

Temperature: Digital and Glass Thermometers

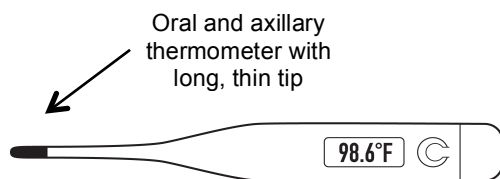
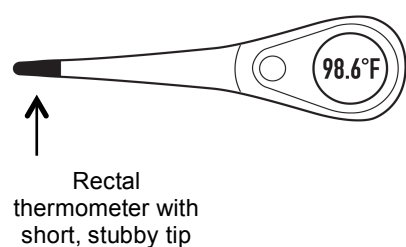
The body temperature of infants and children can change quickly. Age, activity and time of day can all affect a child's normal temperature. If your child feels warmer than usual to your touch, is sweating, shivering or seems ill, you will want to take his or her temperature before calling the doctor. It can also show if a certain medicine is working to fight an infection. The doctor will want to know your child's temperature before any treatment or surgery.

See the fever guide on the last page of this Helping Hand to know what is recommended for your child.

Kinds of thermometers

- Digital thermometers (best to use)
- Glass (not recommended)
- Fever strips (not recommended)

Each thermometer looks different. Know which kind you are using.



Tympanic (ear)
thermometer with
cone-shaped tip



Picture 1 Digital thermometers are best to use. Compare the tips of each kind.

Ways to take a temperature

- Rectal. The thermometer is placed in the child's bottom. It is thought to be the most accurate temperature.
- Oral. The thermometer is placed in the mouth under the tongue. **Note:** Pacifier digital thermometers are not recommended. They can be inaccurate.
- Axillary. The thermometer is placed in the armpit.

Continued on page 2

Ways to take a temperature, continued

- Tympanic. The thermometer is placed in the ear.
- Temporal artery. The thermometer scans the surface of the forehead. These are sometimes used to screen for fever. If the temperature is higher than normal (greater than 101° F), it needs to be taken with a more accurate kind of thermometer. Temporal artery thermometers should not be used on infants.

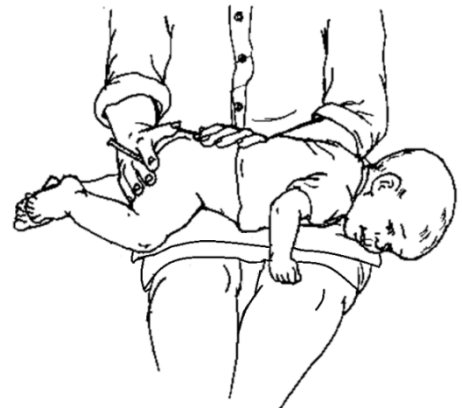
How to take a temperature

Children move around. You may need to hold the thermometer and hold your child at the same time to get a correct temperature. For safety, **never leave a child alone while you are using a thermometer.**

If using a glass thermometer (not recommended), it may take a little longer to get a correct temperature. **Remember: You are placing a piece of glass in your child's body. Never leave your child alone while taking his temperature.**

Rectal temperature

- Use a thermometer with a stubby tip. This type of thermometer is less likely to tear the skin (tissue) inside the rectum (Picture 1).
- Put a diaper or other cloth across your lap. Place your child over the padding on his or her stomach or back. Taking a rectal temperature can cause the child to have a bowel movement.
- Put a small amount of petroleum jelly, such as Vaseline®, on the tip of the thermometer.
- Slide the tip gently into the rectum (Picture 2). Never try to force the thermometer.
 - If your child is less than 3 months old, put it in the rectum only ½ inch. The silver tip on the end of the thermometer is about ½ inch.
 - If your child is more than 3 months old, put the thermometer about 1 inch into the rectum.
- Hold the thermometer in place. You will hear a beep in about 30 seconds. For glass thermometers, hold in place for 3 minutes. Take the thermometer out and read the temperature.



Picture 2 Slide gently into rectum without force. Hold in place.

