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Alkalinity is key to your health

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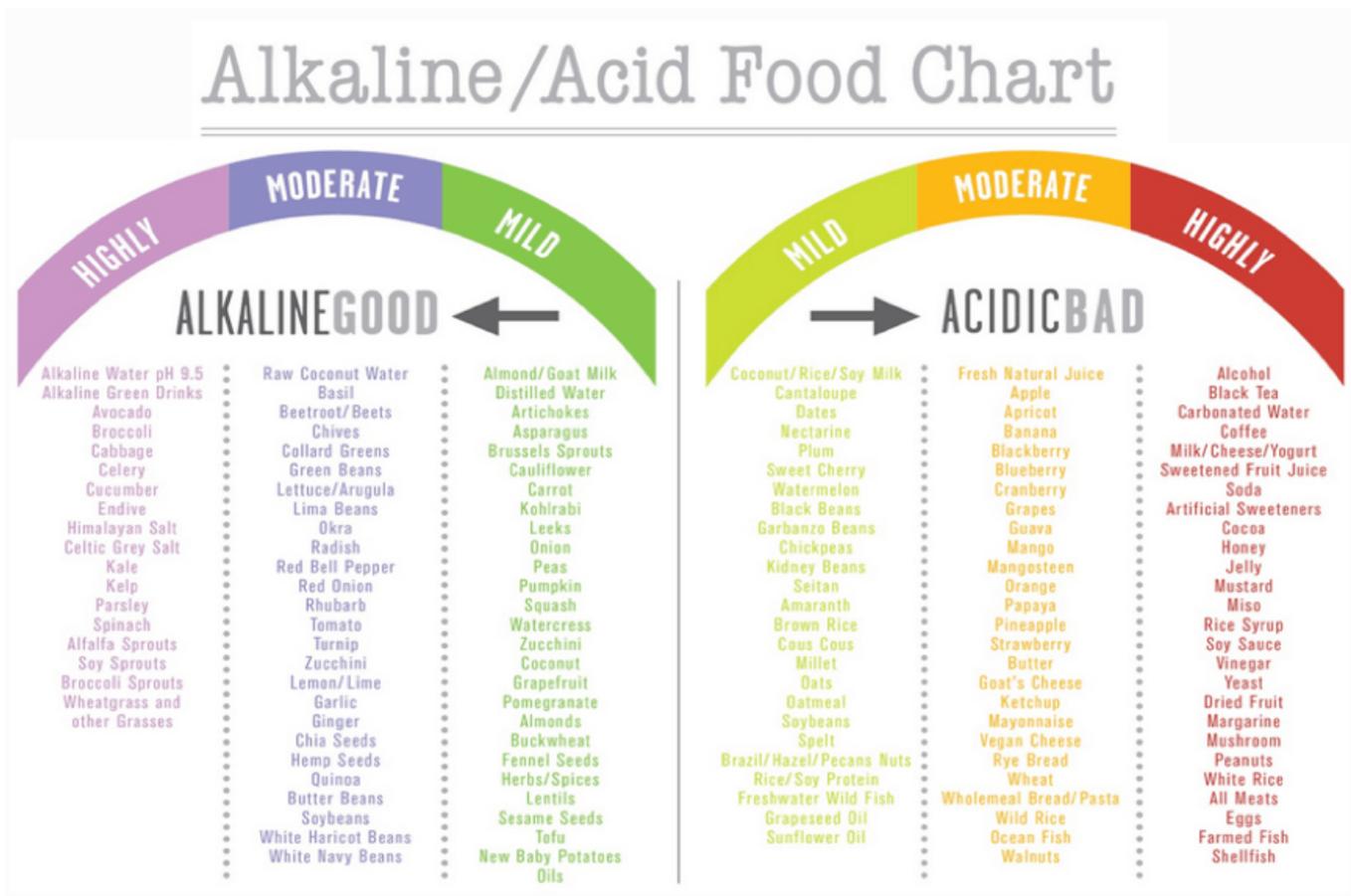
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Biology has everything to do with the acid and base balance within our bodies. When we are alkaline, our immune system and our well-being are favored. When we are acidic, pathology is favored. Achieving and maintaining alkalinity is key to our health.

