



Water as a key tool for the maintenance of health: A review

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Abstract: Basic component in nature which is essential as we know, clean and fresh drinking water. The basic component of the life is abundantly available in nature after air which is essential for the sustenance of human life and maintenance of health. A person can survive a week or sometimes even much longer on water alone, but dies quickly if he is deprived of it. A large proportion of our food composed of from 15 % to 90 % water. Water undergoes no change in the body, but its presence is absolutely essential for the performance of the vital functions, as it enables organs to perform their work so that life could be sustained. The circulatory system is especially dependent upon water composed of a large percentage of fluid in the blood that suspends the RBC as the nutritive and waste component. With the help of water, nutrients enter the blood and are conveyed to critical areas of the intricate human mechanism where repair and growth are needed, water contributes significantly to health, and good health is the essence of development.

Keywords: Basic component, water, vital function, circulatory system.

Introduction: Water is the most abundant of the essential nutrients in our body, the total amount being about 45 quarts, from 75% of body weight in infants to 55% in elderly, and fatter people have proportionately less water than thin peoples. Water is present in all the tissues and every cell of the body. Even our bones are made up of nearly one-third water, while the muscles and our 10 to 12 billion brain cells contain 71 % water; about 2/3rd of the body water is located inside the cell while the remaining 1/3rd comprises plasma and interstitial fluid. It is possible to live without food for several weeks but we cannot survive more than few days without water. It is the most essential substance for survival and for preservation of life only after O₂, and none of the nutrients we eat would be of any value in absence of water. Thirst occurs when we lose only about 1 % of our total water, loss of 10 % of total body water can cause physical and mental deterioration, and death occurs if we lose as much as 20 % of water. With the potential of affecting human performance and functioning, water intake is important for disease prevention and health promotion.^[1]

History of water cure: The potential healing and strengthening power of water seized the imagination of people across the globe, and water was used in multiple ways in therapeutic and hygienic practice, as evident from world's eminent medical literature. Hippocrates ^[2] who survived before 460 BC was the first to describe on healing the diseases with water; he used water extensively, both internally and externally, in treating all kinds of illnesses. Hippocrates goes on to say: for the bath soothes the pain in the side, chest and back; promotes expectoration, improves the respiration, it soothes the joints and the outer skin, and is diuretic, removes heaviness of the head and moisten the nose, such are the benefits to be derived from the bath. We have learned from the ancient Egyptian history, Egyptian enjoyed bathing in their sacred river Nile. Pictures of ancient Egyptian found in the tombs, show people preparing for a bath. Bathing held a prominent place in the instructions; the relation of the bath to the treatment of leprosy would leads to believe that it was used for its curative effects. The ancient Persian and Greeks erected stately and magnificent public buildings devoted to bathing. The Greek were the first nation to use bath for personal cleanliness as well as for health issues. Rome, however, surpassed all the older nations in the coastlines and magnificence of her bathing facilities, the first public bath was erected in Rome in the year 312 BC. The two Roman physicians, Celsus and Galen ^[2] glorified bathing as being invaluable for the treatment of a number of specific diseases. The Arabians have sometimes been looked upon as a wandering horde of wild men, but about 1000 year ago they had physicians, who were very sensible about the benefit of bath. Rhazes one of them described the method that is scarcely outdone by present day water treatment. Bath was also used during pestilences. In Constantinople, Turkish baths were very popular during the 15th century. In the year 1600 AD, public vapour bath were numerous in Paris, France. The German in olden times were very familiar to bathing. According to the historical records, during the middle ages when there were many cases of Hansen's disease, it was a religious duty to bath because of the national faith in bathing. During the early eighteenth century, water was used medicinally. ^[1]

Benefits of water: It compensate the water lost from the tissues, dilute the blood and lymph, help in excretion of the waste materials from the body out, maintain the body temperature as well as distribute the heat all over the body, support in enzymatic actions of the body, water also take part in the process of digestion of food particles, act as carrier of digested food, ^[3] prevents constipation, normalizes blood pressure, stabilizes the beating heart, flushes bacteria from the bladder.

