



# FEVER FACTS

Dear Parents,

Fever is probably the most common of all pediatric complaints, affecting millions of infants and children throughout childhood. While many of you may become concerned, even anxious, when your child develops a fever, you can be reassured that this most natural of symptoms usually indicates that your child's immune system is alive and functioning well.

This brochure was designed to put fever in perspective by providing you with the facts about fever and some helpful advice on fever management. We hope that the content will be both informative and useful, empowering you to take charge of your child's fevers whenever they arise.

## Understanding Fevers

Fever - an increase in body temperature - is one of the body's normal defenses against attack from an infection or another disease. It is therefore a symptom, not a disease itself.

A part of the brain that acts as the body's thermostat controls body temperature by balancing hot and cold signals throughout the body. Factors that influence body temperature are infections; vaccines

and medications; and injury. Body temperature increases also occur with exercise, excessive clothing, a hot bath, or hot weather.

Fever may actually play a role in fighting infections and shortening their course by turning on the body's immune system, thereby increasing the release and activity of white blood cells and other germ-killing substances.

**The usual fevers (100.4°F to 104°F) that all children get are not harmful. Most are caused by viruses and may last 3 to 5 days. In general, the height of a fever doesn't relate to the seriousness of the illness. How sick your child acts is what counts, and that should determine whether he or she needs a doctor's attention.**

### INSIDE

- 1 Understanding Fever and Fever Fears
- 2 Treatment of Fevers
- 3 How to Measure Body Temperature
- 4 Medication Dosing

### INSERT

Medication Dosing Chart  
and  
When to Call the Pediatrician

## Fever Fears

The following are some commonly held fears regarding fever:

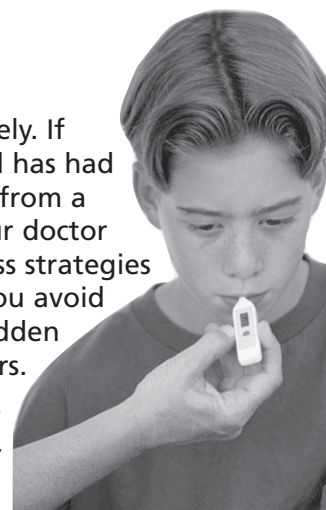
- **MY CHILD WILL HAVE A CONVULSION (SEIZURE) WITH FEVER.**

Only a small percentage of children have a seizure caused by a fever. These usually occur in children between 6 months and 6 years of age. It is not only the height of the fever but also how rapidly the temperature rises that puts a child at risk for a seizure. Although these seizures are frightening for parents, they usually are without serious long-term consequences. If you think your child has had a seizure during a fever, you should call your doctor

immediately. If your child has had a seizure from a fever, your doctor will discuss strategies to help you avoid future sudden high fevers.

- **HIGH FEVER IS A SIGN OF MENINGITIS.**

Meningitis can cause a high fever, but meningitis is very rare. The vast majority of high fevers are caused by common childhood illnesses that are not dangerous.



# Treatment of Fevers

## MEDICATIONS

Remember that fever is helping your child fight infection, so use fever medications only if the fever is in the moderate range (over 101.5°F) or your child is uncomfortable. In general, fever medications are overused, and, as with all medications, there is a risk of dangerous side effects from giving them too frequently. **Simply undressing the child and offering a cool drink can reduce mild fevers.** If fever medications are to be used, be sure to give the correct dosage for your child's weight and within the appropriate time interval. The table included in this brochure provides all the information you will need about medication dosing.

Fever medications usually work within about an hour after they are given and will reduce a fever by 1.5°F to 2°F. Don't expect the medication to bring the temperature down to normal unless the fever was low-grade to begin with. Repeated doses may be needed to manage fever fluctuations as the illness runs its course, which may take several days. **If your child is sleeping comfortably, it is not necessary to awaken him to administer a fever medication.** If the fever is high enough to require medicine, your child will usually awaken on his own.

