



ABSTRACT

Water quality and the impact to the health

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Received 24 May 2022
Accepted 31 May 2022
Published: 31 May 2022

Link to DOI:
[10.25220/WNJ.V05.S3.0003](https://doi.org/10.25220/WNJ.V05.S3.0003)

Citation: Sunardi D. Water quality and the impact to the health. World Nutrition Journal. 2022 May 31, 5(S3): 5-6.



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Website :
<http://www.worldnutrijournal.org/>

Abstract : Nutrition Virtual Symposium 2021 - Speaker

Water is the major constituent of the human body. Water is essential for life and maintaining optimal levels of hydration is important for humans to function well. Water makes up a large proportion of our body weight, distributed between the intracellular (inside cells) and extracellular (water in the blood and in between cells) compartments. Water is the major component of body fluids, such as blood, synovial fluid (fluid in the joints), saliva and urine, which perform vital functions in the body. Human body cannot produce enough water by metabolism or obtain enough water by food ingestion to fulfil its needs. As a consequence, we need to pay attention to what we drink throughout the day to ensure that we are meeting our daily water needs, as not doing so may have negative health effects. Water is the main constituent of cells, tissues and organs and is vital for life. A normal hydration status is the condition of healthy individuals who maintain their water balance. We can get water from almost all drinks and from some foods in the diet. Food provides about 20% on average and this could vary widely depending on the types of food chosen. Drinking fluids other than water can contribute to an intake of caloric nutrients in excess of requirements. The major concerns with regards to beverages are their energy content and their effect on health. With obesity levels continuing to increase it is important for many in the population to control their energy intake, and drinks as well as foods must be considered for their energy content. However, if water losses are not sufficiently replaced, dehydration occurs. Extreme dehydration is very serious and can be fatal. It is of practical importance to be able to assess the degree of hydration in individuals exposed to ambient conditions that can induce dehydration. Mild dehydration of 1 or 2% of body water can impair cognitive functions, alertness, headaches, fatigue and reduced physical and mental performance. Many chronic diseases have multifactorial origins. Water is quantitatively the most important nutrient. There is evidence that mild dehydration may also account for some morbidities. There is strong evidence showing that good hydration reduces the risk of urolithiasis.

Good hydration reduce the incidence of constipation, exercise asthma, hypertonic dehydration in the infant, and hyperglycemia in diabetic ketoacidosis. Good hydration is associated with a reduction in urinary tract infections, hypertension, fatal coronary heart disease, venous thromboembolism, and cerebral infarction, also conditions such as bladder or colon cancer.

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Water a transparent, odorless, tasteless liquid, a compound of hydrogen and oxygen. Water quality is a term used here to express the suitability of water to sustain various uses or processes. Any particular use will have certain requirements for the physical, chemical or biological characteristics of water. The composition of surface and underground waters is dependent on natural factors (geological, topographical, meteorological, hydrological and biological). Human intervention also has significant effects on water quality. The different type of water available in the market, such as demineralized, oxygenated and alkaline water, are the example of human intervention. The question are there health benefit other than as water for human body. Drinking demineralized water or water that contains little essential minerals has been associated with various health risks. And these recommendation supported also by studies such as Gupta et al in 2015 found that drinking demineralized water vitamin B12 deficiency and Muhsin in 2019, found that drinking Reverse osmosis water significantly related to lower bone density.

According to WHO, it is not recommended to drink or used demineralized water in cooking daily meal. Studies did not find that oxygenated water can increased physical performance and Alkaline water with high pH did not show health benefit, other than for hydration. In conclusion, hydration status must be maintained with a good quality of water, and natural water, such as mineral water is good enough for health.

Keywords: water quality, hydration, health
