**MASS COMMUNICATION AS A VERITABLE ENLIGHTENMENT TOOL: THE POTENTIAL HEALTH BENFITS OF ALKALINE FOODS**

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**ABSTRACT**

Life on earth depends on appropriate pH levels in and around living organisms and cells. Human life requires a tightly controlled pH level in the serum of a slightly alkaline range of 7.35 to 7.45 to survive. An alkaline diet is one that helps balance the pH level of the fluids in the body, including blood and urine. The data obtained for this study were through a mass communication tool by the administration of questionnaires. The questionnaires were administered to 50 respondents and it was found out that most of the respondents are knowledgeable about alkaline diets regardless of their field of study, academic qualification, age, sex or tribe but with limited knowledge on their specific potential health benefits. By this investigation, it can thus be deduced that to live healthily, it is important to closely regulate the pH balance in the body by striking a balance between one’s acidic diets and alkaline diets and the questionnaire method as a mass communication tool could be used to inquire and at the same time enlighten the masses about a particular subject matter. Further studies could be carried out to provide concisely accurate scientific data and proofs on the therapeutic or prophylactic efficacy of alkaline diets and the papers should published online to enable the masses to have access to the information via the internet.

**Keywords:** Alkaline diets, pH, questionnaires, mass communication, prophylactic efficacy.

**INTRODUCTION**

Media is considered to be the most important tool of society in the modern times as it has the power to reach out to a large audience by mass communication and create an impact wherever it can reach, which now has become far and wide (Pavlik and MacIntoch, 2015). Mass communication is the study of how people exchange information through mass media to large segments of the population at the same time. It also refers to the imparting and exchange of information on a large scale to a wide range of people (Pearce, 2009).

There is a fierce controversy between the proponents and advocates of the health benefits of alkaline diets and also their critics. Schwalfenberg (2012) posited that advocates of eating a more alkaline diet espouse its health-promoting virtues while critics have called it nonsense.

The alkaline diet is also known as the acid-alkaline diet or alkaline ash diet. An alkaline diet emphasizes alkaline foods such as whole fruits and vegetables and certain whole grains, which are low in caloric density (Konner and Boyd-Eaton, 2010). An alkaline diet is one that helps balance the pH level of the fluids in the body, including blood and urine. Bodily pH is partially determined by the mineral density of the foods eaten. All living organisms and life-forms on earth depend on maintaining appropriate pH levels and it’s often said that disease and disorder cannot take root in a body that has a balanced pH (Remer and Manz, 1995).

The body includes a number of organ systems that are adept at neutralizing and eliminating excess acid but there is a limit to how much acid even a healthy body can cope with effectively. The body is capable of maintaining an acid-alkaline balance provided that the organs are functioning properly, that a well-balanced alkaline diet is being consumed and that other acid-producing factors, such as tobacco use, are avoided (Goraya and Wesson, 2013).

The alkaline ash theory is based around the idea that the foods one eats can alter the acidity or alkalinity (the pH value) of one’s body. When one burn foods, they actually leave an ash residue, just like when one burn wood in a furnace. As it turns out, this ash is either acidic or alkaline (or neutral) and proponents of this diet claim that this ash can directly affect the pH of one’s body (Fenton *et al*., 2011). So, if one eats foods with acidic ash, it makes one’s body acidic. If one’s eats foods with alkaline ash, it makes your body alkaline. Neutral ash has no effect. Acid ash is thought to make one vulnerable to illness and disease, whereas alkaline ash is considered protective. By choosing more alkaline foods, one should be able to "alkalize" one’s diet and improve one’s health (Cunningham, 2009).

Food components that leave an acidic ash include [protein](http://www.healthline.com/nutrition/how-much-protein-per-day), phosphate and sulfur, while alkaline components include calcium, magnesium, and potassium (Pizzorno and Katz­inger, 2010).

Certain food groups are considered acidic, alkaline or neutral:

**Acidic:** Meat, poultry, fish, [dairy](http://www.healthline.com/nutrition/is-dairy-good-for-your-bones), eggs, grains and alcohol, artificial sweeteners, processed cereals (such as corn flakes), caffeinated/carbonated drinks and alcohol, oats and whole wheat products, peanuts and walnuts, pasta, rice, bread and packaged grain products, processed and refined foods.

