

Name: \_\_\_\_\_

## THE IMPORTANCE OF DRINKING WATER

- \* **How Long Can We Survive Without Drinking?** Apart from the special case of people traveling in the desert, it should be assumed that a normal adult couldn't stay alive without water for more than three or four days. By way of comparison, someone who has familiarized his/her body to fasting can survive for forty to fifty days, without eating provide he drinks often.
- \* 75% of Americans are **chronically dehydrated**.
- \* In 37% of Americans, the thirst mechanism is so weak that it is often mistaken for hunger.
- \* Even MILD dehydration will slow down one's metabolism as much as 3%.
- \* One glass of water shuts down midnight hunger pangs for almost 100% of the people watching their weight.
- \* Lack of water is the #1 trigger of **daytime fatigue**.
- \* Preliminary research indicates that 8-10 glasses of water a day could significantly ease back and joint pain for up to 80% of sufferers.
- \* A mere 2% drop in body water can **trigger fuzzy short-term memory, trouble with basic math, and difficulty focusing** on the computer screen or on a printed page.
- \* Drinking 5 glasses of water daily decreases the risk of **colon cancer** by 45%, plus it can slash the risk of **breast cancer** by 79%, and one is 50% less likely to develop **bladder cancer**.

**Are you drinking the amount of water you should every day?**

### **Is This Just a Coincidence?**

There is a direct connection between the *quality* and *content* of the water in our body and how the body responds to disease and aging.

<b>Brain</b>	<b>83% Water</b>
<b>Kidney</b>	<b>82% Water</b>
<b>Heart</b>	<b>79% Water</b>
<b>Lungs</b>	<b>80% Water</b>
<b>Bones</b>	<b>22% Water</b>
<b>and the Blood</b>	<b>90% Water</b>

## Water -- Essential to Life.

*Water is a fundamental part of our lives. It is easy to forget how completely we depend on it. Human survival is dependent on water -- water has been ranked by experts as second only to oxygen as essential for life. The average adult body is 55 to 75% water. 2/3 of your body weight is water (40 to 50 quarts). A human embryo is more than 80% water. A newborn baby is 74% water. Everyday your body must replace 2 1/2 quarts of water. The water you drink literally becomes you! Since such a large percentage of our bodies is water, water must obviously figure heavily in how our bodies function. We need lots of fresh water to stay healthy. Aside from aiding in digestion and absorption of food, water regulates body temperature and blood circulation, carries nutrients and oxygen to cells, and removes toxins and other wastes. This "body water" also cushions joints and protects tissues and organs, including the spinal cord, from shock and damage. Conversely, lack of water (dehydration) can be the cause of many ailments. It is noted that chronic dehydration may cause certain problems for the body, including hypertension, asthma, allergies, and migraine headaches.*

*Every process in our body occurs in a water medium. We can exist without food for 2 months or more, but we can only survive for a few days without water.*

*Most people don't drink enough water. The body responds to this water deficiency in a variety of ways, which we frequently see as illnesses. When we drink water, many symptoms decrease. Ongoing dehydration may cause actual disease as the body struggles to maintain itself with insufficient water.*

## Metabolism

Water is the medium for various enzymatic & chemical reactions in the body. It moves nutrients, hormones, antibodies, & oxygen through the blood stream & lymphatic system. The proteins & enzymes of the body function more efficiently in solutions of lower viscosity. Water is the solvent of the body & it regulates all functions, including the activity of everything it dissolves & circulates.

## Water and Weight Loss

**Among its other benefits, water plays a major part in weight loss. Since water contains no calories, it can serve as an appetite suppressant, and helps the body metabolize stored fat, it may possibly be one of the most significant factors in losing weight. In the article "Water Bearers", (Shape magazine) Elizabeth Austin notes that "water is the single most important nutrient you take in every day. It's fat-free, cholesterol-free, low in sodium, and completely without calories." Also, drinking more water helps to reduce water retention by stimulating your kidneys. Studies have recommended that if you are overweight according to average height and weight comparison charts, you should add one glass of water to your daily requirement (of eight glasses) for every 25 pounds over your recommended weight.**

**Dehydration leads to excess body fat, poor muscle tone & size, decreased digestive efficiency & organ function, increased toxicity, joint & muscle soreness, & water retention. Water works to keep muscles and skin toned.**

## Digestive System

The digestion of solid foods depends on the presence of copious amounts of water. Acids & enzymes in the stomach break the food down into a homogenized fluid state which can pass into the intestine for the next phase of digestion. An "acid stomach" will respond to hydration. Constipation is a frequent symptom of dehydration. Increased water, along with increased fiber, will usually totally eliminate a problem.

