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2.2 The role of water in disease prevention and treatment

Sufficient water consumption helps maintain health and is necessary to prevent dehydration, which is associated with adverse health effects [87,88]. There is evidence that insufficient drinking may be associated with heart, lung (asthma), kidney disease, kidney stones, bladder and colon cancer, urinary tract infections, constipation, headache, cognitive disorders, dry mouth, allergies, high blood pressure, obesity, caries, decreased immune function and the development of cataracts. Low water consumption is associated with several unhealthy eating habits, such as low consumption of fruits and vegetables, more "fast food," and fewer market purchases [77]. Health risks (e.g., tooth decay, obesity) are associated with traditional high-calorie sweetened beverages (sodas, drinks, sports drinks). Drinking water before meals and replacing high-calorie sweetened beverages with water correlate with weight retention or weight loss [77, 83]. According to the 2010 Dietary Guidelines for Americans, adults should drink water to moisturize, and government medical organizations are encouraged to promote this message in society[87].

Drink two cups of water - and you will get a surge of adrenal hormone norepinephrine in the bloodstream as if you just smoked a few cigarettes or drank a few cups of coffee, which speeds up your metabolism by 30 percent in an hour… during testing in randomized controlled trials. Weight loss of 44 percent makes it the safest, easiest, and cheapest way to speed up your metabolism [78]. This may be explained by studies showing that overweight and obese people who were randomized to replace diet drinks with water lost significantly more weight. This was attributed to the fact that we got rid of all these artificial sweeteners, but perhaps instead, the diet drinks were too concentrated to offer the same stimulation of metabolism caused by water. Dietary carbonated water, like tea, has about ten times the concentration of solutes compared to tap water [86]. Therefore, plain water on an empty stomach may be best [89]. Moreover, neither warm nor cool water can speed up the metabolism as much as cold (refrigerator temperature). So, your body eventually burns more calories, at least indirectly when you drink cold water [78,83].

Although many do not believe in the safety of tap water, a study of 35 brands of bottled water has not found that it is necessarily safer, cleaner, or higher quality than water poured directly from the tap (we believe this fact of tap water quality cannot be applied equally to different countries... [85]). Tap water that passes through filters is best for drinking, But it is essential to replace them regularly. Because filters eventually lose some of their ability to remove, bacterial growth can accumulate inside them, leading to your so-called "filtered" water having more bacteria than water coming directly from the tap [79].

Investigation of the link between dehydration and the occurrence of diseases. Some studies link the disease to low water consumption. However, do people get sick because they drink less, or do they drink less because they get sick? Several extensive prospective studies have been conducted to measure fluid intake before disease progression. For example, a Harvard study of 48,000 people found that the risk of bladder cancer is reduced by 7% for every extra cup of fluid we drink each day. Therefore, high water consumption, such as 8 cups a day, can reduce the risk of bladder cancer by about 50%, potentially saving thousands of lives [77].

The accompanying edition notes that strategies for preventing the most common cancers in the West are, in principle, straightforward. To prevent lung cancer, quit smoking; prevent breast cancer, maintain the ideal body weight and exercise; and stay away from the sun to prevent skin cancer. Now there is this seemingly simple way to reduce the risk of bladder cancer: drink more fluids [77].

The best evidence of water restriction we have is from the Adventist Health Survey, which surveyed 20,000 men and women. About half were vegetarians, so they got extra water by eating more fruits and vegetables. Those who drank five or more glasses of water a day had about half the risk of dying from cardiovascular disease than those who drank two or fewer glasses a day. The Harvard study found this protection after monitoring other factors, such as diet and exercise. These data suggest that water reduced the risk, possibly by reducing blood viscosity (blood density) [77].

With age, the realization that the body needs water is insufficient [81,89]. According to a study of a nationally representative sample of 3,397 U.S. adults who participated in the National Cancer Institute's 2007 Food Preferences and Habits Survey, 7 percent of adults reported not drinking water daily, 36 percent reported drinking 1 to 3 cups, and 35 percent reported drinking 4 to 7 cups. Moreover, 22% said they drank eight glasses or more. Previous studies have shown that water consumption decreases with age: a study of 4,112 American adults by Kant and other authors found a decrease in plain water consumption among the elderly [80,82]. According to the 2005-2008 National Health and Nutrition Examination Survey (NHANES), simple water consumption by American adults (aged ≥ 20) was 4.4 cups for men and 4.3 cups for women. Chronic dehydration in the elderly can lead to heart and kidney disease [87,88]. For those who have heart or kidney problems and are undergoing treatment, water intake should be increased slowly and under the supervision of a doctor. Those who have heart and kidneys usually function should start with two glasses of water half an hour before each meal and a glass of water two and a half hours after eating. Note: You should never drink more than three cups per hour, as this begins to exceed the amount of fluid your kidneys can withstand [75,76].

