



Acid-Base Regulation

**A Fundamental Process in the Organism:
Nutritional and Lifestyle Errors Are Decisive Factors**

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Interest in the Acid-Base Regulation of the human body has been increasing continually in recent years. Why? Does it merely cover a “fashionable“ trend, as with many other health recommendations that occur like comets? No, entirely to the contrary: in the acid-base regulation, we are at the very center of the most essential metabolic questions, at the very control-center of all vegetatively-regulated processes of living organisms.

Life is the current of energy and all of its changes. But these two processes are dependent on unchangeable laws, which may not be changed without harm. They already occur beginning with the first and smallest unicellular form, determining the natural existence of each single cell quite independent from being a singular cell of a life form made of multiple cells.

Acid Concentration Influences Enzymatic Reactions

Energy is won in living organisms exactly as in inorganic forms, namely by the oxidation of carbohydrates. Energy, which previously served for the formation of larger carbohydrates becomes free through the combustion/oxidation into smaller fractions, and the cell draws on it for its own diverse metabolic tasks. In this process, a substance is developed which may become dangerous for the cell when it increases too much, namely carbonic acid. It makes the cellular milieu “acid.“

Metabolic processes depend on a maximally stable cellular acid concentration. This concentration may tilt only within a small range,

which is the pH-value 7.3 and 7.4. When it rises or falls slightly, certain enzymatic reactions, which regulate the metabolism, are precipitated, because the effect of the enzymes depends on the precise acid degree that is optimal for it. If it changes, the metabolic process stops. That means toxicity and, with it, the death of the cell. In simplified terms one could say that the acid itself constitutes the cellular toxicity.

This threat is banished through a series of regulatory mechanisms. The best-known way is through breathing. With every breath, we not only take in the oxygen needed for combustion, but simultaneously we free the body of the dangerous “toxic“ carbonic acid. Therefore, our life is unthinkable without breathing. The stoppage of the breath is equal to stoppage of life. Therefore, the care of our natural breath should be one of our main concerns.

Mineral Substances Represent a Decisive Factor

Much earlier, at the place of carbonic acid development, the most important but less familiar regulatory mechanisms step in. Within the cell, mineral substances and especially potassium and sodium, neutralize the freshly occurring acid into a harmless salt, which subsequently becomes eliminated through the kidney via the circulation. The minerals used up by this process must be replaced, or the detoxification will falter - a fateful process which has been considered much too little until now. The problem consists in the fact that constantly acids are developed and mineral substances (bases) are used up.

Ragnar Berg was the first scientist who concerned himself with this question and, simultaneously, provided us with guidelines that have maintained their validity to this day. He demanded that every healthy human being should eat daily four times as many “natural“ foods such as salads, vegetables, and fruits than the total of all foods other than that. Most of these natural foods are rich in the minerals that are important for survival. Whoever is ill, requires even more of them, namely 7-8 times the amount of other foods. Only on the condition that the used-up bases are entirely replaced does the health condition and the adaptability toward stresses remain assured. This point sets the switches for health and disease, and that, without compromise.

Most People Already Have Their Account “in the Red“

The regulation of the proper balance between acids and bases in the body is the task of the Acid-Base Regulation. It accounts daily what the balance is, just like a conscientious book-keeper, regulating the survival functions of breath, circulation, digestion, elimination, hormone production, defense and immunity, and much more, minute by minute. After all, who is aware of that the damaging carbonic acid for all these regulations is the decisive factor? Breathing and circulatory centers are stimulated by this factor. Tiredness and sleep disturbances express this increasing acidity; while a last SOS-signal from the body comes from *pain!*

Excepting the very few really healthy human beings, all of us are



unfortunately deeply into red numbers, that is, underbalanced. We are too acid. At the beginning of every disease, there is an overacidified condition, without exception! Disease is nothing other than the expression of a maximally stressed Acid-Base Regulation. It is its effort in balancing the deficit of one's acid-base value. Fundamentally, all regulatory mechanisms of the body, inclusive of the disease, serve the one purpose of balancing the developed "deficit" without damages to the cells. Only when all possibilities are exhausted, this regulation breaks down into an incurable chronic disease. In contrast, acute diseases are an (often-desperate) attempt of the body in mobilizing whatever reserves available to bring about a new trend and to call attention to an otherwise threatening breakdown. Therefore, it is important to establish the pH of the body early enough - which is, before the full manifestation of the disease.

Control of the pH is Essential

The control of the pH is quite simple: for one whole day, we test every urinary excretion with a corresponding indicator paper (obtainable in drug stores), which shows pH values between 4.0 and 7.5. If the value shows repeatedly below 6.2, or when it constantly lies around 5 with no upward divergence - that is, showing between 6 and 7 - danger exists. Change your nutrition to vegetarian and maybe take a basic preparation such as Alkala, Basika, or other proven mineral preparation. Moreover, one should move about more and maybe take up a sport.

All this serves the reduction of acids in the body.

This sentence may seem strange - but all diseases that one tends to see as enemies should be looked upon as valuable regulatory processes. When one precisely examines the background factors, one discovers that they indicate important excretory crises of the body. Whoever hears their messages is taking good advice. In this, all eliminative processes of the body, including the pores of the skin, are applied in a singular effort of eliminating the dangerous acid substances: intestine, urinary paths, vulva, mouth, eyes, nose, ears and glands. One should support these efforts through baths, brushing of the skin and wraps of every type.

Acute and chronic catarrhs indicate how the stricken organs are struggling with the harmful acid. Even the most serious chronic diseases of humanity nowadays, such as cancer, multiple sclerosis, and the ever-increasing diseases of the rheumatic formation cycle, all have as their most important precondition for healing the normalization of the pH value. For many people, this was and is the only possible salvation. Moreover, heart infarcts and strokes can be favorably influenced and even avoided through dietary changes and a high supply of bases.

