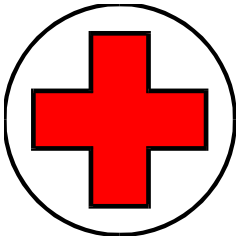
Injury Prevention Through Fluid Replenishment

Injury prevention is necessary for any athlete in competition, and adequate hydration is no less important than protective equipment or bracing. The demands of the sport of hockey, anaerobic exercise over a long period of time, contributes to a large amount of fluid loss during a given session.

As the fall season approaches and hockey rinks fill with excited players, the hot summer days continue outside and the fluid requirements of these players remain high enough to warrant attention from the mite through professional level.



During prolonged exercise, such as a strenuous practice, the body works very hard at performing and this produces a large amount of heat internally. As the body works harder and the core temperature of the body rises, the need to dissipate this additional heat also increases. The thermoregulatory system is controlled by the hypothalamus (located in the brain) and provides the means to get rid of this heat through sweating. If sweating is hindered, the core temperature will continue to rise and heat exhaustion, heatstroke, and/or death is likely to occur.

The actual mechanism of sweating is necessary but the loss of water, nutrients, and vital chemicals can be dangerous if too much lost fluid is not replaced. Typically a loss of 2-3% of a person's bodyweight will negatively impact performance. Decreased performance is evidenced by early muscle fatigue, loss of coordination, and inability to perform at an appropriate level. While fluid loss is mostly water, nutrients and electrolytes are also lost through sweating. These nutrients and electrolytes, such as potassium, sodium, chloride, and magnesium are vital in assisting the body to function at an optimal level and must be replaced.

Guidelines for fluid replacement are common with only slight variations depending on the source. Generally water is the preferred choice followed by a commercially available sport drink. Water leaves the stomach the quickest (called the gastric emptying rate) and gets to the working muscles and cells. Most commercially available sports drinks contain 6-8% glucose and the higher the percentage of glucose, the *slower* the gastric emptying rate. Bottom Line: It takes longer for the needed fluids to get into the body's system to do the work.

The whole idea of using fluid replenishment as a *preventative* measure is to take action *before* action is necessary. By drinking small quantities of water during the daytime and in the hours leading up to actual practice or competition time, the body will be fully hydrated and prepared for the vigorous exercise. If one waits until the thirst mechanism kicks in—the feeling of being thirsty— the body is already dehydrated.

A balanced diet, including water, with salt on foods as desired should be adequate to prevent problems associated with dehydration. Salt pills or tablets *are not recommended* as they counteract the body's mechanism to use and dispose of sodium naturally. Athletes with known hypertension should consult their physician regarding sodium intake.

Recommendations for fluid replenishment are as follows:

- **Hourly intake prior to exercise should be 6-8 ounces of water.**
- **15-30 minutes prior to start of exercise intake should be 4-6 ounces of water.**
- **During exercise, water taken every 15 minutes or more frequently in hot, humid environments.**
- **Post-exercise rehydration should be 1 pint of water per pound of bodyweight lost during exercise until pre-exercise weight is achieved. No further exercise should be undertaken until this weight is met.**

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