



GOOD GOOD GOOD

# Hydration<sup>©</sup>

SPECIAL EDITION

Health News From Cera Products, Inc.

Volume 6

www.ceraproductsinc.com

Number 2



## How Diarrhea Affects Our Troops

**N**on-combat illnesses have been shown to have a significant adverse impact on military operations, resulting in more lost-person days, more hospitalizations, a decrease in operational efficiency, and decreased job performance. Among these illnesses, diarrhea was the most commonly reported illness-affecting troops in both Iraq and Afghanistan, where 74.5 percent stated they had at least one episode of diarrhea during their deployment.

- Among 15,459 persons surveyed<sup>1</sup>, diarrhea affected 76.8% in Iraq and 54.4% in Afghanistan.

- In Iraq, the average number of episodes was 5, lasting for an average of 4 days.
- Nearly half of the troops who developed diarrhea stated it was severe enough to seek medical care at least once.

- Approximately 25 percent believed that combat unit effectiveness had been negatively affected by these common illnesses such as diarrhea.
- Missed Patrol: 8.5 percent from diarrhea.

### Illness Characteristics combined from Iraq and Afghanistan, 2003-2004

- 40.2% sought care for diarrhea, resulting in an average of 2 clinic visits
- Of these cases, 14.2% required confinement to quarters for an average of 2 days
- 9.8% of the cases were persistent diarrhea (>14 days)
- 3.3% of the cases were chronic diarrhea (>30 days)
- Personal/unit impact: 46.1% reported decreased job performance lasting an average of 2 days

<sup>1</sup> Study subjects consisted of military personnel leaving Iraq or Afghanistan upon completion of their deployment or who were participating in a rest or recuperation program. Study subjects were placed in the airport terminals at Rhein-Main Air Base Germany and Incirlik Air Base Turkey, or at Camp As Sayliyah, Doha, Qatar.

Sanders, John W; Putnam, Shannon D; Frankart, Carla; Frenck, Robert W; Monteville, Marshall R; Riddle, Mark S; Rockabrand, David M; Sharp, Trueman W; Tribble, David R. American Journal of Tropical Medicine and Hygiene, 2005.

# Troop Readiness & Deployment

## Effectively Managing Diarrhea and Dehydration

### Diarrhea rates are high among deployed troops.

- Deployed troops experience diarrhea attack rates of over 50%, with 20% temporarily unable to carry out their duties for several days (an estimated 40,000 soldiers in Operation Desert Storm).<sup>1</sup>
- High attack rates occur despite extensive efforts to secure safe food and water supplies and sanitation, and creating many logistical problems.<sup>2</sup>
- Many different organisms cause diarrhea, so preventive vaccines have a limited use. A healthy adult can die in less than 8 hours of cholera due to the dehydration from rapid and high fluid loss.
- Troops and U.S. Citizens both at risk for bio-terrorism contamination of water supplies.

If a central water supply becomes contaminated, many people will be

severely and simultaneously affected, making ORS the best treatment choice, since using intravenous (IV) rehydration will be logistically impractical, if not impossible. IV hydration requires trained personnel, who will be in high demand managing the care of the most severely affected people.

**Dehydration poses a significant health and performance risk for military personnel.** The most dangerous part of diarrheal illness is the dehydration it causes, not the organism itself or the toxin it may produce.

- Mental and physical fatigue and loss of alertness occur with as little as a 1% loss in water content. Reaction time slows with as little as 2 to 5% dehydration.
- Muscle cramping, skeletal muscle fatigue, headaches, nausea and fainting occur with greater than 5% dehydration.

**What is ORS?** Oral Rehydration Solutions (ORS) are a scientifically formulated blend of carbohydrates, salts and water, designed to treat dehydration. The original ORS solutions were made from simple glucose, and were developed in the 1960's to prevent our soldiers in Vietnam from dying of the diarrheal disease cholera. Advanced ORS solutions are made from rice using new technology, and have many clinical advantages over glucose-based products (i.e. PediaLyte) and anti-diarrheal medicines.