Remember that the response, or lack of response, of the fever to fever medication tells us little about the severity of the infection that caused it. If your child is smiling, playing, and drinking adequate fluids, you usually do not need to worry about the fever.

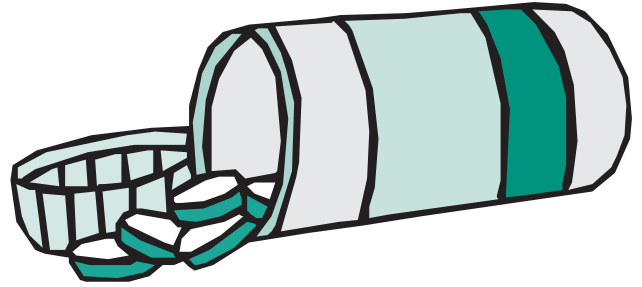
- **ACETAMINOPHEN PRODUCTS (TYLENOL, TEMPRA)**

Children two months of age and older can be given one of the

acetaminophen products for fever. Give the correct dosage for your child's weight every 4 hours but not more frequently. Remember that these products are made in several different strengths (infant's and children's) and formulations (liquid and tablets), so be sure to choose the appropriate product for your child's age. For assistance in determining the correct dosage, see the dosing table included in this brochure.

- **IBUPROFEN PRODUCTS (MOTRIN AND ADVIL)**

Children six months of age and older can be given one of the ibuprofen products. Like acetaminophen products, ibuprofen comes in several strengths and formulations, so be sure to choose the appropriate product for your child's age. As with acetaminophen, ibuprofen should be used only if the fever is over 101.5°F or your child is uncomfortable. Ibuprofen is



longer acting than acetaminophen and should be given every 6 to 8 hours but not more frequently. Again, see the table included in this brochure for assistance with dosing.

- **CAUTIONS ABOUT ASPIRIN**

The American Academy of Pediatrics has advised that all children (through 21 years of age) not take aspirin products. This recommendation is based on several studies that have linked aspirin to Reye's Syndrome, a rare but serious disease affecting the brain and liver following viral infections. Most pediatricians have stopped using aspirin for fevers associated with any illness.

## CLASSIFICATION OF FEVERS\*

MILD:	100.4°F - 101.5°F
MODERATE:	102°F - 104°F
HIGH:	>104°F

(\*rectal temperature)

Please note: If your child is 3 months of age or less, a temperature of 100.4°F or greater (taken rectally or under the arm) is considered a high fever, and you should call your doctor immediately. See insert for other symptoms associated with fever that would require a call to the doctor.

## SPONGING

Although helpful, sponging (artificially cooling the skin surface) is usually not necessary to reduce fever. Never sponge your child without first giving a fever medication. Sponge immediately only in emergencies such as heat stroke, delirium (acting very confused) from fever, a seizure from fever, or any fever greater than 106°F. In other cases, sponge your child only if the fever is over 103°F, the fever has stayed that high when you take the child's temperature 45 minutes after giving medication, or your child is uncomfortable from the fever. Until the medication has taken effect (by resetting the body's thermostat), sponging will only cause shivering, which is the body's attempt to raise the temperature.

If you choose to sponge your child, use lukewarm (85°-90°F) water. Sponging works much faster than immersion, so seat your child in about two inches of lukewarm water and wet the skin surface continually over about 20 minutes. If your child shivers, warm the water slightly, or wait for the fever medication to take effect. Your goal should be to reduce the fever by a few degrees, not to eliminate it entirely. Never use rubbing alcohol either alone or in the sponging water. The skin can absorb it, and it can cause coma if inhaled. And please remember never to leave your child unattended in the tub.

## EXTRA FLUIDS

Because body fluids are lost due to sweating during fevers,

encourage your child to take some extra fluids to replace those losses, but do not force him to drink. Your child may especially prefer popsicles or iced drinks during the fever.

