HEALTH INFORMATION FROM NATURAL SOLUTIONS RADIO-- SODIUM BICARBONATE AND CARBON DIOXIDE..APRIL 08, 2008

Just recently I was confronted for my bicarbonate and maple syrup essay with the following information:

Baking soda (sodium bicarbonate) immediately reacts when it mixes with stomach acid. NaHCO(3) + HCl ---> NaCl + H(2)0 + CO(2). That is: Sodium bicarbonate + stomach acid yields salt + water + carbon dioxide.

The confronting clinician stated that neither the sodium cation nor sodium bicarbonate is taken up significantly into a cancer cell nor into any kind of cell. The bottom line: Maple syrup with sodium bicarbonate delivers sugar, salt, and carbon dioxide to the body. And this is true, bicarbonate anion is considered 'labile' since at a proper concentration of hydrogen ion (H+) it may be converted to carbonic acid (H2CO3) and thence to its volatile form, carbon dioxide (CO2). Little did this clinician know that a lack of carbon dioxide is a starting point for different disturbances in the body. If this continues for a long time then it can be responsible for diseases, ageing and even cancer.

Sodium (Na+) is the principal cation of the extracellular fluid and bicarbonate (HC03 †) is a normal constituent of body
fluids and the normal plasma level ranges from 24 to 31 mEq/liter.

Few people know that a decreased level of carbon dioxide in the blood leads to decreased oxygen supply to the cells in the body including in the brain, heart, kidneys etc. Carbon dioxide (CO2) was found at the end of the 19th century by scientists Bohr and Verigo to be responsible for the bond between oxygen and haemoglobin. If the level of carbon dioxide in the blood is lower than normal, then this leads to difficulties in releasing oxygen from haemoglobin. Hence the Verigo-Bohr law.

According to the Verigo-Bohr effect, we can state that a CO2 deficit caused by deep breathing leads to oxygen starvation in the cells of the body.

A Russian doctor named Konstantin Buteyko is most respsonsible for drawing attention to the importance of carbon dioxide for body metabolism and how the lack of it can cause chronic diseases; this constitutes a major breakthrough in medical science. A molecule of carbon dioxide (CO2) consists of one carbon and two oxygen atoms. Colorless and odorless, it is hard to detect. The amount of carbon dioxide in the atmosphere has been in flux throughout the Earth's history

Public opinion tends to think of carbon dioxide as a waste product or even a poison. (It is sometimes confused with carbon monoxide, which is a poison). Way back in the 19th century, Zuntz, in Berlin, recognized that carbon dioxide, unlike oxygen, is not carried by haemoglobin. He showed that, in the blood, carbon dioxide is combined with bases, chiefly as sodium bicarbonate, which plays a part in acid-alkaline balance. All the carbon dioxide is dissolved in the plasma, both in simple solution and that combined with alkali into the bicarbonates.

"Another natural misconception is that oxygen and carbon dioxide are so far antagonistic that a gain of one in the blood necessarily involves a corresponding loss of the other. On the contrary, although each tends to raise the pressure and thus promote the diffusion of the other, the two gases are held and transported in the blood by different means; oxygen is carried by the haemoglobin in the corpuscles, while carbon dioxide is combined with alkali in the plasma. A sample of blood may be high in both gases, or low in both gases. Under clinical conditions, low oxygen and low carbon dioxide generally occur together. Therapeutic increase of carbon dioxide, by inhalation of this gas diluted in air, is often an effective means of improving the oxygenation of the blood and tissues".[i]

In medicine, up to 5% carbon dioxide is added to pure oxygen for stimulation of breathing after apnea and to stabilize the O2/CO2 balance in blood.

Biologist Dr. Ray Peat tells us that "breathing pure oxygen lowers the oxygen content of tissues; breathing rarefied air, or air with carbon dioxide, oxygenates and energizes the tissues; if this seems upside down, it's because medical physiology has been taught upside down. And respiratory physiology holds the key to the special functions of all the organs, and too many of their basic pathological changes." [ii]

People who live at very high altitudes live significantly longer; they have a lower incidence of cancer (Weinberg, et al., 1987) and heart disease (Mortimer, et al., 1977), and other degenerative conditions, than people who live near sea level.

Dr. Peat continues saying that, “Breathing too much oxygen displaces too much carbon dioxide, provoking an increase in lactic acid; too much lactate displaces both oxygen and carbon dioxide. Lactate itself tends to suppress respiration. Oxygen toxicity and hyperventilation create a systemic deficiency of carbon dioxide. It is this carbon dioxide deficiency that makes breathing more difficult in pure oxygen, that impairs the heart’s ability to work, and that increases the resistance of blood vessels, impairing circulation and oxygen delivery to tissues. In conditions that permit greater carbon dioxide retention, circulation is improved and the heart works more effectively. Carbon dioxide inhibits the production of lactic acid, and lactic acid lowers carbon dioxide's concentratrion in a variety of ways.”

