



Hydration[©]

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Post-Exercise Nutrition

Food and fluid post-workout are necessary for an athlete's full recovery. Not just any fluid, but the "right" fluids assist in restoring what is lost after a strenuous workout. Sweating is the primary cause of water and salt loss during exercise. As the body loses water and electrolytes during exercise or in hot conditions, it is essential to replace and restore essential salts the body requires in order to uphold normal functioning and even

thinking. An important time for rehydration is after a workout, and that becomes essential if other training sessions are planned within 24 hours.

Many athletes are not aware that post-workout nutrition is vital for the body's recovery. After a strenuous workout, the body's nutrients are depleted (including water, sodium and potassium) which stimulate fluid intake. Most athletes only rehydrate and replenish themselves with water.

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CeraSport sponsored triathlete Mirinda Carfrae, photo by Mario Contu, 2007.

Competition and Dehydration:

Is it Worth it?

Competitive sports and athletic activities have become more aggressive than ever. The desire and pressure to perform has athletes cutting corners in their nutrition and health. Neglecting the body's need for fluids and nutrition is dangerous and may even lead to death. In 1997 three collegiate wrestlers died within a two-month period from unhealthy practices to "make weight." All wrestlers were engaged in similar weight-loss strategies by wearing vapor-impermeable suits

under cotton warm-up suits, exercising in a hot environment, and were restricting food and fluid intake.

Starving and dehydrating the body is a common practice during the competitive season for wrestlers, boxers, powerlifters, UFC athletes, and some others. Restricting foods and fluids for days at a time to "make weight" gives wrestlers a competitive edge, generally allowing

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Hydration Tips

Hydrating with water is good; however, only drinking water is not sufficient. Water lacks the electrolytes the body needs. CeraSport contains a mixed blend of rice carbohydrates and the needed electrolytes. The combination of the carbohydrates and the sodium stimulate the absorption of fluids by the sustained release of glucose in the gut.

- ▶ Replacing between 125 to 150% of fluid lost is recommended after exercise.
- ▶ Each pound lost during exercise should be replaced with 20-24oz of fluid.
- ▶ Two liters of fluid consumed in 500 ml amounts every 20 to 30 minutes is an effective rehydration strategy.
- ▶ Slowly drinking CeraSport overtime is more beneficial for rehydration than consuming a large volume of fluid immediately after activity.

Rice carbohydrates in CeraSport stimulate a timed response assisting the body in absorption and avoiding a short-lived sugar high as found in typical sports drinks. Cerasport provides sustained, prolonged, and thus superior hydration.

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This not only limits the athlete's physical abilities, but hinders their best training. Dr. John Berardi, a scientist of Exercise and Nutritional Biochemistry at the University of Western Ontario and president of athletic consulting business Science Link, is amazed that the elite athletes he works with are often clueless to nutritional knowledge. "I would have anticipated nutritional ignorance or misinformation from the average person but not elite athletes. I was wrong. In fact, athletes were just about as misinformed as the general public."¹

To properly restore lost fluids, an intake of water, sodium, glucose (or better still, complex carbohydrates), and other electrolytes needed. Water alone lacks the electrolytes the body needs to completely restore hydration. Rapid intake of a large volume of water (without food or a sport drink with sodium) can lead to water intoxication. Water intoxication, or hyperhydration, is a disturbance in the brain function that results from

low levels of electrolytes in the body and swelling of the brain cells. Water intoxication can ultimately lead to death, and has been known to result in fatality in athletes.

Essentially the body drowns from the inside out.

CeraSport® with a balanced blend of electrolytes (sodium, potassium, chloride and citrate and a patented mixed chain blend of rice carbohydrates), helps stimulate the body's fluid intake. The glucose from the rice carbohydrate blend aids in the transport of sodium and water across the intestinal wall, assisting in sustained hydration.

CeraSport sponsored triathlete Mirinda Carfrae placed second in three Spring 2007 events, at one point only 15 seconds behind the winner of the event. She finished less than one minute behind the winner in the Lubbock, TX half marathon on June 24. Both broke the course records.