## LESS CLOTHING

(BUNDLING CAN BE DANGEROUS)

Since most body heat is eliminated through the skin surface, your child's clothing should be kept to a minimum during a fever. Bundling a child can cause a higher fever; be especially careful with infants who cannot shed extra layers if they become overheated. During a fever, dressing the child in a single layer should be adequate. If at any time your child feels cold or develops shivering ("the chills"), offer a light blanket or a warm drink.

# How to Measure Body Temperature

Obtaining an accurate measurement of your child's temperature with a thermometer requires some practice. If you have questions about this procedure, ask your pediatrician or office nurse to demonstrate how it is done and to observe you taking your child's temperature.

A rectal measurement is the most desirable and the most accurate, especially in an infant, because it reflects the body's central ("core") temperature. Oral

temperatures are also reasonably accurate if performed properly. Underarm temperatures are the least accurate, but better than no measurement at all.

## TYPES OF THERMOMETERS

1. Digital--These record temperatures with a heat sensor that runs on a small battery. They measure quickly, usually in less than 30 seconds, and can be used for rectal, oral, or underarm readings. They usually "beep" when the measurement is complete, and then display the temperature in numbers on a small screen. These thermometers are inexpensive and are recommended as the most reliable by pediatricians.

2. Glass--These come in two versions, rectal (with a round tip) and oral (with a thinner tip), and can also be used under the arm. They are the least expensive type of thermometer but also the

slowest (usually requiring two to three minutes for a measurement) and the most difficult to read.

Mercury thermometers should not be used. We encourage parents to remove mercury thermometers from their homes to prevent accidental exposure to this toxin.

3. Ear Thermometers--These are infrared devices that read the temperature of the eardrum, which provides a measurement that is as sensitive as a rectal temperature. Although they are the fastest reading thermometers (less than two seconds), they are expensive and often inaccurate and therefore unreliable.

4. Other thermometers--Liquid crystal strips and temperature-sensitive pacifiers have been found to be inaccurate and unreliable and should be avoided.



## RECOMMENDATIONS BY AGE FOR THERMOMETERS\*

Newborn to three years - use a digital thermometer for use in the rectum (measure underarm temperature if unable to take rectally)

Over three years - a digital thermometer for use in the mouth (an oral thermometer), underarm, or rectum

\*Ear thermometers, though frequently unreliable, can be used in children 18 months of age and older. When using this type of thermometer, two consecutive readings may help to determine reliability.

## TAKING THE TEMPERATURE WITH DIGITAL AND GLASS\* THERMOMETERS

### 1. Rectal

- Have your child lie stomach down on your lap.

- Apply a small amount of lubricant (petroleum or KY jelly) to the tip of the thermometer.
- Gently insert the thermometer past the anus into the rectum about 1/2 to 1 inch; never force it in. Hold your child still until the digital thermometer "beeps" or the glass thermometer takes the reading (one to three minutes.)

### 2. Underarm

- Place the tip of the thermometer in a dry underarm.
- Close the underarm by holding the elbow against the chest for three minutes (for glass thermometer) or until the digital thermometer "beeps."
- If you're uncertain about the result, compare it with a rectal reading.

### 3. Oral

- Be sure your child has not taken a cold or hot drink within the last 10 minutes.
- Place the thermometer under

one side of the tongue and toward the back. An accurate temperature reading depends on proper placement.

- Have your child hold the thermometer in place with the lips and fingers (not the teeth) and breathe through the nose, keeping the mouth closed. If your child cannot keep his mouth closed because his nose is blocked, suction out the nose.
- Digital thermometers will "beep" when the temperature is read; glass thermometers should be left in the mouth for three minutes.

\*Before insertion, glass thermometers should always be shaken until the liquid is below 98.6° F. To read a glass thermometer, rotate the thermometer until you can see the line. The line ends at the number that represents the temperature.