Oral temperature

- Use a thermometer with a long, thin tip (Picture 1).
- Be sure your child has not had anything hot or cold to eat or drink for 20 minutes before you take his temperature.

Continued on page 3

How to take a temperature, continued

- If your child is so ill that he cannot control shivering, do not take an oral temperature. Take the temperature a different way.
- Place the tip of the thermometer in your child's mouth, under the tongue and close to the middle (Picture 3). Tell your child to keep the lips firmly closed.
- If your child cannot hold the thermometer in place with his tongue and fingers without biting it, hold it in place for him. You will hear a beep in about 30 seconds. For glass thermometers, hold in place for 3 minutes. Take the thermometer out and read the temperature.



Picture 3 Place tip under tongue, close to the middle of the mouth. Close lips.

Tympanic temperature

- If your child has been outdoors on a cold day or is overheated from play, he needs to be inside for 15 minutes before taking the temperature this way.
- Earwax, ear infections and ear tubes do not keep you from getting correct readings.
- Slowly pull your child's ear backwards to straighten the ear canal (back and up if over 1 year old) (Picture 4).
- Gently put the tip of the thermometer in the ear until it stops. The tip should point to the space between the eye and the ear on the other side of the head.
- When you hear a beep in about 2 seconds, remove the thermometer and read the temperature.



Picture 4 Pull ear back. Aim tip to opposite side of head.

Axillary temperature

- Use an oral thermometer with a long, thin tip (Picture 1).
- Make sure the child's underarm is dry.
- Place the tip of the thermometer under your child's arm so it only touches skin. It should not touch clothing (Picture 5).
- Press the child's upper arm against his chest to keep the arm still and the thermometer in place.
- Digital thermometers may take longer than 30 seconds before beeping when using this method. Glass thermometers need to be held in place for 7 to 10 minutes. Remove the thermometer and read the temperature.
- Since axillary temperatures take a little longer, reading a book or watching television might help to keep the child still.



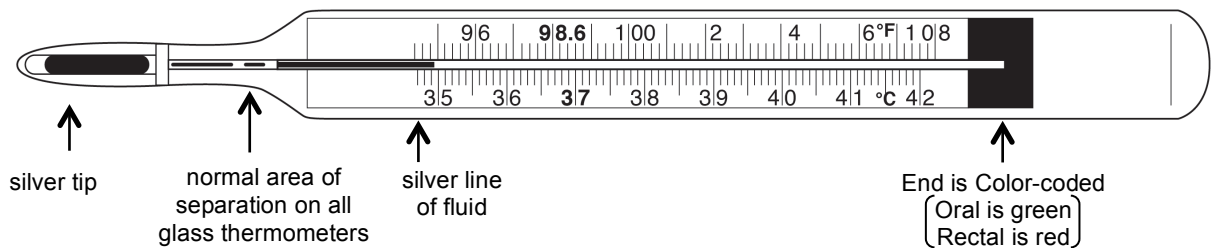
Picture 5 Tip should only touch skin, not clothing. Hold in place.

Kinds of glass thermometers (not recommended)

Glass mercury thermometers are no longer recommended and can be dangerous. There are serious health risks if a glass mercury thermometer breaks. Mercury is toxic if inhaled or if the liquid touches the skin.

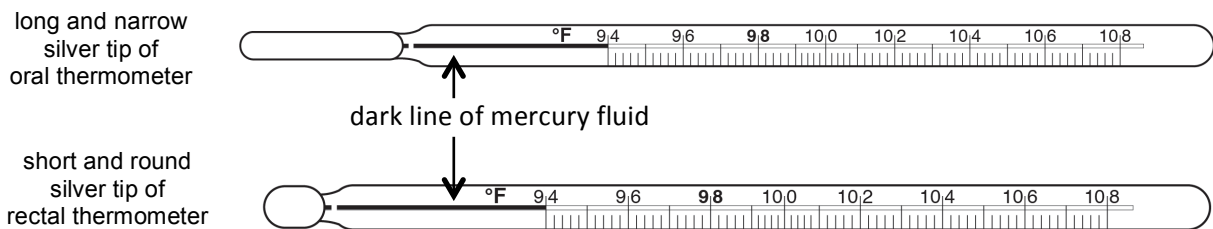
There are two kinds of glass thermometers, one with mercury and one without mercury.

