

FRST Center Nutrition



FUEL FOR THE FRONTLINE: HYDRATE TO OPERATE



SOUTH DAKOTA
STATE UNIVERSITY

South Dakota First
Responders Support Training

As temperatures rise this summer, hydration becomes more important than ever. Long shifts and extreme heat can quickly lead to fatigue and dehydration. Staying hydrated helps keep you alert, improve performance, and recover faster so you're ready for every call!

Importance Of Hydration¹

- Just **30 to 45 minutes** on the fireground can cause fluid losses of up to **50 to 70 ounces**
- Dehydration **raises the risk of cardiac events and strokes** by causing a faster heart rate and higher demands on the heart
- **80–90%** of firefighters show up on shift **already dehydrated**
- Dehydration can impair **cognitive functions** like **decision-making, reaction time, and situational awareness**



Electrolytes

- **What are electrolytes?**
 - Essential minerals such as sodium, potassium, magnesium, and chloride
- **Purpose of electrolytes?**
 - Functions vary throughout the body including keeping the body hydrated, regulating muscle contractions, maintaining fluid balance and supporting nervous system communication
- Firefighters **can lose up to 40 oz of sweat in 30 minutes** of fire suppression activity. **One liter** of sweat (32 oz) can contain up to **1840 mg** of **sodium** and **390 mg** of **potassium**.
- **Sources of electrolytes**
 - Various sports drinks, fruits and vegetables, seeds and nuts, & electrolyte supplements

Tips To Stay Hydrated³

- Academy of Nutrition and Dietetics general daily fluid recommendation:
 - **Men:** 125 ounces per day
 - ≈4 (32 oz) water bottles
 - **Women:** 92 ounces per day
 - ≈3 (32 oz) water bottles
 - **OR** 30-35ml fluid per kg of body weight
- Start early with 16oz upon waking up
- Reduce dehydrating substances (alcohol and caffeine)
- Look for signs of dehydration (headache, fatigue, cramping, dark-colored urine, dry mouth)
- Replenish electrolytes through food and supplementation



Watermelon Electrolyte Cooler

- 2 cups watermelon, cubed
- 1 cup coconut water
- Juice of 1 lime
- Pinch of sea salt
- Ice

Directions:

1. Blend all ingredients until smooth.
2. Pour over ice.
3. Serve cold.



Why these ingredients?

- Watermelon provides water and potassium
- Coconut water contains various electrolytes
- Lime supplies vitamin c and flavor
- Sea salt replenishes sodium stores

¹ SFF Health Care Trust. (2025, July 11). Hydration: It's fundamental to your health and your crew's success. <https://sffhealthcaretrust.org/blog/2025/07/11/hydration-its-fundamental-to-your-health-and-your-crews-success/>
² sportsrd.org. FIREFIGHTERS NUTRITION CONSIDERATIONS. <https://sportsrd.org/wp-content/uploads/2023/05/FI-Firefighter-Fact-sheet-052023.pdf>
³ Academy of Nutrition and Dietetics. (2022, June 23). How much water do you need? EatRight.org (eatright.org)