



Review Article

A Comprehensive Review about Acid / Alkanine Food Materials

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ARTICLE INFO

Received: 17 Jan 2016
Accepted: 16 Feb 2016

A B S T R A C T

Concept of acid and alkanine drug is very importance because today's world is full of hassles, deadlines, frustrations and demands on a wide range of fronts. However, it is important to remember that stress isn't always bad. But when stress is a constant, the mind and body pay a huge price. To overcome this problem is by advicing the alkaline diet because it is rich in fruit and vegetables it can help in cancer prevention which may be a function of alkalinity. In any case, we do know there is no harm associated with consumption of an alkaline diet, and there is likely to be benefits. So, will an alkaline diet play a role in the prevention and treatment of various disease states? Although touted a prevention or treatment diet for cancer, there is not currently specific data to support this. The adrenals store the highest concentration of vitamin C in the body. Vitamin C is water-soluble and gets used up quickly by the body.

Key words: Alkanine and acid, Garlic, Leafy greens, Lemons, capsicum, pH paper test.

1. INTRODUCTION

Now a day's food poisoning has become a vital problem so eat alkanine food material because almost all the foods we eat either release an acid or an alkaline base, into our blood. We changed eating habits from our so-called natural ways in our early existence, concentrating more on foods such as grains, fish, meat, dairy, and salt, protein, sugar, caffeine which all produce acid. Our blood is slightly alkaline naturally, with a normal pH level of between 7.35 and 7.45. The theory behind the Acid-Alkaline Diet is that our diet

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should reflect this pH level. Proponents believe a diet high in acid-producing foods disrupts this balance and promotes the loss of essential minerals such as potassium, magnesium, calcium, and sodium. The degree of difference in nutrient composition between conventionally and organically produced foodstuffs.^{1,3}

2. DEFINING PH

pH is a measure of hydrogen ions in a solution, so the “H” in pH refers to hydrogen and “p” denotes to “potential” and “power.” In any case, the pH scale measures how acidic or alkaline a substance pH ranges from 0 to 14, with Ph of 7 considered neutral, a pH less than 7 considered acidic and a pH greater than 7 considered alkaline. An important concept in pH is that each whole pH value below 7 is 10 times more acidic than the next higher value, and a pH value above 7 is 10 time more alkaline. For example, a pH of 4 is 10 times more acidic than a pH of 5 and 100 times more acidic than a pH of 6. Consequently, even small changes in pH can be significant^{4,7}

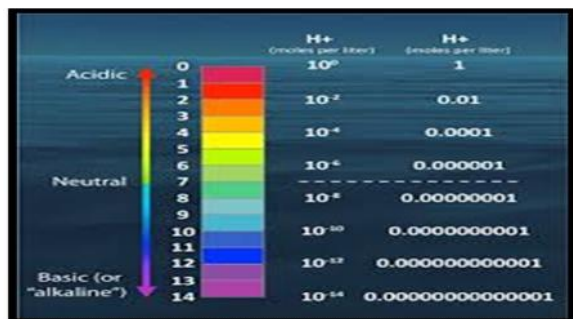


Fig 1: logarithmic pH scale range

PHYSIOLOGY OF ACID-ALKALINE BALANCE

Physiological point of view, body has compartmentalized organ systems operating within specific pH ranges. The “potential of hydrogen,” or “pH,” is based on a logarithmic scale, meaning that there is a 10-fold difference between each number going from 1 to 14. The lower numbers (1-6.99) represent the acid (or H⁺ donating) range, and the higher numbers (7.01-14) represent the alkaline range. For the most part, body tissues remain within the neutral pH of 7. Some body systems such as the blood

(7.35-7.45) are more tightly regulated than others (eg, urine pH ranges from 4.5- 8.0).^{8,10}

3. REGULATION OF ACID-ALKALINE BALANCE IN HUMAN BODY.

- The cellular level via chemical reactions generating or consuming H⁺
- The blood with the assistance of bicarbonate, amino acids, albumin, globulin, and hemoglobin
- Systemically through the release of carbon dioxide from the lungs and hydrogen ions from the kidney.



