

# A New Way to Take Your Temperature

## As accurate as rectal temperature

—Studies by Harvard Medical School Doctors & other Children's Hospitals in North America

## Accurate as the temperature inside your heart measured with a pulmonary artery catheter

—Studies by Massachusetts General Hospital & other University Hospitals

## More accurate than ear thermometers

—Studies by Harvard Medical School Doctors & other University Hospitals



Did you know you always have a temperature? Bet you thought you only had a temperature when you were sick. Absolutely everything has a temperature, even icicles. **Brrrrrr!**

When you don't feel well, your mom or a nurse might say "let's see if you have a temperature," but what they really mean is "lets see if your temperature is different from normal."

So, when you have your temperature taken, don't be fooled. Your mom and your doctor already know you have a temperature, and are just getting an idea of how things are going inside your body.

**Your ears.** Now we're down to ears. And please pardon us, **ears beat rears.** But, having your ear pulled sure isn't fun, and when you have an ear infection, it even hurts. Temperature taken in your ear should be higher than in your mouth, but not as high as in your rear.



**Your heart.** If we were to pick the best place to measure temperature is would be in the center of your heart. But that's pretty dangerous, and surely not be something you would think was fun. **Arrrrghhh!** In case you'd like to know, though, temperature in your heart is around **99.4°F.**



**Your temporal arteries.** There is a special place on your head where we can measure the same temperature as the blood in the middle of your heart. This is because blood is pumped directly from your heart to your head through little tubes called arteries that carry blood up the sides of your neck, up the side of your face just under your skin, and stop at a place on your forehead called your temple. Guess what they're called? **Wow! Isn't this the same place your mom touches with her hand when you don't feel good?**



Did you know that the forehead has been used to detect fevers as far back in time that anyone can remember, over 2000 years? There's a new technology that scans the same place your mom touches, and it's almost as gentle. It's an infrared thermometer called the **TemporalScanner.** It measures your temperature with a quick and gentle scan across your forehead. Most of the time, temperature here is around **99.4°F,** same as your heart. Nothing goes in your mouth, your ear, or your rear, and in just a second or two, done! **Now, where is the best place to take your temperature?**



## Places to measure your temperature.

**Your bum.** Babies and little kids get their temperature taken in their bum. Poor little kids, **how embarrassing!** The temperature taken in your bum is the hottest of all the places to take temperature. Most of the time it is around **99.6°F.**

**Your armpit.** When kids get a little bit older, they might have their temp taken under the arm instead of the bum. This sure feels better, but you have to keep the thermometer in **your armpit** with your arm tight against your chest for a long time. It's hard to keep it from falling out and breaking, especially if you fly! I wonder if flying causes the armpit



temperature to be the lowest in your body. Most of the time it is around **97.6°F.**

**Your mouth.** Now, if you're reading this, you're probably a big kid and so you would most likely have your temperature taken in your mouth. Not too bad, but everyone knows you can trick your mom or your doctor into thinking you're sick by doing stuff with that thermometer. **Bet you already know of ways to do that!** Most of the time, a temperature in your mouth is about **98.6°F. Well sort of...**



## Fun Facts About Temperature

### Normal Temperature

Normal human temperature is around 98.6 degrees. But did you know that only 8% of the people in the world have a normal temperature exactly 98.6?

A temperature that is normal for you may even be a whole degree or so above or below "normal." It is good to know what is normal for you. Try taking your temperature at different times, like in the morning, after a cold shower, or a five-mile hike.

### Fever

Fever is when your body's temperature control is set above normal. Fever is a sign that your body is fighting off an infection. It is thought that fever does two things. When the temperature rises, the body's chemical actions speed up so that

damaged tissues can be repaired more quickly. Also, virus or bacteria invaders don't survive well at high temperatures. Perhaps fever is the body's attempt to cook them into submission.

### Chills

You have a high temperature and cold skin. You are hot inside, but still you shiver. Chills are your body's way of creating a fever. The muscle action from shivering produces heat, which raises your temperature in an effort to fight off infection. When the crisis is over, your temperature is set back to normal, the skin warms, and you sweat.

### Hot Blood or Cold Blood?

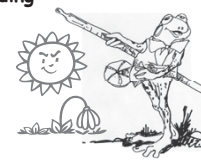
A frog in a 70 degree pond is a 70 degree frog. A frog in a 40 degree pond is a 40 degree frog, and is moving very slowly, if at all.

A kid in a 70 degree pond is a 98 degree kid. A kid in a 40 degree pond is still a 98 degree kid, although you can bet he's swimming as fast as he can to get out.

One difference between kids and frogs is the difference between warm-blooded and cold-blooded beings. People have automatic climate control inside their bodies.

Their bodies keep themselves at an even temperature by carefully controlling the rate of burning in their cells.

**Frogs are cold blooded, their temperature changes depending on where they are.**



**112°-114°**  
Cells begin to burn up



**106°**  
Dangerous fever

**103°-104°**  
Hard exercise

**101°**  
Excitement  
Some active kids

**98°-100°**  
"Normal"

**96°-97°**  
Cold weather or  
Early morning

**86°**  
Lower limit of  
survival

**86°**  
Lower limit of  
survival

**86°**  
Lower limit of  
survival

Cold blooded creatures have no internal temperature control. Their rate of metabolism is determined by their environment. When the outside temperature drops way down, all their body processes slow way down.

Humans, and all mammals, are souped-up hot-blooded beings. Their metabolisms are speedy, but are kept at an even keel. So no matter what the temperature is outside, the climate on the inside is ever warm and ready for action!

\*Studies available on request

Excerpts from Blood and Guts: A Working Guide to Your Own Insides, Allison L. Katz, D.



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