

# ALKALINE WATER

Snehal Patel<sup>1\*</sup>, Dr. V. V. Paithankar<sup>2</sup>, Shrushti Shrirao<sup>3</sup>

Vidyabharti College of Pharmacy, Amravati.

## ABSTRACT:

This study compiles a variety of pharmacological studies on alkaline water. Because of modern living, acidity is a major issue in metropolitan areas and is the cause of many diseases, including GERD, hypertension, skin conditions, hyperthyroidism, hyperlipidemia, cancer, diabetes, and others. Numerous investigators investigated the properties of alkaline water, and numerous clinical trials are underway. assemble information that clarifies the role of alkaline water in treating various diseases and outlines plans for clinical trials involving several cancers and related disorders in the future.

**Keywords:** Alkaline water, acidity, Cancer, Pharmacological investigation.

## INTRODUCTION

The primary cause of many ailments, including hypertension, skin conditions, hyperthyroidism, hyperlipidemia, cancer, diabetes, and associated conditions, is acidity, which is also the primary cause that goes unnoticed. In allopathy, doctors treat the disease's signs and symptoms only after doing several costly diagnostic procedures, including blood tests, kidney function tests, ECGs, and other diagnostics. The underlying cause of this illness condition is still totally disregarded. One way to treat the underlying cause of this illness is using naturally occurring alkaline water. I want to discuss future research prospects and the many studies conducted on alkaline water in this article. <sup>[1-6]</sup>



Fig: Root causes of various life-threatening diseases <sup>[1-6]</sup>

### Mechanism of alkaline water in treatment of acidity

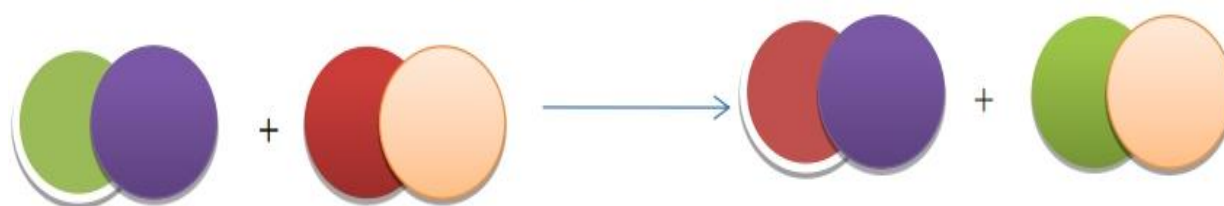
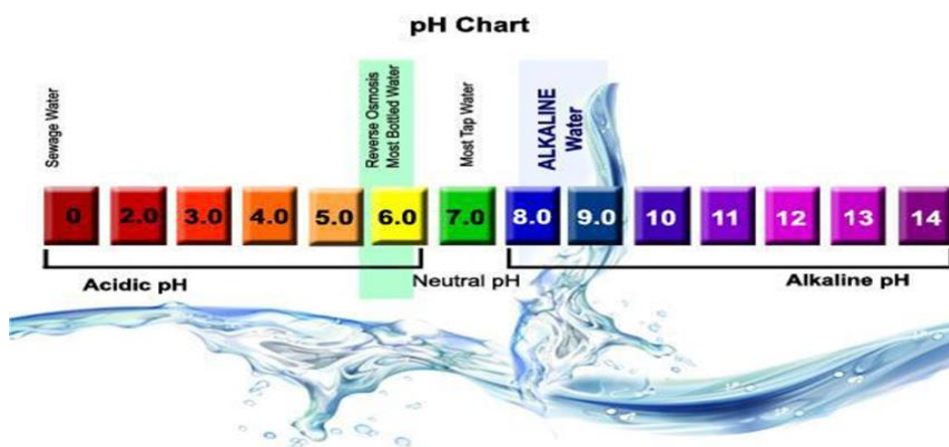


Fig: Mechanism of Alkaline Water <sup>[7]</sup>

The American Institute for Cancer Research found that acidity can affect the body's pH equilibrium and promote cancer. The untested notion is based on lab experiments that show cancer cells flourish in an acidic (low pH) environment but cannot live in alkaline (high pH) conditions. The research has shown that the cells are isolated in a lab setting. It is practically impossible to change the human body's cell environment to make it less acidic and less cancer-friendly. Even minor pH fluctuations can be fatal. To avoid even minor disruptions in acid-base balance, we can focus on the underlying cause, acidity, which can prevent additional illness complications.

Henry and Chambron investigated the physiochemical, biological, and therapeutic properties of electrolyzed reduced alkaline water. Rubik presented his findings and observations on the health effects of drinking electrolyzed-reduced alkaline water. Lal et al. investigated waterborne illness and its prevention using the R.O system. However, the RO system produced acidic water with a pH of roughly 6.5-6.9. Many researchers are constantly working on the use of alkaline water for human health, and while some have proposed both positive and negative consequences, no one has conducted an accurate study on the experimental basis of alkaline water's application to humans. This work provides a promising direction for researchers in this subject<sup>[7]</sup>



### HEALTH IMPACT OF CONTAMINATED DRINKING WATER <sup>[8]</sup>

Contaminated water and poor sanitation inevitably lead to diseases such as cholera, dysentery, diarrhea, hepatitis A, typhoid fever, and polio. Inadequate water and sanitation infrastructure undeniably puts people at risk for avoidable health problems, particularly in medical settings where workers and patients face imminent danger of infection and disease.

