

HEALTHY EATING TIP OF THE MONTH:

HYDRATION July 2011

HETM HOME

HYDRATION OVERVIEW

HYDRATION TOPIC

WATER TERMINOLOGY

WATER CONTENT

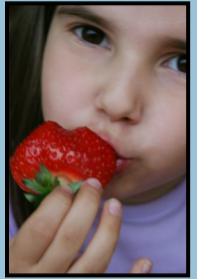
BODY OF WATER

EXERCISE HYDRATION

HYDRATION & HEAT

RELATED LINKS

Beat the summer heat with the UMHS and East Ann Arbor Healthy Eating Tip of the Month informational boards:



Learn about...

- Your Fluid Requirements
- Water Content of Food and Beverages
- Staying Hydrated During Exercise
- Bottled Water
- Relationships Between Hydration Status and Mental Cognition
- Importance of Hydration in the Heat



Read, Learn, and WIN!!!

Let us know you stopped by and you are eligible to win a .75L stainless steel Camelbak water bottle!



July 2011

Giveaway

To contact us:

Nutrition Counseling Center
Patient Food and Nutrition Services
University Hospital 2A-237
1500 E. Medical Center Dr.
Ann Arbor, MI 48109
Phone: (734) 936-7527



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DID YOU KNOW? -

Humans can last a few months without food but only a couple days without water. Water is one of the most important nutrients for our body. Drinking fluids affects more in our bodies than quenching thirst. Fluids affect body homeostasis, nutrient transport to cells, removal of body waste products, body performance, mental cognition, joint lubrication, organ cushion etc.



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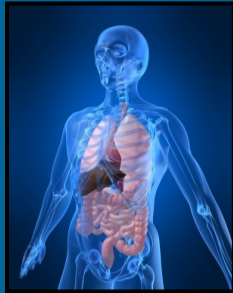
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Topics range from hydration needs with exercise to components of bottled water. Grab a glass of water, a comfy chair, and retain some fluid knowledge!



The Human Body of Water

What is the purpose of water in your body? How much intake do you need for a healthy hydrated you?

Water Content: Foods and Beverages

Fluids can be found in beverages as well as many foods such as fruits, vegetables, and soups. Choosing high fluid foods can help maintain intake.



Get to Know your H₂O



As consumers we see different water terminology thrown around regularly such as natural, spring, mineral, filtered, etc. Get to know your H₂O: what does your water label mean?

Exercise Hydration

Exertion through exercise causes high water losses through sweat and heat release. Hydration helps us maintain performance and function.



Stay Safe In Hot Weather



With record high temperatures in summer it is important to maintain fluid intake. Some of the most common summer medical issues include heat injury. Dehydration and sustained exertion can cause debilitation and even death.



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Exercise Hydration

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By: Sports, Cardiovascular, and Wellness Nutrition Group of the American Dietetic Association (SCAN/CSSD)

Goals of Hydration:

- Begin exercise well hydrated by drinking fluids during the day and within the hour before the exercise session.
- Replace sweat losses by drinking fluids regularly during exercise.
- Rehydrate after exercise to replace weight lost as fluid during exercise.
- Follow a personalized fluid replacement plan to prevent consequences of excessive (>2% body weight loss) dehydration such as early fatigue, cardiovascular stress, increased risk of heat illness, and decreased performance.

Fluids Surrounding Exercise:

- For short duration (<60 minutes), low to moderate intensity activity, water is a good choice to drink before, during, and after exercise.
- Sports drinks (6-8% carbohydrate) are good options for moderate to high intensity activity lasting longer than 60 minutes, especially when the goal includes replacing carbohydrates and electrolytes.
- For those who experience high sodium losses during exercise, eat salty foods in a pre-exercise meal or add salt to sports drinks consumed during exercise.
- Rehydrate following exercise by drinking enough fluid (water or sports drinks) to replace fluid lost during exercise. Replace fluid and sodium losses with watery foods that contain salt (i.e. soup or vegetable juice). Replace fluid and potassium losses by consuming fruits and vegetables.

Tips to Take With You:

Replace fluids early and often during and after exercise, particularly in hot environments.

Good sources of fluid include water, sports drinks, juices, soups, smoothies, fruits, and vegetables.