Properties of portable water: According to world health organization 2017 report, contaminated water is estimated to result in more than half million death per year. Safe drinking water is water that does not represent any significant risk to health over a lifetime of consumption, including different sensitivities that may occur between life stages. Assessment of drinking water quality is done under three categories: physical, chemical and microbiological.

Physical characteristics of drinking water: Water should be clear, colourless, odourless, tasteless, well oxygenated and free from bacteria and protozoa.

Chemical and microbiological characteristics of water:

1. Proportion of solid should not exceed 1000 (PPM)
2. Free from all type of harmful gasses.
3. Do not contain much amount of salt as seen in hard water.
4. Do not contain poisonous or harmful metals.
5. Free from Ammonia and Nitrates.
6. Free from organic compounds.
7. Proportion of heaviness should not be exceed above 350 (PPM)
8. Proportion of chloride should be at 5 or below (PPM)

9. proportion of iron should be 0.5 (PPM)
10. Albumoid Amonia should be 0.06 (PPM)
11. Copper should be 0.1 (PPM)
12. Proportionate of biological oxygen demand should be 2 ppm, because more than this suggest the development of microbes in the water.
13. water should be free from micro-organisms like S.Typhi, Vibrio Cholerae.
14. Amount of coliform shoud not be more than 2 in 100 cc water. ^[3,10]

EFFECTS OF SOME KINDS OF WATERS ON THE BODY:

Pure water: The best water is that which comes out from sweet springs, especially those springs which were naturally formed in sandy land because it does not easily putrefy. The running spring which is in direct contact of sun is best for the health, if it is not running spring then it must be surrounded with stones or walled, so become safe from getting contaminated. Spring flowing towards the east in the direction from where sun rises in summer (Mashriq-e-saifi) is considered purest .

Properties of pure water: This water is tasteless which is also known as sweet water, odourless, its minimal amount can neutralize the vine, it easily accept the heat and cold due to its lightness, it leaves the stomach rapidly and do not stay longer, further the things are easily cooked in it. ^[5]

Rain water: Of any water attainable, rain water comes the nearest to being pure. But even rain water is often unwholesome because it gathers many impurities as it falls piercing the atmosphere. Filtered rain water and distilled water are perhaps the purest form. ^[1]

Ice water: Ice water is hard but easily quenches the thirst. It is harmful for neural pain and its side effect can be corrected by boiling the water.

Hard water: This water causes obstruction and develops stone as it contains a light concentration of Ca+2 and Mg+2 and other divalent cations. Because of its constipative property this water is beneficial for those who are suffering from dysentery, corrective of this water is oil and sweets.

Stagnant water: This kind of water is hard, and its stagnation may support the development of algae, produces anasarca and ascitis, very harmful for spleen, liver, and can cause molar pregnancy in womens.

MINERALIZED WATER AND ITS EFFECT ON THE BODY:

Salty water: Salty water weakens the body and produces the dryness, causes diarrhoea, scabies, and associated with increased risk of preeclampsia and gestational hypertension.

Ammonia water: Helpful for stomach, whether drink, or takes sitz bath or enema.

Alum water: Alum water is beneficial in case of haemoptysis, piles, menorrhagia as it acts as a haemostatin agent, slowing the blood clot to form. Blood is negative sol and sol particles are coagulated more effectively by Al³⁺ ions present in alum.

Iron and Copper water: Water containing iron and copper is beneficial for spleen, liver and ascites, alleviates inflammation and boosts digestion.

Cold and warm water: Moderate cold water is beneficial in diarrhoea, increases the appetite, strengthen the stomach activity, quenches the thirst, but this kind of water is harmful for those who have colitis and mostly suffering from nasal congestion. Warm water causes nausea. But when consumed sip by sip relieves the constipation, however this type of water weakens the stomach and deteriorates the digestive system and does not quench the thirst. ^[5, 6].

