very sick, the cause is serious.

MYTH: The exact number of the temperature is very important.

FACT: How your child looks is what's important.

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 99.4°F (37.5°C) is just the average rectal temperature. It normally can change from 98.4°F (36.9°C) in the morning to a high of 100.3°F (38.0°C) in the late afternoon.

- 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 (36.5°C) in the morning to a high of 99.5°F (37.5°C) in the late afternoon.