Gastritis, duodenitis, pain from ulcers (as long as the ulcer is not perforated), & heartburn all decrease with increased water intake. Water eliminates toxins & waste from the body.

## Water Loss

Adults lose nearly 6 pints (12 cups) of water every day. We lose 1/2 cup to 1 cup a day from the soles of our feet. Another 2 to 4 cups is lost from breathing. Perspiration accounts for another 2 cups. Another 3 pints (6 cups) are lost in urine.

## **Dehydration**

When the body is dehydrated, a form of rationing & distribution goes into play to ration the available water. Since the body has no reserve system, it operates a priority distribution system for the amount that has been made available by intake. The body's signals of dehydration are frequently joint pain, stomach pain & ulcers, back pain, low energy, mental confusion & disorientation. Numerous disease symptoms respond to increased water intake.

## **Water Retention**

If you're not drinking sufficient water, your body starts retaining water to compensate for this shortage. To eliminate fluid retention, drink more water, not less. If you don't drink enough water to maintain your body's fluid balance, you can impair every aspect of your body's physiological function.

## **The Thirst Reflex**

The "dry mouth" signal is the last outward sign of extreme dehydration. As our bodies try to adjust to being deprived of water, our thirst mechanism becomes disabled. The only time we receive the "dry mouth" signal is as the last outward sign of extreme dehydration. In addition, the thirst sensation gradually decreases with age. The result is increasing dehydration. As we start to give our bodies more water, the thirst mechanism begins to work again, but doesn't become fully apparent until our bodies are fully hydrated. When we are getting sufficient water, we're often thirsty.

## **Body Temperature**

Water helps regulate our body temperature through perspiration, which dissipates excess heat & cools our bodies.

## **Breathing**

We even need water to breathe! As we take in oxygen & excrete CO<sub>2</sub>, our lungs must be moistened by water. We lose about 1 to 2 pints of water each day just exhaling.

Asthma is frequently relieved when water intake is increased. Histamine plays a key role in regulating the way the body uses & distributes water & helps control the body's defense mechanisms. In asthmatics, histamine level increases with dehydration. Our defense for the body is to close down the airways.

## **Joints**

Water lubricates our joints. The cartilage tissues found at the ends of long bones & between the vertebrae of the spine hold a lot of water, which serves as a lubricant during the movement of the joint. When the cartilage is well hydrated, the two opposing surfaces glide freely, & friction damage is minimal. If the cartilage is dehydrated, the rate of "abrasive" damage is increased, resulting in joint deterioration & increased pain.

The actively growing blood cells in the bone marrow take priority over the cartilage for the available water that goes through the bone structure. Rheumatoid joint pain frequently decreases with increased water intake & flexing exercises to bring more circulation to the joints.

## **Back**

75% of the upper body weight is supported by the water volume that is stored in the spinal disc core. 25% is supported by the fibrous materials around the disc. The spinal joints are dependent on different hydraulic properties of water which is stored in the disc core. Back pain is frequently alleviated with hydration.

## **The Brain**

Brain tissue is 85% water. Although the brain is only 1/50th of the body weight, it uses 1/20th of the blood supply. With dehydration, the level of energy generation in the brain is decreased. Depression & chronic fatigue syndrome are frequently results of dehydration.

Migraine headaches may be an indicator of critical body temperature regulation at times of "heat stress." Dehydration plays a major role in bringing on migraines. Dehydration causes stress & stress causes further dehydration.

## **Kidneys**

The kidneys remove wastes such as uric acid, urea & lactic acid, all of which must be dissolved in water. When there isn't sufficient water, those wastes are not effectively removed, which may result in damage to the kidneys.