The mismanagement of urban, industrial, and agricultural wastewater pollutes the drinking water of hundreds of millions of people. Naturally occurring chemicals, especially in groundwater, such as arsenic and fluoride, can also affect health. Additionally, other chemicals like lead can increase in drinking water because they leach from components in contact with drinking water.

Diarrhea brought on by tainted drinking water, inadequate sanitation, and improper hand hygiene kills an estimated 1 million people annually. 395,000 deaths each year may be avoided if we address the risk factors that affect children under the age of five. People may neglect to wash their hands when there is limited access to water, which increases the risk of diarrhea and other illnesses.

Diarrhea is the most widely known disease linked to contaminated food and water but there are other hazards. In 2021, over 251.4 million people required preventative treatment for schistosomiasis – an acute and chronic disease caused by parasitic worms contracted through exposure to infested water.

Insects that breed or reside in water carry and spread diseases like dengue fever throughout most of the world. Household drinking water containers can act as breeding grounds for certain of these insects, which are known as vectors. They breed better in clean water than in unclean ones. Covering water storage containers is an easy way to prevent vector breeding and potentially lower domestic water contamination from feces.

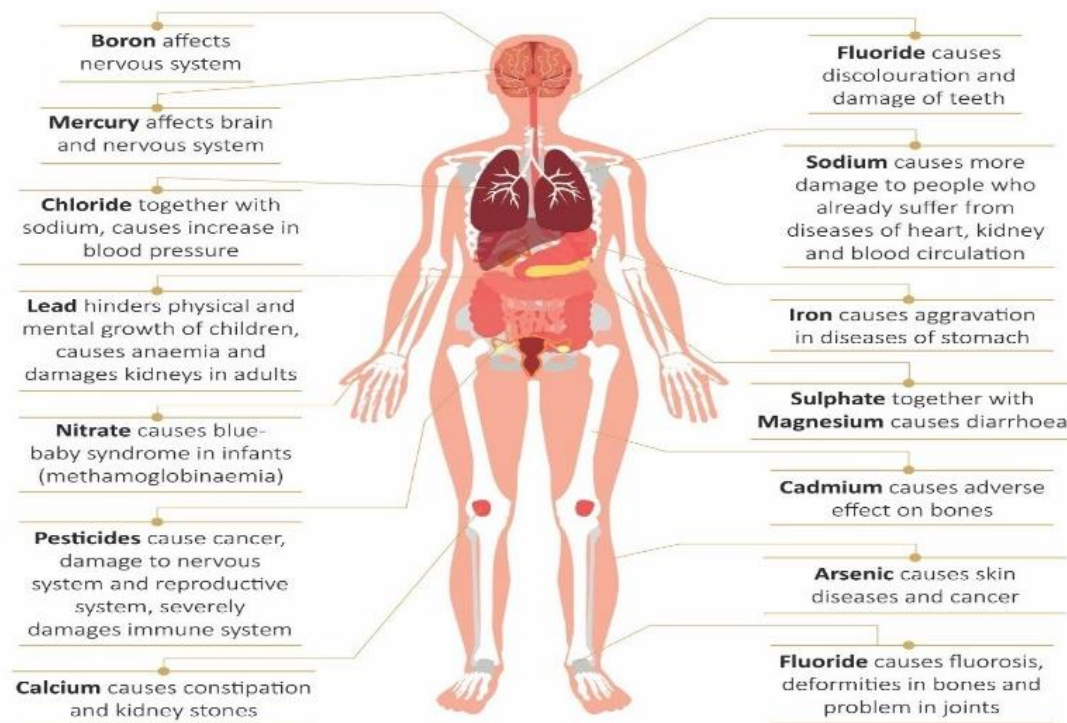


Fig: Impact of Contaminated drinking water on Human Health <sup>[8]</sup>

**Classification and Application of water according to the pH level <sup>[9]</sup>**

Sr.NO	pH	TYPE OF WATER	APPLICATIONS
1.	9.5-10.5	Strong Alkalinity Water	1.Clean kitchen counters, stovetops and other greasy or dirty surfaces, 2. Food cleaning because strong alkalinity water can help to remove the pesticides and oil/wax from the fruits or vegetables, 3. Stain removal from hard surface/clothes or carpets etc
2.	8.5-9.5	Higher Alkalinity Water	1. Optimal amount of water should be drink (2 liters. per day), 2. it is great to use in cooking in preparation of soup and handmade sauces etc. 3. This type of water observed good for that time when some vegetables are boiled before cooking, 4. Mix with coffee and Tea and 5. Watering the plants.
3.	6.5-8.5	BIS recommended Drinking water	General Purpose drinking water for all age humans, vegetation, and animals etc.
4.	4.5-6.5	Higher Acidic Water	Face washing, Hair cleaning, pets cleaning, polishing (Mirror, windows etc.), preservation of food (Fruits and vegetables) prior to freezing
5.	2.7-4.5	Strong Acidic Water	For Disinfecting the surfaces, toothbrush disinfectant, and can be used as mouthwash

**Alkaline Water Producer:**

The alkaline water producer or water ionizer is used as a home appliance for producing the alkaline water by electrolysis. It will separate the incoming raw water stream into alkaline and acidic components. The figure shows the basic principle of alkaline water production in which two electrodes of tungsten materials are separated by the diaphragm. When raw water is supplied to the ionizer, the supply current will ionize the water inside the system. The positive ions and the negative ions flowed towards their electrical ion suitability. Therefore, the high pH and low pH water will be generated in the water ionizer; the low pH water is called the acidic water, and the high pH water is called the alkaline water. Both are collected in separate tanks and used according to the purpose of their applications. Low-pH water can be used for washing vegetables and fruits, and very-low-pH water can be used as sanitizer. The acidic water can be used for bathing also, and it will be beneficial for skin disease. "Low alkaline water (pH up to 8.5) is good for daily drinking due to antioxidants and minerals. High pH water can help remove body fats as an emulsifier."<sup>[9]</sup>

