

I'm Patchareeya, the Thai "Water Minister". I had the company of one of my closest friends, Silvermist (a Fairy), when I went to Daegu to attend the Water World Forum. Unfortunately, due to a mishap, I was unable to attend it.

On the one day of sightseeing before Silvermist and I were due at the Water World Forum, we went sightseeing around the rest of the country to admire its natural beauty. We went to Nuri Peace Park and several other nearby places that day. Although it started off relatively cool and pleasant at sunrise, the temperature rapidly climbed as the day progressed. By midday, the temperature was a searing 40°C and it was also highly humid.

At one point, I turned around and found that Silvermist looked quite weak and was flushed. She was also sweating profusely and seemed to be nauseous. Feeling her forehead revealed that she was having an elevated body temperature. I thought that she was suffering from a fever, so I got her to rest on the grass and gave her an antipyretic, after which she was adjourned to the nearby shade while I continued to go around the park. However, later on, she did not appear to have recovered; in fact, under the intense heat, she felt even more stressed and remained flushed and hot. Although she eventually recovered, it was long enough that my chance to shine at the Water World Forum was to be just a figment of my imagination.

This inspired me to take on the Neurobiology course, where among other things, I learned that an elevated body temperature is not necessarily a fever. It is just part of the symptoms of one of hyperthermia or fever, each of which has got its other symptoms and their respective causes and treatments are very different from each other.

In a fever, the person would have chattering teeth and be shivering. They may also feel nauseous. This is because they may have contracted some virus or other infection, and so the body's natural mechanism would be to raise the set point of the body temperature in order for it to kill off the virus. The antipyretic is meant to help lower this set point such that the body will adjust back to the natural temperature. An ice bath or other means of cooling the body tends to worsen the fever since the body is going to generate more heat in order to adjust it back to the raised set point.

However, what Silvermist was suffering from was hyperthermia. Hyperthermia tends to occur under hot, humid conditions (high wet bulb temperature) and can be accelerated through high metabolic activity. Unlike fever, she was flushed and sweating. This is done through the hypothalamus, where it aims to adjust the heat intake and outflow to keep the body temperature constant. In this instance, there was a huge influx of heat from the surroundings, which meant that her body would aim to increase the heat output to achieve equilibrium. This is done primarily through two means: vasodilation (transport more heat from the blood to the body surface, hence the flushed look) and sweating (which involves evaporation for the cooling effect). But in such humid conditions, the effect of the latter would be heavily restricted. This would limit the heat that the body is able to dissipate, consequently the body temperature would increase. Since the antipyretic is meant to lower the set point, administering that to her was not solving the problem. What should have been done was to quickly find an air-conditioned area if possible and quickly reduce the surrounding temperature through ice bath which would help allow the heat flow outwards to increase.

This event may not have really helped me out with improving the water conditions in the world that much, but it is more with the awareness of such conditions that allowed me to be able to identify and treat them carefully, especially since the weather can be hot back home in Thailand.