AlkaLife
Reverse Acidosis • Reverse Aging

Is Accumulation of Acid Equal to Aging?

By Sang Whang

Since 1990, I have defined the aging process as the accumulation of non-disposed acidic waste within the body. Based on this definition, the reduction of accumulated acidic waste is the reverse aging process. Since then, I introduced a water additive product called AlkaLife®, an alkaline concentrate made of potassium hydroxide and sodium hydroxide in a 3 to 1 ratio respectively.

Lately I came across two academic papers that support my contention and the contents of AlkaLife®. I can assure you that there have been no collaborations between the authors of these papers and myself.

The first paper is by Drs. Lynda Frassetto and Anthony Sebastian of the University of California, San Francisco, Department of Medicine and General Clinical Research Center. It's title is Age and Systemic Acid-Base Equilibrium: Analysis of Published Data, published in 1996[1)]. The abstract of the paper is given below.

> *To investigate whether systemic acid-base equilibrium changes with aging in normal adult humans, we reviewed published articles reporting the acid-base composition of arterial, arterialized venous, or capillary blood in age-identified healthy subjects. We extracted or calculated blood hydrogen ion concentration ($[H^+]$), plasma bicarbonate concentration ($[HCO_3^-]$), blood PCO_2, and age, and computed a total of 61 age-group means, distributed among eight 10-year intervals from age 20 to 100 years. Using linear regression analysis, we found that with increasing age, there is a significant increase in the steady-state blood $[H^+]$ ($p<.001$), and reduction in steady-state plasma $[HCO_3^-]$ ($p<.001$), indicative of a progressively worsening low-level metabolic acidosis. Blood PCO_2 decreased with age ($p<.05$), in keeping with the expected respiratory adaptation to metabolic acidosis. Such age-related increasing metabolic acidosis may reflect in part the normal decline of renal function with increasing age. The role of age-related metabolic acidosis in the pathogenesis of the degenerative diseases of aging warrants consideration.*

In layman's terms, it means that as we get old we have more acid radicals $[H^+]$ and less bicarbonate $[HCO3^-]$, which brings about age-related metabolic acidosis. This paper is the recognition and treatment of the symptoms, accepting aging as an inevitable fact of life.

I look at acid accumulation as the **cause** of physiological aging; therefore, I view the reduction of accumulated acid as the reversal of physiological aging. In addition, acid reduction can prevent all kinds of degenerative aging diseases.

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Most everyone else who recognizes acid as the culprit attempts to reduce acid by harder and less effective means, i.e., diet and exercise. I promote the use of potassium and sodium to neutralize acid and bring about acid/alkaline balance. It is well recognized that not only is acid/alkaline balance important, but potassium/sodium balance in the human body is equally, if not more critical.

Another paper that Dr. Frassetto and four other colleagues published supports my contention that our body needs more potassium than sodium. The title of this paper, published in 2001, is Diet, evolution and aging (The pathophysiologic effects of the post-agricultural inversion of the potassium-to-sodium and base-to-chloride ratios in the human diet) [2)]. Here is the relevant excerpt from the "Summary" of this paper:

> ***Summary*** *Theoretically, we humans should be better adapted physiologically to the diet our ancestors were exposed to during millions of years of hominid evolution than to the diet we have been eating since the agricultural revolution a mere 10,000 years ago, and since industrialization only 200 years ago. Among the many health problems resulting from this mismatch between our genetically determined nutritional requirements and our current diet, some might be a consequence in part of the deficiency of potassium alkali salts (K-base), which are amply present in the plant foods that our ancestors ate in abundance, and the exchange of those salts for sodium chloride (NaCl), which has been incorporated copiously into the contemporary diet, which at the same time is meager in K-base-rich plant foods.*
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> *Deficiency of K-base in the diet increases the net systemic acid load imposed by the diet. We know that clinically-recognized chronic metabolic acidosis has deleterious effects on the body, including growth retardation in children, decreased muscle and bone mass in adults, and kidney stone formation, and that correction of acidosis can ameliorate those conditions. Is it possible that lifetime of eating diets that deliver evolutionarily superphysiologic loads of acid to the body contribute to the decrease in bone and muscle mass, and growth hormone secretion, which occur normally with age? That is, are contemporary humans suffering from the consequences of chronic, diet induced low-grade systemic metabolic acidosis?*
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> *Our group has shown that contemporary net acid-producing diets do indeed characteristically produce a low-grade systemic metabolic acidosis in otherwise healthy adult subjects, and that the degree of acidosis increases with age, in relation to the normally occurring age-related decline in renal functional capacity. We also found that neutralization of the diet net acid load with dietary supplements of potassium bicarbonate ($KHCO_3$) improved calcium and phosphorus balances, reduced bone resorption rates, improved nitrogen balance, and mitigated the normally occurring age-related decline in growth hormone secretion – all without restricting dietary NaCl. Moreover, we found that co-administration of an alkalinizing salt of potassium (potassium citrate) with NaCl prevented NaCl from increasing urinary calcium excretion and bone resorption, as occurred with NaCl administration alone.*

In layman's terms, potassium deficiency is the cause of many health problems and administering potassium bicarbonate can slow down the normally-occurring age-related low-grade systemic metabolic acidosis and can correct many of the aging symptoms such as calcium and phosphorus imbalances, fast bone resorption rates (slowing down osteoporosis), nitrogen imbalance (reduction of uric acid), etc.

Since Dr. Frassetto's main interest is to cure patients with these problems, the amount of potassium in AlkaLife® is almost negligible for her. However, AlkaLife® is not designed to cure any diseases, but to prevent the onset of aging symptoms by steady consumption. Consumption of large doses of potassium can cause side effects and must be monitored very carefully by doctors.

I would like to extend my sincere appreciation to the doctors in UCSF for conducting this research and bringing these important facts to the attention of the public.

1) Journal of Gerontology: BIOLOGICAL SCIENCES, 1996, Vol. 51A. No. 1, B91-B99
2) European Journal of Nutrition, Vol. 40, Number 5 (2001). ©Steinkopff Verlag 2001

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