



PATIENT EDUCATION

Fever in Children

MAYO CLINIC CHILDREN'S CENTER



BARBARA WOODWARD LIPS
PATIENT EDUCATION CENTER

Mayo Clinic Children's Center

For more than 100 years, teams of physicians have cared for children at Mayo Clinic.

T. DENNY SANFORD PEDIATRIC CENTER

MAYO EUGENIO LITTA CHILDREN'S HOSPITAL

Pediatric Sub-Specialties in the following areas:

Allergy and Immunology	General Pediatric and	Plastic and Reconstructive
Anesthesiology	Adolescent Medicine	Surgery
Cardiology	Gynecology, Adolescent	Psychiatry and Psychology
Cardiovascular Surgery	Hematology and Oncology	Pulmonology
Child and Family	Infectious Diseases	Radiation Oncology
Advocacy Program	Medical Genetics	Radiology
Community Pediatrics and	Neonatal Medicine	Regional (Health System)
Adolescent Medicine	Nephrology	Pediatrics
Critical Care	Neurology	Research
Dermatology	Neurosurgery	Rheumatology
Developmental and	Ophthalmology	Sleep Medicine Center
Behavioral Pediatrics	Oral and Maxillofacial Surgery	Speech Pathology
Emergency Medicine	Orthopedic Surgery	Surgery
Endocrinology and Metabolism	Otorhinolaryngology (ENT)	Urology
Gastroenterology and	Physical Medicine and	
Hepatology	Rehabilitation	

Pediatric Specialty Clinics:

Adrenoleukodystrophy Clinic	Dermatology Genetics Clinic	Neonatal Follow-Up Clinic
Aerodigestive Clinic	Diabetes Clinic	Neuromuscular Clinic
Anxiety Disorders Clinic and	Eating Disorders Clinic	Pain Clinic
Intensive Therapy Program	Eosinophilic Esophagitis Clinic	Pain Rehabilitation Center
Arrhythmia and Device	Epilepsy Clinic	Pediatric Diagnostic Referral
Placement Clinic	Erythromelalgia Clinic	Clinic
Asthma Center	Facial Paralysis and	Pediatric Level 1 Trauma Center
Attention Deficit Hyperactivity	Reanimation Clinic	Plagiocephaly Program
Disorders (ADHD) Clinic	Feeding Program	Pulmonary Hypertension
Bariatric Surgery Clinic	Fertility Preservation	Program
Brain Injury Program	Fetal Surgery Program	Renal Stone Clinic
Brain Tumor Clinic	Friedreich's Ataxia Clinic	Spina Bifida Clinic
Cerebral Palsy Clinic	Functional Movement	Spinal Deformities Clinic
Chemotherapy/Radiation	Disorder Program	Sports Medicine Center
Long-Term Effects Clinic	Heart Failure Clinic	Thyroid Nodule/Cancer Clinic
Child and Adolescent Intensive	Hemophilia/Coagulopathy Clinic	Transgender Clinic
Mood Program (CAIMP)	Hyperlipidemia Program	Transitions Program
Childhood Sarcoma Clinic	Immunodeficiency Disorders	Transplant Center
CompPASS (Palliative Care and	Clinic	Travel Clinic
Integrative Medicine)	Inflammatory Bowel Disease	Vascular Malformations
Congenital Heart Clinic	Clinic	Velo-Pharyngeal
Constraint Induced Movement	Learning Disorders	Insufficiency Clinic
Therapy Program	Assessment Clinic	Voiding Clinic
Craniofacial Clinic	Long QT Syndrome Clinic	Weight Management Clinic
Cystic Fibrosis Center	Marfan Syndrome Clinic	
Dana Child Developmental and	Metabolic Bone Clinic	
Learning Disorders Program	Mood Disorders Clinic	

What Is a Fever?

A fever occurs when body temperature rises above normal — above 100.4 degrees Fahrenheit (F) or 38 degrees Celsius (C). Often, a child's temperature is a little higher or lower than the average body temperature of 98.6 degrees F (37 degrees C) during different parts of the day. A temporary rise in temperature can sometimes result from exercise, hot weather, being overdressed or drinking hot liquid.

