



## **GATORADE SPORTS SCIENCE INSTITUTE**

**[www.gssiweb.org](http://www.gssiweb.org)**

Virtually no one matches the Gatorade Sports Science Institute (GSSI) when it comes to hydration expertise. Established in 1988, GSSI has conducted and published research, as well as educated sports health professionals and athletes on sports nutrition and exercise science. The information provided to athletes helps them understand how they can fuel themselves so they not only perform better, but also feel better when training or competing.

### **Background**

- **History** – The Gatorade Sports Science Institute (GSSI) was founded by The Gatorade Company in 1988. Headquartered in Barrington, Illinois, GSSI consists of three labs in addition to the education office: exercise physiology, biochemistry and exercise sensory laboratories.
- **Athlete Testing** – GSSI scientists test amateur, elite and professional athletes to determine the hydration and nutrition needs for intense training and competition.
- **Worldwide Membership** - More than 100,000 members subscribe to information from the Institute.

### **Advisory Boards**

GSSI also works with scientists from major universities around the world to further research and expand knowledge in exercise science and sports nutrition. Scientists on these boards conduct research, provide counsel and participate in educational programs in conjunction with GSSI.

### **Research and Education**

In collaboration with other scientists at leading universities around the world, GSSI researchers produce educational materials for the continuing education of members of the sports science community. *The Sports Science Exchange* and *Round Table* provide information on numerous issues facing athletes. Some of the more recent topics include:

- Hydration Assessment of Athletes (*SSE #97*)
- Dietary Water and Sodium Requirements (*SSE #92*)
- Hyponatremia in Athletes (*SSE #88*)
- Collapse in the Endurance Athlete (*SSE #95*)
- Metabolic Factors in Fatigue (*SSE #98*)
- Psychology of Sports Injuries (*SSE Round Table #40*)
- Sports Foods for Athletes: What Works? (*SSE Round Table #32*)
- Diabetes, Exercise and Competitive Sports (*SSE #90*)
- Dietary Protein, Amino Acid Supplements and Recovery from Exercise (*SSE #87*)

### **GSSI Laboratories**

As the leading facility of its kind, GSSI has tested thousands of athletes from around the world to show how hydration and sports nutrition affect their performance. There are several laboratories at the Institute designed to help GSSI do whatever it takes to better understand athletes' needs:

- **Exercise Physiology Lab** – Study what athletes lose in sweat and expend in energy during physical activity. This research is used to determine how heat stress, hydration status, energy supply and physiology interact to cause fatigue. These findings are shared with the academic community as published in peer-reviewed journals to contribute to the literature on sports nutrition and the importance of fluid replacement.
- **Biochemistry Lab** – Analyze samples of sweat, blood, saliva and urine collected from athletes in the exercise physiology lab. Electrolytes, metabolites, such as lactate acid and blood substrates such as glucose and free fatty acids are quantified to determine their relationship to delaying fatigue. Analyses are also conducted on hormones such as insulin, growth hormone, aldosterone and cortisol to help understand the mechanisms that regulate energy metabolism during exercise. Based on these analyses, scientists develop recommendations to help athletes understand what and how much should be replaced in the way of carbohydrates, fluids and electrolytes.
- **Exercise Sensory Lab** – Scientists conduct sensory (taste) evaluation of sports drinks and sports foods to determine what athletes prefer when they are hot, sweaty and thirsty. This research is important because the taste, color, aroma, and mouthfeel of foods and beverages are major determinants of how much fluid or energy is ingested. This is of critical importance to keep athletes well hydrated and nourished. In this research, athletic subjects of varying ages perform exercise protocols lasting from one to three hours. During each test, subjects receive food or drink at prescribed times, consume as much as they want, and complete sensory evaluation surveys to describe their liking of the food or beverage.

***For more information and to take a virtual tour  
of the Gatorade Sports Science Institute, please visit [www.gssiweb.org](http://www.gssiweb.org)***

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