

## Winter Health Hints: Fever in Children

Wintertime brings colder weather conditions that tend to keep infants and children inside more often, resulting in easier and more frequent spread of viruses and bacteria. In addition, influenza, croup, and gastroenteritis all peak during the late fall and winter seasons. Fever generally accompanies these infections.

Fever is one of the most anxiety producing situations for a parent to face. A recent study has documented that many parents have misconceptions and sometimes unrealistic concerns about fever. A large percentage of parents stated they worried a great deal about serious harm caused by fever. Such unfounded fears were designated "fever phobia."

Fever phobia has several disadvantages: Fearful parents may stay up all night trying to bring the temperature down to normal.

Children may be needlessly awakened for temperature-taking, as well as have to endure the discomfort of prolonged shivering from repeated sponge baths.

Hopefully, the information below will result in a better understanding of fever and alleviate many fears about it.

**Definition** – A rectal temperature above 100.4 degrees Fahrenheit, an oral temperature exceeding 100 degrees, and an axillary one (though less accurate) greater than 100.4 degrees are all fevers. The body's temperature can normally fluctuate during the day from a low of 97 degrees in the morning to a high of 100 degrees in late afternoon. A mild elevation can be caused by exercise, warm clothing, hot weather, or warm food or drink.

**Causes** – Fever is a normal response to infection. Most fevers are due to viral illnesses. In general, the degree of the fever doesn't correlate to the seriousness of the disease. What matters is how sick a child is acting. Bacterial infections and complications of viral illnesses should be suspected if fever lasts more than four to five days or returns after subsiding for more than 24 hours.

**Benefits** – The potential benefits of fever are only recently being appreciated. Moderate fever often reduces viral and bacterial toxin production and multiplication. Scientific research has documented that many human defense mechanisms (e.g., the inflammatory response) are enhanced by fever.

**Harmful Effects** – Fever causes no apparent permanent harm until reaching 107 degrees. (This temperature is extremely rare.) The most common side effects of fever are generally harmless: mild dehydration, vomiting, discomfort, and febrile seizures (discussed below). Most heat strokes (and they occur very infrequently) are due to inadvertent heat overload, usually caused by overexertion in a hot environment, and could be prevented. For example, a febrile child may be wrapped in too much clothing, an infant may be placed near a radiator or wood stove, or a child may be left in a car in direct sunlight (never do that!).

**Treating Fever** – Every child can be made to feel more comfortable with extra fluids, less clothing, reduced activity, and appropriate antipyretics (Tylenol or acetaminophen, Motrin/Advil or ibuprofen) and sponging. The correct dosage is about 7 milligrams per pound for Tylenol and approximately 4 milligrams per pound for Motrin or Advil. Sponging with tepid water is more effective if

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## Office Highlights

### The New Marlton Office

*We announced in our winter newsletter one year ago that we had broken ground for our new Marlton office. Rising on the same site as the original Farm Pediatrics establishment, our facilities will be located on the first floor of a spacious two-story building. Powered by solar energy, we are proud of our efforts to be environmentally responsible. We look forward to welcoming you to our new location after we move in this winter.*

### Farewell To Dr. Pandit

*We are sad to say that after dedicating herself to children as a primary care pediatrician for more than two decades, Dr. Florence Pandit has decided to retire from Advocare The Farm Pediatrics. Dr. Pandit will leave private practice on December 31, 2011 in order to pursue other endeavors. Having spent the last five years with us at The Farm, she will be greatly missed. We all wish her the best.*

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# Vitamin D and Calcium

Vitamin D and calcium are essential for strong, healthy bones. These nutrients play a primary role not only in assuring acquisition of peak bone mass in childhood and adolescence (and in the prevention of rickets), but in preserving skeletal mass in mature adulthood. Additionally, adequate vitamin D levels may reduce the risk of diabetes, some forms of cancer, osteoporosis, and autoimmune diseases.

The American Academy of Pediatrics recently tripled its recommended daily amount of vitamin D in children to 600 International Units (IU) per day. (Infants up to six months of age require 400 IU.) Vitamin D comes from three sources: sun, food, and supplements. The best foods for obtaining vitamin D are fatty fishes and fortified milk, yogurt, cereal, bread, and infant formula. Fish is the ideal source since a single serving of tuna or salmon—the equivalent of one quart of fortified milk—provides almost the entire recommended daily amount of vitamin D.