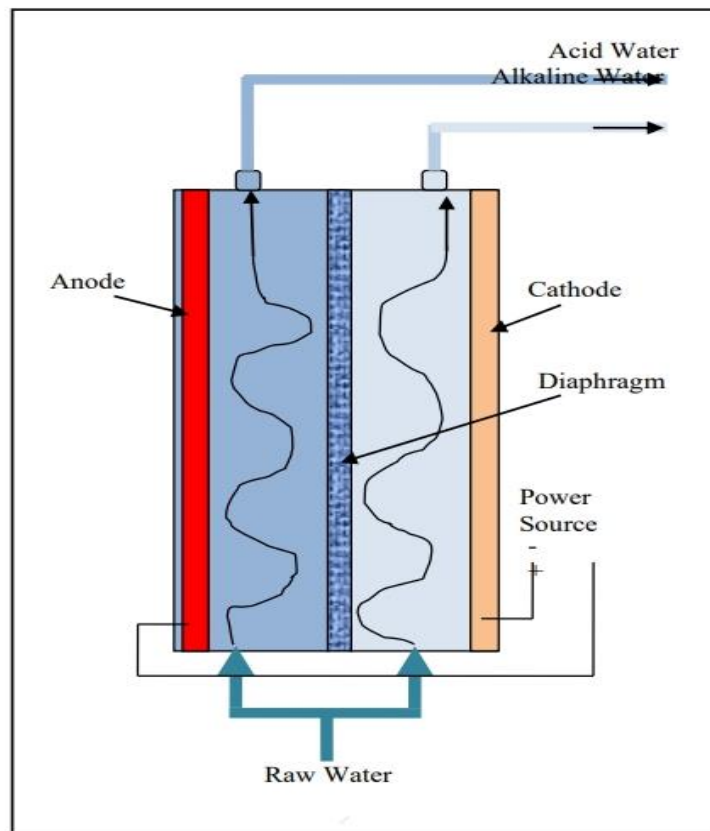


Fig: IONISED WATER PRODUCER <sup>[9]</sup>

**There are a few ways to produce alkaline water, and each method has a different mechanism:**

**1.Electrolysis:** Hydrolysis is the process of breaking water into hydrogen and oxygen by passing an electric current through it. We call this process alkaline water electrolysis. <sup>[11][12]</sup>

**2.Mineral addition:** Alkaline minerals such as calcium and magnesium can be added to water to make it more alkaline. <sup>[11][12]</sup>

**3.Water filters:** Alkaline water purifiers use many filters to remove pollutants and improve the pH of the water. The minerals in the alkaline filter cause a chemical reaction that raises the Ph. <sup>[11][12]</sup>

**4.Natural flow:** As water travels through rocks and gathers minerals, it may become alkaline. <sup>[11][12]</sup>

# Circulating operational flow-chart

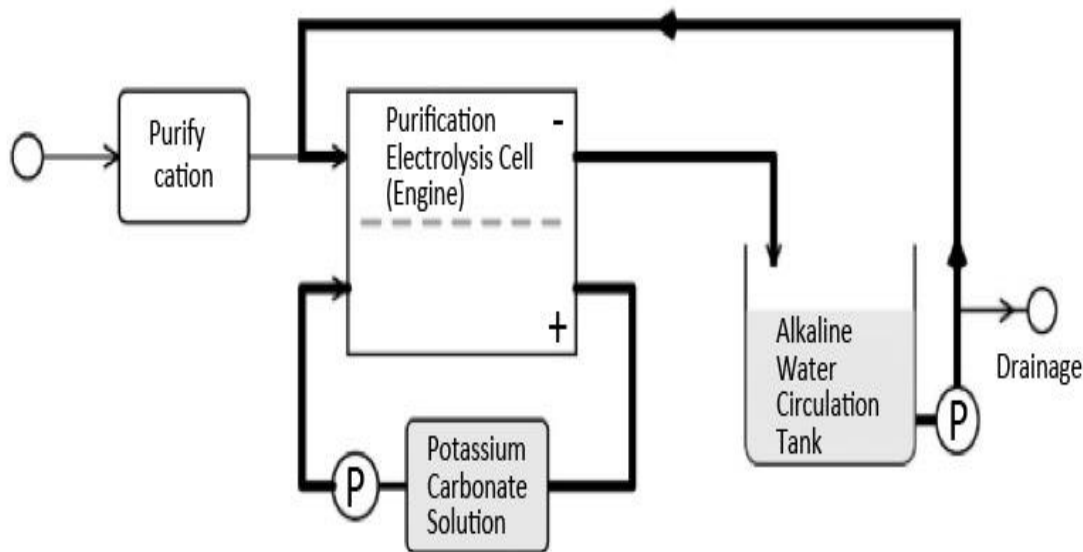


Fig: Alkaline water electrolysis <sup>[10]</sup>

## An Overview of the Therapeutic Potential of Alkaline Water

### 1. REFLUX DISEASE:

Tissue-bound pepsin is essential to the pathophysiologic mechanism of reflux disease at the cellular level. While the thresholds for esophageal damage in gastro-esophageal reflux disease and laryngeal damage in laryngopharyngeal reflux differ, pepsin is responsible for both types of damage because it needs acid to be activated. Furthermore, human pepsin can be reactivated by hydrogen ions from any source and is stable at pH 7.4. With most tap and bottled waters having a pH of 6.7 to 7.4, it would be unlikely that they would have an impact on pepsin stability. These in vitro experiments were conducted to determine the possible acid-buffering capacity of artesian well water containing natural bicarbonate (pH 8.8) and to explore the possibility of irreversibly denaturing (inactivating) human pepsin. <sup>[13]</sup>