Acid-Alkaline Balance

The pH value is highly controlled in all biological fluids and tissues within a narrow range. Moreover, each cell, tissue or organ has its own optimal pH level. The normal pH range of arterial blood is between 7.38 and 7.42. Several natural buffer systems in the human body contribute to this homeostasis, which is maintained via metabolic and respiratory pathways mainly in the tissue, kidneys, and lungs. The buffering agents bind to hydrogen ions and reduce the likelihood of change in pH.^{11,12}

Examining Diet & Acid-Alkaline Balance

The agricultural revolution about 10,000 years ago and since industrialization (200 years ago); and further that many of our health problems may result from this mismatch between our genetically determined nutritional requirements and our current diet. Specifically, the difference between the two diets may partially be due to the exchange of potassium-rich foods is present in the plant foods and for sodium chloride (salt), which we have an over-abundance of in the contemporary diet, and also potassium-rich plant foods. U.S. diet, researchers found that contemporary

net acid producing diets (i.e. high in animal protein with a relatively low intake of fruits and vegetables) characteristically produce a low-grade systemic metabolic acidosis in otherwise healthy adult subjects, and that the degree of acidosis increases with age, in relation to the normally occurring age-related decline in renal functional capacity. They also found that plant food intake tended to be protective against hip fracture, because plant foods are also rich in antioxidants, other research suggests that an acidic pH can reduce the effectiveness of antioxidants' ability to fight free radicals and an alkaline pH can improve it.¹³⁻¹⁵

4. SEVEN MOST ALKALINE FOODS

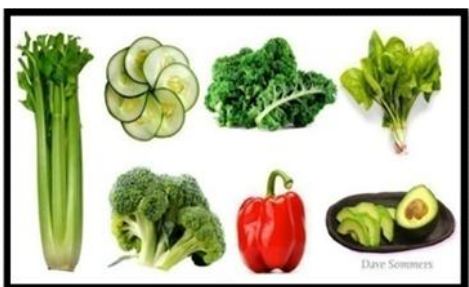


Fig 2: Alkalanine Foods Material

About 60% alkaline-producing foods in our diet, in order to maintain health. We need plenty of fresh fruits and particularly vegetables (alkaline-producing) to balance our necessary protein intake (acid-producing), sugary or simple-carbohydrate foods, not only because they are acid-producing but also because they raise blood sugar level too quickly with high glycemic index, therefore fattening and stressing our insulin response - plus they tend to be nutrient-lacking and may be toxic too. Saliva and urine tests show clearly enough the changes in alkalinity or acidity that are caused by diet and lifestyle.^{16, 17}

5. WIKIPEDIA OF BODY'S PH.

Most abundant compound in the human body is water about 70% of the body. The body therefore contains a wide range of solutions, which may be more or less acid. pH (potential of Hydrogen) is a measure of the acidity or alkalinity of a solution - the ratio between

positively charged ions (acid-forming) and negatively charged ions (alkaline-forming.) An imbalanced diet high in acidic-producing foods such as animal protein, sugar, caffeine, and processed foods puts pressure on the body's regulating systems to maintain pH neutrality. The extra buffering required can deplete the body of alkaline minerals such as magnesium, sodium, potassium, and calcium, making the person prone to chronic and degenerative disease. Minerals are borrowed from vital organs and bones to buffer (neutralize) the acid and safely remove it from the body.^{18, 19}

Health problems caused by acidosis

The body's pH level is slightly alkaline, the body cannot heal itself. So no matter what means you choose to take care of your health, it won't be effective until the pH level is balanced. If your body's pH is not balanced, for example, you cannot effectively assimilate vitamins, minerals and food supplements. Your body pH affects everything. Acidosis will decrease the body's ability to absorb minerals and other nutrients, decrease the energy production in the cells, which result damaged cells, detoxify heavy metals, make tumor cells and susceptible to fatigue and illness. An acidic pH can occur from an acid-forming diet, emotional stress, toxic overload, or immune reactions or any process that deprives the cells of oxygen and other nutrients. The body will try to compensate for acidic pH by using alkaline minerals. If the diet does not contain enough minerals to compensate, a buildup of acids in the cells will occur.²⁰⁻²²

Table 1: Acidosis can cause such problems as

Cardiovascular damage	Slow digestion and elimination	Loose and painful teeth
Weightgain, obesity diabetes.	Yeast/fungal overgrowth.	Inflamed, sensitive
Bladder stones. Immune deficiency.	Lack of energy and fatigue.Lower body temperature.	Mouth and stomach

Acceleration of free radical damage.	Tendency to get infections.	Loss of drive, joy, and enthusiasm.	ulcers.
Hormonal problems.	Depressive tendencies.	Easily stressed.	Cracks at the corners of the lips. Excess stomach acid.
Premature aging, osteoporosis and joint pain.	Headaches.	Pale complexion.	Gastritis.
Aching muscles and lactic acid buildup.	Inflammation of the corneas and eyelids.		Nails are thin and split easily. Hair looks dull, has split ends, and falls out. Dry skin.

6. pH STRIPS ANALYSIS

Test your body with Acidity or Alkanity with pH Strip

By using Litmus Paper pH test strips can determine your pH factor quickly and easily in the privacy of your own home. The best time to test your pH is about one hour before a meal and two hours after a meal.