**Neutral:** Natural fats, starches and sugars.

**Alkaline:** Fruits, nuts, raw food, legumes and vegetables.

Here is a list of alkaline foods, especially high alkaline foods:

* Alkalizing vegetables: Beets, broccoli, cauliflower, celery, cucumber, kale, lettuce, onions, peas, peppers, spinach, green juices (chlorophyll), green tea
* Alkalizing fruits: Apple, banana, berries, cantaloupe, grapes, melon, lemon, orange, peach, pear, watermelon
* Alkalizing proteins: Almonds, chestnuts, tofu, beans, nuts
* Alkalizing spices: Cinnamon, curry, ginger, mustard, sea salt

Alkaline foods and acid foods are called alkaline or acid based upon the effect they have on the body after being consumed. This is an incredibly important distinction and explains fully the [difference between different food lists.](http://www.energiseforlife.com/alkaline-diet-questions-answered-why-are-alkaline-food-lists-so-different/) It helps explain the main differences between the different alkaline food charts as to why some food lists contain fruits such as oranges and bananas as alkaline foods (Csepregi *et al.*, 2016). This is because despite them containing alkaline minerals, they also contain a huge amount of sugar, which makes them highly acid-forming once consumed, also why lemons and limes are considered alkaline foods, despite them being acidic in their natural state - due to the very low sugar content but very high alkaline mineral content, they have an alkaline effect on the body once consumed (Lemaƒska *et al*., 2001).

Put simply, the pH value is a measure of how acidic or alkaline something is. It’s a measure of the acidity or alkalinity of our body’s fluids and tissues. It’s measured on a scale from 0 to 14; 0-7 is acidic, 7 is neutral and 7-14 is alkaline. The stomach is loaded with hydrochloric acid, giving it a pH value between 2 and 3.5 (highly acidic). This is necessary to break down food. On the other hand, human blood is always slightly alkaline, with a pH between 7.35 and 7.45 (Williams, 2001). The blood’s pH value falling out of the normal range is [very serious](http://labtestsonline.org/understanding/conditions/acidosis/) and can be fatal if untreated. However, this only happens during certain disease states and has absolutely nothing to do with the foods one eats from day to day. It is critical for health that the pH of one’s blood remains constant. If it were to fall outside of the normal range, body cells would stop working and one would die very quickly if left untreated. For this reason, the body has many effective mechanisms to closely regulate the pH balance in the body (Remer and Manz, 1994). This is known as acid-base homeostasis. Fortunately, these mechanisms make it near impossible for outside influences to change the pH value of blood. However, food can definitely change the pH value of urine, although the effect is somewhat unreliable. One of the main ways the body regulates blood’s pH is by excreting acids in urine. Urine’s pH is actually a very poor indicator of overall body pH and general health; it can be influenced by many factors other than diet (Virgili and Marino, 2008).

The alkaline diet is healthy because it is based on real and unprocessed foods. It has absolutely nothing to do with being acidic or alkaline. It encourages a high consumption of [fruits](http://www.healthline.com/nutrition/is-fruit-good-or-bad-for-your-health), vegetables and healthy plant foods, while restricting [processed](http://www.healthline.com/nutrition/9-ways-that-processed-foods-are-killing-people) junk foods. Because of the body's natural regulatory mechanisms, which do not require a special diet to work, eating an alkaline diet just can, at most, change the blood pH minimally and transiently (Remer and Manz, 1995).

Osteoporosis is a progressive bone disease characterized by a decrease in bone mineral content. Osteoporosis is particularly common among postmenopausal women and can drastically increase the risk of fractures (Rao and Balachandran, 2002). Many alkaline diet enthusiasts believe that in order to maintain a constant blood pH, the body takes alkaline minerals (such as calcium) from the bones to buffer the acids from the acid-forming foods one eats. According to this theory, acid-forming diets cause a loss in bone mineral density (Mark, 2005). This theory is known as the "acid-ash hypothesis of osteoporosis." The glaring problem with this theory is that the function of the kidneys is completely ignored. The kidneys are fundamental to removing acids and regulating body’s pH. It's one of their main roles (Vormann *et al*., 2001).

As Forbe’s Magazine puts it, “Our bodies go to extraordinary lengths to maintain safe pH levels.” If one develop [electrolyte imbalances](https://draxe.com/electrolyte-imbalance/) and frequently consume too much acidic foods, one’s body’s changing pH level can result in increased [acidosis](http://www.healthline.com/health/acidosis) (Stanner *et al*., 2004)..

Normally, the kidneys maintain the body’s electrolyte levels (those of calcium, magnesium, potassium and sodium). When being exposed to overly acidic substances, these electrolytes are used to combat acidity. High degrees of acidity force the body to rob minerals from the bones, cells, organs and tissues (Cseuz *et al*., 2008).