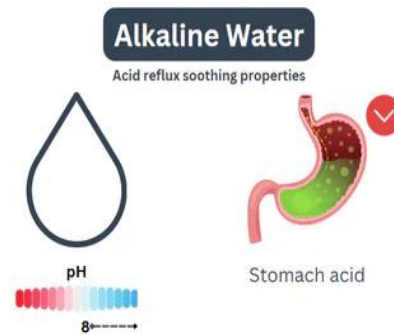
Alkaline water may help with acid reflux by neutralizing stomach acid and deactivating pepsin, an enzyme that causes reflux disease:

- **Reduces stomach acid:** Alkaline water reduces stomach acid because it has a higher pH than ordinary water. <sup>[14]</sup>
- **Deactivates pepsin:** The reflux disease-causing enzyme pepsin can be permanently deactivated with alkaline water. <sup>[15]</sup>
- **Buffer Stomach Acid:** Alkaline water has a good ability to buffer stomach acid. <sup>[14]</sup>

Proton pump inhibitors (PPIs) and a Mediterranean diet were shown to be equally beneficial in treating acid reflux in a 2017 experiment as alkaline water. The most popular drug for acid reflux is a proton pump inhibitor (PPI), yet these can have major negative effects. <sup>[13]</sup>

In contrast to regular drinking water, pepsin is instantaneously denatured and rendered permanently inactive by pH 8.8 alkaline water. It also has a strong ability to buffer acids. Alkaline water drinking may therefore be therapeutically beneficial for those who suffer from reflux illness. <sup>[13]</sup>





## 2. ANTI-AGING PROPERTIES:

**1. Neutralising Free Radicals:** Because alkaline water can help neutralize dangerous chemicals known as free radicals, it is thought to have anti-aging benefits. These erratic molecules have the potential to harm our DNA and cells, resulting in early aging and other health problems. It is believed that the antioxidants in alkaline water can help lessen the harmful effects of free radicals and slow down the aging process.<sup>[16]</sup>

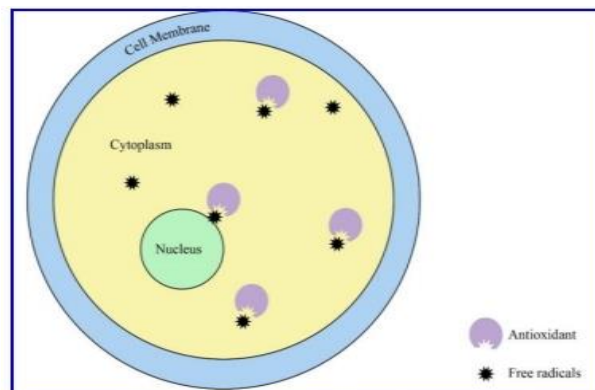


Fig: Free radicals and antioxidants in a cell <sup>[16]</sup>

## 2. Detoxification and Cellular Hydration

Alkaline water supporters say it keeps cells hydrated and helps to remove contaminants. It is thought to benefit the skin by eliminating toxins and moisturizing its cells. Alkaline water has also been shown to increase skin suppleness and hydration, potentially making the skin appear younger. Skin that is properly moisturized is stronger and less prone to indications of aging.<sup>[17]</sup>

## 3. Maintain a Balanced pH Level

By bringing the body's pH equilibrium back into balance, drinking alkaline water may help slow the aging process. In addition to promoting the ideal functioning of the body, a pH balance protects against age-related problems.<sup>[18]</sup>

## 4. Deep Cleanses the Pores:

The outermost layer, or surface of human skin, is very acidic, which is beneficial since it protects our skin from germs, rays of sunlight, pollution, and other contaminants. However, an increase in acidity might result in excess production of oil, which can cause acne and skin infections. You can reduce acidity and maintain clean pores by including alkaline water in your skincare routine.<sup>[17]</sup>

### 3. DIABETES

#### 1. Improving Metabolism

Alkaline water can speed up the metabolism, which is one of its many benefits. This is because water containing negative ions might encourage the cells to produce more ATP. The metabolism may be enhanced by boosting the synthesis of ATP, as the cells need it as fuel. Those who have diabetes may find this especially helpful since it helps control blood sugar levels. <sup>[20]</sup>

#### 2. Free Radicals and Diabetes

Alkaline water has a high content of negative ions and that is why it is considered to be the most effective antioxidant. Free radicals are attracted to negative ions, which can neutralize them and prevent more cellular damage. This is something that most rational people would agree is important to avoid, especially when attempting to prevent illnesses like diabetes and many others.