# WATER VS. OTHER BEVERAGES

**THERE IS A DIFFERENCE BETWEEN DRINKING PURE WATER & BEVERAGES THAT CONTAIN WATER. FRUIT JUICE, SOFT DRINKS, COFFEE, ETC., MAY CONTAIN SUBSTANCES THAT ARE NOT HEALTHY, & ACTUALLY CONTRADICT SOME OF THE POSITIVE EFFECTS OF THE ADDED WATER. CAFFEINATED BEVERAGES STIMULATE THE ADRENAL GLANDS AND ACT AS DIURETICS, ROBBING YOUR BODY OF NECESSARY WATER. SOFT DRINKS CONTAIN PHOSPHORUS WHICH CAN LEAD TO DEPLETION OF BONE CALCIUM. SODA CONTAINS SODIUM. FRUIT JUICES CONTAIN A LOT OF SUGAR & STIMULATE THE PANCREAS. THESE DRINKS MAY TAX THE BODY MORE THAN THEY CLEANSE IT. A 12 OUNCE CAN OF REGULAR SODA CONTAINS THE EQUIVALENT OF 9 TEASPOONS OF SUGAR AND LOADS OF EMPTY CALORIES.**

**OTHER BEVERAGES ALSO CONTAIN DEHYDRATING AGENTS. THEY MAY ACTUALLY REDUCE THE WATER RESERVES IN THE BODY! DRINKING OTHER BEVERAGES TO THE EXCLUSION OF WATER ALSO CAUSES YOU TO LOSE YOUR TASTE FOR WATER. THIS IS PARTICULARLY TRUE WITH CHILDREN AS THEY BECOME DEPENDENT ON SODAS & JUICES.**

**UH OH. HERE'S SCARY NEWS ABOUT POP!...**

**DRINKING CARBONATED BEVERAGES FROM DR. PEPPER TO DIET COKE, WHICH ARE EASILY AVAILABLE IN MANY MIDDLE SCHOOL AND HIGH SCHOOL VENDING MACHINES, IS THE MAJOR CAUSE OF TOOTH EROSION IN TEENAGERS, REPORTS REUTERS. THIS OCCURS WHEN THE PROTECTIVE ENAMEL COATING ON TEETH WEARS AWAY. DENTAL EROSION IS DIFFERENT FROM TOOTH DECAY, WHICH IS DUE TO LOTS OF SUGAR. INSTEAD, EROSION IS CAUSED BY ACIDIC SUBSTANCES IN THE DRINKS, WHICH IS WHY EVEN DIET SOFT DRINKS ARE HARMFUL. EROSION NOT ONLY WEAKENS THE TEETH, BUT ALSO CAN CAUSE THINNING OR CHIPPING OF THE TOOTH EDGES.**

**SCARY STATISTICS:**

- \* DRINKING FOUR OR MORE GLASSES OF FIZZY DRINKS A DAY RAISES A 12-YEAR-OLD'S CHANCES OF SUFFERING TOOTH EROSION BY 252 PERCENT.**
- \* HEAVY CONSUMPTION OF SODA POP BY 14-YEAR-OLDS INCREASES THE RISK OF TOOTH EROSION TO 513 PERCENT.**

**"THIS RESEARCH IDENTIFIES FIZZY DRINK AS BY FAR THE BIGGEST FACTOR IN CAUSING DENTAL EROSION AMONG TEENAGERS," LEAD STUDY AUTHOR DR. PETER ROCK TOLD REUTERS. "DRINKING FIZZY DRINKS ONLY ONCE A DAY WAS FOUND TO SIGNIFICANTLY INCREASE A CHILD'S CHANCES OF SUFFERING DENTAL EROSION." HOW MANY SODAS DOES YOUR TEENAGER DRINK EACH DAY? DID YOU KNOW IT COULD CAUSE TOOTH EROSION? IF YOU HAD NO CLUE, YOU'RE NOT ALONE. MOST PARENTS DON'T UNDERSTAND THE DIFFERENCE BETWEEN EROSION AND DECAY AND EVEN FEWER KNOW SOFT DRINKS CAN ERODE THEIR CHILDREN'S TEETH.**

**WHAT'S A TEENAGER TO DO? DRINK MILK OR WATER INSTEAD. THE STUDY FINDINGS WERE PUBLISHED IN THE BRITISH DENTAL JOURNAL.**

## How much water should you drink?

A non-active person needs a half ounce of water per pound of body weight per day. That is ten 8 ounce glasses a day if your weight is 160 pounds. For every 25 pounds you exceed your ideal weight, increase it by one 8 ounce glass.

