Preventing Dehydration

http://healthlink.mcw.edu/article/993748461.html

Water is one of the most important nutrients in our body. It makes up approximately 70 percent of our muscles, and about 75 percent of our brains. We use water as well as expend it. In fact just in everyday breathing we lose about two cups of water. Other ways that we lose body water is through sweating and urinating. If we fail to replenish these losses, we set ourselves up to become dehydrated.

If our body sense's low water stores it will tell the kidneys to conserve the water instead of excreting it (darker colored urine will result). Dehydration can also lead to constipation and bloating as well. Some other symptoms of dehydration include dry mouth and tongue, apathy and a lack of energy, and muscle cramping.

If left untreated, dehydration can lead to heat exhaustion or heat stroke. These symptoms include: fatigue, dizziness, nausea or vomiting, headache, rapid shallow breathing, high temperatures, rapid heart beat, and decreased alertness or complete loss of consciousness.

According to the Center for Disease Control (CDC), more than 6,600 people have died from heat related causes from 1979-1995. And last year in Texas, 130 people died during the summer. These statistics are grim, but dehydration is 100 percent preventable. Here are some practical tips to prevent you from becoming dehydrated this summer:

- Drink plenty of fluids: on average it is recommended to consume at least 8- eight ounce glasses of fluid a day
- Sports drinks can encourage active people to drink more fluids because they are flavored and are higher in sodium
- Avoid caffeinated beverages and alcohol, both contain substances that will cause dehydration
- Avoid carbonated beverages because the carbonation may cause bloating or a feeling of fullness and prevent adequate consumption of fluids
- Wear light colored, absorbable, loose fitting clothes
- Stay in cool, shaded areas and protect your skin with sunblock whenever possible

For most of us, being aware and prepared is the easiest way to prevent dehydration from occurring. On hot humid days, an active person can become dehydrated in just 15 minutes. If you experience any of the symptoms above, stop the activity and rest in a cool area. Then drink fluids to replenish the water lost.

Adapted from: *Preventing Dehydration and Heat Illness; American College of Emergency Physicians and Preventing Dehydration by L. Reilly. Vegetarian Times. January 1998.*

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Dehydration and Heat Stroke

The danger of dehydration and heat stroke:

Dehydration and heat stroke are two very common heat-related diseases that can be life-threatening if left untreated.

What is dehydration?

Dehydration can be a serious heat-related disease, as well as being a dangerous side-effect of diarrhea, vomiting and fever. Children and persons over the age of 60 are particularly susceptible to dehydration.

What causes dehydration?

Under normal conditions, we all lose body water daily through sweat, tears, urine and stool. In a healthy person, this water is replaced by drinking fluids and eating foods that contain water. When a person becomes so sick with fever, diarrhea, or vomiting or if an individual is overexposed to the sun, dehydration occurs. This is caused when the body loses water content and essential body salts such as sodium, potassium, calcium bicarbonate and phosphate.

Occasionally, dehydration can be caused by drugs, such as diuretics, which deplete body fluids and electrolytes. Whatever the cause, dehydration should be treated as soon as possible.

What are the symptoms of dehydration?

The following are the most common symptoms of dehydration, although each individual may experience symptoms differently. Symptoms may include:

- thirst
- less-frequent urination
- dry skin
- fatigue
- light-headedness
- dizziness
- confusion
- dry mouth and mucous membranes
- increased heart rate and breathing

In children, additional symptoms may include:

- dry mouth and tongue
- no tears when crying
- no wet diapers for more than 3 hours
- sunken abdomen, eyes or cheeks
- high fever
- listlessness
- irritability
- skin that does not flatten when pinched and released

Treatment for dehydration:

If caught early, dehydration can often be treated at home under a physician's guidance. In children, directions for giving food and fluids will differ according to the cause of the dehydration, so it is important to consult your pediatrician.

In cases of mild dehydration, simple rehydration is recommended by drinking fluids. Many sports drinks on the market effectively restore body fluids, electrolytes, and salt balance.

For moderate dehydration, intravenous fluids may be required, although if caught early enough, simple rehydration may be effective. Cases of serious dehydration should be treated as a medical emergency, and hospitalization, along with intravenous fluids, is necessary. Immediate action should be taken.

How can dehydration be prevented?

Take precautionary measures to avoid the harmful effects of dehydration, including:

- Drink plenty of fluids, especially when working or playing in the sun.
- Make sure you are taking in more fluid than you are losing.
- Try to schedule physical outdoor activities for the cooler parts of the day.
- Drink appropriate sports drinks to help maintain electrolyte balance.
- For infants and young children, solutions like Pedialyte will help maintain electrolyte balance during illness or heat exposure. Do not try to make fluid and salt solutions at home for children.

What is heat stroke?