Alkaline diets are of tremendous health benefits, some of which include:

* Protects bone density and muscle mass
* Lowers risk for hypertension and stroke
* Lowers chronic pain and inflammation (alkaline-forming foods are [anti-inflammatory foods](https://draxe.com/anti-inflammatory-foods/))
* Boosts vitamin absorption and prevents magnesium deficiency
* Helps improve immune function and cancer protection
* Helps maintain a healthy weight (Di Matteo *et al*., 2003).

**MATERIALS AND METHODS**

The selection of the study participants was by random sampling procedure. The data obtained for this study were through a quantitative mass communication tool (survey) by the administration of questionnaires, the data were obtained solely through primary sources. The questionnaires were administered to 50 respondents within Ilaro town, Yewa South local government, Ogun State, Nigeria. The respondents were mainly academic staff of different departments of The Federal Polytechnic, Ilaro. The questionnaires administered were designed to assess the respondents’ knowledge of alkaline diets and the potential health benefits of alkaline diets. The data obtained from the questionnaires were processed and analyzed using descriptive statistics.

**RESULTS AND DISCUSSION**

**Table 1:** Respondents’ brief bio-data (Frequency table, N = 37)

|  |  |  |
| --- | --- | --- |
| Parameter | Frequency N = 37 | Percentage (%) |
| Biology-related field | 18 | 48.6 |
| Male | 26 | 70.2 |
| Female | 12 | 32.4 |
| Age 30 – 39 | 17 | 45.9 |
| Age 40 – 49 | 14 | 37.8 |
| Age 50 – 59 | 3 | 8.1 |
| Age 60 - 60+ | 3 | 8.1 |
| HND | 1 | 2.7 |
| Bachelor’s degree | 11 | 29.7 |
| Master’s degree | 22 | 59.5 |
| Ph. D degree | 3 | 8.1 |
| Yoruba | 32 | 86.5 |
| Igbo | 3 | 8.1 |
| Hausa | 0 | 0 |
| Others | 2 | 5.4 |

**Table 2:** Respondents’ knowledge of alkaline diets (Frequency table, N = 36)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S/N | ITEM | YES | NO | MAYBE | NOT SURE |
| 1. | Have you ever heard of alkaline and acidic diets before? | 33 | 2 | 0 | 1 |
| 2. | If yes, was your knowledge of them based on personal research? | 11 | 20 | 5 | 1 |
| 3. | Do you think you know sufficiently about them? | 7 | 20 | 4 | 4 |
| 4. | Did you know that alkaline diets have some potential health benefits? | 24 | 6 | 4 | 2 |
| 5. | Have you been consuming them with no clue that they are alkaline diets (fruits, vegetables, ginger, nuts, cucumber, onions, peppers, beans, green tea, curry, tofu etc)? | 15 | 15 | 4 | 2 |
| 6. | Have you any knowledge of the term pH (Hydrogen ion concentration i.e. 0-7 is acidic, 7 is neutral, 7-14 is alkaline)? | 26 | 6 | 3 | 1 |
| 7. | If yes, did you know the pH of a healthy human body should be 7.35 or between 7.2 and 7.4? | 20 | 12 | 2 | 2 |
| 8. | Did you know that you could check your body’s pH by using pH test strips on your urine, saliva or blood and that a sharp deviation could be lethal? | 24 | 7 | 4 | 1 |
| 9. | If you were to go by the normal body’s pH of 7.35, do you think alkaline diets could be health beneficial? | 20 | 7 | 6 | 3 |
| 10. | Do you think acidic diets could be health detrimental? | 13 | 8 | 5 | 6 |
| 11. | If you knew that the most acidic diets are carbonated drinks (soft drinks), would you consume them less often? | 20 | 7 | 6 | 3 |
| 12. | Do you think that to maintaining an acid-alkaline balance of the body for healthy living through acidic and alkaline diets in the ratio 30:70 is reasonable and practicable? | 17 | 7 | 6 | 6 |
| 13. | Alkaline diet critics argue that the body has a natural mechanism for maintaining that balance and not diets. Can this information change your perception of alkaline diets? | 13 | 14 | 6 | 3 |
| 14. | Alkaline diet advocates argue that the diet protect bones, boosts immunity, lowers risk for hypertension, chronic pain, cancer etc. Can this information make you an alkaline diet supporter? | 25 | 4 | 6 | 1 |
| 15. | If you were told that this research is not meant to scare you about the consumption of acidic diets (Meat, poultry, fish, [dairy](http://www.healthline.com/nutrition/is-dairy-good-for-your-bones), eggs, grains and alcohol, artificial sweeteners, processed cereals such as corn flakes, caffeinated/carbonated drinks and alcohol, oats, pasta, rice, bread, processed and refined foods etc) but to create an awareness about maintaining a balance for healthy living, would you consider consuming them less often? | 23 | 7 | 3 | 3 |

Out of a total of 50 questionnaires administered, 37, which depict a 74% response rate, were retrieved for computation, over a 4-week period. From the two tables above, it can thus be deduced that most of the respondents are knowledgeable about alkaline diets regardless of their field of study, academic qualification, age, sex or tribe but with limited knowledge on their specific potential health benefits. Table 2 shows that 75% of the respondents are willing to give up carbonated drinks or consume them less now knowing that they are the most acidic diets, besides the majority of processed food items, after all, moderation is key even when it comes to food diets.