# Medication Dosing

The chart insert shows our recommended dosing regimen for acetaminophen (Tylenol/Tempra) and ibuprofen (Motrin/Advil).

The factor that best determines the correct dose of medication for

your child is his or her weight. If you are unsure of the exact weight, you may use the child's age, but this method is not as accurate: larger-than-average children for their age will be underdosed;

smaller-than-average children risk overdose. Our chart provides both weight and age parameters, but we recommend that you use weight to arrive at the most appropriate dose of medication for your child.

**APP** | Affiliated Pediatric Practices  
*The benchmark of excellence in pediatric healthcare*

This **Fever Facts** brochure was developed by Affiliated Pediatric Practices.

Your practice is a member of Affiliated Pediatric Practices - an organization working for the health and safety of your children.  
©Copyright APP, 2007

This guide has been established solely as an additional resource for parents to utilize as they deal with fever at home. These guidelines do not constitute medical advice and do not replace the need to seek the independent medical judgement of your physician in each specific case. These guidelines are current as of the date that they are printed but are subject to change as new information may be developed.

## ACETAMINOPHEN (TYLENOL)\* DOSING

**MAY BE GIVEN EVERY 4 HOURS AS NEEDED • DO NOT EXCEED 5 DOSES IN A 24 HOUR PERIOD**  
**The factor that best determines the correct dose of medication for your child is his or her weight.**

WEIGHT OR AGE		INFANT DROPS 80mg/0.8 cc(dropperful)	LIQUID SUSPENSION/ELIXIR 160mg/5cc(teaspoon)	CHEWABLE/MELTAWAY TABS 80mg/tab	JR.STRENGTH CAPS/MELTAWAY TABS 160 mg/tab (or capsule)
9-12 lbs*	0-3 mos*	1/2 dropperful* (40mg)			
13-15 lbs	4-5 mos	1 dropperful (80mg)	1/2 teaspoon (80mg)		
16-18 lbs	6-8 mos	1 1/4 droppersful (100mg)	1/2 teaspoon (80mg)		
19-20 lbs	9-10 mos	1 1/2 droppersful (120mg)	3/4 teaspoon (120mg)		
21-25 lbs	11-20 mos	1 3/4 droppersful (140mg)	3/4 teaspoon (120mg)		
26-30 lbs	21-30 mos		1 teaspoons (160mg)	2 tabs	1 tab/cap
31-35 lbs	3 yrs		1 1/4 teaspoons (200mg)	2 1/2 tabs	1 tabs/caps
36-41 lbs	4-5 yrs		1 1/2 teaspoons (240mg)	3 tabs	1 1/2 tabs/caps
42-47 lbs	6 yrs		1 3/4 teaspoons (280mg)	3 1/2 tabs	1 1/2 tabs/caps
48-53 lbs	7 yrs		2 teaspoons (320mg)	4 tabs	2 tabs/caps
54-59 lbs	8 yrs		2 1/4 teaspoons (360mg)	4 1/2 tabs	2 tabs/caps
60-65 lbs	9 yrs		2 1/2 teaspoons (400mg)	5 tabs	2 1/2 tabs/caps

\*FOR FEVER GREATER THAN 100.4 IN AN INFANT < 3 MONTHS, CONTACT YOUR PHYSICIAN FIRST.

