The Holistic Perspective

With Steven Horne, RH(AHG)

Hydration

Water—
A Foundation for
Good Health

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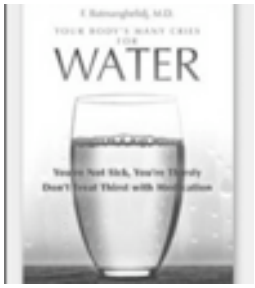
The Importance of Water

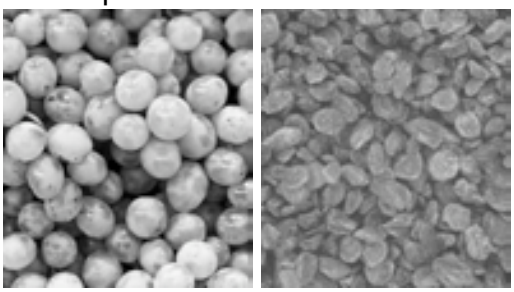
- Water is the foundation of all life
- Our bodies are 65-75% water
- All biological processes need water, including digestion, energy production and elimination
- Water generates energy by itself and increases the energy derived from food
- Water dilutes toxins and waste acids and helps all eliminative channels
- Water helps regulate temperature
- Water lubricates tissues and joints and provides cushioning

Your Body's Many Cries for Water

- Dr. Batmanghelidj, MD was a political prisoner in Iran
- In trying to help a fellow prisoner suffering with an ulcer, he learned that increasing water intake alone could cure ulcers
- He went on to research more about how water can "cure" disease
- www.watercure.com



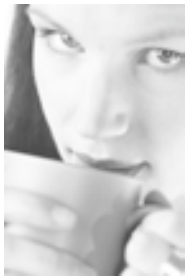
Are Your Cells More Like Grapes or More Like Raisins?



We Dehydrate as We Age

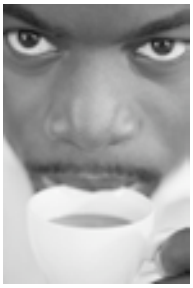
Water and Thirst

- Thirst is not an adequate indicator of dehydration
  - People confuse thirst with hunger
  - People try to satisfy thirst with beverages that deplete the body of water
    - Caffeinated beverages
    - Alcohol
    - Artificial sweetened drinks
- In dehydration
  - 66% of water loss is from inside cells
  - 26% is from extracellular fluids (lymph)
  - Only 8% from blood
  - Thirst is regulated by blood levels of water



Caffeine

- Is a diuretic – increases water loss
- Causes cells in the brain and elsewhere to burn up energy reserves
- Activates an enzyme (phosoph-diesterase) that inhibits memory formation and retention
- May contribute to ADHD and reduces students grades in school



Alcohol

- Inhibits vasopressin, a hormone from the pituitary that inhibits water loss
- Dehydrates the brain, but causes endorphin release (which is why it is addictive)
- Suppresses the immune system and damages the liver
- Hangovers are largely the result of dehydration

Aspartame

- Made with excitatory neurotransmitters – aspartate and phenylalanine
- Like caffeine, aspartame causes the brain to use up its energy stores, this increases hunger and sugar cravings
- About 10% of aspartame gets converted to formaldehyde and methyl alcohol, compounds known to cause nerve damage and blindness
- Macular degeneration and retinopathy have increased with the use of artificial sweeteners
- Aspartame has also been linked with headaches, dizziness, confusion, memory loss, drowsiness, epileptic convulsions, tumors, hyperactivity and other problems

Fruit Juice and Milk

- These are liquid foods and cannot replace the need for water
- Fruit juices are high in sugar and potassium
- Potassium has a diuretic effect
- Need extra salt with fruit juice

Health Problems Associated with Dehydration

- Energy Problems
  - Fatigue
  - Sugar Cravings
  - Obesity
- Digestive Problems
  - Heartburn
  - Hiatal hernia
  - Dyspepsia
  - Colitis pain
- Poor Elimination
  - Constipation
  - Congestion
  - Water retention
- Respiratory Problems
  - Allergies
  - Asthma
- Pain
  - Joint pain
  - Back pain
  - Migraine headaches
- Nervous/Emotional
  - Insomnia
  - Depression
  - Anxiety
  - Irritability
  - Difficulty concentrating
- Degenerative Diseases
  - High blood pressure
  - Diabetes
  - Cancer
  - And many others