Other World Champions drinking CeraSport include Susan Hefler, a competitive bicyclist and founder of HPC/List Cycling in Northern Virginia. Hefler plainly puts it "I've been an athlete all my life and I've tried everything...It (CeraSport) just works."



Get Past the Hype and to Hydration

Today there are so many hydrating products on the market, it is hard to know what really works and what is just a gimmick. Energy drinks, designer water, and sports drinks all claim that their product produces prolonged energy for athletic performance, but which works better and produces the best results?

You Decide!

1) Energy Drinks

Energy drinks have become the popular drink of choice, especially among younger generations and claim to give you that extra energy boost to get up and go. Lots of athletes are jumping on the energy drink bandwagon. Caffeine and sugar are the main ingredients in energy drinks, along with multiple other stimulants that are not usually identified. The cans range from 80 milligrams of caffeine (equivalent to one cup of coffee, to 250 milligrams per serving). Caffeine is a diuretic, causing your body to lose fluid and increasing the risk of dehydration. While athletes may love the quick energy boost during exercise, caffeine is working against them and putting them at risk of dehydration, seizures, and abnormal heart rates. Drinking a lot of sugary drinks can cause bloating, abdominal pain and even cramps.

Other concerns associated with energy drinks are the multiple

stimulants that are not identified. Sugar and caffeine, usually in the herbal form of guarana, is present in most energy drinks. Some energy drinks contain the stimulant ephedrine, an active ingredient in ephedra, banned by the FDA in 2004 after being linked to heart problems and heat stroke deaths among athletes. "Many of the stimulants in those drinks have not been approved by the government or not even part of the common nutrition vernacular."

2) Sport and Designer Waters

Sport and designer waters are purified, slightly flavored, water that contains added minerals, electrolytes, and vitamins. Effective in hydration for the average consumer, athletes participating in intense prolonged physical activity need more to sustain and hydrate them for premium performance.



Recovery Tips

- ▶ Consuming low-fat protein rich foods, such as lean lunch meat or protein bars, help to stimulate protein synthesis and maintain blood glucose.
- ▶ Combining protein with carbohydrates nearly doubles the insulin response, resulting in more stored glycogen.
- ▶ Studies show that athletes who refuel with a carbohydrate/protein mix had 100% greater muscle glycogen stores than those who only had carbohydrates.

Quinn, Elizabeth. "What to eat after exercise to replenish muscle glycogen." *Sports Medicine*, 2006.

3) Sports Drinks

Sports drinks are flavored drinks that contain electrolytes, such as sodium and potassium, and 4 to 8 percent carbohydrates. Some have the added vitamins and minerals.

Which is the Right Drink for YOU?

Overall, athletes should avoid drinks that contain

caffeine or lots of sugar during exercise. While it may give a quick boost of energy, it works against you by dehydrating your body at the same time. Lots of sugar might cause abdominal cramps. Athletes require a drink with an optimal electrolyte composition and carbohydrate blend to enable your body to replace fluids lost.

Cerasport's rice-based formula provides effective and

sustained fluid absorption through a slow release of glucose (for absorption of sodium and water from the rice carbohydrate-electrolyte blend). The result is maintenance of homeostasis, prevention of cellular damage, and optimum performance.

Don't Forget to Eat

A post-exercise meal is critical to recovery as well and improves the body's ability to train consistently. Fat is constantly burned at a high rate during exercise as well as post-exercise. The energy from carbohydrate and food consumed post-exercise replenishes the depleted muscle energy stores. Research shows that an intake of food containing carbohydrates, protein, or a carbohydrate-protein mix is essential to building adequate glycogen stores

for continued training.

The optimal carbohydrate to protein ratio is 4 grams of carbohydrates for every 1 gram of protein. Eating more protein than that will result in a negative impact on performance. A compact source of energy, carbohydrate, and protein are sports bars and sports gels. They are ideal to eat before, during, or after exercise when other solid foods are not well tolerated or available.