Our environment, which is composed of our physical, emotional, social and spiritual state, affects our pH. It is well known that many chronic diseases such as high blood pressure, heart disease, arthritis, and cancer may result in excess acidity of the body. We also know that the body tends to become more acidic due to dietary habits and stress.

A change in pH of body fluids can have a profound effect on cells, organs, and overall well-being.





The optimal pH of different body fluids or compartments varies. Arterial blood has a pH of about 7.4, and the body's normal physiology can only function between pH of 7.38-7.44. [1] Intracellular fluid, the environment within cells, have a pH of about 7.0 and venous blood and interstitial fluid (the space between cells and tissues) have a pH of about 7.35. [2] The body must do anything and everything to maintain this pH balance. Testing the pH level of saliva fluid best represents the value as it is more conducive to intracellular pH.

The pH scale measures hydrogen ion concentrations on a log scale; a difference of 1.0 means a 10-fold difference in hydrogen ion concentration. [3] If hydrogen concentration increases then there is acidosis, an acidic environment. If hydrogen concentration decreases then alkalosis ensues, an alkaline environment. Acidosis or alkalosis can be caused by disease, diet, exercise, state of mind, stress, respiration just to mention a few.

Systemic physiologic changes can influence a slight change in pH in spinal fluid and cerebral fluid [4], which may cause a reduction in affinity of hemoglobin for oxygen. The decrease in hemoglobin affinity (poor

oxygen delivery), may stress cells and organs, which could result in tachycardia, elevated heart rate, as well as other physiologic compensatory mechanisms. Hypertension may be one of the physiologic results.

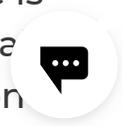
Chronic blood acidosis can lead to muscle loss or degradation [5] in extreme situations, such as [cachexia](#). Skeletal and cardiac muscle cells, as well as organ function, are adversely affected. A low pH depresses cardiac muscle cell contractions, thus decreasing the intensity of the heart muscle's contraction.

Smooth muscle cells are also impacted by acidosis. For example, vascular smooth muscle cells contract with increases in extracellular pH and relax with decreases in pH. When the vascular smooth muscles contract one's blood pressure rises. Conversely, when vascular smooth muscles dilate, blood pressure drops. A rise in extracellular pH increases the influx of calcium into vascular smooth muscle cells, to compensate or regulate blood pressure. Similarly, a decrease in pH inhibits calcium entry into cells.

Acidosis has an adverse effect on bone, causing an increase in loss of calcium. This could lead to osteoporosis or weakening of the bone. When blood pH drops below pH 7.35, osteoclast cells are activated thus reabsorbing or demineralizing bones.

In bone cell experiments, a drop of pH of less than 0.1 doubled the amount of bone resorbed by osteoclasts. During normal bone remodeling, osteoclasts resorb bone and build bone. Remodeling is influenced by how the weight is applied to a particular bone. A low pH, or acidosis, inhibits the bone-building activity of osteoblasts [6], contributing to the overall bone loss. At a high pH of 7.4 or above, osteoclast activity is suppressed.

Some studies have shown that acidic environments help cancer cells grow. A diet high in alkaline foods (high pH) and low in acidic foods may raise the body's pH levels thus making the body more alkaline. There is general agreement amongst natural healers and medical professionals alike that changing a patient's diet is extremely helpful when someone confronted with a cancer diagnosis. The goal of an alkaline diet for cancer



is to achieve an optimal balance between acid-forming and alkaline-forming foods [7]. An alkaline diet for cancer also dramatically reduces the strain on the body's acid-detoxification systems.

Your state of mind can also influence your organ function [8]. When one is calm and happy, heart rates tend to decrease and blood pressures lower. However, given one's inability to manage unusual events may result in just the opposite. The negative emotions of anger, resentment, pride, and fear are the most powerful and acidifying of all feelings. Anger is probably the most powerful and acidic of them all. If we are angry, then we become more acidic; if we are happy, we become more alkaline.

As you can begin to see the human body is a highly complex system with numerous feedback mechanisms and interactive mechanisms affecting all our physiologic responses.

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