



Research Article

Copyright © Manfred Doepp

The pH value Inside the Organism, How Important is it?

Manfred Doepp*

Holistic Center, Switzerland

*Corresponding author: Manfred Doepp, Holistic Center, 13 Haupt St., Abtwil 9030, Switzerland.

To Cite This Article: Manfred Doepp. The pH value Inside the Organism, How Important is it?. Am J Biomed Sci & Res. 2023 19(1) AJBSR. MS.ID.002547, DOI: [10.34297/AJBSR.2023.19.002547](https://doi.org/10.34297/AJBSR.2023.19.002547)

Received: 📅 May 14, 2023; Published: 📅 June 02, 2023

Abstract

The pH in the organism is maintained by extensive and feedback compensatory mechanisms, in the slightly alkaline range above 7.0. Why alkaline? Because in the acidic range there are electron deficits and the molecules thus often become “free radicals” which aggressively attack other molecules. This is only useful in the stomach and should not be altered, at most by “acid attractants” such as bitter liqueurs. Conventional medicine as well as nutritional science only recognize a manifest hyperacidity in need of treatment and doubt that a latent hyperacidity could be a basis for many diseases. In this article it is shown that this latent hyperacidity is not an independent disease, but it is the basis for various diseases. The preventive treatment is simple, it is intake of alkaline-forming foods and substances, in the simplest case baking soda. Because bicarbonate is the most important buffer of the organism against the danger of hyperacidity.

Introduction

Since Otto Warburg was awarded the Nobel Prize in 1931, we have known that there are two prerequisites for cancer and other serious diseases in the body: hyperacidity (pH below 7) and an oxygen deficit [1]. What does an acidic pH value mean? It means a deficit of electrons in the ionic shells, which has the effect of being free radicals. These are ions which, as a result of their electron deficit, are eager to snatch electrons from the shells of other atoms or ions in order to reach a neutral state. Unfortunately, the atoms or ions from which electrons have been snatched usually become free radicals themselves. This creates a chain reaction that can only be stopped by adding free electrons. So, antioxidants are alcalic and elektron-donators. Alkaline states (pH above 7) contain ions with a surplus of electrons in their shell. They can spend electrons without suffering themselves [2]. There are two tissues in the body that need to have a constant and slightly alcalic pH, it is the blood, and it is the connective tissue/mesenchyma (including the muscles). The blood pH value should be around 7.38, i.e., in the slightly alkaline range, with a slight surplus of electrons. The connective tissue pH value should be around 7.15. The intracellular pH is also 7.15. Conclusion: the organism strives for a slightly alkaline state with electrons surplus and ensures with feedback processes that it is maintained. Acids, on the other hand, can be dangerous and must be monitored and neutralized (except in the stomach). The importance of this value can be seen in the fact that the body has

several ways to maintain this alcalic value. It can get rid of acids via the very acidic gastric juice (which should have a pH value of approx. 1.5), via the kidneys, via breathing, and alternatively via the skin/the sweat. Interesting: if the body wants to rid itself of acids, all fluids leaving the body become acidic, even the tears.

General Opinion

In order to get to know the general opinion, let us ask Wikipedia: [2] «Acidosis (from Latin acidum) is a disturbance of the acid-base balance in humans and animals that causes a drop in the pH value in the blood (or other body fluids). If the pH in the blood is below 7.35, it is called acidosis. The reference range for inhumans is 7.35 to 7.45. If it is above that, it is called alkalosis. The nutritional acidification of the body that is sometimes assumed in alternative medicine or complementary medicine (see alkaline diet) is not based on acidosis. In respiratory acidosis, there is too little exhalation of carbon dioxide. In metabolic acidosis, there is an accumulation of too many acid metabolites in the blood, such as derailed sugar disease or chronic kidney disease. The pH drops when the buffering capacity of the blood buffer (see acid-base balance) against acids is exhausted. This leads to a sudden sharp drop in pH and acute hyperacidity occurs.

Anaerobic glycolysis (e.g., due to oxygen deficiency) and the increased formation of ketone bodies (due to insulin deficiency)



lead to an increase in the concentration of acid metabolites (lactate, ketone bodies) in the tissue and thus to tissue acidosis. Acidosis represents a respiratory stimulus. Deepened breathing compensates for non-respiratory acidosis, such as may occur in renal failure. Compensatory hydrogen carbonate output by cells is associated with potassium output, resulting in hyperkalemia. Acidosis inhibits glycolysis and promotes glucose breakdown via the pentose phosphate pathway. On the heart, acidosis has a negative dromotropic effect (slowed excitation propagation due to closure of gap junctions) and a negative inotropic effect (decreased cardiac output due to reduction in the open probability of calcium channels), which, together with the vasodilatation triggered by low pH, may result in a drop in blood pressure.