A sports dietitian can assist you in designing a personalized hydration plan that considers thirst, urine color, and body weight changes under varying conditions of exercise.



Contact SCAN at

www.scandpg.org

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Stay Safe in Hot Weather

By: Washtenaw County Public Health

Heat Exhaustion:

Mild heat related illness that can occur after several days of being in high temperatures without drinking enough fluids. Can lead to heat stroke without treatment.

Warning Signs of Heat Exhaustion:

- Heavy sweating -Fast, weak pulse -Fast, shallow breathing
- Paleness -Muscle cramps -Weakness -Headache
- Dizziness -Nausea or Vomiting -Fainting

Heat Stroke:

The most serious heat related illness. This occurs when the body can not control it's temperature. The body loses its ability to sweat with the inability to cool down. This can cause death or permanent disability if emergency treatment is not provided.

Warning Signs of Heat Stroke:

- Extremely high body temperature (above 103oF) -Fast, strong pulse
- Red, hot, and dry skin (no sweating) -Confusion
- Nausea -Unconsciousness -Throbbing Headache -Dizziness

High Risk Groups:

- 65 yrs and older – Elderly do not adjust as swiftly to temperature change as younger people, are more likely to have chronic medical conditions affecting the body's response to heat, and more likely to take prescription medications that may decrease the body's ability to sweat.
- Infants and young children
- Overweight
- Ill
- Physically Active

Medications that Make it Harder to Control Body Temperature:

- Antidepressant Drugs
- Antiparkinson Drugs
- Psychiatric Drugs
- Some Antihistamines (ex: Benadryl and Chlortripolon)
- Antidiarrhea Drugs (ex: Lomotil)

Emergency Phone Numbers

Ambulance, Fire and Police: Dial 911

**Washtenaw County Emergency Management Division:
(734) 973-4900**

**Ann Arbor Office of Emergency Management:
(734)761-2425**

**Washtenaw County Public Health Department:
(734)544-6700**

American Red Cross: (734)971-5300

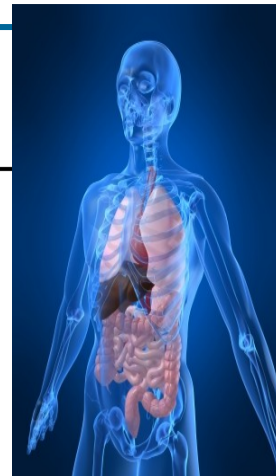
Salvation Army: (734)668-8353



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The Human Body of Water

By: Jessica Zokas, UMHS Dietetic Intern



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Composition of Water in the Human Body:

- Muscle 75%
- Heart– 80-90%
- Fat 20%
- Lung-80-90%
- Blood 83%
- Brain– 75%

What Does Water Do in Your Body?

- Helps maintain body temperature
- Transports nutrients
- Carries away waste
- Helps increase cognition
- Increases body performance
- Prevents heat injury
- Lubricates and cushions joints, tissues, and organs

When Do Our Hydration Needs Increase?

- With fever, diarrhea, or vomiting
- Extreme temperatures: very cold or hot environments
- During strenuous activities that cause perspiration and evaporation from skin
- During extended exposure to recirculated air (ex: airplanes)
- During pregnancy and lactation
- When eating a high fiber diet – drink fluids to prevent constipation



Signs of Dehydration:

Physical-dry mouth, headache, thick saliva, nausea, sunken eyes, flushed skin, swollen tongue, and increased body temperature

Feelings-weakness, fatigue, and dizziness

Output-Dark colored urine, decreased urine output

Possible Complications of Dehydration

- Kidney stones
- Urinary tract infection
- Heat injury
- Brain swelling
- Seizures
- Decreased blood pressure

Life Stage Groups	Fluid Ounces per Day (8fl oz = 1 cup)
Infants 0-6 month 7-12 month	23 fl oz. 27 fl oz.
Children 1-3 yrs 4-8 yrs	43 fl oz. 57 fl oz.
Males 9-13 yrs 14-18 yrs 19-70+ yrs	80 fl oz. 110 fl oz. 123 fl oz.
Females 9-13 yrs 14-18 yrs 19-70+ yrs	70 fl oz. 77 fl oz. 90 fl oz.
Pregnancy 14+ yrs	100 fl oz.
Lactation 14+ yrs	126fl oz.

