

Hydration for Athletes

General

- Thirst is not a good indicator of hydration. It is a symptom that dehydration has already occurred.
- Athletes should consume a nutritionally balanced diet and drink adequate liquids during the 24 hours before an event to promote adequate hydration.
- Meals and snacks provide adequate amounts of electrolytes to replace those lost in sweat. Electrolytes enhance fluid absorption and retention.

Preadolescents

- Lower sweating capacity
- Poorly developed thirst mechanism
- Limited ability to transfer heat from their muscles to their skin
- Need 10 -14 days to acclimatize to exercising in warm weather
- Water is the best hydration beverage for exercise lasting an hour or less at moderate temperatures if a pre-exercise refueling snack is eaten
- Cold, flavored and lightly sweetened drinks and waters (5-8% carbohydrate) are preferred and more readily consumed to assure hydration in hot weather and for strenuous exercise lasting over 1 hour
- **Preadolescent Hydration Requirements**
 - 14 - 20 ounces cold water 15 minutes prior to practice or competition
 - 4 -10 ounces cold water each 15 minutes during practice or competition
 - Carbohydrate-containing beverages such as chocolate milk after practice or competition to replenish fluids and glycogen stores

Adolescents

- Body temperature control mechanism still developing
- Planned fluid intake protocol is key to avoiding heat injury
- Cold water is quickly absorbed and an excellent choice in most circumstances
- Commercial sports beverages are suggested for endurance events or very strenuous sports and practices, especially in hot humid conditions
- Commercial sports beverages do not have enough carbohydrate to replace glycogen and are not recommended as recovery beverages
- **Adolescent Hydration Requirements**
 - 16 oz cold water 2 hours prior to practice or competition
 - 8 -12 oz cold water 30 minutes prior to practice or competition
 - 8 -12 oz cold water each 15 minutes during practice or competition
 - Carbohydrate-containing beverages such as chocolate milk after practice or competition to replenish fluids and glycogen stores

American College of Sports Medicine, Position Stand: Exercise and Fluid Replacement, Med. Sci. Sports Exerc. 1996; 28, 1: i-vii. www.acsm-msse.org

American Dietetic Association, Dietitians of Canada, American College of Sports Medicine, Position Statement Nutrition and Athletic Performance, J Am Diet Assoc. 2000; 100, 12:1543-1556 www.eatright.org

National Athletic Trainers' Association, Position Statement: Fluid Replacement for Athletes. J Athletic Training 2000; 35, 2: 212-224 www.nata.org

Debbi Jennings, Suzanne Steen, *Play Hard Eat Right* (Minneapolis: Chronimed Publishing, 1995), pp. 49-64.

Recovery Nutrition Tip Sheet

General

- Athletes recover more quickly by carefully choosing food and liquids after an event to replace fluids and replenish glycogen
- Athletes involved in intense and closely scheduled competitions and practices need to consume recovery fluids and carbohydrates as soon as tolerated
- Recent research from the Human Performance Lab at Indiana University concluded chocolate milk is nearly twice as effective as a recovery product when compared to commercial sports drinks

Recovery Fluids

- Hydration is optimized by drinking fluid to quench thirst and then drinking more (guide: fluid ounces needed for rehydration = 150% of ounces of weight lost during exercise)
- Carbohydrate-containing recovery beverages replenish glycogen in the muscles and improve the rate of absorption of water and sodium
- 16 oz bottle of low fat chocolate milk is 90% water and an excellent source of carbohydrate to maximize recovery
- Fluid replacement may take 24 - 48 hours following strenuous exercise

Recovery Carbohydrates

- Liquids or solid food containing carbohydrate may be used
- Consume 75 grams carbohydrate within 30 minutes of event or practice
- Consume 75 more grams of carbohydrate within 2 hours
- 16 oz bottle of chocolate milk contains 65 grams of carbohydrate
- Muscles replace 5% of glycogen per hour (20 hours to replace glycogen)

Chocolate Milk: An Ideal Sports Recovery Drink

- 90% water for hydration
- Carbohydrate to replace depleted muscle glycogen
- Protein to build and maintain muscles
- The optimal protein to carbohydrate ratio to refuel tired muscles
- Calcium and phosphorus for strong bones
- Potassium to help muscles contract and regulate body fluids
- B-vitamins to help convert food to energy for exercising muscles
- Great taste readily accepted by athletes encourages consumption

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J Karp et al, *Chocolate Milk as a Post-Exercise Recovery Aid*, Int J Sport Nut & Exer Metab, 2006, 16: 78-91