An active, athletic person needs 2/3 ounce per pound which is 13-14 8 ounce glasses a day if you're 160 pounds. The more you exercise the more water you need. Spread out your water intake throughout the day. Do not drink more than 4 glasses within any given hour. After a few weeks your bladder calms down & you will urinate less frequently, but in larger amounts.

Most people should drink 8-10 cups of water daily, or 64-80 ounces. Drink water even when you are not thirsty. The body's thirst mechanism is not a reliable indicator of hydration status. By the time we feel thirsty, we may already be mildly dehydrated. When we exercise, we need even more water. It is important to drink water before, during, and after a workout. In general, the recommendation is 8-16 ounces of water before exercise and 5-10 ounces every 15-20 minutes during exercise. After exercise, drink water to quench your thirst, then drink even more. If you weigh yourself before and after your workout, drink 16 ounces of water for every pound of weight you lose after exercise. You can tell whether or not you are drinking enough water by monitoring your urine. Urination should be frequent and urine should be pale in color. Remember to drink extra water during hot, dry weather when our fluid needs are increased.

## TIPS FOR INCREASING YOUR WATER INTAKE:

- \* FILL A PITCHER OF WATER IN THE MORNING AND PUT IT IN THE REFRIGERATOR – MAKE IT A GOAL TO DRINK THE WHOLE PITCHER BEFORE YOU GO TO BED.**
- \* EVERY TIME YOU PASS A DRINKING FOUNTAIN, TAKE FIVE GULPS OF WATER... EVEN IF YOU ARE NOT THIRSTY.**
- \* ADD A SLICE OF LEMON, ORANGE OR LIME TO A GLASS OF WATER FOR A REFRESHING, DIFFERENT TASTE.**
- \* CARRY A CLEAR WATER BOTTLE WITH YOU ALL DAY AND KEEP IT FILLED.**
- \* DRINK WATER WITH ALL OF YOUR MEALS.**
- \* EAT MORE JUICY FRUITS AND VEGGIES.**

NAME \_\_\_\_\_ HOUR \_\_\_\_\_ DATE \_\_\_\_\_ +20

**AFTER READING THE ARTICLE, PLEASE ANSWER THE FOLLOWING QUESTIONS USING THE INFORMATION THAT YOU HAVE LEARNED FROM THE LESSON AND ARTICLE. ~ 20 POINTS**

**How much does 1 gallon of water weight: \_\_\_\_\_ How many oz. are in 1 cup: \_\_\_\_\_**

How much water (in ounces) did I drink in 24-hours?

straight water: \_\_\_\_\_ juice: \_\_\_\_\_ milk: \_\_\_\_\_ TOTAL: \_\_\_\_\_

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caffeinated drinks: \_\_\_\_\_ pop: \_\_\_\_\_ TOTAL: \_\_\_\_\_

Metabolism is: \_\_\_\_\_

Ways to boost metabolism: \_\_\_\_\_

Name five benefits that may occur to your body if you drink plenty of water and your body is "well-hydrated."

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Name five bad effects that may happen to you or ways that you may feel if you become "dehydrated" (not enough water)?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Figure out according to your body size and how physically active/inactive you are how much water you should be drinking a day. Use the following calculation to compute your answer.

Total Pounds Body Weight \_\_\_\_\_ x 2/3 ounce (0.66 oz.) = \_\_\_\_\_ oz. (ANS. 1)

Divide your answer from above by 8 ounces (which is the number of oz. in 1 cup) = \_\_\_\_\_ cups

Add 2 cups to your answer if you are VERY ACTIVE.

**FINAL ANSWER: I NEED TO DRINK \_\_\_\_\_ CUPS OF WATER PER DAY**

Give two reasons why pop, carbonated beverages, energy drinks, and high-sugar juices are not the best choice to pick to stay hydrated.

1. \_\_\_\_\_
2. \_\_\_\_\_

List three types of drinks that should be healthy alternatives to those mentioned in number 4.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

Name the SIX significant ingredients that are dangerous to your health found in ENERGY DRINKS.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

Name SIX signs of CAFFEINE WITHDRAWAL that one could experience from developing a CAFFEINE ADDICTION.

