



Hydration

A common denominator in all living things is the need for water. Building the molecules of life is only possible when their components are dissolved in water. Adequate water intake and utilization is indispensable to all microorganisms, plants, and animals. The human body is composed of 25% solid matter and 75% water.

Water is essential to life and is a key to the rate of aging, immunity and all biochemical processes that occur in biological systems especially the brain, which consists of about 85% water. Water makes life possible because it has unique physical and chemical properties.

Most people are unaware of what happens to the body if it is not adequately hydrated. Whole metabolic systems are disturbed, often severely by dehydration. Some of the signs of dehydration are bloating or abdominal discomfort that occurs after drinking, dry mouth or difficulty forming saliva, disinclination to drink water because of the taste and sometimes not drinking water but obtaining water from coffee, tea, fruit drinks or manufactured beverages, etc. Other symptoms include insatiable thirst, craving and eating sweets followed by drinking a lot of fluids, lack of elasticity in skin and water retention are but a few. Unfortunately, many of these beverages accelerate water loss rather than increase hydration.

HYDRATION AND MUSCULOSKELETAL PAIN

Hydration can affect any or all parts of the body, especially the spine, intervertebral joints and their disc structure. Hydraulic properties of water stored in the disc core, as well as other parts of the musculoskeletal system are indeed dependent upon adequate hydration. Contact surfaces in the spinal vertebrae require water for its lubricating.

The disc core within the intervertebral space also contains water and supports the compression weight of the upper body. Fully 75% of the upper body is supported by the water volume that is stored in the disc core; 25% is supported by the fibrous materials around the disc. The fifth lumbar disc is affected in the majority of cases.

Water appears to be a universal lubricating agent for all joints in addition to sustaining the force produced by weight or tension produced by the action of muscles on the joint. Water is made available in most joints through an intermittent vacuum effect. The water is then dispersed by pressure brought about by joint movement.

IMPORTANT FACTORS IN RELIEVING BACK PAIN ARE:

- Increased water intake
- Specific exercises to enhance the uptake of water into disc space through a vacuum effect
- Correct posture
- Regular visits to your chiropractor

Neck pain is also exacerbated by dehydration and poor posture. Adequate hydration and exercise will help establish adequate circulation and a vacuum within the disc spaces.



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Dyspeptic pain is indicative of dehydration and is a thirst signal. More specifically, gastritis pain, duodenitis, and heartburn are important signals of dehydration in the body. Ulcers however, require more rigid dietary management in addition to water intake.

Research has shown that if we drink a glassful of water, it is immediately transported to the intestine and absorbed. Within 30 minutes the same quantity of water is secreted in the mucosal glandular layer of the stomach ready to aid digestion. Adequate digestion is dependent upon adequate amounts of water. The glandular layer of the stomach is normally covered in mucus. Mucus consists of 90% water and 2% the physical “scaffolding” that traps water. This protects the inner lining of the stomach by acting as a natural buffer state. An important part of this buffer system is sodium bicarbonate that is secreted by the cells below the mucous layer. Sodium bicarbonate becomes trapped in the water layer. This protects the stomach from acid production by effectively neutralizing it. The result of this natural biochemical reaction is an increased salt production (sodium from the bicarb and chlorine from the acid). Excess sodium changes the water-holding properties of the “scaffolding” material of mucus. Too much acid neutralization and deposition of sodium in the mucous layer would make it less homogeneous and will allow penetration to the mucosal layer resulting in dyspeptic pain.

The re-secretion of water through the mucous layer appears to exert a “back-washing effect” on the mucous layer removing the salt deposits. The effectiveness of this phenomenon of course is dependent upon the intake of water. (As a note of caution, pains that do not respond to an increased water intake over a period of time could be the result of a serious pathological condition. It would be prudent to consult your physician for assessment of the condition).

Other conditions responding well to proper hydration are, colitis and false appendicitis pain. Rheumatoid arthritis pains can initially be considered indicators of a lack of adequate hydration in the affected joint cartilage surfaces. The cartilage surfaces of bones in a joint contain much water. This “held water” provides a lubricating quality. A well-hydrated joint obtains its nutrition from the blood supply to its base attachment to the bone. A dehydrated joint will get some form of fluid circulating from the capsule of the joint, producing swelling and tenderness in the joint capsule.

DEHYDRATION FACTS

- 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%.
- Lack of water is the #1 trigger of daytime fatigue.
- 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.

References: 1. [Batmanghlidj, M.D., Your Body's Many Cries for Water](#) (Falls Church, VA.) Global Health Solutions Inc., 1994