Detection: Acidosis is detected by blood gas analysis. Based on the measured values for bicarbonate and carbon dioxide partial pressure in the arterial blood, a distinction can be made between a respiratory and a metabolic disorder. Respiratory acidosis can be recognized by an increased partial pressure of CO₂ (PCO₂); in a metabolic acidosis, the standard bicarbonate concentration is lowered. **Treatment:** In acidosis, the cause must be eliminated if possible. If the pH drops below 7.1, correction can be made with bicarbonate.

Deficits in the Common Understanding

However, if bicarbonate is a cure for acidosis, then an essential proposition of conventional medicine mentioned above must be questioned, namely: « The nutritional acidification of the body that is sometimes assumed in alternative medicine or complementary medicine (see alkaline diet) is not based on acidosis. » Conventional medicine does not want to accept that there is a diet that is hyperacidifying, and likewise that there is a diet that can treat hyperacidity. It is repeated routinely and prayerfully: “with a wholesome and balanced diet there can be no hyperacidity”. An illusion. This is why then only in severe cases a therapy with bicarbonate is performed [3].

In-questioning

Let's ask the question: how many people eat a wholesome and balanced diet? Unfortunately, this is only a small percentage of wealthy people from the upper class. With them, on the other hand, there is the danger of a luxury diet with too many animal proteins. The vast majority of people eat a low-quality diet, with cheap and industrially processed products. These in turn contain many unhealthy ingredients, i.e., sugar of all kinds and cheap fatty acids, poor in essential amino acids. The consequence: overacidification in the organism. If we now consider bicarbonate as the therapy of choice for hyperacidity, the question arises: why can't sodium bicarbonate («natron») be used as a permanent nutritional treatment? It is nothing more than baking soda, simple and inexpensive. Accordingly, what can be recommended to almost all patients: “Eat as few sweets as possible, eat only three kinds of acids (namely, apple cider acetic acid, right-turning lactic acid, and citric acid), avoid fast food and junk food, and prefer organically grown products”. The

standard conventional medical use of proton inhibitors as gastric protection is therefore contraindicated. This is because one prevents the stomach from ridding the mesenchyme of acids, and one hinders optimal predigestion in the stomach, which requires highly concentrated hydrochloric acid. Another question to ask would be: is there an alkaline diet? [3] Or is it an unscientific idea? The reason for the alkaline diet is the hypothesis that the body is “over acidified” by too many acid-producing components in the foods of the usual “civilization diet”, which brings the acid-base balance of the body into an unhealthy imbalance. Such a “chronic over acidification” (also called “latent acidosis”) has in the long run health-damaging consequences, which express themselves in the form of various diseases and chronic ailments, such as gout, arthrosis, rheumatic diseases, neurodermatitis, osteoporosis, muscle pain, chronic fatigue, sleep disorders, cardiac arrhythmias, allergies and also cancer. Sugar, coffee, cereal products, carbonated mineral water, and animal protein sources such as meat, milk, and cheese, for example, are said to be among the foods that cause such “latent hyperacidity” [5].

The history

The most famous physician of the late Middle Ages was certainly Paracelsus (*1493 in Einsiedeln/Switzerland, †1541) [6]. In his wandering years he was called to the courts of nobles. The dukes often suffered from severe joint pain. Paracelsus diagnosed gout or rheumatism, caused by hyperacidity. The dukes had the right to hunt and ate a lot of meat from wild animals. The excessive intake of meat proteins led Paracelsus to forbid them from the high consumption of game. The princes usually refused to give up this privilege and sent Paracelsus away. Undoubtedly, however, was his correct knowledge of pathogenesis, cause (game-protein overload) and effect (gout). The thesis that an imbalance of acids and bases in the body causes disease was probably put forward by Francis de la Boe Sylvius in the 17th century, at that time still referring to the “humors” according to the ideas of humoral pathology. The recommendation was to treat patients accordingly alkalis. At the beginning of the 20th century, Howard Hay and Franz Xaver Mayr first took up this theory. From Mayr comes the saying “acid is the cell poison par excellence” [7,8,9]. The hypotheses of hyperacidity of the body became popular in the early 20th century and were advocated by several diet founders, including Howard Hay (food combining diet), Maximilian Bircher-Benner (whole food diet), and Are Waerland (Waerland diet). Swedish biochemist Ragnar Berg determined the alleged acid and base content in many foods by analyzing ash after combustion. He equated cations with bases and anions with acids. These findings correlated with determined urinary values after predominantly vegetable and predominantly meat diets. Berg then formulated the theory of excess acid in the body, which could eventually even lead to “acid death,” as he linked ketoacidosis in diabetics to hyperacidity [10,11,12].

