

# Keeping The Body In Homeostasis

## Blood pH

I am often asked "What are the main things we can do to promote health and increase wellness?" The foremost thing we can do is to keep the body in homeostasis and let it do what it does best; repair, rebuild and replenish. The first key to homeostasis is correct pH. The more one understands physiologic pH the more you will be convinced about its absolute necessity. Without the correct pH, hormones and enzymes cannot function in their maximum capacity. The optimal pH in oxygenated arterial blood is 7.355 -7.45, optimal pH in carbon dioxide laden venous blood is 7.31 to 7.4.

Blood pH is extremely tightly regulated, so even a drop to 7.25 brings the body to a relative acidic state. For example: the drop from 7.3 to 7.2 will stimulate osteoclastic activity in the bone (bone degradation), inhibits osteoblastic activity (bone rebuilding) and induces a multifold bone mineral loss. Reduced intracellular pH causes swelling and impaired mitochondrial function. This means a reduction in the ability to make more energy and an increase in energy utilization. Reduced intracellular pH brings increased intracellular free water with less efficient metabolism, protein synthesis and increased membrane free radical production.<sup>1</sup>

Another factor to consider in this picture is free radical generation. As the pH drops into the "relative acidity" range, there is an increase in free radical generation.<sup>1</sup> One way to determine pH is with first morning urine. First morning pH reflect the body's ability to buffer excess acidity or net acid excess. This means that a pH below 6.5 indicates that the buffering functional reserve of the body is deficient. The beauty of this test is that it is something that the patient can do for themselves to monitor their own diet.

The following are things which increase the buffering ability of the body and reduce the net acid excess or relative acidity.

- 1) The most important change is in your diet, so increase fruits and vegetables particularly the ones which yield the highest alkaline ash.
- 2) Stop all processed meats and refined carbohydrates, i.e. bagels and pasta.
- 3) Use Celtic sea salt. Celtic sea salt is loaded with approximately 22 bio-available minerals.
- 4) Increase purified water to at least 1 quart per 50#'s of body weight.
- 5) Use salt and soda baths every 3<sup>rd</sup> day.
- 6) Baking soda ½ tsp. at night and 1 tsp of Potassium-HP (with Magnesium) 1 tsp. unless serum potassium is elevated.
- 7) Achieve optimal blood levels of vitamin D. Use the 25-hydroxy vitamin D test and increase vitamin D until the level is between 60-80 ng/ml. Some doctors are suggesting 100 ng/ml. The usual dose to achieve this range is between 4,000-6,000. Doses of 10,000 IU temporarily may be necessary to increase levels when not actively sunbathing.
- 8) Make sure digestion is optimized especially HCl which assists with mineral absorption which helps buffer excess metabolic acids.
- 9) Use Acti-Mag Plus (400 mg of elemental magnesium that doesn't cause diarrhea) 1 scoop in a.m. and 1 scoop 2 hours after dinner. Often stubborn cases of metabolic acidosis can be reversed with the correct levels of magnesium.
- 10) Use the Vitamin C Calibration Test as outlined by Drs. Jaffe and Cathcart, see page 2.

### C Calibrations Test or Vitamin C Flush

The C Calibration Test or Vitamin C Flush is another great way to reduce cellular acidity and assess individual vitamin C levels. Vitamin C in the ascorbate form is an excellent buffer and helps regenerate or re-activate many of your antioxidants. Here's how to assess your levels.

- When a patient has a day off...
- Use 1 tsp of Mixed Ascorbate Powder (each teaspoon contains about 2.75 gram of fully buffered vitamin C mineral ascorbate), with small amount of juice and water and drink every 30 minutes for 2 hours until you reach bowel tolerance. If no results change timing to every 15 minutes.
- Continue until bowel tolerance is experienced. Bowel tolerance is described as explosive diarrhea.
- Calculate the number of teaspoons multiplied by 75% i.e. if 4 teaspoons caused bowel tolerance the daily dose would be 3 teaspoons.
- Use this number (above ex. 3 tsp.) and mix in juice and water drink throughout the day. If excessive gas occurs take with food. If that gas is still a problem reduce to dose that is socially tolerable.
- Continue on this dose for one month and retest the C Calibration Test, or continue on this dose until diarrhea occurs again and decrease by another 75% or in our example 75% of 3 tsp. would be 2 1/4 tsp.

### Salt and Soda Alkalizing Bath

1 cup epsom salts and 4 tbsp. of baking soda in a hot bath – soak for 30-40 minutes. Make sure the water is as hot as you can stand it. Use this bath 2-3 times per week.

### Baking Soda and Lemon Cocktail

Another systemic way to alkalize comes from George Goodheart, DC. Take the juice of ½ lemon and 1 tsp. of baking soda in 8 oz of water, two times per day.

### References:

1. Susan E. Brown, Ph.D., C.C.N., and Russell Jaffe, M.D., Ph.D., CN.N., Acid-Alkaline Balance and its Effect on Bone Health, International Journal of Integrative Medicine, Vol. 2, No. 6, November/December 2000.