Heat stroke is the most severe form of heat illness and is a life-threatening emergency. It is the result of long, extreme exposure to the sun, in which a person does not sweat enough to lower

body temperature. The elderly, infants, persons who work outdoors and those on certain types of medications are most susceptible to heat stroke. It is a condition that develops rapidly and requires immediate medical treatment.

What causes heat stroke?

Our bodies produce a tremendous amount of internal heat and we normally cool ourselves by sweating and radiating heat through the skin. However, in certain circumstances, such as extreme heat, high humidity or vigorous activity in the hot sun, this cooling system may begin to fail, allowing heat to build up to dangerous levels.

If a person becomes dehydrated and can not sweat enough to cool their body, their internal temperature may rise to dangerously high levels, causing heat stroke.

What are the symptoms of heat stroke?

The following are the most common symptoms of heat stroke, although each individual may experience symptoms differently. Symptoms may include:

- headache
- dizziness
- disorientation, agitation or confusion
- sluggishness or fatigue
- seizure
- hot, dry skin that is flushed but not sweaty
- a high body temperature
- loss of consciousness
- rapid heart beat
- hallucinations

How is heat stroke treated?

It is important for the person to be treated immediately as heat stroke can cause permanent damage or death. There are some immediate first aid measures you can take while waiting for help to arrive.

- Get the person indoors.
- Remove clothing and gently apply cool water to the skin followed by fanning to stimulate sweating.
- Apply ice packs to the groin and armpits.
- Have the person lie down in a cool area with their feet slightly elevated

Intravenous fluids are often necessary to compensate for fluid or electrolyte loss. Bed rest is generally advised and body temperature may fluctuate abnormally for weeks after heat stroke.

How can heat stroke be prevented?

There are precautions that can help protect you against the adverse effects of heat stroke. These include:

- Drink plenty of fluids during outdoor activities, especially on hot days. Water and sports drinks are the drinks of choice; avoid tea, coffee, soda and alcohol as these can lead to dehydration.
- Wear lightweight, tightly woven, loose-fitting clothing in light colors.
- Schedule vigorous activity and sports for cooler times of the day.
- Protect yourself from the sun by wearing a hat, sunglasses and using an umbrella.
- Increase time spent outdoors gradually to get your body used to the heat.
- During outdoor activities, take frequent drink breaks and mist yourself with a spray bottle to avoid becoming overheated.
- Try to spend as much time indoors as possible on very hot and humid days.

If you live in a hot climate and have a chronic condition, talk to your physician about extra precautions you can take to protect yourself against heat stroke.

Emergency department study supports giving dehydrated children fluids by mouth

http://news.bio-medicine.org/medicine-news-2/Emergency-department-study-supports-giving-dehydrated-children-fluids-by-mouth-745-1/

Oral rehydration therapy, or giving fluids by mouth, is equally effective as giving intravenous fluids to young children dehydrated by common stomach and intestinal inflammations, according to a new study by emergency medicine physicians. Because oral therapy can be started more quickly and is less painful for the child than IV treatment, the researchers say it should be the preferred treatment for children with moderate dehydration.

The research, performed in the emergency department of The Children's Hospital of Philadelphia, supports previous recommendations by expert groups such as the American Association of Pediatrics and the World Health Organization. The study appears in the February issue of *Pediatrics*.

Gastroenteritis, an inflammation of the stomach and intestine, causes stomach pain, diarrhea, fever and vomiting in young children, especially during the winter months. The loss of fluids may cause a potentially dangerous dehydration, resulting in some 10 percent of hospitalizations in American children under age five.

Busy hospital emergency departments, such as The Children's Hospital of Philadelphia, see hundreds of children each year with this condition, frequently caused by infection with rotavirus. "Our study shows that oral rehydration therapy is as effective as intravenous fluid therapy in rehydrating moderately dehydrated children," said Philip Spandorfer, M.D., a pediatric emergency physician at The Children's Hospital of Philadelphia and primary researcher on the study. "Currently, the majority of pediatric emergency physicians continue to use I.V. therapy for these children, both because they believe parents and referring physicians expect it, and because they believe oral therapy is time-consuming."

There are many benefits to oral rehydration therapy (ORT) that make it more desirable than intravenous fluid therapy (IVF). Patients treated with ORT do not require intravenous access, a potentially painful and difficult procedure in young children. Also, parents who learn to administer ORT correctly have acquired a skill that can be used at home for ongoing and future illnesses.

A randomized controlled clinical trial was performed in the emergency department at Children's Hospital from December 2001 through April 2003. Seventy-three children between 8 weeks and 3 years were enrolled in the study. Of the 73 patients, 36 were randomized to receive oral rehydration therapy (ORT) and 37 were randomized to receive intravenous fluid therapy (IVF). Less than one third of the group that received ORT required hospitalization, whereas almost half of the IVF group was hospitalized. Patients in the ORT group received small amounts of fluid (Pedialyte) over a period of four hours. After instruction, parents provided the fluid (Pedialyte) to their children.