Supplementation is a reliable way to ensure that your child gets the recommended daily dosage of vitamin D. Since breast milk is an inadequate source, breast-fed newborns should be given drops containing 400 IU. Toddlers and older children off of formula (who should not be drinking 32 ounces of milk per day) should supplement with vitamins to total 600 IU per day if they do not receive enough vitamin D from food sources.

Vitamin D works in concert with calcium to ensure optimal bone mineralization and proper activity of body functions, including muscle contractions and nerve conduction. Calcium, a major component of bone mass, is the most common mineral in the body. Almost all of it is found in the skeleton and teeth. Bone is the body's reservoir for calcium. Having such a reservoir is essential because consumption of calcium from dietary sources is not constant, unlike the maintenance of calcium ion concentrations in the circulating blood.

Many children and adolescents have diets deficient in calcium, particularly because their dairy intake is insufficient. Each eight-ounce glass of milk contains about 300 milligrams (mg) of calcium. Two ounces of cheese are equivalent to either a glass of milk or calcium-fortified orange juice. Many vegetables also contain calcium, such as broccoli, but it is not readily absorbed. For example, spinach is relatively rich in calcium, but also high in oxalates that bind calcium, resulting in only 5% absorption of the mineral.

Supplements are adequate and often necessary sources of calcium. Most traditional vitamins do not have significant amounts of calcium, so the label needs to be checked to determine how much of your child's actual calcium needs are met. Specifically, an Extra Strength TUMS provides 300 mg of calcium and a chewable VIAC-TIV (in multiple flavors) has 500 mg of calcium. Chia, nutritionally rich in many ways, is another great source of calcium.

The recommended calcium requirements vary with age. Infants and children up to four years of age require 700 mg per day. Four- to eight-year-olds need 1000 mg (or about three glasses worth of milk), while preadolescents and teenagers (9–18 years of age) should consume 1300 mg per day.

Below is table representing calcium sources.

Source	Portion	Mg
<b>DAIRY</b>		
Milk	1 cup	300
Yogurt	8 ounces	450
Cheese	2 ounces	325
Ice Cream	1 cup	225
<b>FORTIFIED FOODS</b>		
Orange Juice	1 cup	300
Tofu	½ cup	250
Cereal	1 ounce	200-900
Cereal Bar	1 bar	200
<b>OTHER FOODS</b>		
Salmon	2 ounces	200
Broccoli, cooked	1 cup	80
Spinach, cooked	1 cup	250
Collards, cooked	1 cup	350
Kale, cooked	1 cup	180
Cheese Pizza	1 slice	120
White Beans	½ cup	100
Chia Seeds	100 grams	500
Soybeans	½ cup	130
Almonds	1 ounce	75

[ Contemporary Pediatrics, 2011 ]

# Overweight Children

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The percentage of overweight children in the United States is growing at an alarming rate. Since the 1970s, the percentage of overweight children and adolescents has more than doubled. Today, 10% of 2- to 5-year olds and more than 15% of youngsters between the ages of 6 and 19 are overweight. More than 20% of all children are overweight or at risk of becoming overweight.

**The Effects** – Overweight children are at risk for serious health conditions once considered exclusively adult diseases. They may also be prone to low self-esteem stemming from being teased, bullied, or rejected by peers. Children who are unhappy with their weight are generally more likely than average-weight children to develop unhealthy dieting habits and eating disorders.

Some of the medical problems that can affect an overweight child's present and future health include:

- high blood pressure, high cholesterol and abnormal blood lipids, type 2 diabetes
- shortness of breath, as well as bone and joint problems that make physical activity more difficult
- tendency to mature earlier
- overweight girls may have irregular menstrual cycles and fertility problems in adulthood
- liver and gall bladder disease
- restless or disordered sleep patterns
- depression

Risk factors present in childhood can lead to serious adult medical conditions, including heart disease, heart failure, and stroke. Preventing or treating obesity in children may reduce the likelihood of developing these conditions as they get older.

