FEVER

READ AND EXPLAIN

One of the most frequent reasons parents call or visit a paediatrician is when their child has a fever. But what is a fever, and what actually causes it?

Normal body temperature

Normal body temperature is 98.6° F, but this is just an average. Some people are normally higher, and some are normally lower. A fever is defined as a body temperature above 100.5° F Therefore, a body temperature of 99.5° or 100°F is not a fever and should not be a cause for worry in otherwise normal children.

Body temperature and infection

Body temperature is controlled by the hypothalamus, a section of the brain that acts just like your household thermostat. That is, if the body gets too cold, the thermostat sends out instructions to warm things up, and if it gets too hot, the thermostat tries to cool things down. When the body is faced with an infection, it responds in a number of ways. In addition to making antibodies that kill the offending germs, it sends various white blood cells to the location of the infection, where they act much like soldiers at a battle. They help the antibodies destroy the invaders. In addition, they are able to kill the offending germs directly. The number and types of these white blood cells are one of the things that your doctor measures when he does a blood count.

White blood cells also produce chemicals that function as messengers, signalling other cells to come to the area to help with the fight. But one of the chemicals, known as endogenous pyrogen, has a different function. It travels in the bloodstream until it goes past the area of the brain that contains the "thermostat", and it acts to reset the thermostat to a higher temperature in other words, it causes a fever.

Fever can therefore be thought of as one of the body's normal responses to infection. And like most things that happen naturally in our bodies, it doesn't occur just for the heck of it. There is usually a good reason. There may be evidence that the increase in body temperature plays a role in helping the body's defenses fight off infection. Because of this fact, we may have to reconsider the need to "treat" fever.

Taking Temperatures In Young Children

Before we go on to discuss when and when not to treat fever, I want to say a word about methods of taking temperature.

Ear canal thermometer, arguable accuracy

The new high tech ear canal thermometers are remarkably fast and easy to use, but people argue about how accurate they are. The companies that make them claim that they are very accurate. My personal experience is that they tend to read a little bit high, especially with higher temperatures, which may scare people.

Rectal thermometer, the most reliable method

The only really reliable way to take a young child's temperature is with a rectal thermometer. Feeling the forehead is just not trustworthy, and young children are rarely able to tolerate oral thermometers. They can't keep them under their tongues, and they breathe around them, resulting in artificially low readings. An axillary (armpit) temperature takes at least 10 minutes and is quite inaccurate as well.

In older children, the temperature reading is usually not as critical. Its often enough to know if the reading is high (over 103 F) or not. In very young infants and children, however, the actual number is more important, and therefore, we would prefer a more accurate reading. Although taking a rectal temperature is not a lot of fun for either parent or child, it is the method that has proven most accurate.

Do Fevers Need To Be Treated?

Recent evidence has shown that fever in children may play a role in fighting disease. As parents, should we treat fever?

Not all fevers need treatment. A temperature lower than 100.5° is not a fever and does not need medicine. Most children with temperatures lower than 102° generally do not feel all that bad. Earaches and sore throats may hurt, but just having a fever does not cause much discomfort. I feel that fevers of 102° or less, by themselves, do not routinely need treatment if the child feels and acts relatively normally. The increased body temperature may actually be of benefit in fighting off the infection.

Children with temperatures above 102° are often uncomfortable because of the fever and may need treatment. The main reasons to treat fever are, first, to make the child more comfortable, and second, to help you evaluate how sick he looks after you get his temperature down. A child with a fever who is feeling and behaving well does not need to be given medication.

How Do You Treat A Fever?

There are many ways to treat fevers in children, some good and some not so good. Our old favourite remedy, aspirin, should not be used to treat fever in children under 16 years of age. Aspirin may cause the deadly disease known as Reye s Syndrome (a syndrome of rapidly worsening neurological symptoms and liver degeneration) in children with viral illness and chicken pox. Since this association was first recognized, the use of aspirin in kids has almost disappeared, and Reye s Syndrome along with it.

Acetaminophen and ibuprofen

Given that there are other effective medicines for treating fever in children, aspirin should NOT be used. The most common medicines we use to treat fever today are acetaminophen and ibuprofen, both of which are sold under a variety of brand names.

Alcohol rubs, a bad idea

Another old favourite that should be abandoned is the alcohol rub. It is scary and uncomfortable, and it can cause serious side effects in young infants. Alcohol rubs make kids shiver. Shivering is the body's way to generate large amounts of heat, the last thing you want if your child has a fever.

