How long can the average person survive without water?

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Randall K. Packer, a professor of biology at George Washington University, explains.

It is impossible to give an answer to this seemingly simple question because many variable factors determine a person's survival time. Under the most extreme conditions, death can come rather quickly. For example, a child left in a hot car or an athlete exercising hard in hot weather can dehydrate, overheat and die in a period of a few hours. An adult in comfortable surroundings, in contrast, can survive for a week or more with no, or very limited, water intake.

To stay healthy, humans must maintain water balance, which means that water losses must be made up for by water intake. We get water from food and drink and lose it as sweat and urine (a small amount is also present in feces). Another major route of water loss usually goes unnoticed: because we exhale air that is water saturated, we lose water each time we exhale. On a cold day we see this water in the air as it condenses.

Exposure to a hot environment and vigorous exercise both increase body temperature. The only physiological mechanism humans have to keep from overheating is sweating. Evaporation of sweat cools blood in vessels in the skin, which helps to cool the entire body. Under extreme conditions an adult can lose between one and 1.5 liters of sweat an hour. If that lost water is not replaced, the total volume of body fluid can fall quickly and, most dangerously, blood volume may drop. If this happens, two potentially life-threatening problems arise: sweating stops and body temperature can soar even higher, while blood pressure decreases because of the low blood volume. Under such conditions, death occurs quickly. Because of their relatively larger skin surface-to-volume ratio, children are especially susceptible to rapid overheating and dehydration.

The combination of dehydration and overheating sends thousands of people to hospital emergency rooms each year, but diarrhea, excessive vomiting, and kidney failures of various sorts can also cause dehydration. A person can stay hydrated by drinking many different kinds of fluids in addition to water, with one exception. Drinking alcoholic beverages actually causes dehydration because ethanol depresses the level of the anti-diuretic hormone arginine vasopressin (AVP). As a result, urine volume increases such that more fluid is lost in urine than is gained by consuming the beverage.