**The Causes** – A number of factors contribute to becoming overweight. Genetic factors, such as endocrine problems and genetic syndromes, as well as medications can be associated with excessive weight gain. Genes help determine your body type and how your body stores and burns fat. Studies have shown that a child's risk of obesity greatly increases if one or both parents are overweight or obese. More often, though, it is a result of one's lifestyle.

Fat-laden fast foods and microwavable prepackaged meals contribute to unhealthy food choices. Portion sizes have drastically increased inside and outside the home. Plus, now more than ever before, people lead sedentary lives. Children and adolescents spend two and a half to four and a half hours a day watching television. Additionally, playing computer and handheld video games has substituted for actively playing outside.

The least common denominator to the overweight problem in American children, however, is eating too much. Interestingly, studies have repeatedly shown that those who watch television more tend to eat more and those who exercise more tend to eat less.

**The Solution** – Make healthy eating and exercise a family affair. Encourage children to be physically active every day. Keep your kids active at home, too, through daily activities, such as walking, bicycling, and playing in the yard.

Try to steer children away from fast food and toward healthier choices. Get your children involved by letting them help you plan and prepare healthy meals. If possible, take them along when you go grocery shopping, so they can learn how to make good food choices.

Avoid falling into some common food/eating behavior traps:

- Don't reward children for good behavior or try to stop bad behavior with sweets or treats.
- Don't maintain a clean plate policy. Be aware of kids' hunger cues. If they're satisfied, don't force them to continue eating.
- Don't talk about "bad foods" or completely eliminate sweets and favorite snacks from children's diets. They may rebel and overindulge on these forbidden foods outside the home or sneak them in on their own. Try to limit these treats until they have eaten a nutritious meal.

As a parent, if you eat well, exercise regularly, and incorporate healthy habits into your family's daily life, you're modeling a healthy lifestyle for your children that could last into adulthood. Talk to your kids about eating well and being active, but make it a family affair that will become second nature for both you and your children.

[ *Contemporary Pediatrics*, 2008 ]

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antipyretic drugs are given 30 to 60 minutes earlier. (Aspirin is not recommended because of its possible link to Reye's Syndrome.) Remember, the key to treating fever is to make your child more comfortable. Do not wake your child for medication.

Most of the time, the illness associated with the fever does just that, runs its course. However, in many cases specific signs and symptoms warrant a visit to the office. These include earache, wakefulness, inconsolability, lethargy, sore throat, cough, stiff neck, rapid or difficulty breathing, bellyache, pain with or frequent urination, and poor urine output. Children with prolonged fevers or fever that returns after subsiding for a day should be seen in the office. Infants younger than two to three months old with fever are at an unusual risk of serious infection and need to be evaluated as soon as possible.

It is not uncommon for parents (for a variety of reasons) to withhold fever reducing medicine. This is not necessary. If your child is uncomfortable, give her or him Tylenol, Motrin, or Advil to relieve the discomfort. Repeat the medication when needed. There's no reason for your child to be uncomfortable unnecessarily.

**Febrile Seizures** – About 2–3% of all children will have a febrile convulsion. This type of seizure is usually harmless, lasting one to ten minutes, and the first one is not preventable, so it is truly not worth worrying about.

A febrile convulsion (an extreme response of the immature brain to fever) does not occur after six years of age, and is unlikely to happen if the child hasn't had one by age three. In one major study regarding febrile seizures, about 35% of all parents were unaware of the presence of fever at the onset of the convulsions, i.e., the seizure was the first sign of an illness with fever. Further, in over 60% of the cases the fever had been present for less than 12 hours prior to the convulsion; in 86% of the cases the fever had been present for less than 24 hours. Even though we advise you not to worry about an impending convulsion when your child has a fever, please be reassured that they are rare, usually harmless, and not associated with a prolonged fever.

If a child has a lengthy seizure, associated with or without a fever, this is a major concern for which you immediately should seek emergency medical help.

In conclusion, fever is the body's normal response to infection and may even have some benefits. The harmful effects of fever are rare. Fever phobia is an unnecessary burden for parents. Once again, what's more important with fever is how sick the child appears, not how high the temperature is.



*Have a safe and healthy winter  
from the staff at*

**advocare**

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