



When an iguana sneezes, a spray of salty water comes out of its nose.

How You Are Like a Sneezing Iguana

A marine iguana swims through crashing ocean waves, scraping rocks with its jaws to find algae to eat. It hauls itself up onto a dry rock in the sun. With spikes sticking up from its long, scaly body, the marine iguana looks like a monster from an old movie. Suddenly, it sneezes, spraying water out of its nose all over the rock and everything around it.

Don't worry, the iguana isn't sick. Marine iguanas sneeze all the time to get rid of salt.

Since marine iguanas eat algae underwater in the ocean, they take in lots of salty seawater with each bite. Having too much salt in the body is unhealthy, and sneezing out the extra salt is the way an iguana keeps the level of salt in its body stable. This is an example of homeostasis, which means the stability maintained by an organism's body systems. All the cells, tissues, organs, and systems in the body work together to keep things running steadily and keep everything stable. That's homeostasis.

Just like a marine iguana's body, your body has to work to maintain homeostasis. Maybe you don't have to sneeze out salt the way an iguana does, but your body has other ways to keep things stable. Have you ever noticed that you breathe faster when you exercise? That's because your muscle cells are using up oxygen quickly as they release more energy through cellular respiration. This causes the level of oxygen in your blood to drop. Your lungs work to take in more oxygen in order to make up the difference and keep the level of oxygen in your body stable. Your heart also begins beating faster, so that your circulatory system can carry the fresh oxygen to all those muscle cells, replacing the oxygen used for cellular respiration. Your body is working to maintain homeostasis. Your cells, tissues, organs, and systems work together to keep levels of important molecules like oxygen, water, and glucose as stable as possible at all times. So do the cells, tissues, organs, and systems in a marine iguana's body!

There's one very important way that you and a marine iguana are different in terms of homeostasis, and that's temperature control. Through homeostasis, a healthy human body stays in a very narrow temperature range. If you start to get too hot, your sweat glands—groups of specialized cells in your skin—send out sweat that evaporates on the surface of your skin. The evaporation of sweat has a cooling effect and keeps you from getting too hot. On the other hand, if you start to get too cold, your muscle cells begin to spasm, quickly contracting and relaxing over and over—it's known as shivering. Shivering helps generate heat to keep you from getting too cold. Your whole body works to keep your body temperature as stable as possible. A marine iguana's body temperature works very differently. Like all lizards, marine iguanas are ectotherms ("cold blooded"). That means their body temperature matches the environment around them. If a marine iguana is swimming in

cool water, its body temperature is cool like the water. If a marine iguana is lying on a hot rock in the sunlight, its body temperature is hot like the rock. Instead of keeping its body temperature stable, the marine iguana lets its body temperature change with its surroundings. Your body maintains homeostasis in temperature, but a marine iguana's does not. That's one way the two of you are different. Also, the iguana has saltier sneezes!



If an iguana lies on a warm rock in the sunlight, the body of the iguana will be the same temperature as the rock. In cold water, an iguana's body temperature is cold.