

# Case study lost in the desert

Business



**ASSIGN  
BUSTER**

The heat stroke and severe water loss is causing Mark to feel weak, nauseous, disoriented, have low blood pressure, and a headache. Water loss will especially have a large effect on Marks physical state because it will directly affect the blood pressure. Extreme water loss is also evident due to Marks lack of visible sweat. Hyperthermia has caused Marks heat loss process to become ineffective. Dehydration and the heat stroke made it so that Marks body cannot produce sweat.

2. An isotonic solution is one that contain and equal concentration of water molecules to ion molecules or other solutes.

In this case the paramedic gave Mark an electrolyte/glucose solution as a form of oral reiteration therapy (ROT). Mark is still recovering from extreme fluid and electrolyte lost and needs large amounts of electrolytes and energy to balance cellular fluids and produce new cells to replace damaged ones. ROT will help to balance and rejuvenate cells by creating an environment where inside and outside the cells have equal concentration.

If mark was given distilled water or bottle, it was create an hypotonic or hypersonic solution which would cause shrinking or swelling thus causing more damage. . Based on the concept of homeostasis, the symptoms of heat strokes act as positive negative feedback loop to the stimulus of elevated body temperature. Causes Mark is hot the sympathetic nervous system activates sweat glands, which causes Mark to release a large amount of sweat. Mark is in a high humidity environment where evaporation is prohibited therefore body temperature still raises and the body tries to

compensate by sweating even more, which then cause low fluid level, and low blood pressure which then leads to low blood flow.

All these events cause a decrease in blood flow to vital organs like the brain, thus cause segregation, headaches and a mirage, which all symptoms mark experienced.

Eventually, is not reversed by outside interference, cause stroke and death.

4. Mark should be concerned that he might be developing melanoma skin cancer because, it highly metastasis and resistant to chemotherapy.

Malignant melanoma differs from normal moles because of the speed at which it grows, the shape it takes while it grows and their color.

Like Mark most people heighten their risk of developing melanoma by being exposed to large I-JP rays.

5. Heat stroke – A severe condition caused by impairment of the body's temperature-regulating abilities, resulting from reloaded exposure to excessive heat and characterized by cessation of sweating, severe headache, high fever, hot dry skin, and in serious cases collapse and coma.

First degree burns- tissues damage inflicted by intense heat, radiation, electricity and chemicals in which the epidemic cell proteins are denature and cells are killed.

Usually heals in 2-3 days Electrolytes – A chemical compound that unionizes when oilseed or molten to produce an electrically conductive medium.

Glucose- A macroeconomics sugar the simplest form,  $C_6H_{12}O_6$ , occurring

widely in most plant and animal tissue. It is the principal circulating sugar in the blood and the major energy source of the body.

Melanin – dark pigment in the skin that protect the cell nucleus from UP rays and give skin its color 6. In the average human man, 40 liters of Neater account for about 59% of the body's weight.

This means that Mark lost about 10% percent of this bodily water content. Due to activation of the sympathetic nervous system (because of Marks dehydration), decrease in the urinary and digestive activities (decrease of urinary volume) would occur in response to the body preserving water for maintenance of blood pressure and regulating body temperature. His plasma commonality would also decrease because the body has lost a great deal of water which creates a hypotonic situation.

7. Marks blood pressure was so low because the decrease in water level.

The same water used for sweating is also use to create blood and because Mark lost so much water, Marks body could work efficiently to create blood. This then leads to a decrease in blood volume, causing decrease in the pressure of blood in the vessels. Mark felt dizzy and disoriented because the low blood pressure. The brain depends on the blood to supply it with nutrient and energy and when the flow decrease the nutrients and energy decrease cause it to not be able to work proficiently, causing dizzy and disorientation.

8.

It Mould very bad idea for Mark to drink his six-pack of beer because alcohol is known as a dieresis. Diuretics result in the body producing an increased

amount of urine. If Mark drank the six-pack then it would result in him producing more urine causing him to dehydrate quicker. Also, some people react to the consumption of alcohol by 'omitting' which would also cause him to dehydrate faster. 9.

Mark would have a greater amount of vitamin D after his day in the desert. Vitamin D synthesis first occurs in the liver and converts vitamin D to calcified.

It also forms calcitriol in the kidney. Vitamin D promotes calcium absorption in the gut and maintains adequate serum calcium and phosphate concentrations. It is also needed for bone growth and bone remodeling by stem cells and osteoblasts. 10.

Mark took his hat and shirt off and threw them away. If Mark had kept his shirt on or applied sun screen with SPF protection 15 or higher this would have helped prevent sunburns. 11. The redness is an increase in melanin's granules trying to help protect the cells from the UV rays. This would develop during exposure to rays rather than after.