Half of the participants in both groups were rehydrated successfully in four hours. The time required to start therapy was less in the ORT group, at just under 20 minutes compared to 41 minutes in the IVF group. Physicians also obtained 72-hour post-ED visit information through a follow-up phone call to all participants. Researchers used sham I.V.s so that treating physicians did not know which children were in each group.

"By the end of the study, we realized that most families prefer to start with the oral rehydration therapy for treatment of moderate dehydration," said Dr. Spandorfer. "It is our hope that this study may support greater adoption of ORT by emergency physicians."

Dr. Spandorfer's co-authors were Evaline Alessandrini, M.D., M.S.C.E.; Mark D. Joffe, M.D.; Russell Localio, M.S.; and Kathy N. Shaw, M.D. All are from the Division of emergency Medicine at The Children's Hospital of Philadelphia.

Giardia lamblia and Giardiasis
The Common Waterborne Parasite that Causes Beaver Fever

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http://human-infections.suite101.com/article.cfm/giardia_lamblia_and_giardiasis

Giardia lamblia contaminates surface water all over the world and can cause an unpleasant prolonged intestinal illness known as giardiasis, or beaver fever.

Giardia lamblia is a protozoan, a single-celled parasite that lives in the intestines of people and animals. For the lucky, its presence causes no symptoms. For the less fortunate, *G. lamblia* causes an intestinal parasitic disease—giardiasis—that is always unpleasant, and may be prolonged.

How do you catch giardiasis?

Giardia lamblia is found in feces and in contaminated water supplies. People ingest the infective cysts of the parasite when they drink contaminated water or accidentally ingest fecal material on contaminated food items, hands, or other objects.

Giardia lamblia is resistant to chlorination and can survive water treatment. Unfiltered water supplies, particularly those drawn from surface supplies, have often been the source of outbreaks of giardiasis. Many animals can carry the parasite, including cats, dogs, sheep, cattle, muskrats and beavers (the source of the common name “beaver fever”). Infected people can cause an outbreak as well: contaminated hands can spread the parasite to food or objects.

What does Giardia lamblia look like and how does it live?

Giardia lamblia is much larger than bacteria, but still too small to be seen without a microscope. There are two stages, called cysts and trophozoites. Cysts are oval—watermelon shaped—and contain two pairs of nuclei that look like spherical eyes, along with a collection of other thread-like structures. Trophozoites are shaped like teardrops, with a broad rounded end and a pointy end that tapers off. The parasite alternates between the two stages:

1. The cyst stage is very resilient; it survives well in cool damp conditions and even in very cold water in winter. This is the stage that people swallow.
2. In the small intestine, the cyst breaks down, releasing two trophozoites, which attach to the intestinal lining and divide to produce more trophozoites.

3. Some trophozoites are carried away in the intestinal flow, especially when the host has diarrhea. As they move through the intestine, some secrete a resistant wall and become cysts.
4. Trophozoites and cysts of *Giardia lamblia* are passed in the stool. The trophozoites die quickly, but the cysts survive a long time in the right conditions.
5. Cysts are swallowed by another unsuspecting host and the process begins all over again.

What are the symptoms of giardiasis?

Many people have no symptoms, but some people become very ill and have trouble getting rid of this parasitic disease. Symptoms include:

- Abdominal pain.
- Watery diarrhea.
- Foul smelling gas and burping.
- Mild fever, sometimes with chills.
- Malabsorption, where nutrients are not absorbed, frequently with weight loss.
- In chronic infection, intermittent diarrhea alternating with normal stools and sometimes even constipation.

Avoid *Giardia lamblia*

It's probably impossible to completely avoid coming in contact with *Giardia lamblia*, but you can lessen your chances of catching it:

- Never drink untreated water from surface sources—rivers, streams, lakes. Treat water with filtration or a chemical treatment that kills protozoa.
- When traveling in countries where sanitation is poor, drink bottled water and avoid uncooked vegetables that you do not peel yourself (with clean hands).
- Practice good hygiene at all times: wash hands thoroughly after using the toilet and before handling food.

If you do catch giardiasis, take heart: you are not the first—*Giardia lamblia* cysts have been recovered from preserved human stools that are over two thousand years old. Two thousand years ago, this parasitic disease would have run its course, but today there are drugs that are usually very effective at killing the parasite.

Read more: "Giardia lamblia and Giardiasis: The Common Waterborne Parasite that Causes Beaver Fever" - **http://human-infections.suite101.com/article.cfm/giardia_lamblia_and_giardiasis#ixzz0A3ilHWP3**