Free radicals are harmful molecules that can attack cells and thus cause serious disorders including diabetes and others. Moreover, they may trigger the body to produce excessive insulin that may increase blood levels of glucose. <sup>[20]</sup>

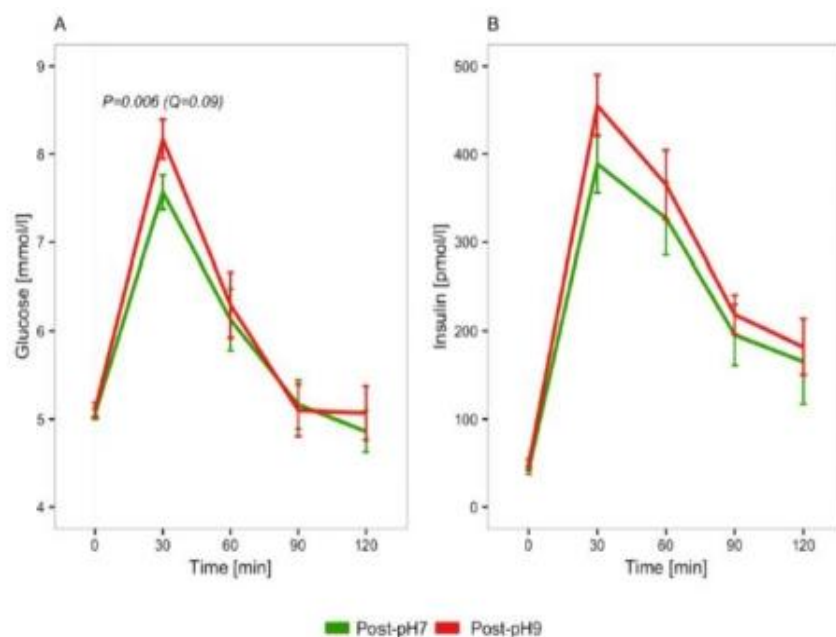


Fig: Effect of water pH on glucose and insulin during an oral glucose tolerance test <sup>[19]</sup>

### 4. RENAL DISEASES

#### 1. Reducing Kidney Stones:

Urine's pH can be momentarily raised by drinking alkaline water, according to research. Although the influence on stone formation is not well-established, this may theoretically lower the chance of developing some forms of kidney stones. Kidney stones can be prevented more significantly by factors including nutrition and hydration. <sup>[21]</sup>

#### 2. Improved Kidney Function:

The notion that alkaline water might improve kidney function is not well supported by scientific research. The body's pH equilibrium is preserved by the kidneys, and they do it rather effectively on their own without help from outside sources. Moreover, drinking alkaline water has no appreciable effect on the body's pH since it is closely controlled.

There are many who argue that people with chronic kidney disease (CKD) may benefit from alkali treatment. However, a conclusive declaration about the advantages of alkaline water for patients with chronic kidney disease is still required due to the dearth of clinical studies on the subject. <sup>[21]</sup>



In one study, patients treated with an alkali-therapy for more than two months saw improvements in their kidney function.

- Patients saw an improvement in their glomerular filtration rate (GFR) — a test measuring how well your kidneys filter blood.
- Patients with the alkali treatment also experienced decreases in a waste product called serum creatinine. Lower levels mean the kidneys are working better.
- Fewer of the patients given the alkali treatment needed to start dialysis compared to the group that wasn't alkali treated.

## 5. ALKALINE WATER AS A POWER BOOSTER FOR SPORTSMEN

### Why Should Athletes Drink Alkaline Water?<sup>[22]</sup>

Athletic performers are aware that the intake of water before, during, and after the exercise or competition is very important, and the subtle changes in the pH level in the body can hurt their overall health and performance.

When you exercise, your body increases the consumption of muscle glycogen for energy, which, as a result, increases the production of surplus acid and CO<sub>2</sub>. It will increase the acid level in your body, and your muscle's pH level begins to drop. Once your pH level is below 6.5, your athletic muscles will be unable to function.

The harder you exercise, the faster your body's muscles will become acidic, and you might experience fatigue. During normal circumstances, your body can neutralize the acid and maintain the proper pH balance, but when you exercise aggressively, your body cannot buffer the effects of acid fast enough.

Alkaline water can help you with that! In a study, 'The effect of mineral-based alkaline water on hydration status and the metabolic response to short-term anaerobic exercise,'

It was mentioned that alkaline water with healthful minerals and high pH has a significant effect on the acid-base balance of the human body and can balance the pH level, which is the main aspect of maintaining exceptional athlete performance. Drinking alkaline water will help in maintaining the optimal blood pH level when the body is in a resting or low-activity state.

### Health Benefits of Drinking Alkaline Water for Athletes:<sup>[22]</sup>

Although there may not seem to be a direct correlation between drinking alkaline water and improving athletic performance, closer examination reveals that alkaline water contains all the minerals athletes require to meet hydration guidelines set forth by the "Nutrition and Hydration Guidelines for Excellence in Sports Performance," including calcium, magnesium, sodium, and potassium.

Alkaline water is becoming more and more popular among athletes worldwide as a result of its several additional health advantages for improving athletic performance. Let's examine the advantages of alkaline water for health on athletic performance:

#### 1. Improved Hydration:

Our regular tap water is made up of groups of 10–20 molecules, whereas alkaline water is made up of 5–6 molecules. Alkaline water is subjected to an electrolysis process, which breaks these clusters into micro-clusters that are absorbed much faster and easier by our cells, allowing for improved hydration. And this is a must for better athletic performance.

#### 2. Antioxidant Properties:

You must know that free radicals and oxidants in your body are harmful to your health, which is why it is recommended to have antioxidant foods. Alkaline water is highly anti-oxidizing with a negative ORP value of -400 mV, which will keep you healthy and your athletic performance on the mark.

