



Hydration[©]

SPECIAL EDITION

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Sweat Replacement: What You Drink Matters!



US Navy Seabees building a base camp in the Middle East

US Dept of Defense

Extrême environments and high levels of physical exertion make hydration a critical issue for military personnel. Dehydration can cause a significant decrease in performance of both physical and mental skills. Consequently, it is essential for military personnel to rehydrate correctly. Water and electrolytes play a major role in the proper functioning of the human body. It is vital to replace these nutrients during prolonged physical activity.

Maintaining peak performance also requires energy. The ingestion of carbohydrates during prolonged physical activity is critical. Which type of carbohydrate

matters, as well. The Cera Products' mixed chain carbohydrate blend provides a more efficient delivery system than the simple sugars found in most sports drinks.

Major Functions of Water in the Body

- ▶ Transportation mechanism in the body for oxygen, nutrients, hormones, and other compounds;
- ▶ Regulation of body temperature, especially for physically active individuals;
- ▶ Dissolves electrolytes at normal levels;
- ▶ Essential for proper functioning of the senses (vision, hearing, smell);
- ▶ Serves to protect key body tissues such as the brain and spinal cord.

Water is of primary importance to active individuals as water is the major component of sweat. As sweat evaporates, it helps to dissipate excess body heat and regulate body temperature. Although water is the most important nutrient to individuals that are physically active, rehydrating with only water is not enough!

Electrolytes need to be replaced during physical activity. "Electrolytes" are substances which, in solution, conduct an electric current. Sodium and potassium are

positively charged electrolytes that are lost in sweat. Linked to sodium and potassium are two negatively charged electrolytes, chloride and bicarbonate. Chloride and bicarbonate are also lost in sweat. It is essential for physically active individuals to rehydrate with a solution, such as CeraSport and CeraLyte, containing water, sodium, potassium, chloride, and citrate. Citrate efficiently replaces bicarbonate losses.

Drink continues on page 2

Did You Know?

Cholera is the most rapidly fatal of all diarrheal diseases. Without immediate rehydration, adults can die within hours due to the extreme fluid loss and dehydration resulting from cholera. By administering an Oral Rehydration Solution like CeraLyte at the onset of the illness, fatality rates drop to 1%.

Cholera in Iraq

In September of 2007, the UN reported that there was an outbreak of cholera in Iraq and it was feared to become an epidemic. Cholera has occurred in Iraq for many years but due to U.S. military presence in the country there has been recent media attention focused on the current outbreak. The fact that our troops are there and could become infected with the bacteria makes the epidemic an American concern.



“When they drink CeraSport, the guys in my 20 man detachment were able to cut 40 minutes off our regular 12 mile marches in the hot Texas heat...”

Sgt. J.K., US Army, Texas

Drink *cont. from pg 1*

Major Functions of Electrolytes in the Body

Sodium

- ▶ Helps to maintain normal body-fluid balance
- ▶ Essential in the control of normal blood pressure
- ▶ Critical for muscle contraction and nerve impulse transmission

Potassium

- ▶ Helps to maintain normal body-fluid balance
- ▶ Critical for muscle contraction; including the heart
- ▶ Critical for nerve impulse transmission
- ▶ Helps transport glucose (fuel for activity) into muscle cells

Chloride

- ▶ Works with sodium and potassium in the regulation of body-fluid balance
- ▶ Critical for nerve impulse transmission
- ▶ Involved with the formation of hydrochloric acid in the stomach

Bicarbonate/Citrate*

- ▶ Works with sodium and potassium in the regulation of body-fluid balance
- ▶ Helps to neutralize acidosis

Energy Demands

High levels of physical activity and varying environmental conditions increase energy expenditure.

* Citrate is an efficient way to replace bicarbonate losses

Carbohydrates have been identified as the most efficient energy source for physical activity and exercise. The ingestion of carbohydrates during exercise has shown to delay the onset of fatigue. The amount of carbohydrate that an individual should consume before, during, and after physical activity is variable.

Duration and intensity of the activity, an individual's pre-existing physical condition and environmental factors all play a role in determining how much carbohydrate is needed. In general, carbohydrate feedings should take place every 15 to 30 minutes during prolonged exercise. The feedings should be equal to 15-20 grams of carbohydrate, for example, 6 to 8 ounces of CeraSport every 15 to 30 minutes.

