

Fever.

Hilliard Pediatrics, Inc. -- Dr. Tim Teller, M.D. -- 5-13

Definition.

The body's temperature normally ranges from 97 to 100.4 degrees. Your child has a fever when the temperature is over **100.4** degrees. Mild elevations in the body's temperature (99-100.4 degrees) can be caused by exercise, excessive clothing, hot baths, or hot weather. Temperatures taken in the mouth may be high because of warm food or drink (if you suspect this, take the temperature a different way or repeat the oral temperature in one-half hour).

Causes.

It is very important to remember that **fever is a symptom, not a disease**. Fever is one of the many ways our body's immune system fights infection. Many of the cold and flu viruses have a more difficult time making us sick if the body is fighting them off with a fever. The usual fevers of 100.5-105 degrees are not harmful. Most fevers are caused by viral infections. Teething does not cause fever. Children may have fevers after some immunizations.

Expected course.

Fevers typically are present for a few days while someone has an active infection. During this time, it is not unusual for the temperature to fluctuate. **The height of the fever does not correlate with the seriousness of an illness.** *How sick a child is acting is what is important. If a child perks up well when the temperature comes down, it is reassuring.* Fevers do not cause harm until the temperature is **108 degrees or higher**. Fevers this high are extremely rare because the body's thermostat keeps the temperature below this level. About 1 in 30 children have one or more **febrile seizures** between birth and 5 years of age. Febrile seizures occur in some children when that child's temperature rapidly rises. They typically occur when the temperature is between 101-103 degrees. These seizures, though frightening, are very rarely dangerous. These seizures also are very difficult to prevent because these rapid increases in the temperature can occur unexpectedly and before we would be able to dose with a fever-reducer. Most children with a "high" temperature will not have a seizure.

Taking a temperature.

Many thermometers are available for home use. The most accurate measurements are with glass (mercury) or digital thermometers. However, because of concerns regarding children coming into contact with the toxic mercury in glass mercury thermometers, we can no longer recommend their use. If you still have a glass mercury thermometer, it is recommended that you contact your local city offices or fire department to determine how you may safely dispose of your mercury-containing thermometer. Infrared ("ear") thermometers are certainly convenient, but they can be inaccurate. Temporal artery ("forehead") thermometers are convenient and accurate. Temperature strips are the least accurate, and they often give misleading results. Rectal temperatures are the most accurate, while oral and axillary temperatures are less so. Everyone with young children should have a rectal thermometer available at home in case it is needed. For children **less than 8 weeks** of age, if you believe your child has a fever, take a **rectal** temperature with a digital rectal thermometer. For children from 8 weeks to 4 years, rectal, temporal, ear, or axillary temperatures are recommended. After the 5th birthday, temporal, ear, axillary, or oral (mouth) temperatures are recommended. Rectal temperatures: Have the child lie down on their side (with the knees pulled up to the chest). Lubricate the metallic end of the thermometer with petroleum jelly (Vaseline). Insert about 3/4-1 inch of the metallic end of the thermometer into the rectum, but do not force it. Holding your child still, leaving the thermometer in for 2-3 minutes. Many infants pass a bowel movement afterwards. Oral temperatures: Place the thermometer under the tongue and toward the back. Have the child hold the thermometer in place with their lips or fingers (not their teeth) for 3 minutes. While the thermometer is in, the child should breathe through their nose. Axillary temperatures: Place the thermometer in a dry armpit. Hold the elbow to the chest, closing the armpit. The thermometer should remain in place for 5 minutes. Ear temperatures: Follow the instructions that come with your unit. Many need you to tug the external ear, hold the button for a full second with the sensor in the ear canal, and take 3 readings and average them. If you ever feel the readings you are getting with an ear thermometer are too high (especially 105 and above), recheck the temperature with a different thermometer. Temporal artery thermometers: Press and hold the button. Lightly scan across the forehead as instructed in the manual. Release the button and read the temperature.

Treatment.