Water and Energy

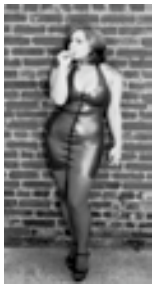
- Hydrolysis increases energy output by one magnitude (a factor of 10)
- With proper hydrolysis, 100 calories can create nearly 1,000 calories of energy in the body
- Water also creates hydroelectric energy as it passes through cell membranes

Dehydration and Sugar Cravings

- The brain is the most hydrated organ of the body, being 85% water
- The brain and central nerves are bathed in a saline solution called cerebrospinal fluid
- The brain uses water to create energy
- When dehydrated the brain has to get more energy from food, which causes sugar cravings

Dehydration and Obesity

- When we eat more sugars (and starches) the brain only uses 20% of these increased calories
- The body stores the remaining calories as fat
- Increasing water intake reduces sugar cravings and fat deposition
- It also decreases hunger in general, since most "hunger" sensations are actually thirst
- Hydration helps with weight loss



Fat and Energy

- Fat is a more efficient fuel source than carbohydrates
  - One molecule of sugar forms 38 units of ATP with 66% conversion (34% lost as heat)
  - One molecule of fat forms 146 unites of ATP
- The body stores excess energy as fat because it is an efficient way to store energy
- The body stores 150 times more energy as fat than it does as sugar (glycogen)
- Breakdown (hydrolysis) of fat is dependent on water and lipase
- High insulin levels decrease lipase output

Other Fat Facts

- Brown fat is highly vascularized fatty tissue, which is directly converted to energy
- White fat has less vascularization and is therefore harder to break down
- Even white fat, however, is recycled every two or three weeks
- Walking for one hour activates lipase to break down fat for 12 hours
- Hydration may also increase leptin, a hormone from fat cells that decreases hunger

Water and Digestion

- Digestion requires water – food must be dissolved in water to be utilized
- The body must pull this fluid from the blood
- If water levels are low, the body will not be able to properly digest food causing indigestion, heart burn and other digestive problems

Acid then Alkaline

- The stomach uses acid (HCl) for the first stage of digestion
- Hydration is critical to mucus production (which protects the stomach from this acid)
- The pancreas makes the liquid coming from the stomach alkaline using bicarbonate, because
  - The intestines do not have a mucus coat to protect them from the acid
  - Pancreatic enzymes require an alkaline environment to work
- The pancreas needs water to make its bicarbonate solution, if there is not enough bicarbonate solution to neutralize the acid, the stomach will not empty its contents

Salt and Digestion

- A pinch of salt (NaCl) taken with water about 15-30 minutes prior to eating aids digestion
- The water helps form digestive secretions
- The chlorine in the salt (Cl) helps form hydrochloric acid (HCl)
- The sodium (Na) helps form mucus in the stomach and bicarbonate solution in the pancreas to protect the body from the acid

Tummy Troubles

- When the stomach doesn't empty its contents it can result in:
  - Acid indigestion
  - Gastritis (inflammation of the stomach)
  - Dyspepsia
  - Ulceration and colitis
  - Acid reflux
  - Hiatal hernia
  - Loss of appetite

Bulimia

- May be a sign of severe dehydration
- The inability to digest the food may cause the stomach to empty (vomit)
- Dehydration also affects brain function
- Bulimics are hungry because they aren't digesting the food

Water and Detoxification

- All channels of elimination rely on water to work properly
- Dehydration is a factor in:
  - Constipation
  - Respiratory congestion
  - Lymphatic stagnation
  - Water retention

Herbal Hydrotherapy

- Herbs have been traditionally used with WATER as teas or decoctions
- Dehydrated herbs (capsules and tablets) need to be adequately hydrated to work properly
- Enemas, sweat baths, soaks and other naturopathic therapies also involve water

Herbs Move Water

- Many herbal "actions" involve moving water
- If there isn't enough water to move, the remedy won't work properly
- Taking too many herbs or supplements without water will actually make a person "sicker"