Body temperature can be taken:

- In the mouth, called orally.
- In the armpit, called axillary.
- In the ear, called tympanically.
- In the rectum, called rectally.

Your child's temperature will vary depending on which of these methods you use. When you report your child's temperature to a health care provider, tell him or her what method you used.

Taking your baby's temperature

If you think your baby has a fever, use a digital rectal thermometer to check your baby's temperature, unless you have been told otherwise by your baby's health care provider.

Put a small amount of lubricant, such as KY™ Jelly, Vaseline™, or warm water, on the tip of the thermometer. Insert the tip of the thermometer about 1/2 inch to 1 inch into the rectum. Follow the instructions that come with the thermometer. Hold your baby's feet and legs securely when you take a rectal temperature. See Figure 1.



Figure 1. Taking your baby's temperature.

Pacifier thermometers, temperature strips placed on the skin and touching the skin with your hand are not accurate methods for determining whether your child has a fever.

Fever is a symptom, not an illness by itself. Fevers can have many causes; the most common cause of fever in children is viral illness. Fevers related to viral illness usually last about two to three days.

Fever also can be a sign of a more serious illness. The intent of this information is to help parents and caregivers understand when fever in a child is serious, when to obtain medical help and how to comfort a child who has a fever. These are general guidelines. **If you are uncomfortable with how your child looks or acts, please call your health care provider.**

Following are signs that your child may have a serious illness and needs to be seen by a health care provider right away. If these symptoms occur when your primary health care is closed or a health care provider is not available to see your child right away, take your child to an emergency care facility.

Signs of a serious illness include the following:

- Rectal temperature of 100.4 degrees F (38 degrees C) in an infant under 2 months
- Difficulty breathing
- Disorientation, confusion, not responsive or difficult to awaken
- Stiff neck
- Seizure
- Signs of significant dehydration such as a dry mouth, sunken eyes or minimal urination for 8 to 12 hours
- Intense abdominal pain
- Acts very sick and does not improve one hour after being given fever-reducing medication
- Chronic disease that impairs your child's ability to fight infection
- Extreme irritability; difficult to comfort or calm
- Coughing
- Vomiting
- Pain while passing urine

Nights and weekends, contact the physician-on-call for specific advice.

Immunizations help to protect your child against many serious illnesses. If your child has not been fully immunized, he or she will be at greater risk for serious illness. Inform your health care provider if your child's immunizations are not up-to-date.

Call your health care provider during office hours the next morning if your child has no signs of serious illness and:

- Has had a fever for more than 48 to 72 hours without a known cause.
- Has a fever that returns after having gone away for 24 or more hours.
- Has burning or pain with urination.
- Has ear pain or ear pulling.

Comforting a Child Who Has a Fever

The following suggestions may comfort a child who has a fever:

- Fever causes children to lose more fluids than usual, so offer liquids often in unlimited amounts. Frozen juice bars or Popsicles™ can also help provide extra fluid. Drinking plenty of fluids replaces those lost while sweating and also helps to reduce the fever.
- Let your child decide how much he or she feels like eating.
- Do not overdress or bundle your child. This can cause a rise in body temperature. Dress your child in one light layer of clothing while indoors and cover with one lightweight blanket when sleeping.
- Encourage extra rest and quiet play for two to three days.
- Sponge your child with lukewarm (not cold) water. If your child shivers or becomes cold, stop sponging or increase the water temperature. Do not sponge your child with rubbing alcohol.
- Allow your child to gradually return to normal activities after the fever ends. Your child may return to school or daycare when your child has not had a fever for 24 hours.

Giving Medication to Treat a Fever

Most fevers are not harmful for children because they help the body fight infection. Fever medication helps reduce fever and can make a child more comfortable, however, fever medication will not make an illness go away faster. If your child has a fever and is comfortable, you do not need to give fever-reducing medication. Without treatment, the fever will not keep going higher. Because of the brain's thermostat, fevers from infection do not exceed 105 to 106 degrees F (40.6 to 41.1 degrees C). With treatment, the fever usually will come down 2 to 3 degrees F (1.1 to 1.7 degrees C), however, medication may not reduce the temperature to normal.