Overall, timing of the right food in addition to the right fluid replacement is crucial to post-exercise recovery. ■

Resources:

- 1 "Simple Steps to Optimizing Post-Workout Nutrition." <http://www.topendsports.com>
- 2 Severson, Kim. "Energy Drinks are Fueling Concerns," *The New York Times*, June 19, 2006.



Edward Dudley-Robey, M.D., a long-term powerlifter, won the Bronze

medal in the bench press in the 181 pound class at the 2007 American Powerlifting Federation Senior National Championships, and will be on the US team for the World Powerlifting Championship competition in Russia in 2007. Dudley-Robey has been using CeraSport to help maintain his powerlifting performance.



Terry Acosta started powerlifting a year ago, placing 2nd in the 181 lb. class

at the USA Powerlifting Junior Nationals. Acosta rehydrates with CeraSport and says, "CeraSport gets me hydrated faster than any other sports drink I've tried, without it I'm not sure how well I would have done." CeraSport restores fluids and electrolytes the body needs helping to maintain optimal athletic performance. Remaining well hydrated is the way to athletic success.

CeraSport®
Fast, sustained hydration
with mixed chain carbohydrates
for effective hydration to help
people feel better!



Cera Products is now sponsoring TEAM Sirius, coached by Siri Lindley, one of the top world-wide Triathletes. Her website is www.siri-lindley.com.

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them to wrestle in a weight class below their normal weight against smaller opponents.

Although the medical community has warned against voluntary dehydration for weight loss, and several wrestling associations have banned it, many athletes continue dehydrating and starving themselves for a competitive edge.

Depending upon the rules of the association wrestlers are expected to weigh-in at least two days before the actual competitive event. Through dehydrating, and sometimes



starvation, the athlete's goal is to make the lowest weight, and then replenish and rehydrate the body in the time between the weigh-in and the match. Studies reveal that 93% of wrestlers engage in strategies other than exercise to lose weight, and 82% lose 5-10 pounds every week in order to "make weight."

Excessive dehydration as a means to lose weight can harm bodily functions by lowering blood and plasma volumes, reducing blood flow to muscles and the kidney. These practices can lead to kidney failure and heat stroke or heart attack.

Hydration is important: it carries oxygen and nutrients to cells in the body, regulates body temperature, assists in conversion of nutrients into energy, and other basic physiologic functions. Dehydration as a means of weight loss is a dangerous practice that hinders the bodily functions and can hinder athletic performance. Hydration is necessary in order for the body to function properly. ■

Resources:

Hyperthermia and Dehydration- Related Deaths Associated with Intentional Rapid Weight Loss in Three Collegiate Wrestlers—North Carolina, Wisconsin, and Michigan, November-December 1997. *MMWR Weekly* 47(06): 105-108. February, 1998.

Roemmich and Sinning. Weight Loss and Wrestling Training: effects on nutrition, growth, maturation, body composition and strength. *Applied Physiology Research Laboratory* 82(6): 1751-1759. June, 1997.

Viscardi, Mike. *Weight Issues in Wrestling*, Vanderbilt University Psychology Department. http://www.vanderbilt.edu/AnS/psychology/health_psychology/Weight-Wrestling.htm.

Making Weight for Wrestling. Crucible Fitness, <http://www.cruciblefitness.com/nutrition/etips/Makingweight.htm>.



Susan Hefler has over 20 years experience of bicycle racing, and has competed in marathons, duathlons, and triathlons. Bronze medalist at the 1998 Australian Nationals in the Individual Pursuit on the Track, she is now using her experience to

coach others. Beginning HPC Racing in 2005, she utilizes her Masters degree in exercise physiology and peptide chemistry to help other athletes with their biking abilities and strategies. One suggestion she gives for all her athletes is to drink CeraSport. Hefler feels that "CeraSport is the best hydration product I've ever used!" CeraSport not only rehydrates, but helps most cyclists avoid cramping during races. Unlike many sports drinks CeraSport is rice based, not sugar based. Sugar based drinks are usually the problem associated with cramping in athletes. CeraSport wishes Hefler good luck this season as well as good hydration!



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