References

- Michigan Department of Environmental Quality “The Human Body Water Relationship” www.michigan.gov/deq, Feb 2006
- Whitney E., Rolfes S. “Understanding Nutrition” Thomas Wadsworth Belmont Ca, eleventh edition 2008 p397-403
- Grandjean A., Reimers K., Bennick K., Haven., M “The Effect of Caffeinated, Non Caffeinated, Caloric and Non Caloric Beverages on Hydration” Journal of the American College of Nutrition Vol. 19, No. 5, 591-600 2000
- Mayo Foundation for Medical Education and Research (MFME) “Dehydration” Jan 7, 2011. <http://www.mayoclinic.com/health/dehydration>
- USDA “Dietary Guidance– DRI Tables– Electrolytes and Water” Jan 31, 2011<http://fnic.nal.usda.gov/>

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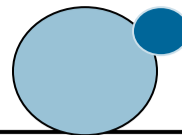
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Water Terminology



By: Jessica Zokas, UMHS Dietetic Intern

DID YOU KNOW:

Bottled water...

- Is a convenient and easy way to make sure you drink enough water for hydration.
- Is a better “on the go” beverage choice than soft drinks.
- Is not a source of fluoride. Fluoride is in tap water and important for prevention of tooth decay.
- 25-40% of bottled water comes from the same municipal water as tap water.

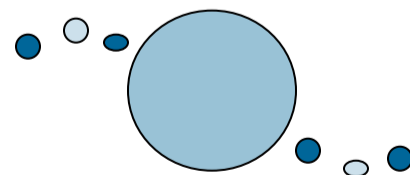
Soft vs. Hard Water

Hard Water: is higher in calcium and magnesium. Both of these minerals assist with growing and maintaining healthy bones and teeth. May cause crusty appearance on dishes, bath tubs, etc.

Soft Water: Contains higher amounts of sodium and potassium. Soft water may actually contain higher levels of toxic substances than hard water. Commercially softened water often adds sodium while calcium and magnesium are removed. This adds additional sodium to the already high sodium intake in a typical American diet.

Water Terminology:

- **Public/Tap:** Treated and disinfected by a municipal facility.
- **Distilled:** Vaporized and re-condensed leaving it free of dissolved minerals.
- **Well:** Water drawn directly from the ground.
- **Filtered:** Usually filtered by carbon filters to reduce lead in tap water or by reverse osmosis to remove lead, arsenic, and some microorganisms.
- **Mineral:** from a spring or well with minerals commonly giving a distinctive flavor (ex: sulfur). Many mineral waters are high in sodium.
- **Purified:** De-mineralized. Treated by distillation or a chemical process to remove dissolved solids. Contains no minerals or contaminants. Useful for medical and research purposes.
- **Sparkling:** Naturally has carbon dioxide, which gives it bubbles.
- **Spring:** Underground source without added or removed minerals.
- **Seltzer:** Tap water injected with carbon dioxide to make bubbly, without added salts
- **Club Soda:** Artificially carbonated water with added salts and minerals.
- **Tonic:** Artificially carbonated water with added sugar, sodium, and quinine.



References

1. U.S Department of the Interior-Geological Survey “Water Science Glossary of Terms” 2/8/11, <http://ga.water.usgs.gov/edu/dictionary.html>
2. U.S. Environmental Protection Agency “Bottled Water Basics” 9/2005, http://www.epa.gov/ogwdw000/faq/pdfs/fs_healthseries_bottlewater.pdf
3. U.S. Environmental Protection Agency “Water Facts” 12/22/11, http://water.epa.gov/learn/kids/drinkingwater/water_trivia_facts.cfm

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Water Content Of Foods and Beverages



By: Jessica Zokas, UMHS Dietetic Intern



Beverages:

Beverages with few or no calories meet fluid needs without contributing to weight gain. Pure and simple water is the best option for low calorie fluid intake. However, all beverages except alcohol assist in meeting fluid needs. Sweetened, low nutrient beverages (such as flavored waters) and high calorie options (such as soda) should be consumed in moderation.

Caffeine and Artificial Sweeteners:

These act as diuretics by increasing urine output. Although they contribute to daily fluid intake, you require greater fluid intake to balance the increased output.