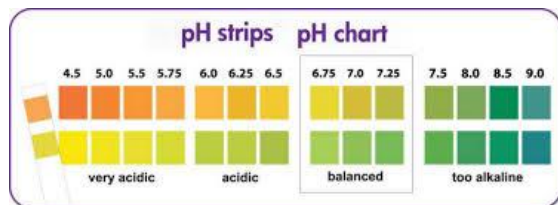


Fig 3: pH paper Strips

Saliva pH Test Strips

Wet a piece of Litmus Paper with your saliva. While generally more acidic than blood, salivary pH mirrors the blood and tells us what the body retains. The optimal pH for saliva is 6.4 to 6.8. A reading lower than 6.4 is indicative of insufficient alkaline reserves. After eating, the saliva pH should rise to 7.5 or more. If your saliva stays between 6.5 and 7.5 all day, your body is functioning within a healthy range. Acidosis, an extended time in the acid pH state, can result in tuberculosis, osteoporosis, high blood pressure, rheumatoid arthritis, diabetes and cancers. If salivary pH stays too low, the diet should focus on fruit, vegetables and mineral water as well as remove

strong acidifiers such as sodas, whole wheat and red meat.

Urine pH Test Strips

The pH of the urine indicates how the body is working to maintain the proper pH of the blood. The urine reveals the alkaline and acid metabolic cycles. The pH of urine indicates the efforts of the body via the kidneys, adrenals, lungs and gonads to regulate pH through the buffer salts and hormones. Urine can provide a fairly accurate picture of body chemistry, because the kidneys filter out the buffer salts of pH regulation and provide values based on what the body is eliminating. Urine pH can vary from around 4.5 to 9.0 in extremes, but the ideal range is 6.0 to 7.0. If your urinary pH fluctuates between 6.0 to 6.5 first thing in the morning and between 6.5 and 7.0 in the evening before dinner, your body is functioning within a healthy range. Urine testing may indicate how well your body is excreting acids and assimilating minerals, especially calcium, magnesium, sodium and potassium. These minerals function as "buffers." Buffers are substances that help maintain and balance the body against the introduction of too much acidity or too much alkalinity. Even with the proper amounts of buffers, acid or alkaline levels can become stressful to the body's regulatory systems. When the body produces too many of these acids or alkalis, it must excrete the excess. The urine is the method the body uses to remove any excess acids or alkaline substances that cannot be buffered.

7. UNDERSTANDING HOW AN ALKALINE DIET WORKS

Primarily moves the balance toward fresh fruits and vegetables, whole grains, wholesome protein sources such as beans and legumes, and healthy oils such as olive and flax seed. These foods may be either alkaline or acid in their natural state, but after the process of digestion they all produce what is termed as an

"alkaline ash" once digested and metabolized by the body. When the body's pH is kept at a slightly alkaline level, all the systems can work more efficiently. Alkaline diets are a popular choice for people who want to achieve optimum good health. However, many people don't actually understand this diet or how it works. The concept is actually fairly simple the diet just focuses on regaining the balance that was lost when man started to eat a more domesticated diet. Instead of focusing on foods that are high in sugar, simple carbohydrates (like white bread and chips) and fatty meat and dairy an alkaline diet

Body pH Level

The pH level of the body has the ability to affect every single cell of the body. When the blood has an alkaline pH instead of an acidic pH, it will have a positive effect on how every bodily system functions. The brain, circulatory system, nerves, muscles, respiratory system, digestive system, and reproductive system can all benefit from a proper pH level. On the other hand, when the pH of the body is too acidic, it is susceptible to many diseases and problems. Weight gain, heart disease, premature aging, fatigue, nerve problems, allergies, muscle disease and cancer are all more prevalent when the body's pH is not optimal. Because these problems are all more likely to occur when the body's pH is too acid, it makes good sense to eat a diet rich in alkalizing foods. The primary goal is usually to eat approximately 75-80% alkaline foods along with only about 20-25% acidifying foods. If this level is maintained in the diet, the end result is a slightly alkaline pH in the body, which is perfect for optimum good health.

Selection of Alkaline Foods in diet

It's actually quite easy to eat a diet rich in alkaline-producing foods. Most fresh fruits and vegetables are excellent choices. Red meat is not a good choice, but you can add plenty of protein to your meals by using

soy products, delicious beans, legumes, and nuts such as almonds, but you can use good fats such as canola, olive. High fat dairy products should be avoided, but you can drink soy milk and goat's milk. Cheeses made from soy milk and goat's milk would also be good choices herb tea, green tea and lemon water. Coffee should be avoided, but you can drink hot herbal or green tea. Replace pasta with healthy whole grains such as wild rice, millet and quinoa. When sweetening your foods, focus on natural products such as raw sugar.

