



Hand Sanitizers vs. Soap and Water

Anti-bacterial hand sanitizers have become increasingly more popular. Many people carry around little bottles of alcohol-based hand sanitizers. Are these hand sanitizers more effective than soap and water?

The effectiveness of alcohol-based gels depends on the type and amount of germs that they are up against. In general, the longer it's been since an individual has washed his or her hands with soap and water, the less effective a hand sanitizer is likely to be.

The Center for Disease Control (CDC) recommends alcohol-based hand gel as a suitable alternative to hand washing for health-care personnel in health-care settings. These guidelines were not intended to apply to food establishments.

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Oral Rehydration: WHY Aren't We Using It?

Dehydration due to diarrhea brings thousands of young, old and people of all ages to emergency rooms in the United States every year. Yet we have known for over forty years that there is a simple, inexpensive and effective way to prevent most of these emergency room (ER) visits. Oral rehydration therapy (ORT) is proven to avert painful and invasive intravenous therapy in most cases, if started early and at home. ORT is currently used globally, has a robust

scientific foundation and is credited with saving three to four million lives every year. So the question is WHY are we in the United States not using ORT early as the first line treatment? Why are we not pushing parents to give ORT to their children, or indeed to themselves, or their elderly relatives, when they get a virus or bacteria that causes diarrhea and vomiting? Do we prefer spending time and money at a hospital emergency room, refusing to believe that we can handle this at home?

A number of reports indicate that ORS is

underutilized and IV Therapy is overused in United States, as well as other countries. According to McKenzie and Barnes in the British Medical Journal in 1991, several factors that contribute to the overuse of IV Therapy include:

- The degree of dehydration is consistently over-estimated in the developed world.
- Despite evidence that ORS is a safe and effective treatment for severe dehydration (provided that the patient is not in

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- shock), many believe that IV therapy should be given in all but mild dehydration;
- Administering ORS is believed to be more labor intensive, even though that may not be the case.

ORS Products

The table below compares the formulas of the WHO/Unicef and other ORS preparations available in the U.S. Note the differences between products with regard

to glucose/carbohydrate, sodium and osmolarity.

- CeraLyte 50 and 70 have the lowest osmolarity.
- CeraLyte has a greater amount of carbohydrate (that will slowly release double the glucose molecules) with a similar sodium content to the WHO formula;
- CeraLyte has more energy for recovery and slightly more sodium to replace salts lost than Pediatric electrolyte solutions and thus can be more effective in wider variety of diarrhea cases, promoting early recovery.

Administration of ORS

- ORS is recommended for minimal mild dehydration and moderate dehydration.
- ORS with 70mEq/L sodium can be used for both rehydration and maintenance in nearly all patients, even those who present with hypo- or hyponatremia.
- ORS with 90mEq/L of sodium is recommended for patients with severe watery diarrhea, as in cholera.
- Vomiting does not rule out using ORS; very small amounts of liquid can be

- given frequently (5-10ml every 1-2 minutes) by teaspoon or sips..
- Oral rehydration is contraindicated when there is impaired consciousness, intestinal obstruction, or shock.
- Recommended foods to give along with ORS include cereals, potatoes, rice, crackers, and bananas.
- AVOID foods or drinks with sugar while the diarrhea or vomiting continues; continue ORS until the diarrhea stops.

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Comparison of ORS Product Composition

	Glucose/Carbohydrate (gm/L)	Sodium mEq/L	Potassium mEq/L	Base mEq/L	Osmolarity mOsm/L
CeraLyte® 50	(rice-based) 40	50	20	30	180-200
CeraLyte® 70	(rice-based) 40	70	20	30	220-235
CeraLyte® 90	(rice-based) 40	90	20	30	265-280
WHO/Unicef ORS					
“Standard Formula”	(glucose) 20	90	20	30	310
“Reduced-Osmolarity Formula”	(glucose) 13.5	75	20	30	245
PediaLyte®	(glucose, fructose) 25	45	20	30	250
CeraSport®	(rice-based) 40	20	5	5	<150
CeraSport EX1®	(rice-based) 20	35	10	15	<200
Sports Drinks	(sucrose, glucose-fructose) 56-68	20	3	3	330-380

International Medical Help:

During 2008 Cera Products donated 17 pallets of CeraLyte ready- to-drink oral rehydration therapy (ORS) to Direct Relief International and Child Health Foundation, along with 10,000 packets of CeraFlu Oral Rehydration drink mix packets, to help in disaster recovery operations. Most of this donation, worth over \$100,000, was donated to help in Myanmar and Zimbabwe.

Cera Products also donated nearly 10,000 packets of CeraSport Oral Hydration packets, with a retail value of nearly \$20,000, to Direct Relief International to use “where needed most.”

CeraLyte helps prevent and correct dehydration from diarrhea, while CeraFlu helps those with influenza, upper respiratory infections and fever, keep well hydrated. Fever can further dehydrate individuals already weakened from waterborne infections and diarrhea diseases, conditions which deplete essential fluids and salts. Cera Products also helped in Haiti with donations to Foyer de Sion orphanage there (www.foyerdesion.org). For more information regarding donations, please contact Jenni at: donation@foyerdesion.org ■

Benefits of Rice-based Oral Rehydration (IV versus Oral):

- Cost Effective, no hospital needed; easy to use;
- Lack of Pain (versus needle sticks);
- Little to no complications;
- Provides more energy from complex carbohydrates
- Safety: less worry about mixing errors as rice-based ORS has larger molecules and lower osmolarity than glucose-based ORS (no insulin spikes);

- A solution lower than blood osmolarity also means better absorption;
- Rice-based ORS always works as well as glucose-based ORS but, with the extra energy from more substrate, it is more effective in severe or high output cases;
- Sustained hydration (larger molecule, more substrate);
- Tastes better! CeraLyte ORS can be mixed into hot or cold water.