Tepid bath, a better solution

You can replace the alcohol rub with the more effective and less scary tepid bath. Sponge your child down in the tub with lukewarm water (not hot, not cold) for a few minutes. He should not be allowed to get cold enough to shiver. Pat him almost dry, but leave him a little bit damp, because it is the evaporation of the water from the skin that removes heat and lowers the temperature.

Bundling up makes the body hotter

A child with a fever should not be bundled up. It will make him hotter and can raise the body temperature of young infants.

Fever Is Not A Disease

Thus far you've learned several things about fever. A fever is a temperature greater than 100.5° F and is a normal body's response to infection. The medications of choice for treating fever in children, if treatment is necessary, are acetaminophen or ibuprofen, not aspirin. The alcohol rub should be replaced with the tepid bath.

But why all the fuss, anyhow? What I hope to teach you is that while a fever is often cause for concern, it is rarely a reason for panic.

Fever, only a symptom

The first thing I want to make clear is that fever is not a disease. It is simply one symptom of an illness. The illness itself could possibly be serious, but it is far more likely to be one of the common viral infections of childhood, which may be scary and annoying, but in most cases is not dangerous.

One of the most common misconceptions about fever is the mistaken belief that a high fever, in itself, will harm a child. This is simply not true. The highest fever a normal human can get will be around 106° F. While such a high temperature will make the child feel terrible and scare the pants off of her parents, it will not cause physical harm or long-term damage.

A temperature in excess of 107° F might theoretically be dangerous, but the body will not allow the temperature to rise that high unless there is already pre-existing damage to the centres of the brain responsible for controlling temperature. So, while the underlying disease may be a problem, fever in itself is not dangerous.

What about seizures with fever?

They do occur, but they are relatively uncommon and are likely due to a rapid rise in temperature. While they are horribly unpleasant, we do not believe they result in any long-term problems in otherwise normal children.

When Should I Be Concerned About Fever?

When should parents be concerned if their child has a fever? A lot depends on the age of the child. Let's first look at newborns.

Newborns

A temperature over 100.5° F in a child under three months of age is always a cause for concern. These youngest of infants are simply not like older children. First of all, they rarely get fevers, even when they are sick, so a fever is unusual even in the presence of illness. Second, very young infants are not really developmentally able to do much. It's hard to figure out how sick they are and if they are not just doing the things that they normally do. Third, very young infants can change very rapidly. One minute they look OK, and a few minutes later they can become seriously ill. The risk of a serious underlying illness such as meningitis, pneumonia, kidney infection or blood infection is much higher in newborns. You should quickly alert your pediatrician to any abnormal temperature in an infant under three months of age. The younger the infant, the more urgent the situation.

Infants 3 months to 3 years old

Infants between three months and three years of age present a similar dilemma, only not such an urgent one. It is much more difficult to diagnose which fevers are significant. Once again, the younger the child, the greater one's level of concern. Children under three are usually unable to give you much of a clue as to what is wrong. It is up to us to observe our children in order to decide if a problem is of concern.

You Can Be A Great Help To Your Pediatrician

A pediatrician has years of training and experience that prepares him or her to distinguish medically serious conditions from minor viral illnesses in children. This clinical judgment can be aided by a variety of lab tests, but in the final analysis, the best diagnostic tool is the impression that the child looks sick. As parents, you can be a great help to the doctor by providing a good history of the child's symptoms and what you've done about them, as well as providing your opinion about how sick your child appears to you.

What should you look at?

First, notice whether there are other symptoms in addition to the fever. Is there a cough, sore throat, vomiting or diarrhoea? How about rashes, headache or runny nose? How long have the symptoms been present, and in what order? What have you done about them?

The next, and perhaps most important, thing to notice is how the child looks and acts. Is he playful and active? Does he laugh and smile at times, or is he irritable and difficult to approach? Is he lethargic, lying around without energy or interest in his surroundings? In other words, does the child appear sick?

I am much more concerned about how the child appears and acts than how high his temperature is. The child with 104° F who is active and playful is of far less concern that the child with 102° F who is lethargic and irritable. High fever often makes you feel bad. Try to reduce the fever and then see how your child looks. If he perks up and looks well again, it is more likely that your child does not have a serious illness. If he continues to look ill despite temperature reduction, you should be more concerned. Statistically, high fevers are more likely to be associated with serious illness than lower fevers, but I am more concerned with how your child behaves. Just having a high fever does not, in itself, mean that your child is seriously ill.