**Fevers**

Normal body temperature to support optimal function is ideally between 98.6 °F (37°C) +/- 0.3°F (0.17°C). However, on a variety of factors - such as time of day, consumption of hot food, exercise, over bundling, hot weather, an overheated room and/or crying in children - temperature can increase by a degree or two.

In both children and adults, fevers are most commonly a natural reaction to infection. Other explanations for a fever (if applicable) include transfusion reactions, juvenile rheumatoid arthritis, tumors, trauma causing inflammatory reactions, immunizations, allergic reactions, dehydration, medication (including some antihistamines, antibiotics or an too much aspirin) and teething in infants.

When an infectious “micro-organism” stimulates white blood cells, a substance is released that signals the body to increase its temperature. The body generates heat by increasing its metabolism or shivering. In addition, heat loss is minimized in the body by restricting blood flow to the skin, giving it a pale appearance. As the temperature rises the skin flushes and you may start to sweat. You may also lose your appetite and feel lethargic, achy and sleepy. In newborns, these symptoms may occur before they generate a fever.

A basic fever can be thought of as the immune system working at its best as this is nature’s way of fighting an infection. There are many purposes for a fever:

1. The temperature has specific functions:
* 37°C (98.6°F) Normal body temperature
* At 39.5°C (103.1°F) Bacteriostatic (Stops the microbes from growing)
* At 40.5°C (104.9°F) Bacteriolytic (Kills microbes and is the best antibiotic)
* At 42°C (107.6°F) Cellulolytic (Kills cells in the body)
1. Stimulate Thyroid: Helps to eliminate toxins speeding up metabolism
2. Increase Circulation: Increased respiratory and heart rates will increase blood flow
3. Increase Liver Activity:
	1. Mechanically, the liver is stimulated with breathing faster, the motion of the diaphragm pushes on the liver, increasing the circulation within it and the increased heat leads to increased elimination
	2. There is an increase in the production of proteins so the body can make more molecules to support immunity
4. Helps Kills Microbes: A mild fever increases white blood cells (immune cells) that kill cells infected with viruses, bacteria, fungi, and cancer. It also improves the destruction of bacteria and impairs the replication of many bacteria and viruses.

Since fevers can be very helpful, the effective temperature range for a fever is 39°C to 40.5°C (102.2°F to 104.9°F). As seen above, there are many benefits to fever. That is why it is best not to decrease or suppress the fever with acetaminophen (Tylenol or Tempra) or Ibuprofen (Advil). Watch your child and make sure they do not get dehydrated. The fever is too high if your child flops like flowers, their eyes are rolling or their mouth is sagging or dry. In extreme and rare cases, your child may have a febrile seizure. The seizures looks scary, but there has been no evidence that they cause permanent damage. Ensure that if any of the above situations occur, your child is looked at by your ND, MD or taken to the ER. If dehydration is severe, you may have to take your child to the ER in order to become rehydrated.

Some strategies to help avoid the above complications:

1. Ensure your child stays hydrated. They may not be hungry, but make sure they are drinking fluids – preferably water (remember – water is nature’s juice as Dr. Chris loves to say!), bone or vegetable broth\*, other clear non-creamy broths, spring water and herbal teas (chamomile, ginger, peppermint, licorice root. Endurlyte is an electrolyte powder available at the clinic can be added to the water. For a breastfeeding child, ensure they are nursing as often as they can while mom drinks the teas and soups.
2. You can do the following to help decrease the temperature:
	1. sponge your child with warm water
	2. give them a tepid bath or
	3. place a cool/tepid cloth on their forehead and the back of their neck
3. If the temperature is still rising uncomfortably high, then you can use Apple Cider Vinegar and swab it down the spine and the bottom of the child’s feet.
4. If the Apple Cider Vinegar is not working, you can use a very cold, wet hand towel and wrap your child’s arm and opposite leg (ie right arm and left leg). Then bundle them up in a blanket and get them to drink or sip fluids or ice cubes. This allows the blood to cool down, but for prevents a chill. Leave them for 3 to 5 minutes, and then dry them off, and wrap them in a blanket and monitor their temperature. You may have to repeat with the opposite limbs, and keep alternating this technique.
5. To help your child clear the toxins, and enable the lymph system to be at its best, you can pump the lymph system and/or use a lymph cream. The pumping is very gentle motion with a pressure similar to a massage. Dr. Chris also recommends incorporating massage therapy and chiropractic care to your health care team, in addiction to working with a Naturopathic doctor.

\*Green vegetable broth: steam 3 to 5 green vegetables and put the whole mixture into a blender and puree. This is used for children who are eating solid food. For bone broth – it is recommended to simmer organic bones (chicken, beef, fish etc) for 24-48 hours to maximize nutritional content from a mineral perspective.