- Mercury-free glass thermometer. If you choose to use a glass thermometer, pick one that is mercury-free such as a Geratherm[®]. Mercury-free glass thermometers have a silver tip. A silver line runs along the numbers to show the temperature. You may see a blue line filling the extra space that is not taken by the silver line. The opposite end is color-coded. Green is for oral or axillary and red for rectal (Picture 6). To be sure, check the package to know which thermometer you have.



Picture 6 Mercury-free glass thermometer

- Mercury glass thermometer. Glass mercury thermometers also have a silver tip. A dark line runs along the numbers to show the temperature. The tip of an oral or axillary glass mercury thermometer is long and narrow. The tip of a rectal glass mercury thermometer is short and round. The space that is not taken by the dark mercury line is usually clear.



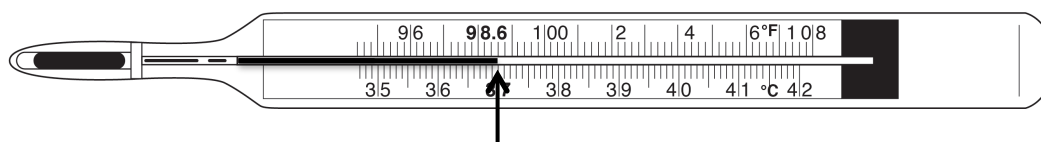
Picture 7 Mercury glass thermometers

How to read a glass thermometer

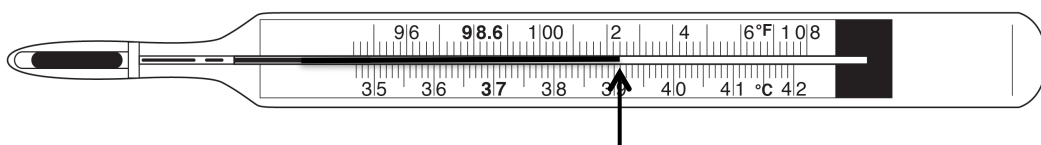
- Check to see what type of thermometer you have.
- Check the tip of a glass thermometer to make sure it is not broken or cracked. Do not use a broken or cracked thermometer.
- Hold the thermometer at eye level with the numbers facing you.

How to read a glass thermometer, continued

4. Look for the numbers and measuring scale of black lines (Picture 8). These vertical (up and down) lines stand for degrees of temperature. Most thermometers have two scales for temperature, Fahrenheit and Celsius. Read the numbers for °F (degrees of Fahrenheit).
 - Each long line is for 1°F temperature.
 - The four shorter lines between each long line are for 0.2°F (two tenths) of a degree of temperature.
5. Look for the line of fluid running along between the numbers and the vertical black lines.
6. Read the number that is closest to where the column of fluid ends. For example:



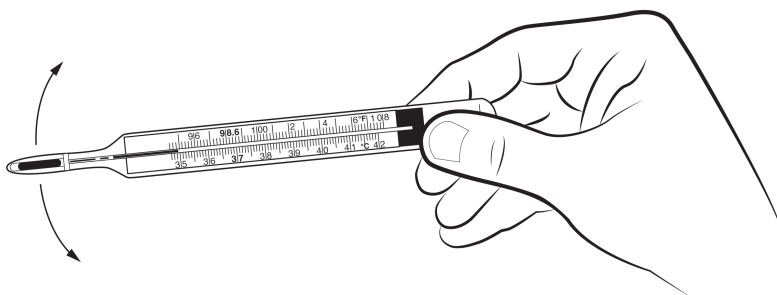
This is 98.6°F (normal or average body temperature)



This is 102.4°F (temperature over 101°F is a fever)

Picture 8 Measuring scale of vertical (up and down) black lines

7. The thermometer's temperature should always start below the first number on the line. If needed, shake the glass thermometer down. Grasp it firmly at the end opposite the tip and flick your wrist sharply. Take care to be away from people and objects before shaking (Picture 9).



