

CONCEPTUALYZE

Selecting Key Ideas Exercise Factsheet

A fever means the body is hot, and the heat helps to kill germs like bacteria and viruses.

How does the body increase its temperature? The brain has a set point that determines how hot the body gets. When the set point rises, it causes the body to get hotter. The set point rises when germs invade the body. When this happens, your brain tells the body that the temperature must be raised a few degrees to kill the germs.

There are four different ways the set point causes the body temperature to increase. One way is to decrease blood flow to the skin, by shrinking the veins (blood vessels). When less blood gets near the skin, the blood cannot release as much heat through the skin. This explains why people can have a fever but still feel cold in their hands and feet. There is less blood near the skin.

A second way is shivering. Shivering makes the muscles move. When muscles move, they produce heat. Shivering can make the body produce more heat than normal.

A third way is to raise body hairs. When the small hairs on the body stand up, pores (small holes) in the skin close. This means less heat can escape through the pores. It also means that less sweat can escape through the skin. When you have a fever, you sweat less, because sweating cools the body. Raised hair explains why a fever causes a person's skin to feel tender. The little hairs get rubbed and irritate the skin.

A fourth way is to increase the body's metabolism. A higher metabolism means that the body burns energy faster, and this causes it to produce more heat. Higher metabolism explains why people have faster breathing and a faster heart rate when they have a fever. A body with high metabolism needs more blood and oxygen.

If the body gets too hot, it will begin to kill its own cells. How does the body stop from getting too hot? When the body temperature reaches the set point, all the processes reverse. Blood goes to the skin, shivering stops, the hairs lie down, and metabolism decreases. Aspirin and Tylenol help reduce a fever by bringing down the set point, so the body stops trying to heat up. The good thing about aspirin is that it makes you feel better. The bad part is that there is less fever to help kill the germs.