Lack of water is a potential opportunity for the development of hypertension. If we do not drink enough water to meet all the body's needs, some cells become dehydrated and give water to the blood. Before dehydration, the body mobilizes reserves, using all water reserves. However, the forces are not equal. As a result, lack of water leads to stress, exacerbating dehydration. This is a vicious circle…

Moreover, if we drink tea and coffee instead of water, we complicate the situation. Caffeine, which they contain, stimulates the CNS and activates the kidneys. An increase in blood pressure adapts to a significant lack of water. The vessels narrow, and the pressure rises to compensate for water loss.

Individual capillary beds will have to close to compensate for losses. Underwater shortage and dehydration conditions, 66% of water are extracted from the volume of water contained inside the cells, 26% from the water surrounding the cells, and 8%

from the water contained in the blood. For blood vessels, there is no alternative but to close the capillaries to cope with the loss of blood volume. The process begins with the closure of some capillaries in less active areas. Insufficient fluid must be filled either from the outside or taken from another part of the body! The water we drink must get into the cells - it regulates the cell volume from the inside. Salt regulates the amount of water contained outside the cell - the "ocean" that surrounds the cell. The body's maintenance of blood composition due to fluctuations in water volume in some cells is a very subtle mechanism. In the case of lack of water, some cells have to do without the usual norm; others get precisely as much as needed to maintain function (as explained, the mechanism involves the passage of water through the cell membrane).

However, blood usually maintains homeostasis. All blood tests may be normal, but still, the small capillaries of the heart and brain will be closed, which will damage the cells of these organs (resulting in heart attacks and strokes) due to prolonged dehydration. If we lose thirst (or do not recognize other signs of dehydration) and drink less water than required by the daily norm, closing some vascular beds is the only alternative to keeping blood vessels full. A natural question arises: how long can it last? Answer: long enough to get seriously ill. As long as we do not recognize these problems associated with impaired water metabolism, chronic dehydration will cause both our body and society! [75,76]

Increasing the amount of water (and salt) at high pressure should be gradually and under medical supervision!

The essence of water consumption is simple: you need to drink 8-10 glasses of clean water a day. The drinking regime is as follows: in the morning, wake up, drink two glasses of water, 30 minutes before eating (each time) - a glass. And 2.5 hours after a meal - another glass of water. The daily dose is calculated based on 30 ml per 1 kg per day. Increased water intake causes increased urine production, leading to loss of salt, minerals, and water-soluble vitamins. Therefore, extra salt (preferably sea salt) (about half a teaspoon of salt per 2 liters of water you drink a day, or it can be added to food) and vitamins should be added to the daily diet. If cramps occur, it means that the amount of salt in the diet is not enough to meet all the body's needs. Therefore, the

amount of salt in the diet should be increased for the entire period of increased water consumption. Salt intake does not contradict the views of modern medicine. Every doctor knows what saline is, sodium chloride, which in severe conditions is injected into a vein through a drip and in which the drug is dissolved. It would seem that what is the use of a 0.9% solution of salt in distilled water (this is a saline solution)? However, even without medication, this saline solution can save a seriously ill life!

Now salt is called "white death" and others. Salt without water can harm the body. However, the doses of salt and water recommended by Professor F. Batmanghelidge are close to saline concentration. You should also avoid tea, coffee, and carbonated beverages. As for carbonated drinks, they do not quench thirst and lead to dehydration.

Moreover, 200 ml of tea will be excreted with 250 ml of water in the urine. "Water and liquid are not the same things," writes F. Batmanghelidzh in one of his books. "Even milk is food, and it should be treated accordingly" [75,76].

The color of urine varies from dark yellow to orange. The more the body is saturated with water, the lighter the urine. If it becomes dark, it is a symptom of dehydration. The amount of urine should increase simultaneously with the amount of water taken. If urination does not increase within two days, consult a doctor. Batmanghelidzh advises: that water should be drunk whenever you feel thirsty. It should be drunk before meals, especially for those who suffer from digestive tract diseases; it will prepare them for digestion. You need to drink before exercise to create a supply of free water to sweat. Water should be drunk by those who suffer from constipation and eat little fruit and vegetables. For example, if you have heartburn, try drinking a little salted water at 0.5 g of salt per 0.5 liters of water. The doctor studied his method of treatment for asthma, allergies, and lupus [75,76].

Water consumption is related to individual factors (for example, physical activity, which leads to increased sweating). Moreover, who drinks a lot of water? People who do many sports. Not surprisingly, they tend to have lower rates of disease! There is a well-known practice of encouraging program participants to quit smoking by increasing water consumption [77].

CONCLUSIONS

Due to the regular use of water in sufficient quantities, each person can help his body stay healthy for a long time. Thus, only awareness of the need to maintain health at the personal level, maintaining the health care system on a state and global scale can reduce morbidity and prevent complications of diseases.

And at the end of "Four simple steps to excellent health," dr. F. Batmanghelidjh: balance (based on: water - 3% of human weight; salt - 3-4 g per day). Perform physical exercises to improve brain function (the minimum that can be done is to walk in the fresh air). Balance the diet: 20% protein products, 80% vegetables, fruits, and greens, and a minimum of starch and sugar. Drink the least drinks that remove water from the body [75, 76].