**Why use ORS for diarrheal dehydration?** Dehydration isn't just water loss. Significant amounts of sodium and potassium are also lost through sweat and diarrhea fluids. Replacing the water but not the electrolytes causes cramps, disorientation, and convulsions, as well as heart and nervous system problems, and can even be fatal.<sup>3</sup>

**Why is CeraLyte® the best ORS choice for military personnel?**

**(1) Dual Action.** CeraLyte measurably reduces the severity and duration of diarrheal symptoms while it rehydrates.<sup>4</sup> This dual action is not seen with IV solutions or glucose-based ORS products, and is critical in high purging illnesses such as cholera, where fluid and salt loss is so rapid that a healthy adult can die in eight hours.

**(2) Rapid Absorption.** CeraLyte empties quickly from the stomach and is rapidly absorbed, with sustained hydration, even when disease is present. This is in part due to its low osmolarity.<sup>5</sup>

**(3) No Lab Tests Required.** Effectively rehydrates regardless of what's causing the diarrhea, so



**Troop Readiness**, continued...

definitive diagnosis by a health care provider is not required prior to treatment.

**(4) Replaces IV Therapy.** CeraLyte is clinically effective in treating mild, moderate and even severe dehydration. According to unpublished research conducted at USUHS, in some situations CeraLyte may be more effective than using Intravenous (IV)

therapy if oral therapy is possible.

**(5) Sustained Absorption.** CeraLyte is made utilizing a patented enzymatic process for rice extrusion, which breaks the rice carbohydrate into short, medium and long chains of repeating glucose units, and preserves the rice protein and other attributes inherent in rice. This means CeraLyte is not dumped into the blood stream all at once. Hydration and energy are delivered without the

insulin rebound seen with glucose-based products. This makes Cera's products a good choice to treat dehydration and avert fatigue from strenuous activity, long hours and stress.

#### Who Uses CeraLyte & CeraSport?

All U.S. military branches, including those who are Army and Air Force Rangers, SEAL units, and other government agencies, including Secret Service and SWAT Teams.

1 Hyams K.C., et al. Diarrheal Disease during operation Desert Shield. NEJM 325:1423-1428.

2 Kilpatrick ME, Diarrhoeal disease: Current concepts and future challenges. Trans R Soc Trop Med Hyg 1993 Dec87 Suppl 3: 47-48.

3 Funk D. Too much water can kill you. Air Force Times. Feb 2002.

4 Rice ORS scientific and clinical references available at [www.ceralyte.com](http://www.ceralyte.com)

5 One rice carbohydrate chain has the same osmotic value as a single glucose molecule. Solutions with a low osmolarity leave the stomach quickly, diffuse across the small intestine lining and into the bloodstream faster, than solutions with higher osmolarity.

## Diarrhea & Dehydration

### What it means for you

**D**iarrhea and dehydration are among the most commonly complained about ailments and no one is safe from them. Under the best circumstances diarrhea is simply an inconvenience that passes quickly. However, it can rapidly become more serious when coupled with dehydration and left untreated.

So what is it and when does it happen? Essentially, diarrhea is described as 3 or more loose/watery stools a day<sup>1</sup> and it can happen at any time. There are of course some situations which you can expect or anticipate an episode of diarrhea. Illness and traveling are two examples. The risk of an episode varies greatly depending on where you are traveling.

According to Lt. Richard Yung, M.D., of the Naval Hospital

Jacksonville, FL, the best way to hydrate during diarrhea is to drink fluids having small amounts of salt and sugar. For example, he says CeraLyte is a good choice because it is specially formulated for optimal hydration. Lt. Yung cautions that Gatorade is not quite the same and while Imodium "may" make you more comfortable, it does not make your diarrhea go away faster. CeraLyte reduces diarrhea symptoms while replacing lost fluids to prevent or correct dehydration.

