A Review of Fluid Replacement for Workers in Hot Jobs

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Prolonged work in hot environments leads to progressive water and electrolyte loss from the body. The rate of sweating varies among individuals and depends on the environmental conditions, but in protective clothing and very hot environments rates can reach 2.25 L/hour. Because hypohydration will impair work performance and increases the risk of heat injury, consumption of fluids is necessary to prevent dehydration and enhance performance. Much of the research on rehydration has been conducted in athletic settings. The purpose of this review is to interpret the existing research literature on hydration in a way that is useful to industrial hygienists and safety experts. The authors hope to provide industrial hygienists and safety professionals with scientific bases for making recommendations regarding beverage availability and hydration practices. Although water is a very common beverage, some previous research has reported that drinks containing low to moderate levels of electrolytes and carbohydrates may provide some significant advantages in industrial situations. In general these studies seem to support the use of electrolyte-carbohydrate beverages as a supplement to water or as a replacement for water.