

# PERFORMANCE PLAYBOOK



gssiweb.org

## Hydration: Critical to Athletic Performance

DAVID R. LAMB, Ph.D., is a Professor Emeritus of exercise physiology at The Ohio State University.

**High school athletes train hard, they play to win, and they sweat through it all. In the intensity of a practice or game, athletes don't realize the amount of sweat they lose, and that puts them head to head with a nasty competitor – dehydration. It's crucial to beat dehydration so that athletes can play at their best, even in the final minutes of the game.**

Sweat losses of as little as 2% of body weight (less than 3 pounds in a 150-pound athlete) can impair performance by accelerating the onset of fatigue. This is important because some athletes can lose 5 to 8 pounds of sweat or more during practice or competition. So it's easy for athletes to become dehydrated if they don't drink enough to replace what is lost in sweat.

Research shows that sports drinks outperform water because sports drinks:

- **Encourage voluntary drinking when athletes are hot and thirsty.** Sports drinks with a light flavor and small amount of sodium encourage athletes to drink, and drinking fluids is the only defense against dehydration.
- **Stimulate rapid fluid absorption.** A well-formulated sports drink, like Gatorade, speeds the delivery of fluid, carbohydrate, and electrolytes into the bloodstream.
- **Help keep athletes in the game.** Sports drinks can help athletes avoid dehydration and other heat-related problems, such as early fatigue, muscle cramps, lightheadedness, and heat exhaustion.
- **Aid performance.** Carbohydrate in sports drinks helps athletes perform better. As one of many examples, research has shown that hydrating with a sports drink significantly improved basketball-shooting skill and on-court sprinting performance when compared with a flavored-water placebo.
- **Speed recovery.** The carbohydrates and electrolytes in sports drinks help refuel muscles and speed rehydration. This is

especially important during tournaments and other situations when recovery times are limited.

With a game plan to help your athletes drink the right fluids at the right times, you're giving them the strategy for a high-powered performance that matches their will to win.

### The National Athletic Trainers' Association "Fluid Replacement for Athletes" Position Statement

- Educate athletes on the effects of dehydration on physical performance.
- Inform athletes how to monitor hydration status.
- Encourage coaches to mandate rehydration during practices and competitions, just as they require other drills and conditioning activities.
- During events that require a high rate of fluid intake to sustain hydration, the carbohydrate concentration in a sports drink should be kept low (e.g., less than 7%) to optimize stomach emptying and fluid absorption.
- A proper hydration protocol considers each sport's unique features. If rehydration opportunities are frequent (e.g., baseball, football, track, and field), the athlete can consume smaller volumes at a convenient pace based on sweat rate and environmental conditions. If rehydration must occur at specific times (e.g., soccer, lacrosse, distance running), the athlete may need to drink greater volumes at each opportunity for rehydration.

