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NEW RESEARCH SUGGESTS THAT DEHYDRATION CAN HAVE A GAME-CHANGING NEGATIVE IMPACT ON THE PERFORMANCE OF ADULT BASKETBALL PLAYERS

NBA Stars Participate in First-of-its-Kind Hydration Initiative led by the Gatorade Sports Science Institute

CHICAGO (November 16, 2006) – A new research initiative conducted by the Gatorade Sports Science Institute (GSSI) in partnership with researchers from Penn State University suggests that dehydration can significantly impair a basketball player's performance.

According to the research, adult basketball players can experience up to a **six percent decrease in shooting percentage** and a **seven percent decrease in sprint times** when they are even only two percent dehydrated (the equivalent of a deficit of 4 lbs. of body weight for a 200 lbs. player). Furthermore, performance is impacted whether the dehydration occurs during play or if the players are inadequately hydrated before they start. Based on prior research, GSSI found that a majority of elite athletes involved in stop-and-go sports such as basketball, football and soccer show up to practice and games already at or exceeding this level of dehydration. The research initiative also found that **NBA players can lose up to 10.2 lbs or 1.25 gallons of sweat during a game** and that more than a quarter of professional players are finishing practices and games still significantly dehydrated despite their efforts to hydrate throughout the course of play.

These two pieces of research are part of a multi-phase study administered on NBA players and Division I college players, and is part of an ongoing effort by GSSI and NBA athletic trainers to better understand player hydration issues and the impact these issues have on performance. NBA players participating in the ongoing initiative include Dirk Nowitzki (Dallas Mavericks), Kirk Hinrich (Chicago Bulls), Raymond Felton (Charlotte Bobcats) and Gerald Wallace (Charlotte Bobcats) among others. To date, findings have helped GSSI develop specialized hydration strategies for several of these professional players.

"The evidence showing the adverse effects of poor hydration as a contributing factor to a player's performance is very compelling," said Larry Kenney, lead researcher and professor of physiology and kinesiology at the Noll Physiological Research Center at Penn State University. "The findings from this research suggest that hydration can be a real competitive edge for those players and teams who are able to employ an effective hydration strategy."

Based on 85 shots per game (the league average), a properly hydrated team shooting 45% would make approximately 40 shots versus only averaging 39% and approximately 33 shots made playing at a level of two percent dehydration – a difference of at least 14 points per game on average, which exceeds the NBA average per game point differential of 10.43 points per game.¹

"Staying hydrated is a huge issue for NBA players because we're constantly in motion, moving up and down the court, and this can create a lot of sweating which can lead to dehydration," said Jason Terry of the Dallas Mavericks. "When I am not fully hydrated, I am not able to perform at my full capacity. I am trying to avoid situations that could affect my performance, especially late in the game. The findings from this research really show the importance of staying hydrated, and the guidance I've received from GSSI has helped me manage these issues throughout the long season."

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The research on dehydration in NBA players was presented at the American College of Sports Medicine (ACSM) annual conference. The research by Penn State to understand the impact of dehydration on performance by having each player participate in a sequence of shooting, defensive and sprint drills while at multiple dehydrated levels from zero to four percent - as dehydration increased, performance declined, was presented at the 2006 ACSM conference.

Several NBA trainers have taken notice of this research and are now assessing the hydration needs of each individual player.

“Basketball is a physically demanding sport and if you’ve ever watched a professional game, you can see how much sweat basketball players lose on the court,” said Casey Smith head athletic trainer for the Dallas Mavericks. “In a league that has the best athletes in the world, each team is trying to get the slightest edge over the competition. Working with the Gatorade Sports Science Institute to identify the best hydration solutions provides us with strategies that allow our players to perform at their absolute peak,” Smith added.

GSSI and Penn State also worked together to conduct studies on teen and youth players which showed the significant impact dehydration has on the performance of players at younger levels as well. This research showed a 15-20% decrease in shooting percentage when elite level players were two percent dehydrated – the equivalent of 3 lbs weight loss for a 150 lbs player. Furthermore, the research reinforced the benefit of carbohydrates in enhancing performance. Even when the teen players were drinking Gatorade vs. a carbohydrate-free, electrolyte-containing flavored beverage used as a placebo, they experienced an approximate 10% increase in shooting percentage and seven percent increase in sprint times. This research was published this fall in *Medical & Science in Sports & Exercise*.

GSSI will continue its ongoing research aimed at understanding the needs of basketball players of all ages, helping athletic trainers and players better understand the hydration issues they face on the court, so they can identify solutions that will ultimately benefit players at all levels.

About Gatorade

Gatorade® Thirst Quencher, the nation's leading sports drink, is backed by 40 years of research. Gatorade is scientifically formulated and athletically proven to quench thirst, replace fluids and electrolytes and provide carbohydrate energy to enhance athletic performance. Gatorade is the official sports drink of the NFL, NBA, WNBA, AVP, NHL, Major League Baseball, Major League Soccer, and numerous professional, collegiate and amateur teams and events throughout the world. For more information, please visit www.gatorade.com.

About GSSI

Established in 1985, The Gatorade Sports Science Institute, headquartered in Barrington, Illinois, is a research and educational facility dedicated to helping athletes enhance their performance and safeguard their health. Every year, GSSI educates more than 100,000 members who are primarily sports and health professionals on the latest sports science information through direct communications, educational programs and tools, conferences and professional meetings in the U.S. and around the world. For more information about sports nutrition and exercise science pertaining to The Gatorade Company, visit the Gatorade Sports Science Institute Web site at gssiweb.org or gatorade.com.

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