## IBUPROFEN (MOTRIN or ADVIL)\* DOSING

**MAY BE GIVEN EVERY 6-8 HOURS AS NEEDED • DO NOT EXCEED 4 DOSES IN A 24 HOUR PERIOD**

WEIGHT OR AGE		INFANT DROPS 50mg/1.25 mls	LIQUID SUSPENSION 100mg/5cc(teaspoon)	CHEWABLE TABS** 50mg/tab	CHEWABLE TABS**/CAPS 100 mg/tab (or caplet)
6-8 lbs*	0-2 mos*	<b>* IBUPROFEN SHOULD NOT BE USED IN CHILDREN UNDER THE AGE OF 6 MONTHS</b>			
9-10 lbs*	0-2 mos*				
11-12 lbs*	2-3 mos*				
13-15 lbs*	4-5 mos*				
16-18 lbs	6-8 mos	1 1/2 droppersful (1.875 mls 75mg)	3/4 teaspoon		
19-20 lbs	9-10 mos	1 1/2 droppersful (1.875 mls 75mg)	3/4 teaspoon		
21-25 lbs	11-20 mos	2 droppersful (2.5 mls 100mg)	1 teaspoon	2 tabs	1 tab/cap
26-30 lbs	21-30 mos		1 1/4 teaspoons	2 1/2 tabs	1 tab/cap
31-35 lbs	3 yrs		1 1/2 teaspoons	3 tabs	1 1/2 tabs/caps
36-41 lbs	4-5 yrs		1 3/4 teaspoons	3 1/2 tabs	1 1/2 tabs/caps
42-47 lbs	6 yrs		2 teaspoons	4 tabs	2 tabs/caps
48-53 lbs	7 yrs		2 1/4 teaspoons	4 1/2 tabs	2 tabs/caps
54-59 lbs	8 yrs		2 1/2 teaspoons	5 tabs	2 1/2 tabs/caps
60-65 lbs	9 yrs		2 3/4 teaspoons	5 1/2 tabs	2 1/2 tabs/caps

\*\*REMEMBER: IBUPROFEN CHEWABLE TABS COME IN TWO DIFFERENT STRENGTHS (50MG AND 100MG)

*We have found that generic versions of these medications are as effective as the brand versions and may save you money. We encourage the use of generic medications.*

*NOTE: Medications may come in different size bottles with different size droppers. Please make sure you read the dropper/medication dispenser carefully to ensure the correct dosage for your child. If in doubt, please call the office.*

## When to call your pediatrician if your child has a fever

Please note that the following are guidelines only. Your child's general appearance and the way he or she is acting are usually more important indicators of illness than the height of the fever. You should always call if your child looks or acts significantly ill for any period of time or if you are concerned about worsening health.

### Call immediately if:

- Your child looks or acts very ill for any period of time.
- You think your child has had a seizure.
- Your child is less than three months old and has a temperature greater than 100.4°F.
- Your child is over three months and less than three years old, and the fever is over 102°F and he or she is not acting well.
- Your child is over three years old, feverish, and does not look well, and does not perk up significantly after an appropriate dose of fever medicine.
- Your child is crying inconsolably.
- Your child cries if you touch him or move him.
- Your child is difficult to awaken.
- Your child complains of a stiff neck and cannot touch the chin to the chest without pain.
- Purple spots are present on the skin, and these do not blanch (whiten) when pressed firmly.
- Breathing is labored and no better after the nasal passages are cleared.
- Your child is unable to swallow anything and is drooling saliva.
- Your baby's fontanelle ("soft spot") is bulging when he or she is sitting up quietly.
- There is redness or swelling around the eye or pain with eye movements.
- There is redness, tenderness, or swelling over an arm or leg.
- Your child walks with a limp or refuses to move a leg joint.
- Your child has a compromised immune system (e.g., the spleen has been removed, the child is undergoing chemotherapy or is HIV-positive) or sickle cell anemia.
- You have any other concerns about fever that make you feel an immediate call is necessary.

### Call within 24 hours if:

- Your child suffers from a burning sensation or pain during urination.
- Your child complains of ear pain.
- Your child complains of sore throat and any of the following: swollen glands, headache, abdominal pain, rash, or joint pain.
- Your child voids dark urine 3 or 4 weeks after a sore throat.
- Your child's fever lasts more than 48 hours without any obvious cause or infection.

### Call during regular office hours if:

- Your child's fever is greater than 101.5°F for more than 72 hours.
- The fever has been normal for 24 hours and then returned.
- Your child has a history of seizures with fever, and you wish to review fever management.
- You have other concerns or questions regarding fever.