Due to the lack of credible evidence supporting the claimed mechanism of alkaline diets, it is not recommended by [dietitians](https://en.wikipedia.org/wiki/Dietitian) or other [health professionals](https://en.wikipedia.org/wiki/Health_professional), though some have noted that eating unprocessed foods as this diet recommends may have incidental health benefits unrelated to bodily pH. These diets have been promoted by [alternative medicine](https://en.wikipedia.org/wiki/Alternative_medicine) practitioners, with the proposal that such diets treat or prevent [cancer](https://en.wikipedia.org/wiki/Cancer), [heart disease](https://en.wikipedia.org/wiki/Heart_disease) and have been mainly directed at a [lay](https://en.wikipedia.org/wiki/Layperson) audience. However, difficulties in effectively predicting the effects of this diet have led to [medications](https://en.wikipedia.org/wiki/Medication), rather than diet modification, as the preferred method of changing urine pH. The "acid-ash" hypothesis was once considered a risk factor for [osteoporosis](https://en.wikipedia.org/wiki/Osteoporosis), though the current weight of scientific evidence does not support this hypothesis.

Maintaining an acid alkaline balance (acid-alkaline homeostasis) is vital to health and this could be achieved by eating 70-80% alkaline forming foods and a maximum of 20-30% acid forming foods. Some alkaline diets rich in nutrients like beta carotene, lycopene and vitamins A, C and E also are antioxidants and are health beneficial. An antioxidant is a [molecule](https://en.wikipedia.org/wiki/Molecule) that inhibits the [oxidation](https://en.wikipedia.org/wiki/Redox) of other molecules. Incorporating antioxidants, some of which are alkaline diets, into one’s diet with fruit juices from mangosteen, pineapple, blueberries, pomegranate, star fruit and many other fruits is certainly worth a try when it comes to cancer prevention.

While the myth of an alkaline diet helping to prevent cancer is unclear, antioxidants have been found to help prevent cancer in certain studies. A healthy diet should include fresh fruits. Even the American Cancer Society states that the best way to reduce your cancer risk is to have a healthy diet that includes five servings of fruits and vegetables a day. It is of interest to note that while plant foods are also rich in antioxidants, other research suggests that an acidic pH can reduce the effectiveness of antioxidants’ ability to fight free radical and an alkaline pH can improve it. According to a report by Thomas Remer, an acidic diet can be a contributor to renal (kidney) problems, and dietetic intervention with alkaline foods and substances can be advantageous (Remer, 2000).

Factors that contribute to a diet being alkaline are freshness, low sugar, mineral contents and it being a vegetable while the factors that contribute to a diet being acidic are the presence of sugar, yeast, dairy, gluten or whether the diet had been fermented or refined.

**CONCLUSION**

The influential power of mass media cannot be over emphasized as information can be disseminated to a large number of people per time. It is not arguable that most individuals are ignorant of the knowledge of alkaline diets and that they tend to inadvertently consume more of acidic diets daily, with their alleged attendant complications. Though debatable, acidic diets have been reported to cause acidosis (acidic body state) which has been linked to premature aging, cellular damage, sour moods, poor detoxification and metabolism.

By this investigation, it can thus be deduced that to live healthily, it is important to closely regulate the pH balance in the body by striking a balance between one’s acidic diets and alkaline diets and the questionnaire method as a mass communication tool could be used to inquire and at the same time enlighten the masses about a particular subject matter.

**RECOMMENDATIONS**

Considering the fact that there seem to be conflicting reports as to whether alkaline diets can really perform the health activities claimed by enthusiasts of alkaline diets or not, the diets themselves are nutritious, so, they will do no harm if they are consumed appropriately. Besides, some of them are anti-oxidants and these are undoubtedly health beneficial.

It is also recommended that, if perhaps alkaline diets help to remotely alkalize the body, one could confirm by using pH strips to test one’s urine or saliva for slight changes in their pH per daily consumption of acidic or alkaline diets.

Further studies could also be carried out to provide concisely accurate scientific data and proofs on the therapeutic or prophylactic efficacy of alkaline diets and the papers should published online to enable the masses to have access to the information via the internet.

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