It is **not necessary** to treat most fevers. Children lethargic with a fever, children uncomfortable with a fever, children less than 5 years of age with a history of febrile seizures, and children with a 105 degree or more fever **should** be treated. Children may be treated if the fever is making them uncomfortable or otherwise disrupting their normal activities. In general, do not wake your child from sleep in order to give them medicine for a fever. Remember that it may take 1-2 hours for either acetaminophen (Tylenol) or ibuprofen (Motrin and Advil) to work. On average, the medicine for fever will drop the temperature by 1-2 degrees after 1-2 hours. Therefore, the temperature may not return to a normal range after using a fever-reducer. **With many illnesses, the fever will NOT decrease after a dose.** This is not an indication of the seriousness of the illness. Repeated doses are often needed during an illness. Repeatedly offering the fever-reducer will NOT shorten the course of the illness, it will simply help control the child's temperature.

The dose of fever-reducer for your child should be based on their weight.

ASPIRIN. It is recommended to NOT give aspirin to children. Never give a child aspirin unless specifically directed to do so by a doctor.

ACETAMINOPHEN [Tylenol®]. Choose between different brands of acetaminophen based on taste and cost. This medicine can be given as often as **every 4 hours**. The dose for your child should be **based on their weight**. *Note that Tylenol® and other brands of acetaminophen are doing away with the Infant Drops (80mg./0.8ml.) as of early 2012. The Infant's Suspension Liquid will need to be used for infants.* Carefully pick the right dose for infants and toddlers by the appropriate milliliter dose for their weight.

| <u>Age/Weight</u> | <u>Infant's Suspension</u> <u>160mg/5ml</u> | <u>Chewable</u> <u>80mg</u> | <u>Children's Liquid</u> <u>160mg/5ml</u> | <u>Regular</u> <u>325mg Tablets</u> |
|------------------------|--|--------------------------------|--|--|
| 2-3months/6-11 lbs | ¼ tsp. (1.25 ml.) | -- | -- | -- |
| 4-11months/12-17 lbs | ½ tsp. (2.5 ml.) | -- | -- | -- |
| 12-23months/18-23 lbs | ¾ tsp. (3.75 ml.) | -- | -- | -- |
| 2-3years/24-35 lbs | 1 tsp. (5 ml.) | 2 chewables | 1 tsp. (5ml.) | -- |
| 4-5years/36-47 lbs | -- | 3 chewables | 1 ½ tsp. (7.5ml.) | -- |
| 6-8years/48-59 lbs | -- | 4 chewables | 2 tsp. (10 ml.) | -- |
| 9-10years/60-71 lbs | -- | 5 chewables | 2 ½ tsp. (12.5ml.) | -- |
| 11years/72-95 lbs | -- | 6 chewables | 3 tsp. (15ml.) | 1 tablet |
| 12years-adult/96 lbs + | -- | -- | -- | 2 tablets |

IBUPROFEN [Motrin®, Advil®]. Ibuprofen has the same ability to lower fever as acetaminophen, but they work in different ways. Ibuprofen can be given as often as **every 6 hours**. Do NOT give a child less than 6 months of age or a child with chicken pox, dehydration, or a history of kidney problems any ibuprofen unless instructed by a doctor. The dose for your child should be **based on their weight**.

| <u>Age/weight</u> | <u>Drops</u> <u>50mg/1.25ml</u> | <u>Suspension</u> <u>100mg/5ml</u> | <u>Chewable</u> <u>100mg</u> | <u>Tablets</u> <u>200mg</u> |
|------------------------|------------------------------------|---------------------------------------|---------------------------------|--------------------------------|
| 6-11months/12-17 lbs | 1 dropper/1.25ml. | ½ tsp. (2.5ml.) | -- | -- |
| 12-23months/18-23 lbs | 1 ½ droppers/1.875 ml. | ¾ tsp. (3.75 ml.) | 1 chewable | -- |
| 2-3years/24-35 lbs | 2 droppers/2.5ml. | 1 tsp. (5 ml.) | 1 ½ chewables | -- |
| 4-5years/36-47 lbs | -- | 1 ½ tsp. (7.5 ml.) | 2 chewables | -- |
| 6-8years/48-59 lbs | -- | 2 tsp. (10 ml.) | 2 ½ chewables | 1 tablet |
| 9-10years/60-71 lbs | -- | 2 ½ tsp. (12.5 ml.) | 3 chewables | 1 tablet |
| 11years/72-95 lbs | -- | 3 tsp. (15 ml.) | 4 chewables | 1 tablets |
| 12years-adult/96 lbs + | -- | 4 tsp. (20ml.) | 4 chewables | 2 tablets |