Dehydration leaves people feeling weak, dizzy, flushed, and/or with a headache. All of these have a negative impact on your job performance, especially those deployed to arid, desert areas such as the Middle East. The Army has implemented revised guidelines, which emphasize prevention of dehydration to avert per-

formance degradation and reduce the risk of heat injuries<sup>2</sup>. The Air Force has distributed approximately 23,000 new and improved individual first aid kits, which include CeraLyte 70 oral hydration packets.<sup>3</sup> Military leaders are required to enforce fluid replacement guidelines to avoid dehydration and related heat injuries.<sup>4</sup> Water is naturally a good choice, however, it does not contain the electrolytes that are also lost in sweat. "Inclusion of sodium or other electrolytes can be an effective source for electrolyte replacement during prolonged periods of profuse sweating in hot weather, especially when meals are not available."<sup>5</sup>

The point is to pay attention to what your body is telling you. Drink and drink often, by the time you notice you're thirsty, you may already be dehydrated. Don't let an episode of diarrhea turn into something serious; replace the fluids you are losing as you lose them.

1 Lt. Richard Yung, MD. "Diarrhea - How to manage at home, when to go to the doctor." [www.navalhospitaljax.com/healthnotes/diarrhea.asp](http://www.navalhospitaljax.com/healthnotes/diarrhea.asp).

2 Kolka, Margaret A; Latzka, William A; Mountain, Scott J; Corr, William P; O'Brien, Karen K; Sawka, Michael N. "Effectiveness of Revised Fluid Replacement Guidelines for Military Training in Hot Weather." *Aviation, Space, and Environmental Medicine*. March 2003. 242-246.

3 Lt.Gen. George Peach Taylor, Jr, Air Force Surgeon General. "Presentation to the Military Personnel Subcommittee of the House Armed Services Committee." 19 October 2005.



## Then and Now

### Then:

“In that era (1965 to approximately 1970), the thought process of the military was directed toward hydration being a sign of weakness. More importantly, one did not really have to hydrate if trained appropriately, and there would be an extra burden to provide water or hydration to the troops.”

*“Lessons learned from Vietnam-Do they apply to Iraq and Afghanistan?”*

*Military Medicine, Aug 2005, by Kerstein Morris*

### Now:

“What and how much you eat and drink can mean the difference between top performance and struggling to complete the mission. In extreme conditions, it could be the difference between life and death.”

“Dehydration can also hurt your performance. Drink often. Drink before you feel thirsty. Dehydration has already set in by the time you're thirsty. Eat and drink right to improve not hinder your performance.”

*“High Caliber Nutrition in the Field” by CPT Lisa M. Giese, RD, LN,*

*Martin Army Community Hospital, Ft. Benning, GA*



**9017 Mendenhall Court  
Columbia, MD 21045**

**Tel: 410.309.1000**

**Fax: 410.309.4000**

President/CEO: Charlene Riikonen  
Medical Director: Dr. Amy H. Maung, M.B., B.S.  
Editor: Charlene Riikonen  
Design: Becky Hansen

TO ORDER Cera's Products,  
call us or go to CeraStore at  
[www.ceraproductsinc.com](http://www.ceraproductsinc.com)  
to have CeraSport and CeraLyte  
conveniently delivered to  
your home or office.

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

### How to Order CeraLyte and/or CeraSport?

The Defense Medical Standardization Board (DMSB) assigned NSNs to most CeraLyte and CeraSport ORS items. Cera Products also holds DAPA and FSS/GSA Advantage contracts to make it easy for government groups to order. Let us know if you would like us to mail or fax you our government price list. You can also look on our website at [www.ceraproductsinc.com](http://www.ceraproductsinc.com) and look for our Government Page which has Cera's CAGE Code, and Contract numbers needed for ordering — or give us a call at 410-309-1000.