#### 3. Quick Recovery:

Water is essential for flushing out the toxins from the body during a workout or competition. The acid buildup can cause fatigue and muscle soreness, which will undermine your performance. Drinking alkaline water rapidly flushes out lactic acid and other toxins and reduces the soreness in the joints.

#### 4. Increased Energy:

Athletes are constantly training, playing, or travelling, so they need something more than plain old water. Many athletes are opting for alkaline water as it helps restore their energy and increase stamina, which is very important for you if you are an athlete.

#### 5. More Oxygen:

The hemoglobin in the blood carries oxygen throughout your body, but it will not be able to work properly if there is acid present in the body. The acid present will not allow the hemoglobin to absorb the oxygen properly and deliver it. Drinking alkaline water will reduce the acid and allow hemoglobin to work more effectively.

### 6. WEIGHT MANAGEMENT:

For several reasons, alkaline water has replaced regular drinking water among celebrities and artists in recent years. Natural alkaline water is healthier than normal alkaline water, even though it may sound like a trend. Its numerous advantages include the ability to help in weight loss.

Therefore, here are six unexpected ways alkaline water can help you lose that extra fat, regardless of whether you're fighting severe obesity or just a few extra pounds. [\[23-24\]](#)

#### 1. Alkaline water can boost your metabolism

Increasing the pace at which the body burns calories, or the metabolic rate, is the simplest and least difficult strategy to lose weight. The human body may burn extra fat when having a faster metabolic rate, even when it's not conscious of it. Independent of food and activity, drinking water is linked to weight loss, per a study published in the Obesity Journal. Even greater advantages may come from drinking cold alkaline water; in fact, a different study demonstrates that this beverage increases thermogenesis, or the rate at which the body burns calories.

While researchers observed the effects of water in general, studies made on alkaline water suggest it is a healthier choice than plain water due to its higher pH level. With this in mind, drinking one or two glasses of natural alkaline water 30 minutes before your meals is a great way to promote weight loss. [\[23-24\]](#)

#### 2. It can stop your cravings

Overeating never works well while trying to lose weight, regardless of how fast or slow our metabolism is. Cravings are the primary cause of many diet failures. If we're on a strict low-calorie diet, it might be quite difficult to avoid those delicious fats and fatty meals unless we drink alkaline water. Drinking a glass or two of natural alkaline water when we sense that we are about to give in to temptation is the key. We need to know that we cannot typically differentiate between hunger and thirst. That is to say, sometimes we mistakenly think we are hungry when we are only thirsty. One of the best ways to feel content and full without consuming extra calories is to drink plenty of water. [\[23-24\]](#)

#### 3. Alkaline water re-hydrates you faster

At first glance, staying hydrated and losing weight don't have a lot in common. Considering that the path to quick weight loss is made from a low-calorie diet and exercise, hydration plays a crucial role. The mechanism is simple. Dehydration leads to fatigue. If you feel tired and sluggish, chances are you'll have poor performance at the gym—hoping you'll still have enough energy to hit the gym in the first place.

Proper hydration is key to proper training and improved performance, and one recent study published in the PLoS One journal shows that athletes drinking alkaline water were able to rehydrate themselves faster than those drinking plain water.

This happens because of the minerals and electrolytes present in alkaline water. If you want to enjoy the most benefits, drinking natural alkaline water rich in these substances could be a better choice than consuming artificial alkaline water, which may have scarcer nutritional values. [\[23-24\]](#)

#### 4. It supports your digestive tract

A dry colon is the primary cause of bloating and constipation, and dehydration also makes people tired. Two things might prevent you from reaching your goal of a toned, flat stomach.

Regular use of alkaline water improves colon lubrication and promotes appropriate operation. In addition to keeping you from feeling bloated, a healthy colon can remove any pollutants and substances that might harm your digestive system.

Consume plenty of leafy greens, limit your intake of fatty meals, and drink alkaline water to help your digestive tract work properly for the greatest outcomes. <sup>[23-24]</sup>

#### 5. It improves your muscle function

Another way adequate hydration can help you lose weight is by improving your joint and muscle function.

Indeed, dehydration often leads to tight, sore joints. Inflammation and joint pain don't pair very well with a daily exercise routine.

On the contrary, proper hydration keeps your joints lubricated, reducing inflammation and pain.

Studies also showed that proper hydration boosts performance when executing aerobic exercises.

Refreshing yourself with alkaline water before, during, and after your workout can increase your workout benefits, with subsequent weight loss.

One thing to keep in mind, though, is that joint pain can also be triggered by improper warming up before training. To prevent joint and muscle damage, always do some stretching before and after a workout. <sup>[23-24]</sup>

#### 6. Alkaline water re-balances your body's pH levels

The most important advantage of alkaline water while attempting to lose weight is that it helps to balance the pH levels in the human body.

The human body requires slightly alkaline environments to function properly. Because body fat has an acidic quality, it plays a role in the acidification of the human body. By drinking alkaline water regularly, it is possible to restore a healthy pH level, which reduces acidity and helps in fat loss through several types of neutralization processes.