This theory was taken up by the Swiss nutritionist Bircher-Benner: He said: “If the acid excess grows so high that the food bases

are no longer sufficient (...) the organism gradually falls into acid distress until finally acidosis, a state of life-threatening acid poisoning, sets in [7].” Bircher-Benner also held uric acid responsible for the development of cancer. The physician and biochemist Otto Warburg observed that cancer cells ferment glucose instead of burning it, so that the tumor acidifies its environment through lactic acid (Warburg effect) [1]. The World Cancer Research Fund [13] has compiled scientific studies on food and cancer risk. Solid study results are available for the following statements: Whole grains: reduce the risk of colorectal cancer. Foods containing dietary fiber: reduce the risk of colorectal cancer. Foods preserved by curing: increase the risk of stomach cancer. Red meat: increases the risk of colorectal cancer. Processed meat: increases the risk of colorectal cancer. Consumption of calcium supplements: reduces the risk of colorectal cancer. A higher dietary glycemic load: increases the risk of endometrial cancer. In general, the higher the glycemic load in the diet, the higher the risk of cancer. It can be concluded that a plant-based diet should be the basis of nutrition, and that meat and sugar are risk factors. They go hand in hand with latent hyperacidity.

Conclusions

In conventional medicine there is a binary assessment scheme: either the body can compensate for the acids as a normal condition, or it suffers from manifest hyperacidosis which must be treated with infusions. The state of latent hyperacidity is not recognized as abnormal nor treated. This view is prejudiced and dogmatic. In reality, it should be recognized that the status of latent acidosis is very common and is a basis for various civilized diseases. The pH value in the organism is of utmost importance, although the organism makes great efforts to stabilize the condition with the help of compensatory mechanisms such as bicarbonate. However, with today’s widespread unnatural diet, our bodies are often overloaded. The logical everyday use of bicarbonates and other alkalizing agents is under evaluated. Not only the oral supply is possible, but also the use of alkaline baths, as they were common e.g., with Celts and Germanic tribes. The “fountains of youth” were nothing other

than alkaline. Perhaps this ancient knowledge should be reactivated. Unfortunately, the views of nutritional medicine are similarly inadequate. It should finally be recognized that alkaline root vegetables should be the basis of the food pyramid and not animal or high-sugar products.

References

1. Petra Werner (1988) Otto Warburg: Von der Zellphysiologie zur Krebsforschung. Biographie. Berlin 1988, ISBN 3-355-00789-7
2. Azidose.
3. (2020) The Alkaline Diet: Another Cancer and Diet Claim. In: American Institute for Cancer Research. 2 November 2020.
4. <https://www.deutschlandfunkkultur.de/die-geschichte-der-basenkost-100.html>
5. <https://www.wcrf.org/nutrition-in-europe-policy-database-nourishing-moving/>
6. Udo Benzenhöfer: Paracelsus. (1997) 3. ed. Rowohlt, Reinbek bei Hamburg 2003, ISBN 3-499-50595-9.
7. M. O. Bircher-Benner: Ordnungsgesetze des Lebens. ed.: Andres Bircher. Edition Bircher-Benner, Braunwald/Switzerland 2014, ISBN 978-3-906089-01-0
8. <https://www.deutschlandfunkkultur.de/die-geschichte-der-basenkost-100.html>
9. Golay, Allaz, Ybarra, Bianchi, Saraiva (2000) de Tonnac: Similar weight loss with low-energy food combining or balanced diets. In: International Journal of Obesity 24(4): 492-496.
10. <https://www.spektrum.de/lexikon/ernaehrung/waerland-kost/9258>
11. Christian Rummel: Ragnar Berg (2003s) Leben und Werk des schwedischen Ernährungsforschers und Begründers der basischen Kost. Verlag Peter Lang, Frankfurt am Main/Bern/Wien/Oxford/ New York 2003 (= Europäische Hochschulschriften, Reihe VII, Abteilung B: Geschichte der Medizin. Vol. 10)
12. (1994) Erich Rauch: Lehrbuch der Diagnostik und Therapie nach F. X. Mayr, Haug, Heidelberg, 1. ed. 1994, ISBN 3-7760-1392-3
13. <https://hp-meyer.de/ernaehrung-und-krebspraevention-eine-globale-perspektive-ergebnisse-des-world-cancer-research-fund/>