Water and Constipation

- At the end of the digestive process, the body "recycles" water used in digestion by absorbing it in the colon
- Laxatives work by holding water in the colon by:
  - Inhibiting absorption of water and electrolytes (anthraquinones)
  - Adding electrolytes that can't be absorbed (magnesium salts)
  - Just holding onto water (fiber)
- Water makes all other "laxatives," especially fiber, work the way they are supposed to

Water as a Laxative

- Water stimulates a hormone in the gut called motilin
- Motilin activates the downward movement of the intestinal tract and is a natural laxative
- Motilin acts like serotonin, which means it reduces carbohydrate cravings, enhances mood and helps to ease pain

Congestion

- More water is lost from lymph (26%) than from the blood (8%)
- This means that dehydration will "thicken" lymph and may cause it to become congested
- Swollen lymph nodes and other masses have been traditionally treated with "salty" herbs and actual salt

Water Retention & Diuretics

- Water retention may be a final effort of the body to hold onto water in severe dehydration
- Convention wisdom says, "avoid salt, drink less water"
- Dr. B says using water and salt will help the body flush excess water
- It is certain that diuretic herbs will NOT help unless adequate water is consumed

Expectorants and Decongestants

- Mucus is 90% water and about 5% glycoprotein
- Decongestants "thin" mucus so it will move
- Expectorants help expel excess mucus
- In order for these remedies to work they must have water

Histamine

- Histamine is involved in inflammatory responses, but it is also a neurotransmitter in the nervous system
- Dr. B says histamine is a “drought-management” hormone. It is used to direct water to critical organs
- Dehydration causes higher levels of histamine – hence more inflammatory responses
- Histamine also suppresses antibody production, thus lowering immune defenses
- Water and salt act as a natural antihistamine, reducing inflammatory responses and allergic reactions

Allergic Reactions

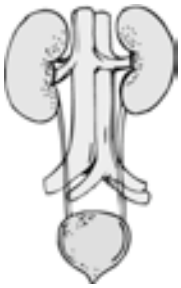
- With lowered antibody production and less water available for mucus and tear production, the body has a hard time discharging minor irritants like pollen, dust and animal dander
- The body uses histamine to create an inflammatory reaction to “flush” irritants away from eyes and membranes
- Antihistamines interfere with this process by “drying out” mucus membranes
- Mucus, tears and sweat are all salty, so drinking water with salt helps promote tear, mucus and sweat production to flush away irritants without histamine

Asthma and Dehydration

- A lot of moisture is lost through the lungs (especially when talking or exercising)
- When there is a shortage of water, the bronchial passages constrict to reduce air flow and water loss through the lungs
- Water and salt can stop an asthma attack
- Epinephrine inhalers dehydrate the lungs further, creating a vicious cycle
- Asthma and allergies are closely related and both can be “cured” by proper hydration

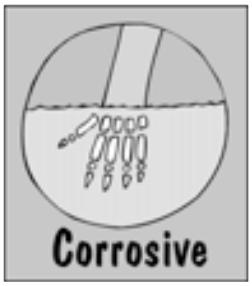
Acid Waste and Kidneys

- The byproduct of energy production in the cells is acid waste
- The kidneys flush this waste
- When there isn’t enough water to dilute the acid, the kidneys concentrate it and make the urine more acid
- This is damaging to the urinary passages



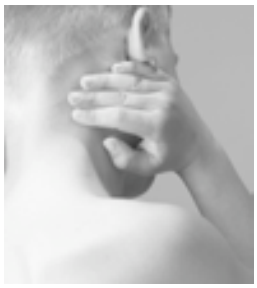
Acid and Alkaline

- Acid is H+ (hydrogen missing an electron)
- Acid is corrosive and irritating to tissues, causing inflammation
- Antioxidants are electron donors, which reduce tissue irritation and inflammation
- Water dilutes acid, which means it helps alkalize the body



Acid and Pain

- Pain is a sign of a lack of oxygen and acidity in the tissues
- Deep breathing and drinking more water are natural pain relievers
- Dr. B considers pain a sign of dehydration
- If you have chronic pain, drink more water