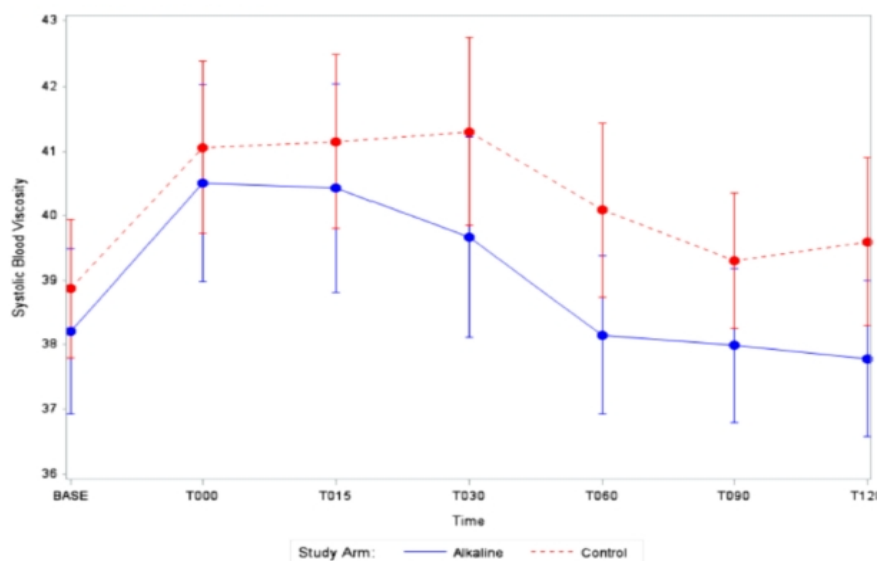
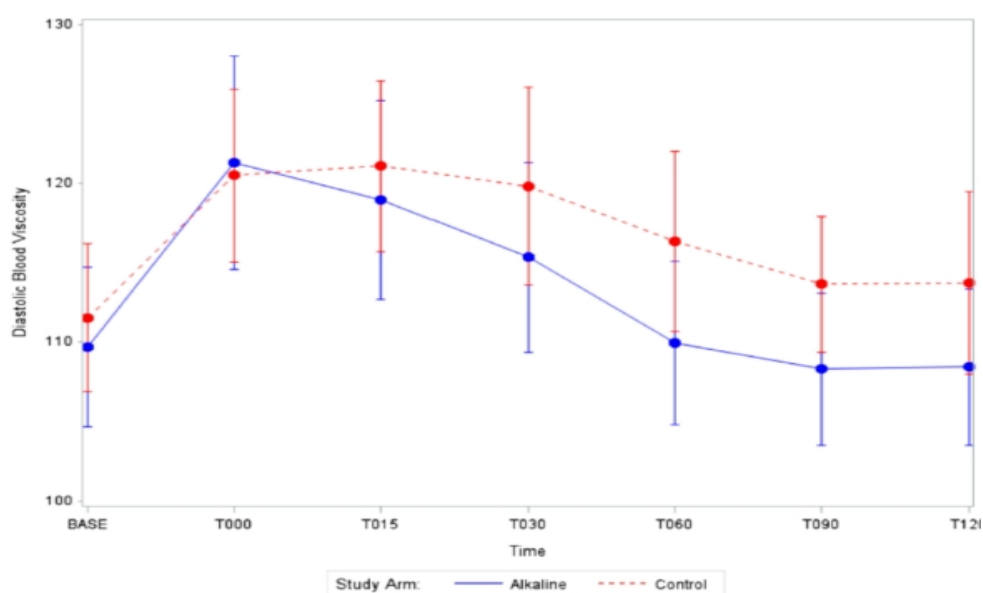
An easy method to accomplish this is to replace your weekend Margaritas with a glass or two of natural alkaline water, which not only tastes great but may also help you lose excess fat.

While there is no magic weight-loss secret, drinking natural alkaline water like Aur'a can help you lose weight faster and more effectively. Finally, the key to a slimmer, healthier physique is to combine enough hydration with a low-calorie diet and frequent exercise. Without question, this is the most effective approach to reduce weight quickly. <sup>[23-24]</sup>

#### 7. HYPERTENSION

A recent animal study reported alkaline water may downregulate oxidative stress and inhibit inflammation, leading to lower blood pressure <sup>[25]</sup>. Essential elements such as calcium and magnesium are generally higher in filtered alkaline water, which is speculated to contribute to lower blood pressure as well. As hypertension is one of the major causes of morbidity and mortality and affects a considerable proportion of the population, with many more underdiagnosed, the use of alkaline water can be considered a simple lifestyle modification to modulate blood pressure. Before such a recommendation is made, extensive and quality studies are needed.

The effect of water alkalinity or alkaline water on systolic and diastolic blood viscosities is shown in figure a and b. It is noticed that the alkaline water limits the blood viscosity in both types and it reduces the sickness factor which increases due to higher blood viscosity or thickness of blood. <sup>[25]</sup>

a)Effect on Systolic Blood Viscosity<sup>[25]</sup>(b) Effect on Diastolic Blood Viscosity<sup>[25]</sup>

## 8. CANCER

It is known that tumor cells produce ROS more abundantly than normal cells. It is also well known that antioxidants can inhibit tumor cell proliferation, which indicates an important role of ROS in mediating the loss of growth control. Human tongue carcinoma cells were shown to be significantly inhibited for either colony formation or colony sizes by ERW (Electrolyzed reduced water) in cell cultures without inhibition to normal human tongue epithelial cells. ERW also caused growth inhibition, cell degeneration, and inhibition of invasion to human fibrosarcoma cells HT-1080. These studies suggest that ERW may help prevent tumor progression and invasion. In vitro examination of leukemia cells (HL-60) treated with ERW showed enhanced mitochondrial damage and cell apoptosis. Alkaline water, however, did not cause any cytotoxic reaction in normal mononuclear cells from peripheral blood arteries. Alkaline Water's capacity to slow the development of cancer cells implanted in mice further supports its anti-cancer qualities in vivo.<sup>[5][7]</sup>