“Otto Warburg established that lactic acid production is a fundamental property of cancer. It is, to a great degree, the lactic acid which triggers the defensive reactions of the organism, leading to tissue wasting from excessive glucocorticoid hormone,” says Dr. Peat. Tumors do tend to be efficient at exporting lactate which drops the pH in the milieu of the tumor. The breakdown of glucose or glycogen produces lactate and hydrogen ions - for each lactate molecule, one hydrogen ion is formed.

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Dr. Ray Peat

Thus we can begin to see that it is the lack of carbon dioxide in the body which is a cause of many disturbances in the metabolism of cells and tissues, which, in turn, can lead to disease. Dr Buteyko said, "CO2 is the main source of nutrition for any living matter on Earth. Plants obtain CO2 from the air and provide the main source of nourishment for animals, while both plants and animals are nourishment for us. The great resource of CO2 in the air was formed in pre-historical times when the amount was about 10%.” According to the Verigo-Bohr effect, we can state that a CO2 deficit caused by deep breathing leads to oxygen starvation in the cells of the body. This state is known as hypoxia and it badly affects the nervous system.

The best way to produce carbon dioxide is from physical activity but most people with chronic illness and cancer unfortunately do not exercise. Are you starting to understand how important sodium bicarbonate can be to the chronically ill person? And why it is such a potent emergency room and intensive care medicine? There are different techniques designed for increasing carbon dioxide levels in the blood. Dr Buteyko developed a system where by

breathing techniques controlled asthma. The ancient yogis with their yogic breathing and NASA controls spaceship climates with these issues in mind. Natural medicine makes proper breathing very important because the central mechanism to maintain CO2 levels is correct breathing.[iii] The clinical choice often is IV injection of bicarbonate in emergency situations but t he rest of us can take the easy and extremely inexpensive way using oral sodium bicarbonate with or without maple syrup!

Special Notes: Serious precautions should be taken by individuals who suffer from chronic pulmonary problems. If a person has significant lung disease, their brain shifts to breathing in response to a lowered O2 level so it won't respond to the accumulating CO2. With the added CO2 and the lungs not removing it, the equation shifts left, meaning the added CO2 becomes H2CO3 (carbonic acid) and then you end up with an acidic patient.

[i] Henderson, Y. Carbon Dioxide. Article in Encyclopedia of Medicine. 1940.

[ii] http://raypeat.com/articles/aging/altitude-mortality.shtml

[iii] http://www.positivehealth.com/article-view.php?articleid=1436

ORAL DOSES OF BICARBONATE

> Many people write to me asking about dosages for sodium bicarbonate and I tell them to read Sodium Bicarbonate – Rich Man's Poor Man's Cancer Treatment. Below is some information from that chapter with some additional information that I hope people will find useful. I have resisted responding to many people in this regard for there are many variables one has to consider when addressing the issue of dosages and this type of question is best answered by ones personal
> healthcare provider.
> The best guidance for dosages for sodium bicarbonate is provided by one's own urinary and salivary pH, which one takes in the morning or several times during the day when doing a heavy course of dosages for cancer or other serious diseases. One needs to buy inexpensive pH paper strips for this. Because Natural
> Allopathic Medicine is designed for self administration I include as much information in my books as possible so people can find their way without having to depend on physicians but again it is always helpful to have good support when treating serious conditions.
> There is no question that plasma bicarbonate concentrations are shown to increase after oral ingestion. The most important effect of bicarbonate ingestion is the change in acid-base balance as well as blood pH and bicarbonate concentration in biological fluids.1 In Europe, spa-
> goers drink bicarbonate-rich water to heal ulcers, colitis and other gastric disorders. Ingesting bicarbonate by way of bathing stimulates circulation, possibly benefiting those with high blood pressure and moderate atherosclerosis.
> While the body does have a
> homeostatic mechanism which maintains a constant pH 7.4 in the blood, this mechanism works by depositing and withdrawing acid and alkaline minerals from other locations including the bones, soft tissues, body fluids and saliva. Therefore, the pH of these other tissues can fluctuate greatly. Some believe the pH of urine remains at the acidic end of the scale because it is a reflection of the body eliminating unwanted acids, and therefore is not an accurate measure of the body's pH. The pH of saliva offers us a window through which we can see the overall pH balance in our bodies.
> When healthy, the pH of blood is 7.4, the pH of spinal fluid is 7.4, and the pH of saliva is 7.4. Thus the pH of saliva parallels the extra cellular fluid. The pH of the non-deficient and healthy person is in the 7.5 to 7.1 slightly alkaline range. The range from 6.5, which is weakly acidic to 4.5, which is strongly acidic represents states from mildly deficient to strongly deficient, respectively. Most children are at a pH of 7.5. If the saliva pH is too high, the body may suffer from excess gas,
> constipation and production of yeast, mold and fungus.
> The following testimonies from the bicarbonate book highlight bicarbonate's use as a pain reliever: "After suffering from a 4 hour long blinding headache for which nothing I took brought any relief, I tried the sodium bicarbonate, 1
> tsp mixed in a glass of water. Within a few short minutes I could feel the headache abating and within the hour it was completely relieved! I tried this again when another headache occurred, and it worked just as miraculously." "This is the best pain reliever of all the ones I have been trying. I am amazed that something so simple would be so potent! I haven't exceeded 7 a day; but wish I could. It takes the pain away for about 2 hours. Nothing seems to work more then 2 hours at a time."
> Sodium bicarbonate can be used orally in doses of 1/2

