

# Hypo-Alkalinity, by Herbert Shelton

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Acidosis is the term misapplied to a lessened alkalinity of the body fluids. The fluids of the body are normally slightly alkaline. A lowering of the alkalinity of these fluids is more properly termed hypo-alkalinity. Acidosis or hypo-alkalinity is defined as a condition characterized by a deficiency of fixed alkalis in the body, which leads to an increased production of ammonia in the urine and a high acidity.

Acidosis is not acid blood, for the blood never becomes acid during life. An alkaline blood and lymph is necessary to life and health and for the blood to even reach the point of neutrality would cause speedy death.

The normal ratio between the alkalis and acids of the body is approximately 80 to 20 - 80% alkali and .20% acid. This proportion is maintained in balance by the so-called "buffer salts" - sodium, potassium, calcium and magnesium - from which either side may draw as need arises. When this "buffer" or "balance wheel" is in normal order any excess of acids in the body is promptly neutralized. It is only when there is a deficiency of these salts that troubles may arise. A shortening of the relationship between these is wrongly termed acidosis.

The body will not tolerate any free acid for a minute, except in the stomach during the process of digestion. All acids are instantly "bound," by being combined with alkalis, to render them harmless. The body makes use of every resource at its command to preserve its alkalinity for the reason that its cells can thrive only in an alkaline medium and cannot possibly thrive in an acid medium.

Since we supply acids and alkalis to our bodies through food, the matter of a balance between acid foods and alkali or base foods is important. If an excessive amount of acid food is eaten, the blood is forced to draw upon its alkaline reserve, its "buffer salts," in order to maintain its normal alkalinity. When we have taken more acid into the body than we can "bind" without sacrificing some of the bases of the tissues, blood alkalinity falls below the normal level and we have hypo-alkalinity or acidosis.

Every food eaten leaves behind it an ash after it has been used by the body. The ash is either acid or alkaline. Eating too much acid-ash food, or eating it over long periods of time, results in storing acid-ash in the cells and in depleting the body of its alkaline reserve.

Acid-ash foods are all meats, eggs, cheese, milk (in adults), all cereals and cereal products, legumes (except in the green state), nuts, and all denatured foods of all kinds. Denatured foods have been robbed of their bases.

The alkaline-ash foods are fruits (except cranberries, prunes and some plums), all green vegetables and milk (in infants). Fats and oils are classed as neutral foods. Severe acidosis may be produced experimentally by deficient diets, but such severe states are seldom met with in life, except in famine. Maignon has repeatedly shown that an exclusive protein diet is positively toxic even in the carnivora.

Whipple, Slyke, Birkner, and Berg have shown the same thing.

The medical administration of acids, such as salicylic acid, benzoic acid, boric acid,

sulphuric acid, etc., leads to a dangerous loss of bases, for these acids can be rendered harmless and subsequently eliminated only after being combined with alkaline elements. Hydrochloric acid, prescribed by physicians in supposed gastric hypo-acidity, also leaches the body of its bases and aids in producing acidosis. Free acetic acid, as found in vinegar, if consumed in quantities, may lead to symptoms of acid poisoning. It is even more injurious to health than alcohol. The body is called upon to sacrifice its bases to neutralize the acid, while it has a particularly destructive effect upon the red corpuscles and may produce anemia. A diet poor in bases, or food that has been robbed of its bases, has the same deleterious effects. The meat diet, as used in civilized countries, is of this type. An exclusive muscle-meat diet, when fed to dogs, will not maintain health and growth. If dogs are fed on meat from which the juices have been expressed, "emaciation ensues after a time, toxic symptoms set in, death speedily follows, and postmortem examination shows in the skeleton changes characteristic of osteomalacia and osteoporosis." (Osteomalacia is softening of the bones; Osteoporosis is the rarefaction - decrease in density - of bone due to enlargement of its cavities or the formation of new spaces). Cooking meat extracts much of its juices and, where these extracted juices are not eaten, the same draining of minerals from the bones and other tissues of the eater must occur.

Flesh eating animals eat the bones of their prey, for it is here that most of the calcium of the vegetables eaten by the prey is deposited. When a man eats meat he eats only the soft parts, thus he fails to secure the calcium. Carnivorous animals also supply their need for bases by drinking the blood and by eating the internal organs and cartilage. These are consumed raw and with a minimum of loss. Berg says: "It also appears that wild carnivora consume at times considerable quantities of fruits, leaves and buds; they do this especially in the autumn, whereas in the spring they live almost exclusively on animal food."