Not all carbohydrates are the same! Many popular sports drinks are made from only simple sugars. Simple sugars provide a short-lived high and are often associated with nausea and cramping during physical activity. CeraSport and CeraLyte are made from a patented rice-based carbohydrate. The rice-based carbohydrate is a mixed chain carbohydrate that stimulates a timed

response for quick and sustained energy. The timed response also assists the body in salt and water absorption.

Stay Hydrated

Hydration is a critical issue for military personnel. If an individual does not stay hydrated, the consequences can be very dangerous, and even fatal. Cera Products' hydration drinks including CeraLyte and CeraSport, have been scientifically designed along with doctors at Johns Hopkins University to replace nutrients that are lost in sweat and help individuals stay hydrated. They also contain mixed-chain carbohydrates that provide quick and sustained energy for physically active individuals.

References:

Clark, Nancy. (1997). Nancy Clark's Sports Nutrition Guidebook. Brookline: Human Kinetics.

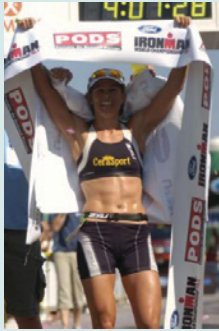
Gastelu, D. & Hatfield, F. (1997). Dynamic Nutrition for Maximum Performance. New York: Avery Publishing Group.

Williams, M.H. (1999). Nutrition for Health, Fitness, and Sport. Boston: WBC McGraw-Hill.

“The packets were a lifesaver... at 37 years old I just went through some vigorous military training in very hot conditions and if I didn't have the CeraLyte, I would have probably been a heat casualty.”

P.S., Marine in North Carolina

Cera's World Champion: Mirinda Carfrae



CeraSport's triathlete Mirinda Carfrae set a new world record at the 2nd Ford Ironman World Championship 70.3. The event was held in Clearwater Beach, Florida on November 10, 2007. Carfrae, with the help of CeraSport, finished in 4:06:25, four minutes ahead of her closest competition. Congratulations Mirinda! CERA Products, Inc. is proud to sponsor a world champion!

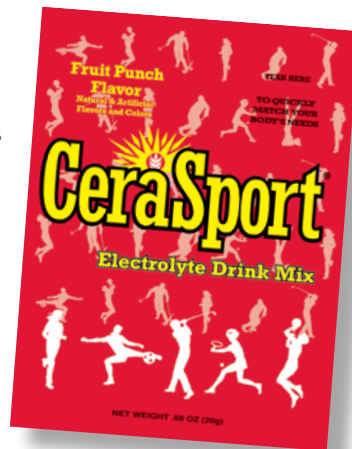
For Sweat Replacement, Drink CeraSport

Before Physical Activity

- ▶ Consume 16 ounces of CeraSport 1 to 1.5-hours before activity
- ▶ Then consume 4 to 8 ounces of CeraSport 10 minutes before activity

During Physical Activity

- ▶ Start drinking early to prevent dehydration!
- ▶ Always drink before you are thirsty.
- ▶ By the time you are thirsty you may have already lost 1-2% of your body weight due to fluid lost in sweat.
- ▶ Consume 8-10 ounces of CeraSport every 15-20 minutes of strenuous activity



After Physical Activity

- ▶ Consume enough fluids to regain your body weight losses
- ▶ Urine is used as an indicator of hydration and should be pale yellow in color

For Diarrhea, Use CeraLyte ORS

CeraLyte meets the World Health Organization requirements for electrolytes to be used for diarrhea and vomiting to help people recover quickly. CeraSport is ideal for sweat replacement. However, if you are in the field and do not have access to CeraSport, then CeraLyte may be used. In order to use CeraLyte for sweat replacement it needs to be mixed with increased amounts of water. See below for mixing instructions.



of the 50 gram packet per liter of water) will make a sweat replacement drink for extreme athletes or heat stress situations.

- ▶ CeraLyte-70 mixed into 4 liters of water (1/4 of the 50 gram packet per liter of water) will make a sweat replacement drink for physically active individuals.
- ▶ Crystal Light, Sweet 'N Low, diet drink mix, diet drinks or other non-nutritive sweeteners can be added.

CeraLyte Oral Rehydration Drink Mix

- ▶ For diarrhea, use full strength (for 50 gram packets mix into one liter of water; for 10 gram packets mix into 7 ounces or 200 mL of water).
- ▶ For sweat replacement, these packets may be mixed into two to four times the water. They will not be sweet, but they will be effective!