THERAPEUTIC APPLICATION OF WATER:

There are very few substances that have medicinal properties as water; anyone treating the diseased should try to accomplish the greatest amount of good with the least expense to the patient's vitality. Following is a list of some of the therapeutic properties of water.

Sedative: Sedative drugs diminish the action of the heart. They affect all the nerve centres controlling the heart. And their action is very often uncertain and detrimental. However when water is properly applied, however, it is very much more efficient sedative, and its use rarely leaves harmful after-effect. A warm bath will invariably soothes and relaxes an extremely anxious person and help produce restful sleep. ^[7]

Antipyretic: There is no other drug that will decrease the temperature of the body as quickly, efficiently, and harmlessly as water. The pulse can rapidly be reduced by twenty to forty beats per minute with the use of a cool or cold bath. To decrease body temperature it may be used below 98 °F. ^[4,7]

Analgesic: Hot water fomentation always gives relief and has often been used when drugs failed.

Anticonvulsant: Water is unrivalled as a relaxing agent in convulsions and muscle spasm.

Astringent: The use of cold water in arresting haemorrhage is well known by all physicians.

Laxative: The abundant use of pure water is most effective in helping to overcome constipation, but it never causes violent or unpleasant side effects such as those that frequently accompany and follow after the use of purgatives.

Eliminative: Water is a perfect eliminator. It dissolves poisonous waste materials and foreign elements in the blood, thereby aiding their elimination through the urine, faces, sweat and lungs.

Alterative: In old days mercury was considered the most noteworthy alterative in the *Materia medica*, but it is replaced by water nowadays. The only thing mercury ever accomplished was to destroy the normal elements of the blood. Water not only preserves and builds up the normal elements, but it also destroys and eliminates the waste products and increases the blood circulation. ^[1]

Tonic: Water used properly will increase the vital activities very quickly and powerfully and restore normal tone of the body. The tonic effect of a cool bath is well known to everyone.

Stimulant: A short hot bath, lasting for five minutes or less, is a very efficient stimulant. It will stimulate the circulation and increase the pulse from 70 to 150 beats/min. Hot baths of a longer period cause relaxation and even weakness. Short cold bath also acts as a very bracing stimulant and tonic.

Emetic: Rapidly drinking several glasses of water will often cause vomiting.

Diuretic: The more the water you drink, the greater will be the amount of urine produced.

Expectorant: Heat applied to the chest loosen the secretions so that they can be easily coughed out.

Aesthetic: Prolong local use of cold water will produce numbness, such as using an ice pack on a sprained area. ^[5,7]

WATER POLLUTION AND ITS CONSEQUENCES:

Water pollution: It may be defined as alteration in physical, chemical and biological characteristics of water which may cause harmful effects on human health. The main causes of water pollution are (1) Sewage and sludge (2) Inorganic compounds and minerals (3) Nitrates (4) Synthetic organic compounds (5) Oil and petroleum (6) Radioactive waste (7) Miscellaneous water pollutants. ^[8]

Consequences of water pollution:

The adverse effects of water pollution may be summarised as follows:

- i. **Waterborne diseases:** the polluted water is the main cause of waterborne diseases such as cholera, dysentery, diarrhoea, jaundice, parathyroid, tuberculosis, typhoid, etc.
- ii. **Stomach cancer:** Water polluted with high concentration of certain trace minerals causes stomach disorders cancer and hardening of tissues.
- iii. **Lung cancer:** Water contaminated by fibres of asbestos, when used by humans, causes asbestosis. The water polluted with mercury causes minamata diseases.
- iv. **Skin diseases:** Higher concentration of arsenic causes several skin disorders; it is common in the Gang-Brahmaputra plains.