8. TOP SIX ALKALINE FOODS TO EAT EVERY DAY FOR VIBRANT HEALTH

1. Root vegetables

The healing "yang" nature of these foods in traditional Chinese medicine, and their tendency to be more rich in minerals than many other vegetables, it may be safe to say that you can't get enough of them. Look for radishes especially (black, red or white), as well as beets, carrots, turnips, horseradish and rutabaga. Ready to eat after steaming for just 15-20 minutes.



Fig 4: Root Vegetable

2. Cruciferous vegetables

These are the veggies we all know and love, made even more delicious with just a small amount of healthy, like cabbage, cauliflower etc.



Fig 5: Cruciferous vegetables

3. Leafy greens

Leafy greens is rich vitamin K and folate content, spinach is also packed with vitamins, minerals, phytochemicals, antioxidants and fiber, helping to improve digestion and even vision.



Fig 6: Leafy greens

4. Garlic

A true miracle food, garlic appears at the top of innumerable lists of foods that encourage overall health, Among its other benefits are its ability to promote cardiovascular and immune health by lowering blood pressure cleansing the liver and fighting off diseases.



Fig 7: Garlic

5. Cayenne peppers (capsicum)

As part of a family of potent, tropical peppers which contain enzymes essential to endocrine function, cayenne is among the most alkalizing foods. It is known for its antibacterial properties and is a rich supply of vitamin A, making it a helpful agent in fighting off the harmful free radicals that leads to stress and illness.



Fig 8: Cayenne peppers (capsicum)

6. Lemons

Lemons is acidic in nature but it is come in contact with body compartment it may be converted to alkalizing food of all and also act as a natural disinfectant, it can heal wounds while also providing potent and immediate relief for hyperacidity and virus-related conditions, as well as coughs, colds, flu and heartburn. Lemon also works to energize the liver and promote detoxification.



Fig 9: Lemons

Table 2: Acid & Alkali food List

Acidic Forming Foods		Alkali Forming Foods	
Meat/Poultry/Sea food	Beverages	Vegetables	Fruits
Beef	Wine	Bamboo shoots	Banana (unripe)
Chicken	Beer	Beans	Grapefruit (sour)
Duck	Liquor	Beets	Lemon/Lime
Fish	Coffee	Beet tops	Tomatoes
Shellfish	Soda drinks	Peppers	Grains/Legumes
Condiments/Dressings	Sport drinks	Cabbage	Buckwheat
Jams	Black tea	(white)	Lima beans
Mustard	Fruits/Vegetables	Carrots	White beans
Soy sauce	Preserved fruits	Cauliflower	Beverages
Vinegar	Preserved vegetables	Celery	Fresh coconut water
Breads/Flours	roasted, sweetened	Cucumbers	Distilled water
Cereals	Pickled vegetables	Garlic	Fats/Oils
Corn (processed)	Nuts/Seeds	Greens (leafy)	Olive oil
Corn meals	Peanuts	Onion	Flaxseed oil
Rye bread	Roasted nuts	Peas (fresh)	Dairy Products
White biscuit	Salted nuts	Pumpkin	Goat milk
White bread	Walnuts	Radish	Goat cheese
Whole grain bread	Wheat	Spinach	Breads/Flours
Whole meal bread	White rice	Wheat grass	Sprouted bread
Fats	Sweets		Spelt bread
Butter	Artificial sweeteners		Nuts & Seeds
Corn oil	Barley malt sugar		Almonds
Vegetable oil,	Molasses		Cumin seeds
Sunflower oil	Pies		Fennel seeds
	Sugar, refined		Sesame
	cane Beet sugar		

Dairy Products	Cakes Chocolate
Butter	Cookies
Cheeses	
Eggs & egg products	
Milk	

9. CONCLUSION

Acid poisoning is hazardous to health to overcome this problem alkaline diet is beneficial for health because it is rich in fruit and vegetables vitamin c and antioxidant it can help in cancer prevention which may be a function of alkalinity. Acid alkaline diet is essential for health because it contain leafy green vegetables and beets and antioxidant.

10. ACKNOWLEDGEMENT

The authors would like to acknowledge the assistance provided by kind cooperation of Secretary Shri Keshavrao Mankar Bhavabhuti Shikshan Sanstha "Shri Laxmanrao Mankar Institute of Pharmacy" Amgoan, Gondia. Maharashtra, INDIA.

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Conflict of Interest: None

Source of Funding: Nil