Hydration – The Importance of Water Stats and Facts

FACTS

1. Replacing body fluids lost during sweating, therefore, is the single most important way to control heat stress and keep workers comfortable, productive, alert, and safe.
2. (OSHA) identifies fluid replacement (drinking water) as one of its top 10 tips for staying cool in hot workplaces.
3. The human body maintains a constant internal temperature, even when exposed to varying environmental temperatures. To get rid of excess heat, the body varies the rate and amount of blood circulation through the skin and the release of fluid onto the skin by the sweat glands.
4. As environmental temperatures approach normal skin temperature, cooling of the body becomes more difficult as blood brought to the body surface cannot lose its heat. At that point, sweat evaporation becomes the principal means to maintain a constant body temperature.
5. Sweating does not cool the body, however, unless the moisture is removed from the skin by evaporation, which is difficult under conditions of high humidity or when wearing heavy protective clothing. Profuse and prolonged sweating can also disturb normal cardiovascular functions.
6. Excessive exposure to a hot work environment can bring about a variety of heat-induced disorders. In fact, after just two hours of moderate work, workers may begin to feel the initial stages of heat stress. After another hour, they may start to lose strength, energy, and focus. At its most severe point, heat stress can result in collapse or unconsciousness.

STATS

- One percent dehydration has been found to decrease worker productivity by 12 percent.
- 3-4 percent dehydration can bring about a 25 percent decline in worker productivity. At just one percent dehydration, workers begin experiencing decreased cognitive abilities, reduced concentration and alertness, and slower reaction times.
- A study concluded that visual motor tracking, short-term memory, attention and arithmetic efficiency were all impaired at dehydration levels of 2% of body weight or more. In the extreme, studies showed 23% reduction in reaction time when subjects were 4% dehydrated.
- It’s been estimated that up to 80% of the U.S. adult population goes through their normal day in at least a mildly dehydrated state.
- Fully encapsulated protective clothing increased sweat rates up to 2.25 liters per hour. In the simplest of terms, what fluids leave the body must be replaced or dehydration is inevitable.
- A 3% dehydrated state from heat exposure subjects experienced a significant reduction in cerebral blood flow velocity when changing from a seated to a standing position.
- The human body requires fluid to control temperature and maintain muscle function. In hot, hard-working conditions, workers can lose up to 1.5 liters of water each hour in the form of sweat.