An exclusive meat diet, like an exclusive grain diet causes a great loss of bases from the body and causes "acidosis." Benedict and Roth found that the basic turn over is much less in vegetarians than in persons on a mixed diet. An excess of bases is always desirable and is necessary to the best utilization of proteins and carbohydrates.

Acids arising from decomposition of foods in the digestive tract require to be neutralized. These, like tea, coffee, cocoa and chocolate, deprive the body of bases.

The exclusive eating of fat is also a source of acidosis; for, the free fatty acids liberated by the splitting up of fat in the intestine cannot be absorbed so far as is known. This neutralization must occur, therefore, in the intestine itself, at the cost of the alkalis of the bile as well as of the food. The unabsorbed fatty acids are eliminated in the stools in the form of sodium soap, calcium soap and potassium soap, and this soap formation robs the body of these bases.

All organic acids produced in the body and all mineral acids deplete the alkali-reserves of the body. The normal processes of life produce acids in the form of waste and the body's bases are consumed in neutralizing them. There is a constant demand for bases and the conventional diet does not supply these in adequate quantities. If our foods do not maintain the normal alkalinity of the blood and

tissues, disease develops; for if there is a lack of bases, the body must withhold from neutralization some of the poisonous organic and mineral acids, so that as these gradually accumulate, an acid-toxemia results.

Violent or long-continued emotional states and overwork result in the formation of acid metabolic end-products that require to be "bound" with bases.

"Acidosis" may be very mild and even transitory in its initial stages, and very severe and dangerous when fully developed. Between these two extremes a large number of intermediate stages may exist. Severe states of acidosis, as seen in certain diseases, develop only after the acid-toxemia has so greatly impaired the organs of the body that metabolism is greatly crippled. The attention of the medical profession has always been fixed upon the severe terminal forms of acidosis and they have ignored its initial stages. The clinical diagnosis of acidosis was made only after the hypo-alkalinity had reached a far advanced and dangerous stage. They looked only for the end-point of the pathological evolution resulting from a progressive acid-saturation and alkali-depletion of the tissues.

The decline of blood alkalinity, as previously pointed out, may be due to one or more of many factors. Whether we regard it as a "rising acidity" or a lowered alkalinity" makes little practical difference so long as we know its sources and how to avoid these.

Whether an increasing acidosis - hypo-alkalinity - is due to the accumulation of the acid end-products of protein metabolism, or to the binding of the too great a proportion of the body's alkalis by the development of acid fermentation in the digestive tract, or to the consumption of an excess of acid-rich and alkali-deficient foods, or to the medicinal use of acids, makes no difference. The results are the same; beginning with a lowered available alkalinity and a resulting crippling of function, proportionate to the degree of hypo-alkalinity, and progressing to serious organic disease and the symptoms of acidosis are fatigue, headache, loss of appetite, sleeplessness, general nervousness, acid stomach (hyperacidity), acid perspiration and frequent troubles - colds and the like - and a sour disposition. Acidosis inhibits growth in the young, depletes the bodies of adults, and lowers vitality. It imposes a tremendous handicap upon pregnancy and lactation. It predisposes to tuberculosis, cancer, pneumonia, appendicitis, measles and other "diseases."

Chronic fatigue is often nothing more than acid-toxemia and this same acid-toxemia, if not removed, will in its extension and continuation, result in premature "old age," functional and organic disease and death. The blood robbed of its normal alkalinity can not neutralize or correct the acid "fatigue products" and these are permitted to poison the body. The health, strength, youth, growth and preservation of the body depends upon a certain fixed degree of alkalinity. Old age is a disease which has not, as yet, taken on definite organic form. It is the result of auto-intoxication, that is, of retention of acid waste.

Men who have become almost fanatical about heredity assert that diet has nothing to do with length of life - it is all a matter of heredity. But if a pair of rats are fed on a diet of meat, grain and tubers, such as potatoes and beets, they will live about one year. If milk and cabbage are added to this diet, the rats live nearly three years. Food does help to determine longevity - make no mistake about that.

The noted surgeon of Cleveland, Dr. George W. Crile, says: 'There is no natural death. All so-called death from natural causes are merely the end-point in a progressive acid saturation.'

The cells of the body are born, pass through their regular life-cycle and are exfoliated and replaced by new ones. Whether they are replaced by normal cells or diseased ones depends wholly upon the kinds of materials out of which the new cells are created and upon what inhibiting waste is present or absent. The body is created anew daily; but if its blood and lymph are not normal the process of renewal is imperfect.