NEED OF WATER CONSERVATION PLANNING:

Presently there is scarcity of water in many part of the world and the quality of water is also depleting day by day, especially in developing countries like India, Pakistan. The water requirement of the present billions of people is enormous. The quantity and quality of water can be conserved by adopting the following steps: ^[8]

- i. **Environmental education:** Individuals and the masses should be educated about the significance of quality of water and its impact on economy, society and ecology
- ii. **Accountability of industrial units:** Industrial units should discharge the treated water in the drains and rivers.
- iii. **Financial supports:** The government should provide adequate funds to the civic bodies, Municipal Corporation for water pollution control.
- iv. **Afforestation:** Planting of trees can reduce the water pollution to a large scale as they reduce the rate of soil and salt erosion by running water.
- v. **Soil conservation:** Soil erosion adds many inorganic substances in the surface and underground water. Soil conservation may be useful to reduce the water pollution.
- vi. **Less use of chemical fertiliser in agriculture:** Chemical fertiliser adds nitrates in the water bodies. The more use of compost manures can reduce the problems of eutrophication in the water bodies.
- vii. **Legislation of strict environmental laws:** Government should legislate and implement strict environmental laws. The such laws and the law violator should be given rigorous punishment. ^[8,9]

Conclusion:

Water, so valuable for remedial purposes, is fortunately one of the most abundant elements in the nature. The human body composed of about 2/3rd of water, the fluid secretion and excretions are more than nine-tenths water. Perspiration and saliva are both close to 100 % water, while blood is 90 % and muscle is between 80-90% water, the presence of water in abundance as composition suggest its importance and need of water, when one drink pure fresh water the blood and tissues are bathed and purified, thereby being cleansed of all poisons and waste materials, water dissolves nutritive material in the course of digestion, water keeps all mucus membrane soft and prevents friction, water aids in regulating body temperature and body process. The quality of water is needed to be maintained, because pure water helps in maintaining the health and contaminated water causes many ailments related to digestive, respiratory, nervous systems. Mineralised water in certain amount may strengthen the liver and spleen, but some minerals like lead, arsenic, mercury etc, even in micro gram can damage the body parts, or may develop the chronic disease. Apart from this dehydration is a major cause of death among children's and elderly peoples.

References:

1. Kloss.Jethro, The Handbook Of Herbal Medicine, Natural Foods And Home Remedies, Sri Satguru Publication, Shakti Nagar, New Delhi ,2001, P.542,777,783,788,799.
2. Nagrami.H, Tareekh-E-Tib, Edition 1st Qaumi Council Bara-E-Farogh Urdu Zuban, , New Delhi 1989. P.84,131
3. Ansari.M.Y, Tahaffuzi Wa Samaji Tib, Edition 3rd , Idara Kitab-Al-Shifa, Darya Ganj New Delhi, 2015, P.76.
4. Sina.I, Kulliyat-E-Qanoon, Urdu Translation By Allama Kabiruddin, Edition 2nd , Idara Kitab-Al-Shifa, Darya Ganj , New Delhi, 2015, P.170.
5. Masihi.A.S, Mia' masihi, Islamic Publication Society, Jigar Road, Hyderabad, P.144-146.
6. Hamdani.S.K.H, Usool-E-Tib, Edition 1st , Litho Printers, Achal Tal, Aligarh, 1980, P.168-171.
7. Ram.Kashi, Cyclopedia Of Homeopathic Drugs, Edition 2nd , Chinot Bazar, Faisalabad, Lahore, 1939, P.131.
8. Husain.M, Environment And Ecology, Edition 4th , CI Media (P) Ltd, Main Mathura Road, New Delhi, 2018. P.3.31, 6.29.
9. Nafis.B, Kulliyat-E-Nafisi, Urdu Translation By Allama Kabeeruddin, Idara Kitab-Al-Shifa, Darya Ganj, New Delhi, 1954, P.389-397.
10. Park K. Park's Text Book Of Preventive And Social Medicine. Edition 23rd , Banarsidas Bhanot Publication, Jabalpur, 2015. 716-718.