Fun Fact:

Beverages make up 20% of the average U.S. diet. Be aware of extra calories consumed from beverages.

A **study** from the University of Washington Center for Public Health Nutrition in 2007 suggested a relationship between increased sugar sweetened beverage intake (i.e. soda, juice, and sports drinks) and obesity. Weight change may depend on the purpose, context, and mode of liquid calories. However, increased no or low calorie fluid intake was also related to weight loss and fewer feelings of hunger between meals. Moderation is key.

Low Calorie Beverages

- Water
- Tea
- Coffee
- Low fat, skim milk, soy milk
- Low calorie artificially sweetened beverages (Ex: Coke Zero, Gatorade G2)

Food Water Content

Food:

Fluid needs can be met by more than just water.

Many foods have a high moisture content.

- Most fruits and vegetables contain up to 90% water.
- Many meats and cheeses contain at least 50% water.

Try to meet fluid needs with low calorie beverages, fruits and vegetables. Limit diuretic and high calorie beverages such as coffee and non-diet caffeinated sodas.



90-99%	Fat free milk, strawberry, watermelon, lettuce, cabbage, celery, spinach,
80-89%	Fruit juice, yogurt, apples, grapes, oranges, carrots
70-79%	Shrimp, bananas, corn, potatoes, avocados, cottage cheese, ricotta cheese
60-69%	Pasta, legumes, salmon, ice cream, chicken breast
50-59%	Ground beef, hot dog, feta cheese
40-49%	Pizza
30-39%	Cheddar cheese, bagels, bread
20-29%	Pepperoni sausage, cake, biscuits
10-19%	Butter, margarine, raisins
1-9%	Crackers, cereals, pretzels, taco shells, peanut butter, nuts
0%	Oils, sugars

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Prize Giveaway!

0.75L Stainless Steel Camelbak Water Bottle



Let us know you visited our Healthy Eating Tip of the Month board!

STEP 1: On a submission form at the board, please write your:

- *Name*
- *Email*
- *Phone number*

STEP 2: Fold and place the form in the envelope attached to the board.

STEP 3: A lucky winner will be chosen and contacted by August 1, 2011.

GOOD LUCK and thank you for stopping by!

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WATER: Educational Links

Want to learn more about water, hydration status, and health? Continue your learning with these resources:

U.S. Food and Drug Administration

Bottled water, flavored water, and nutrient added water safety and regulations.

<http://www.fda.gov/Food/ResourcesForYou/Consumers/>

Medline Plus– Drinking Water

Articles, journals, videos, photographs etc. about safety and utilization of drinking water in the United States. Topics such as e.coli, lead, safety, and kids activities.

<http://www.nlm.nih.gov/medlineplus/drinkingwater.html>

American Council on Exercise–Healthy Hydration

Tricks and tips for monitoring your fluid intake with exercise exertion. How to replenish.

http://www.acefitness.org/fitfacts/fitfacts_display.aspx?



BAM! Body and Mind

Website designed for pre-teens/teens with interactive games, information, videos, and activities on water. Plus additional nutrition and wellness information.

http://www.bam.gov/sub_yoursafety/yoursafety_keepingyourcool.html

Centers for Disease Control:

Global water safety, sanitation, and hygiene

<http://www.cdc.gov/healthywater/global/>

WATER: Research Articles

1. Hydration Status and the Diuretic Effect of A Small Dose of Alcohol

Hobson and Maughan– *Oxford Journal of Alcohol and Alcoholism* (2010) , **45:4** Pg 366-373

<http://alcalc.oxfordjournals.org/content/45/4/366.full.pdf+html>

2. Relation Between Hydration Status in Children and their Dietary Profile: Results from the DONALD Study

Stahl, Kroke, Balzenius, and Manz–*European Journal of Clinical Nutrition* (2007) **61**, 1386–1392; <http://www.nature.com/ejcn/journal/v61/n12/abs/1602663a.html>

3. Effect of hydration status on thirst, drinking, and related hormonal responses during low-intensity exercise in the heat

C. M. Maresh, C. L. Gabaree-Boulant, L. E. Armstrong, D. A. Judelson, J.R. Hoffman, J. W. Castellani,¹R. W. Kenefick,¹ M. F. Bergeron,¹ and D. J. Casa¹—*Journal of Applied Physiology* (2004) **97** , 39-44