In summary, dehydration remains a significant problem in the United States. Oral Rehydration Therapy is an effective,

inexpensive and simple-to-use treatment for patients suffering from dehydration. The administration of ORS can improve the health and well-being of individuals suffering from diarrheal illness, vomiting and other conditions that lead to dehydration. When choosing an ORS product, rice-based CeraLyte is

superior compared to other ORS, and rice-based oral electrolyte solutions have proven effective in reducing volume and duration of diarrhea. CeraLyte provides glucose from rice carbohydrate, salts and water needed for replacing fluids lost from diarrhea and/or vomiting. ■

References

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 2. Santosham M. Oral rehydration therapy for diarrhea: an example of reverse transfer of technology. *Pediatrics* 1997;100(5):e10
 3. Listernick R, Zieserl E, Davis T. Outpatient oral rehydration in the United States. *Arch Pediatr Adolesc Med* 1986;140:211-15
 4. Kelly DG, Nadeau J. Oral rehydration solution: a "low-tech" oft neglected therapy. *Practical Gastroenterology* 2004;27:51-62
 5. Faes MC, Spigt MG, Rikkert MGM. *Dehydration in Geriatrics. Geriatrics Aging* 2007;10:590-96
- Additional references are available upon request; also look at the rice-based bibliography on the www.ceraproductsinc.com website.*

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In health-care settings doctors and nurses wash their hands several times an hour, providing the gels with a relatively clean surface to work on. The FDA recommends that hand sanitizers not be used in place of soap and water in retail and foodservice, but only as an adjunct. Protein and fatty materials commonly found in any kitchen are especially resistant to alcohol-based gels.

In conclusion, hand washing remains the single most important procedure for preventing the spread of biological contamination. ■

References

- www.cfsan.fda.gov/~comm/handhyg.html
biology.about.com/library/weekly/aa022400a.html

10-Easy-To-Follow Steps for Proper Hand Washing:

- 1 Consider the sink, including the faucet controls, contaminated.
- 2 Avoid touching the sink.
- 3 Turn water on using a paper towel and then wet your hands and wrists.
- 4 Work soap into a lather.
- 5 Vigorously rub together all surfaces of the lathered hands for 15 seconds. Friction helps remove dirt and microorganisms. Wash around and under rings, around cuticles, and under fingernails.
- 6 Rinse hands thoroughly under a stream of water. Running water carries away dirt and debris. Point fingers down so water and contamination won't drip toward elbows.
- 7 Dry hands completely with a clean dry paper towel.
- 8 Use a dry paper towel to turn faucet off.
- 9 To keep soap from becoming a breeding place for microorganisms, thoroughly clean soap dispensers before refilling with fresh soap.
- 10 When hand washing facilities are not available at a remote work site, use appropriate antiseptic hand cleaner or antiseptic towelettes. As soon as possible, rewash hands with soap and running water.



BioTech Award to Cera

Cera Products was selected as the BioTech Company of the year by the Howard Technology Council (www.howardtechcouncil.org) and was presented with an award at the Howard Technology Council's 2008 Technology Awards Ceremony on November 11, 2008. The purpose of the awards program is to recognize innovative companies and their contributions to the economy, as well as the Howard County community. Cera Products was chosen for its work with rehydration, its charitable support of the Myanmar Cyclone victims and for the Cera Products support of the US Military. ■

ORT Training in China

Cera Products provided financial support and supplies and translation of materials for an ORT course for 134 Chinese physicians at Shengjiang Hospital, organized by Dr. Tim Shi and GlobalMD, China Medical University, and the Chinese Ministry of Health.

While 100 physicians were expected, 134 attended the course. Pre-course knowledge and post-course testing was done and will be analyzed. Preliminary results show significant improvement in attitudes and intended behavior after the workshop.

Dr. Julius G. Goepf, formerly an emergency room physician at Johns Hopkins University School of Medicine, and Dr. Mei Sun, Chief Pediatrician, Shengjiang Hospital, co-directed the ORT training. GlobalMD and the Chinese Government held this ORT course. Its aim is to teach and to refresh



earlier learning for Chinese pediatricians about correcting and preventing dehydration from diarrhea and vomiting, with ORT, including rice-based ORT. A projected outcome is the development of an Oral Rehydration Center of Excellence for training, education, and research in ORT to reduce serious dehydration and save child lives.

GlobalMD, a non-profit

organization with over 2 million physician members is initiating a project document to plan and raise funds for this ORT Center of Excellence in China, which would serve as a hub for other such centers in China and elsewhere in Asia.

For more information or to support the Center for Excellence in ORT, please contact Tim@globalmd.org regarding this exciting project. ■



ORAL REHYDRATION PRODUCTS:
To Prevent and Correct Dehydration

- Holds GSA/VA, DAPA and CEC contracts to US Government Agencies
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