Mixing CeraLyte with increased amounts of water will make it comparable to most sports drinks, but without the simple sugars. Fluid intake before, during and after physical activity should then follow the general guidelines that are listed under CeraSport.

For example:

- ▶ CeraLyte-70 mixed into 2 liters of water (1/2

Reference: Clark, Nancy. (1997). Nancy Clark's Sports Nutrition Guidebook. Brookline: Human Kinetics

"With doing physical training down in South Georgia, the CERA products we use make exhaustion non-existent. Thank you for a great product!"

R.J., USAF Sgt., in Georgia

“CeraLyte and CeraSport are some of the few products I’ve used in the high heat stress environments that actually works to combat heat injury. Using your product last summer in temps over 126F and with full body armor, I was able to function without any complications. I highly recommend your product to anyone operating under these conditions.”

D.H., US Army Special Operations, VA

New Products Available

CeraSport Citrus Concentrate

Provides sustained hydration for sweat loss while helping improve athletic performance. Each box can make 2.5 gallons or 40 individual servings. 30 gallons from each case of 12 boxes.

CeraLyte 70 Lemon-Citrus Ready to Drink

Packaged in an environmentally friendly “Tetra Drink box”, in an improved lemon-citrus flavor, this CeraLyte-70 is easy to use with a resealable top. Reach for this drink to correct or prevent dehydration, for chronic diarrhea or when the “stomach bug” hits you. Each box holds 1 liter (4.25 cups). Available in cases of 12.

CeraLyte 70 Chicken-Broth Flavor

Back by Popular Demand! Reminiscent of old-fashioned chicken soup, this is a vegetarian version and tastes great when mixed into hot water. Available in 10 gram packets (single serving size, mix into 7 ounces or 200 mL of water) or 50 gram packets (mix into 1 liter of water). Available in the “clinical variety pack” of five 50 gram packets, or cases of 100 packets.



“The first week of Airborne school at Ft. Benning was very demanding through rigorous training and extreme temperatures. During the second week, we were given CeraSport once a day to combat the effects of heat stroke and dehydration. All the soldiers that hydrated with CeraSport led the platoons up front, everyone else who relied on just water we falling out of the formations or worse, receiving IV’s! It definitely aided our success throughout the school.”

A.L., US Army Airborne Reserve, N.C.

New U.S. Government Awards

TRICARE

The health program for active duty and retired members of the uniformed services, their families and survivors has designated Cera Products as an authorized, certified durable medical equipment provider. TRICARE determined that Cera Products meets its licensing and certification requirements. This means those covered under TRICARE may buy CeraLyte Oral Rehydration Solutions.

Corporate Exigency Contract

Defense Supply Center of Philadelphia (DSCP), a division of Defense Logistics Agency (DLA) awarded Cera Products with its prestigious 10-year Corporate Exigency Contract (CEC) in November 2007. The contract ensures that government agencies will be able to secure the items listed on the contract at any time, should a need for these products arise. This contract is part of the defense readiness program and guarantees that the products are available to the government 24/7. The CeraLyte items currently on the CEC are: CeraLyte-90 Lemon and Natural, CeraLyte-70 Lemon and Chicken-broth flavor, and CeraLyte-50 Mixed Berry. Additional Cera items may be added upon request from any US government agency. For further details, questions or concerns, Cera Products or Mr. Michael Brywka, DSCP-MRP/LMIS - Global Services at 215.737.5775, may be contacted.

Government Contract Number and Cage Identifiers:

VA/GSA Contract # V797P-5867X

DAPA Contract Numbers:
(CAGE CODE # 020B7)

Pharmaceutical # SP0200-95-H-0044

MED SURG # SP0200-05-H-0081

“The best part about the CeraSport is there is no let-down — I finish as strong as I start every time. One packet really does go a long way. CeraSport is head and shoulders above all other products on the market when it comes to keeping you hydrated in the hottest conditions.” S.M., former Army Ranger, VA



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TO ORDER

Cera’s Products, call us or go to CeraStore at www.ceraproductsinc.com to have CeraSport and CeraLyte conveniently delivered to your home or office.

A growing number of distributors and national chain stores also have CeraLyte available – call us to see if there is one near you.