Alkaline water has been proposed as a potential cancer preventive measure since cancer cells grow in acidic environments. The idea is that by consuming alkaline water, people may increase the alkalinity of their internal surroundings and prevent the formation of cancer cells. It is challenging to make a connection between dietary pH and cancer, and the evidence for this idea is weak.<sup>[5][7]</sup>

## RECENT RESEARCH ON ALKALINE WATER

Alkaline water is a bit of a sensitive topic; many medical experts argue that the numerous health claims claimed by consumers and vendors are not adequately supported by research. Variations in study results might be attributed to different kinds of investigations on alkaline water.

A few research indicate that drinking alkaline water may have specific health benefits for you:

- A [2020 study by Trusted Source](#) on mice found that daily intake of alkaline water improved DNA aging markers.<sup>[26]</sup>
- A [2018 study by Trusted Source](#) on mice suggested alkaline water may help reduce nonalcoholic fatty liver disease symptoms.<sup>[27]</sup>
- A [small 2018 study by Trusted Source](#) in Japan suggested that drinking alkaline electrolyzed water slightly improved stool in 60 human participants.<sup>[28]</sup>
- A [2016 study by Trusted Source](#) that included 100 people found a significant difference in whole blood viscosity after consuming high-pH water compared to regular water after a strenuous workout. Viscosity is the direct measurement of how efficiently blood flows through your vessels.<sup>[29]</sup>
- A [2021 study by Trusted Source](#) suggests it may help improve bone density in postmenopausal people with osteoporosis.<sup>[30]</sup>

## SIDE EFFECTS

Drinking alkaline water can have some side effects, including <sup>[31]</sup>

1. **Alkalosis:** Drinking alkaline water can disrupt the body's pH, leading to metabolic alkalosis. Symptoms of alkalosis include confusion, vomiting, nausea, hand tremors, muscle twitching, and tingling in the hands, face, or feet.
2. **Medication interference:** Alkaline water can interfere with the absorption of certain medications.
3. **Stomach acid production blockers:** Drinking alkaline water can be dangerous for people who take proton pump inhibitors (PPIs), which are stomach acid production blockers.
4. **Blood pH:** Alkaline water can raise your blood pH, which can alter your normal blood levels of chemicals like potassium.
5. **Taste:** Alkaline water with a pH above 9 may taste bitter.
6. **Eye, skin, and mucous membrane irritation:** Alkaline water can irritate your eyes, skin, and mucous membranes.
7. **Hyperkalemia:** Drinking alkaline water regularly, especially water with a pH greater than 9.8, can increase the risk of developing hyperkalemia.
8. **Nutrient absorption interference:** Alkaline water can interfere with the body's ability to absorb nutrients.
9. **Mucosal lining damage:** Alkaline water can damage the mucosal lining.
10. **Excessive thirst:** Alkaline water can cause excessive thirst.

## CONCLUSION

Although there has been increasing proof that drinking alkaline water provides health benefits, it remains unclear. As a result, a greater study in this area is essential. Complex study designs are also necessary since a wide range of factors, including the environment, genetic susceptibility to certain diseases, lifestyle choices, diet, smoking, and alcohol use, may influence the specific health results of studies including alkaline water. Alkaline water has the potential to treat or prevent certain diseases, making it important to study its effects and processes in many medical settings.

Various researchers signify the importance of alkaline PH water in growth factors by using randomized human and in vivo trials for. Researcher opens up a novel hypothesis for human trials on aging factor investigation. The importance of alkaline water for drug stability will be a blockbuster area for drug absorbance enhancement and various pharmacological investigations. Regardless of the advancement of alkaline water by the media and sales representatives, there is no genuine research to either encourage or discredit these facts and figures. This methodical survey of the writing uncovered an absence of proof possibly in support of alkaline water for the inception or treatment of malignancy. Advancement of alkaline water to people in general for cancer and other acid-related diseases treatment isn't legitimized.

Alkaline water consumption may be considered a source of an easy-to-implement lifestyle to modulate metabolic features. However further studies are warranted for unravelling the full spectrum of individuals that could benefit from its consumption. Additionally, the precise mechanism of alkaline water consumption on the improvement and prevention of diseases such as metabolic syndrome and its features are not fully elucidated, hence the necessity of studies addressing its broad effect on health status improvement and mechanism merit further studies.

If viewed from a practical angle, it's quite safe for most people to include alkaline water in their diet plans. However, moderation is key since overindulgence may upset the natural pH balance of the body or result into gastrointestinal discomfort among other side effects.

According to medical experts, drinking alkaline water in moderate amounts is unlikely to harm one's health, but it must not be considered as an alternative to conventional treatments recommended by experts in health. Current scientific consensus does not support the idea that alkaline water can serve as a one-size-fits-all remedy. People should depend on effective methods of controlling their health issues that are informed by evidence while they should also consult with medical practitioners before changing their diets or way of life.

In conclusion, though alkaline water might bring some advantages and serve as a valuable source to uphold a balanced regime; it is not recommended as the sole treatment for illnesses. Good disease control calls for medical therapies, alterations in living habits and help from specialists. As usual the best way to promote and protect good health is to remain educated and use authentic health solutions.

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