Although a fever may make your child feel uncomfortable, it will not cause permanent harm. Fever from an infection will not cause brain damage. Only body temperatures over 108 degrees F (42 degrees C) can cause brain damage. A child's body temperature would only go this high in an extremely hot place, such as in a closed car in hot weather.

Rarely, in less than 4 percent of children, is fever associated with febrile (feverish) seizures in young children. Although watching a child experience a febrile seizure may be frightening, the seizure will not cause permanent harm. Children who have had febrile seizures do not have a greater risk for developmental delays, learning disabilities or seizures without fever. A child who has a febrile seizure, however, should be seen by a physician very soon after the first time a febrile seizure occurs to make certain this diagnosis is correct and that the seizure does not have a more serious cause.

If a fever is high, the cause may or may not be serious. Whether medication helps to lower a fever does not relate to the seriousness of the infection. If your child looks very sick, the cause is more likely to be serious. When a child is under 2 months old, appearance alone does not give enough information about the seriousness of a fever. For that reason, **all infants under 2 months old who have a fever should be seen by a health care provider.**

Guidelines for Giving Medication

Follow these guidelines when treating fevers with medication:

- Consult your health care provider **before** giving an infant less than 3 months fever-reducing medication. Fever in young infants needs to be evaluated.
- **Do not** give aspirin to a child under 16 years with a fever, especially if the child has chicken pox or influenza. Aspirin may trigger Reye's syndrome, a potentially life-threatening disorder.
- **Do not** give fever-reducing medications for more than three days without consulting your health care provider. Fevers that last longer than three days should be evaluated by a health care provider.

Acetaminophen and ibuprofen are medications used to treat fever that can be obtained over-the-counter, without a prescription. Both work in a similar way, so alternating them seldom provides any added benefit. Acetaminophen is available under brand names such as Tylenol™, Panadol™, Liquiprin™ and Tempra™. Ibuprofen is available under brand names such as Advil™ and Motrin™.

Use acetaminophen or ibuprofen, **but not both** at the same time, or an error in dosage or poisoning could occur. In some instances, your child's health care provider may instruct you to alternate using acetaminophen and ibuprofen — to use one and then later to use the other. Alternate using these medications, one at a time, only if told to do so. Follow your child's health care provider's instructions exactly.

Acetaminophen and ibuprofen liquids are available in more than one concentration. Carefully read the medication label to make certain you are giving your child the correct medication and dosage. Do not use a measuring dropper or syringe from one medication with any another medication. If you are not sure which product or amount is best for your child, be sure to consult with your health care provider or pharmacist.

If your child is younger than 6 months old, ask your child's health care provider whether it is OK to give your child ibuprofen.

Changing Centigrade Celsius to Fahrenheit

Centigrade (Celsius)	Fahrenheit
37.0	98.6
37.2	98.9
37.4	99.3
37.6.....	99.6
37.8	100.0
38.0	100.4
38.2	100.7
38.4.....	101.1
38.6.....	101.4
38.8.....	101.8
39.0.....	102.2
39.2.....	102.5
39.4.....	102.9
39.6.....	103.2
39.8.....	103.6
40.0.....	104.0
40.2.....	104.3
40.4.....	104.7
40.6.....	105.0
40.8.....	105.4
41.0.....	105.8

Figure 2. Changing Centigrade (Celsius) to Fahrenheit

Notes



BARBARA WOODWARD LIPS PATIENT EDUCATION CENTER

Mrs. Lips, a resident of San Antonio, Texas, was a loyal Mayo Clinic patient of more than 40 years and a self-made business leader who significantly expanded her family's activities in oil, gas and ranching. Upon her death in 1995, Mrs. Lips paid the ultimate compliment by leaving her entire estate to Mayo Clinic. By naming the Barbara Woodward Lips Patient Education Center, Mayo honors her generosity, her love of learning, her belief in patient empowerment and her dedication to high-quality care.

This material is for your education and information only. This content does not replace medical advice, diagnosis or treatment. New medical research may change this information. If you have questions about a medical condition, always talk with your health care provider.

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