Pain and Water

- Back pain
  - Water is part of the cushion in the disks, dehydration reduces spinal cushioning
- Migraines and headaches
  - Vasodilative migraines may be a result of the body trying to get more blood (and water) to the brain
  - Many other types of headaches are prevented (and even relieved) with proper hydration
- Joint pain
  - Water is an essential component of the joint cushioning, hydration reduces joint pain

Histamine and the Brain

- The brain is highly hydrated (85%)
- In the absence of water the brain uses histamine to activate the cation pumps which move sodium and potassium for cellular energy production
- Histamine is made from the amino acid histadine
- Antidepressants act as antihistamines

Serotonin

- Primary neurotransmitter in the brain
- Produced from tryptophan
- Increases pain threshold
- Controls blood sugar and growth hormone production and release
- Helps to lower blood pressure
- Regulates appetite
- Regulate salt intake
- Affects calcium movement in cells and is involved in neurotransmission
- Inhibits histamine and its action
- Is reduced in starvation, inactivity and dehydration

Water and Neurotransmitters

- When the body becomes more acidic, the liver uses amino acids normally used to make neurotransmitters (tryptophan, tyrosine, cysteine and methionine) in liver detoxification
- Dehydration decreases transport of tryptophan into the brain, increasing serotonin
- Hydration increases levels of tryptophan and tyrosine in the brain, increasing serotinin and dopamine levels, which improves motivation, mood and mental clarity

Brain Thirst Indicators

- If you are feeling…
  - Tired
  - Flushed
  - Irritable
  - Anxious
  - Dejected
  - Depressed
  - Inadequate
  - "Heavy" in the head
- You are probably dehydrated

Water for Your "Frazzled" Nerves

- Reduces anxiety and helps you sleep more soundly
- Helps you concentrate and remember things better
- Reduces irritability and feelings of stress
- Lifts depression and enhances motivation and mood

Blood Pressure

- The endothelium (the lining of the blood vessels) produces nitric oxide to adjust the size of the "pipe"
- A loss of volume in the blood vessels causes them to contract to increase diastolic pressure
- This increases systolic pressure
- In short, dehydration contributes to high blood pressure

Arterial Plaque and "Thick" Blood

- Arterial Plaque
  - Forms only in high pressure areas
  - May be in response to infection weakening an artery
  - May also be formed to inhibit water loss in the high pressure area
- Thick blood
  - Dehydration causes the blood to thicken and pressure to increase
  - This increases the risk of clot formation
  - Adequate hydration "thins" the blood and helps to prevent blood clots

Diabetes

- When the pancreas is short on water it uses a prostaglandin (PGE-2) to call for more water
- This reduces insulin production and water absorption in the cells
- If this is insufficent, it covers insulin with a molecule called xanthurenic acid which makes it ineffective
- Thus, dehydration contributes to Type II (insulin-resistant) diabetes

Cancer Cells

- Cancer cells are anaerobic and live in a low oxygen, high acid environment
- Dehydration directly contributes to this environment
- Dehydration also causes DNA damage by promoting protein breakdown and amino acid depletion
- Receptors on cell membranes are destroyed via dehydration so cell cannot adequately communicate and remain "social"

Histamine and Immunity

- Increases production of cells that suppress the immune response
- This is to prevent over-activation of the immune system in areas where histamine is used for water management
- Suppressed immune function is part of the cancer profile

More Problems from Dehydration

- Dry and burning eyes
- Hot flashes
- Gout
- Kidney stones
- Skin problems
- Osteoporosis
- Autoimmune Disorders
- Fibromyalgia

Water Therapy

- Basic Instructions
  - Drink at least ½ ounce of water per pound of body weight per day (more may be required)
  - Eliminate diuretic beverages
  - Use natural salt with water and food (about ½ teaspoon per day)

More Hydration Therapy

- Other Suggestions
  - Drink 2 eight ounce glasses of water ½ hour before meals
  - Drink 1 glass 2-½ hours after meals
  - Drink 1-2 glasses of water upon arising
  - Drink whenever your are thirsty, including with meals
  - Drink an extra 1-1/2 cups of water for ever cup of coffee, soda or alcohol you drink

Supplements to Help Hydration

- NSP's Natural Salt
- HY-C
- Magnesium
- Licorice root
- Solstic Revive (electrolyles)
- Target Endurance (alternative to caffeine)

Question and Answer Time