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_

**BRING IN EXTRA CREDIT BOTTLE/CAN (FULL OR EMPTY) OF YOUR DRINK...  
(NON-ALCOHOLIC PLEASE) BY FRIDAY!**

# The Energy Drinks Issue: Energy Drinks and Growing Bodies

By: HealthTeacher    Published: September 2, 2009

Increasingly, children and teens are drinking more and more of what marketers refer to as "**energy drinks**," drinks packed with whopping amounts of **sugar** and **caffeine**. If not addressed, this trend will set the stage for even higher rates of childhood obesity, diabetes and a host of other potential problems including a serious addiction to caffeine. Some educators are saying that kids amped up on these drinks are exhibiting specific behavioral problems in school.

## Pros and Cons - there are no "pros"

Most of us well know that too much caffeine or other types of stimulants can increase anxiety, cause panic attacks and gastrointestinal problems and some cardiac arrhythmias. No one yet knows the effect of these drinks have on growing brains, but research is in the works. Legislation is also afoot to regulate these drinks, but until then their use is destined to accelerate. There are sugar-free energy drinks on the market, but sugar is still one of the main ingredients in the most popular drinks. Ingredients include, but are not limited to:

- \* **Caffeine:** (in high amounts)
- \* **Sugar:** (in high amounts)
- \* **Ephedrine:** a stimulant common in weight-loss products and decongestants. There have been concerns about ephedrine's effects on the heart
- \* **Taurine:** an amino acid that helps to regulate normal heart-beats and muscle contractions. Its effects on people as a drink additive remain unclear.
- \* **Guarana:** a stimulant that grows in Brazil & Venezuela which contains high levels of caffeine
- \* **Ginseng:** a root believed to increase energy levels.

Most are **stimulants** in one way or another, the amount of caffeine often surpassing that of at least once cup of coffee. The FDA regulates the amount of caffeine (65 mg per ounce) in soft drinks but not in energy drinks. In one drink, unconscionably called Cocaine, there is an astounding 280 mg in an 8.4-ounce.

## **The marketing of energy drinks to easy marks: CHILDREN**

Surely these beverages will contribute to the obesity epidemic in children. With names like "No Fear," "Red Bull," "Amp," "Monster" and "Full Throttle," it's no wonder that adolescents and teens are drawn to them. Kids want more energy because it temporarily feels good, but these sugary caffeine drinks are also marketed for "enhanced performance."

Energy drinks may also have addictive properties, because after that wallop of a lift in mood, there is a subsequent crash, which causes a craving for another pick me up. Some kids wind up in a loop in which they drink as many as four cans a day while going without breakfast or lunch—a nutritional nightmare, and because caffeine is a diuretic, it causes more dehydration at a faster rate.

## **What's a grownup to do?**

Studies on the impact of these drinks on youth are currently being performed, but until the results are in, arming our children on the potential perils of energy drinks will give parents and teachers a head start. Before waiting for legislators to do their jobs, teachers are advised to talk to students at least about being mindful of the ingredients in various energy drinks as the list is long and the spectrum wide.

## **Caffeine addiction**

On some peer-to-peer online forums, kids are asking each other if they are addicted to caffeine and begging for advice on how to quit. If caffeine addiction is showing up, there may be cause to implement a full-scale school program on how to recognize the problem and how to fix it. The following are signs of caffeine withdrawal (signifying addiction), which typically appears 12 to 24 hours after abstaining from caffeine.

- \* Headache
- \* Lethargy
- \* Depressed mood
- \* Nausea
- \* Vomiting
- \* Muscle pain and stiffness

# WHY I SHOULD DRINK WATER!

1.) Circle FOUR things that happen to your body if you drink plenty of water each day.

I GET MORE ENERGY

I AM MORE TIRED

I CAN THINK BETTER

I CAN RUN LONGER

I HAVE A HEADACHE

I WANT TO EAT MORE JUNK

I WANT TO EAT LESS

I FEEL DIZZY

2.) Circle five things that happen to your body if you DO NOT drink enough water each day.

I GET MORE ENERGY

I AM MORE TIRED

I CAN THINK BETTER

I CAN RUN LONGER

I HAVE A HEADACHE

I WANT TO EAT MORE JUNK

I AM CRABBY

I FEEL DIZZY

3.) How much water (in ounces) should you drink per day?

YOUR WEIGHT (in pounds) DIVIDED BY 2 = \_\_\_\_\_

4.) Circle TWO drinks that should be healthy alternatives to water.

MILK

100% JUICE

RED BULL

POP

COFFEE

BEER

5.) Write down one interesting fact that you learned from this lesson - something that you did not know before!