

Ask the Dietician: The Alkaline Diet: Trend or Truth?

By Alicia Armeli

Although the alkaline diet has been around for some time, it's experiencing a resurgence of popularity. Already familiar with the concepts associated with this diet, I thought I'd Google it, just to see what came up. "Weight loss," and "treats cancer" were just a couple of the common assurances this diet makes. But what exactly is the alkaline diet? And is it just a trend or are its claims true?

What Is The Alkaline Diet?

The alkaline diet has transformed through the years but an overarching theme remains: the majority of your diet (70-80%) should consist of alkalizing foods (I'll explain which foods are considered alkalizing in a moment).

The premise of the alkaline diet dates back to 1995 with the research of Dr. Thomas Remer, PhD and Friedrich Manz, MD. The purpose of their study was to calculate the effect foods consumed had on urine pH. Essentially, by observing foods eaten and measuring how much acid and base were present in the urine, they were able to categorize foods as acidic or alkaline.¹

Foods were then given a potential renal acid load (PRAL) score. The higher the PRAL value, the more acidic the food, and thus the potential to lower urine pH. Urinary pH will vary depending on the body's need to balance its internal environment.² In general, foods like meat, dairy, and some whole grains had higher PRAL scores, whereas fruits and vegetables were seen as alkalizing and having lower PRAL scores.¹

What's interesting about the study's results is that the authors discussed in depth how this research could benefit the treatment and prevention of conditions like kidney stones—not weight loss or cancer. And this makes sense since what we eat influences urinary pH. A review in the *Journal of Environmental and Public Health* explained how a diet with a high acid load, as seen in low-carb high-protein diets, can change urinary chemistry resulting in an increased risk for kidney stones.²

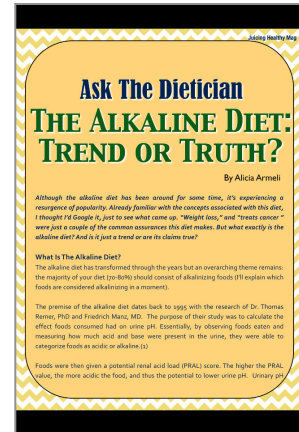
Natural Systemic pH Regulation

As seen, food can alter urinary pH, but the question still remains whether or not it can alter whole body pH. Just to recap, the pH scale runs from 1-14 with values less than 7 being acidic and greater than 7 considered alkaline. pH levels vary throughout the body with blood and tissue fluid normally ranging from 7.35 to 7.45 whereas the stomach is naturally acidic at 1.5-3.5. Thanks to physiological buffers like the urinary and respiratory systems as well as several innate chemical buffers, a healthy body is able to tightly regulate its pH.³

The fact that food doesn't have such a drastic stronghold over the body's pH is a relief to say the least. When the body's pH is swayed outside of its homeostatic zone, it's a sign of danger. Severe pH imbalances can be complications associated with respiratory diseases or diabetes mellitus and may be fatal.

Low-Grade Metabolic Acidosis & Disease

Commonly, when people talk about the body being acidic, they aren't referring to the indicated fatal changes in pH but to what's known as low-grade metabolic acidosis. Research is emerging



regarding how what we eat may, over time, lead to a sub-clinical mildly acidic environment in the body. This is the type of acidity the alkaline diet proposes to treat.

Current research shows what we eat can influence systemic pH. A 2015 study published in the *European Journal of Clinical Nutrition* found that blood and urine pH of young adults and elderly persons following a 7-day normal protein diet consisting of more fruits and vegetables tested more alkaline in comparison to those who ate higher protein diets with no fruit and vegetable intake.⁴

Although the results in this study are not considered drastic, the question still remains: could a mild but constant acidic pH **over time** encourage the development of chronic diseases such as cancer?

Although there's no direct link between diet-induced low-grade acidosis and cancer, pH imbalance has been seen to influence activity at the molecular level. For example, acidic levels in the space surrounding cells have been seen to encourage metastasis potential, or the spread, of cancer cells. And as we get older, we may be more at risk. With age, our kidney function declines as so may our ability to effectively regulate our pH.⁵ This may amplify the long-term effects of a nutrient-poor acidic diet.

Next Steps

First, truth be told, the alkaline diet is (unlike many diets out there) actually healthy. This could, nevertheless, be due to a combination of reasons entirely unrelated to pH. A study published in *Osteoporosis International* discussed how a higher intake of fruits and vegetables was associated with greater lean muscle mass in women. However, the reasons behind these results are multifaceted. The authors of the study concluded that although a “small but significant positive association between a more alkaline diet and muscle mass” exists, it was also essential to recognize that “protein is important for maintenance of muscle mass” as is “eating fruits and vegetables that supply adequate amounts of potassium and magnesium.”⁶

Limiting a diet's success to only one factor would not be telling the entire story. Consuming more fruits and vegetables will also boost antioxidant nutrient intake aiding in the fight against free-radical damage to cells and tissues. Less animal protein will most likely equate to a diet lower in saturated fat. Eating more plants will mean ingesting more of the fiber that nourishes healthy gut bacteria. Fruits and vegetables are nutrient-rich low-cal foods that may help maintain a healthy weight. And the list goes on.

Secondly, forget the percentages, PRAL numbers, and just start small. Decrease processed foods as much as possible and increase whole foods—especially fruits and vegetables. For example, try to incorporate a fruit and/or vegetable with each meal and snack. Pay attention to how much you eat by listening to your body's innate hunger and satiety cues.

And last but not least, demonizing food is not the answer. Acidic or not, each food group has its place in a healthy diet. Under the alkaline diet, whole grains may be considered acidic but they're also sources of vitamins, minerals, and fiber. Animal protein is a rich source of vitamin B-12 and, unless supplemented, this vitamin can't be acquired by eating plants alone.

Leave diets at the door and intentionally start nourishing your body with whole foods. In doing so, you can trust that it's able to maintain its balance naturally.

REFERENCES

1. Remer, T. & Manz, F. (1995). Potential renal acid load of foods and its influence on urine pH. *Journal of the American Dietetic Association*, 95: 791-797
 2. Schwalfenberg, G. K. (2012). The alkaline diet: Is there evidence that an alkaline pH diet benefits health? *Journal of Environmental and Public Health*. Article ID 727630. 7p. doi:10.1155/2012/727630
 3. Saladin, K. S. (2010). *Anatomy & physiology: the unity of form and function* (5th ed.). New York, NY: McGraw-Hill.
 4. Hietavala, E. Stout, J. R., Hulmi, J. J., Suominen, H., Pitkänen, H., Puurtinen, R., Selänne, H., Kainulainen, H. & Mero, A.A. (2015). Effect of diet composition on acid-base balance in adolescents, young adults and elderly at rest and during exercise. *European Journal of Clinical Nutrition*, 69: 399-404. doi:10.1038/ejcn.2014.245
 5. Robey, I. F. (2012). Examining the relationship between diet-induced acidosis and cancer. *Nutrition & Metabolism*, 9: 72. doi:10.1186/1743-7075-9-72
 6. Welch, A. A., MacGregor, A. J., Skinner, J., & Spector, T. D., Moayyeri, A., & Cassidy, A. (2013). A higher alkaline dietary load is associated with greater indexes of skeletal muscle mass in women. *Osteoporosis International*, 24: 1899-1908. doi:10.1007/s00198-012-2203-7
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