Picture 9 Grasp the thermometer and flick your wrist sharply to shake it down. The fluid line should be below the first number before starting.

Care of the thermometer

- Clean a thermometer before and after use with cool soapy water. Or, it can be disinfected with an alcohol swab or cotton ball dipped in alcohol. Never use hot water, bleach or household cleaners on your thermometer. Do not put it in the dishwasher.
- Do not put it away without washing it first. A dirty thermometer might infect your child again.
- Keep it in a safe, cool place and out of reach of children. Glass thermometers should be stored in their plastic container.
- If a mercury thermometer breaks, call the Central Ohio Poison Center at 1-800-222-1222. They will tell you how to get rid of the mercury.
- If a mercury-free thermometer breaks, it can be cleaned up with paper towels and soap. The liquid is not toxic.

When to call the doctor

Most doctors agree that a temperature over 101°F is a fever. However, you may not need to call a doctor every time your child has a fever. Typically, temperatures lower than 101°F do not need to be treated unless your child is uncomfortable.

For information on fever and treatment, including medicines, see Helping Hand HH-I-105, *Fever*.

Call your child's doctor right away if your child has a fever AND:

- is younger than 3 months of age and has a rectal temperature higher than 100.4°F or less than 96.5°F
- looks very ill, is very fussy or is hard to wake up
- has a stiff neck, severe headache, severe sore throat or severe stomachache
- has repeated vomiting and diarrhea
- shows signs of dehydration like dry or sticky mouth, sunken eyes or not urinating
- has a new skin rash
- has had a seizure. See Helping Hand HH-I-195, *Fever and Seizures (Febrile Seizures)*
- has a chronic condition or one that lowers immunity, such as sickle cell disease, cancer or frequent oral steroid use
- has been in an extremely hot place, such as an overheated car
- fever is above 104 °F over and over, and shows no other signs (for all children)
- fever keeps coming back after seven days (for all children)
- you do not know if your child needs treatment

The chart on the next page will help guide you to know when to call your child's health provider. If you call, be sure to state which method you used to take the temperature.

Fever Guide °F (degrees in fahrenheit)			
Child's Age	Normal	Call the Doctor	Call 911 or go to Emergency Department (ED)
Birth to 3 months (Only choose rectal)			
Rectal (in baby's bottom)	96.5-100.4°F	more than100.4°F or less than 96.5°F	more than100.4°F or less than 96.5°F and child looks sick
Oral (under the tongue)	NOT RECOMMENDED		
Ear (tympanic)			
Axillary (armpit)			
4 to 24 months (1 st choice- rectal, 2 nd choice- ear, 3 rd choice- axillary)			
Rectal (in baby's bottom)	Up to 100.4°F	more than 100.4°F for 3 days or more than 102°F and child looks sick	105°F and child does not respond to fever medicine
Oral (under the tongue)	NOT RECOMMENDED		
Ear (tympanic)	Up to 99°F	104°F Take rectal temperature	
Axillary (armpit)	Up to 99°F	103°F Take rectal temperature	
2 to 4 years (1 st choice- rectal, 2 nd choice- ear, 3 rd choice- axillary)			
Rectal (in baby's bottom)	Up to 100.4°F	more than 102°F	105°F and child does not respond to fever medicine
Oral (under the tongue)	NOT RECOMMENDED		
Ear (tympanic)	Up to 99°F	104°F Take rectal temperature	
Axillary (armpit)	Up to 99°F	103°F Take rectal temperature	
4 years old and older (1 st choice- oral, 2 nd choice- ear, 3 rd choice- axillary)			
Rectal (in baby's bottom)	Up to 100.4°F	more than 102°F and lasts more than 3 days or 104°F	105° and child does not respond to fever medicine
Oral (under the tongue)	Up to 99.4°F	more than 102°F and lasts more than 3 days or 104° F	
Ear (tympanic))	Up to 99°F	104°F Take oral or rectal temperature	
Axillary (armpit)	Up to 99°F	103°F Take oral or rectal temperature	