The Importance of Hydration

Diet, Food, Exercise and Nutrition Series
Brendon P. McDermott, PhD, ATC, FACSM
Associate Professor
Outline

• Chronic disease and hydration
• How much should you drink?
• How do you know if you’re drinking enough?
• Hydration and physical activity
Hydration Knowledge

• Much like smoking and/or diet
• People have the knowledge
• Habits and behaviors do not match knowledge

Original Contribution

Examining the links between hydration knowledge, attitudes and behavior

Jennifer C. Veilleux¹ · Aaron R. Caldwell² · Evan C. Johnson³ · Stavros Kavouras⁴ · Brendon P. McDermott² · Matthew S. Ganio²
Hydration Importance

- Normally, 60-70% of our body is composed of water
- Water balance is a large part of homeostasis
  - Muscle function
  - Cognitive function
  - Neural function
  - Gastrointestinal function
Hydration Physiology

• When we don’t have enough water
  – We get thirsty (~2%)
  – Our blood pressure decreases
  – Hormone levels change
    • Arginine vasopressin (AVP)
  – Symptoms
    • Headache, fogginess, dizziness, fatigue
Chronic Disease and Hydration
How much should you drink?!

- Recommendations are based on studies
- When people drink this much, or more, they have a decreased risk of chronic disease
- Does not mean it’s 100% effective
- There are individual differences
• Males: 3.7 L/day total fluid intake
• Females: 2.7 L/day total fluid intake
• Everything counts
  - Except anything above 4% alcohol
• We also get water/fluid from foods
• Males 3-3.5 L/day and females 2-2.5 L/day

1 L = 33.8 oz
How do you know?

• You are an individual!
• Body weight every day at the same time (kg)
• Urine color or frequency
• Thirst level
• Sweating is good for you!
• Start exercise hydrated
• Calculate your sweat rate!

• Pre-exercise body weight (kg)
• Post-exercise body weight (kg)
• 30min of exercise time
• Pre-ex body weight – post-ex body weight/exercise duration (hr)
• 1kg = 1L
• 70kg – 69.6kg / 0.5 = 0.8L/hr
• Normal values range from 0.5 – 3.0L/hr

• So now what?!
• If you sweat about 0.8L/hr and you are 70kg
• Goal is to not lose more than 2% of your body weight during a workout
• 2% of 70kg is 1.4kg
• So, if you exercise for 1hr, you should drink 0.2-0.8 L during your workout
• You should not gain weight during exercise!
Exercise Hydration

• Speeds recovery
• Allows you to maximize performance
• Helps keep you safe
• Affords you optimal benefits from exercise
Summary

• Hydration contributes to many chronic diseases and conditions
• Keep track of your personal hydration
• Exercise and stay hydrated
Brendonm@uark.edu

Exercise Science Research Center

Center for Human Nutrition

UNIVERSITY OF ARKANSAS