ACETAMINOPHEN SUPPOSITORIES. For children who are nauseous or vomiting and have a fever, or who need a fever-reducer but refuse to take the medication, **Feverall® rectal suppositories** are available over-the-counter to treat a fever. The dosing is every **4 hours**.

| AGE | INFANTS | CHILDREN'S | JR. STRENGTH |
|--------------|---------------|---------------|---------------|
| | 80mg | 120mg | 325mg |
| 3-11 months | 1 suppository | -- | -- |
| 12-35 months | 1 suppository | -- | -- |
| 3-5 years | -- | 1 suppository | -- |
| 6-12 years | -- | -- | 1 suppository |

Alternating Fever Reducers. If a fever continues despite doses of acetaminophen or ibuprofen, the two can be given on the same day. If the fever has persisted, we recommend **alternating doses every 3 hours**. For instance, if Tylenol was given at noon and a fever is present at 3 p.m., a dose of Motrin can be given. These alternating Tylenol-Motrin-Tylenol-Motrin doses can be safely continued every 3 hours for as long as the fever persists.

Sponging and Cooling Baths. Sponging a child with a fever with lukewarm water may help briefly reduce the temperature. However, most children feel chilled and uncomfortable with sponging. Because we are **treating fever for comfort** (not for safety unless the fever is 108 or more), sponging is rarely helpful. **If a child is lethargic** with the fever or a feverish child is having difficulty falling off to sleep, sponging them with lukewarm water or giving them a bath in lukewarm water is recommended. **If the fever comes down, but the child does not perk up and respond to you appropriately, please call us.** Never sponge with cold water or alcohol. It can be helpful to do a **sponge bath a child who appears lethargic with a fever that is not responding to the fever-reducer.** If they then are fussing and crying about being in the bath, you know that even if the fever has not come down that they are not lethargic. A note about the difference between “listless” and “lethargic”: these mean very different things to the pediatrician. A listless child will lie around and be less active, but will answer questions, make eye contact, and occasionally be up out of bed to go to the bathroom or to otherwise move about. A lethargic child will not interact normally with others, will not be up and around on occasion, and generally appears much sicker. We often use the phrase “like a limp rag doll” to describe how ill a lethargic child appears to everyone.

FEVER FACTS TO REMEMBER.

1. Keep a **working thermometer** available at home.
2. Call us immediately if your child less than **8 weeks of age** has a rectal temperature of 100.5 degrees or more. These infants need to be seen right away, whether at our office or Nationwide Children’s Hospital Emergency Department. Our concern is that even well appearing newborns can have a more serious illness, such as bacterial sepsis or meningitis. Many of these infants will need further evaluation and a few day stay at Nationwide Children’s Hospital.
3. Carefully check for the **proper dose** before giving your child a fever reducer.
4. Check a child’s temperature at least **daily during an illness** with a fever.
5. Call us immediately during regular business hours or seek care at Nationwide Children’s Urgent Care or Emergency Department if your child has a fever of **106 degrees** or more.
6. Fever **treatment is for comfort** unless the fever is 108 degrees or more.
7. If your child has **a fever for 5 or more days** during an illness, contact our office during regular business hours or have your child seen during walk-in hours at 8 a.m.
8. If the temperature is not coming down after the fever-reducer, you can alternate the Tylenol® and Motrin® every 3 hours. If alternating the medication does not bring down the fever, **BUT** your child perks-up occasionally and is interacting with you, simply continue treating with the fever-reducers. If your child is not perking up or interacting with you normally, cool them down with a lukewarm bath.
9. Remember that the **height of the fever** does not correlate well with the seriousness of the illness. **How sick the child is acting is what is important.** If a child does not perk-up once their temperature comes down, we are concerned about this. Your child should be seen promptly. If during routine hours, call our office. If during walk-in hours at 8 a.m., bring your child in to be seen at that time. Otherwise, we would recommend that your child be seen promptly at Nationwide Children’s Hospital Urgent Care or Emergency Department.

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