Connective Tissue Plays a Significant Role

Acute and chronic diseases of the eliminatory organs are manifested by the body only due to emergencies. With ongoing stress, these

organs would be exhausted and failing quite too early. Therefore, the body has manifested an organic system that is three times as large as the liver, for the possible storage of these acids. The *connective tissue* connects and surrounds all cells and organs. Therefore, it is exceptionally well suited to catch up and store the acid as it is released from the cell. The storing of acids means that the kidneys are getting significant release from stress.

After physical effort, or eating a meal, the acid amounts become so high that the kidneys cannot promptly eliminate the salts formed in the neutralization, because they work too slowly. Therefore, the connective tissue is also called a "pre-kidney" (Volhard). During the nightly rest, the kidneys eliminate the deposits of salts, after they are transported by the bloodstream as salts. For this reason, the urine is most concentrated and maximally acid in the mornings.

It is easy to note the degree of acid storage by the condition of the connective tissue: the originally soft and supple condition of the subcuticular cellular tissue becomes firm, hard, and painful when pressed. It becomes "gelatinous" and changes into "Cellulitis". Only when the depots of the connective tissue suffice no longer, the pathological over-acidification of the entire organism, called „*acidosis*“ sets in after a period of overactivity of the excretory organs, characterized by more or less acute or chronic inflammations. During this situation, the "Alkaline reserves" of



the blood become important for the body. By this is meant a stock of diverse mineral substances, which circulate in the blood and - precisely because of the acid danger remain available for the utmost emergency.

Build-up of Acidosis Occurs in Three Stages

According to the severity of the hyperacidity, one differentiates three stages of this undesirable condition:

1. *“Latent Acidosis“* - in which the connective tissue depots are filling more and more;
2. *“Compensated Acidosis“* - in which the eliminative organs work at high gear (inflammations and catarrhs) and the alkaline reserves of the blood are attacked, however, without sinking below the critical value of pH 7.0;
3. *“Decompensated Acidosis“* - in which the alkaline reserves have sunk below the normal value; the blood and tissue can no longer manage and the *“toxification“* of the body through acids begins. This is the first condition of chronic diseases.

For our consideration, the stage of *“Latent Acidosis“* is the most important because it is possible to come into full control through dietary and lifestyle changes: sufficient regular exercise, as much as possible in fresh air, sufficient sleep, solution of problems and not too much physical or mental stress.

Let the Nutrition be Alkaline

In dietary change, the primary point is the correct relationship between

foods rich in acids and those rich in bases. At least 80% of the foods should be rich in bases. The following foods are rich in this way:

Rich in acids:

- Protein (meats, fish, egg, sausages, etc.)
- Milk products (not milk itself)
- Carbohydrates (sugar, all types of grains, except Dinkel baked goods)
- Sour fruits and citrus fruits (especially older persons should avoid these)
- Nuts
- Coffee, tea, alcohol.

Rich in bases:

- All leafy salads
- Vegetables (except cauliflower, artichoke bases)
- Sweet fruits, such as pears, figs, bananas, raisins, tropical sweet fruits
- Milk, raw and fresh.

Whoever is too *“acid“* should, additionally, take alkaline preparation. Especially, at least for a time, all foods that are rich in acids should be omitted until the pH of the urine moves more and more between 6 and 7. One is best under a doctor's care for such cases.

It should be noted that in most cases, the digestive apparatus has been functionally very disturbed since childhood, due to wrongly combined foods. The damaged intestinal function, thus, becomes the second important source for tissue acidosis. Therefore, to relieve this hyperacidity of the body, a repeated course of intestinal cleansing is essential.

Summary and Review

1. The cellular metabolism produces dangerous acids, especially the carbonic acid.
2. Within the cell, the increase of acids beyond a certain critical point leads to a blockage of the enzymatic functions.
3. In a healthy person, the acid is neutralized already within the cell but also in the tissue and blood (*“Alkaline reserve“*) where it becomes neutralized through minerals (bases) and the formation of salts.
4. The elimination of carbonic acid happens mostly by the breath through the lungs; the elimination of salts is through the kidneys.
5. For the relief of the kidneys, the connective tissue (*“Pre-kidney“*) stores acids as they are released from the cell, and they are excreted apart from meals and physical muscular work (e.g. nights).
6. The complete excreting of the acids occurring through metabolism presupposed a diet *“rich in bases“*. At the most 20% of food taken in may consist of foods rich in proteins.
7. If this percentage is not kept, a resolvable *“Latent Acidosis“* (connected with acute and chronic eliminatory catarrhs) develops. In the end, hyperacidity of the entire organism occurs along with chronic general diseases such as multiple sclerosis, rheuma, and cancer -



which can hardly be eliminated.

8. The degree of tissue acidosis can be proven by the urine through indications by using the litmus paper test. The lower the value, the more "acid" is the person. Suspicious values lie between pH 6 and pH 4.
9. The most important measure in all forms of tissue acidosis is a dietary change and a natural lifestyle (sufficient motion, sleep, lowering of physical and mental stress).

10. Even in far-advanced acidosis, help will come through changes by corresponding detoxification of the tissue and the lifestyle.

11. Apart from nutrition, also alkaline preparations will be helpful for the deacidification, especially of chronically ill patients.

12. These preparations have also proven themselves before, during, and after a heart-infarct or stroke. In these, an indication value of 7.0-7.5 should be the goal.

*Comment by the publishers:
The concept of "Kohlensäure" (carbonic acid) occurring also in this article is frequently misunderstood to mean "Kohlendioxid" CO which, however, is only an anhydrid of the "genuine" Kohlensäure or H_2CO_3 .*

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