> tsp in 4 oz of water every two hours for pain relief as well as gastrointestinal upset, not to exceed 7 doses per day. That's basically the receipt on every box of Arm and Hammers sold in every supermarket in the country.
> Here are the exact instructions for oral use from the Arm and Hammer baking soda package.
Directions:
> Add 1/2 teaspoon to 1/2 glass (4
> fl. oz.) of water every 2 hours, or as directed by physician.
> Dissolve completely in water. Accurately measure 1/2 teaspoon.
> Do not take more than the following amounts in 24 hours:
> --Seven 1/2 teaspoons.
> --Three 1/2 teaspoons if you are over 60 years.
> Do not use the maximum dosage for more than 2 weeks.
> Other Information:
> Each 1/2 teaspoon contains 616
> mg sodium.
> Dr.
> Parhatsathid Nabadalung, "The best time to take it is whenever your pH is most acidic, which is during the night. It is best used when pH is around 5.6-5.9 (urinary). However if the pH is below that then somewhat stronger alkalinity is needed. In which case, I turn to potassium carbonate, potassium bicarbonate and sodium bicarbonate mixture. So if you take these, then both your salivary and urinary pH optimum should aligned close to each other. The usual dosage for me is 1/2 teaspoon (of potassium bicarbonate), 1/2-1 teaspoon of sodium bicarbonate, now if my pH is very acid, I add 1/8 teaspoon of potassium carbonate."
> Dr.
> Napatalung began using baking soda as far back as 1969 to relieve colds and various ailments including cancer. Dr. Reams began using lemon formula with bicarbonate to treat in the 70s thousands of cancer patients to effect changes in the basic biological terrain. As to the alkalization formula Dr. Napatalung has used citrates, carbonates, bicarbonates, potassium, sodium, and magnesium. One can read many comments about using apple cider vinegar with bicarbonate as well as some people's personal struggles at the Earth Clinic site.
> One of the great questions for cancer patients when considering oral intake of bicarbonate is whether or not to take it with maple syrup, molasses, honey, just water or even with lemon. This question is important for patients with cancer for often their cells are starving for glucose and perhaps because the sugar acts as a kind of Trojan horse getting the cancer cells to open their mouths wide. Then the increased O2 enters more easily. This topic is presented in depth in my book.
> Though I have published about the folk formula using maple syrup I do not recommend that. I recommend either black strap molasses (because you don't have to cook it and because of its rich mineral status) or just with mineral or distilled water. Bicarbonate with molasses fulfills the role of the glucose, which Dr.
> Simoncini always used when giving bicarbonate intravenously. Distilled water is excellent for treating disease "if" one adds bicarbonate and some pure magnesium chloride to it to enrich and harden it. One could even add a bit of sodium thiosulfate. When our water becomes a medicine benefits flow that are retarded when ones air and water supplies are tainted.
> Many ask what a maintenance dosage would be or a cancer prevention dosage. Again this would vary widely but one teaspoon split into two dosages could be a standard but one still has to measure

ones pH for guidance. Sodium bicarbonate is not a substitute for an alkaline diet nor is it a substitute for exercise and proper breathing which both increase a persons CO2 levels and thus O2 levels.
> One practices strong medicine if one is in tune with ones own pH levels and use that as a guiding light in terms of dosages. Such a simple method can compete with so many tests that
> allopaths are obligated to do at great expense to the patient or society that pays for them. And still all these official tests ignore something so basic to human health.
> My recommendation is to always use bicarbonate in one way or another because our world is acidic, our food, air and water and even emotions tend to be acidic. I brush my teeth and load up my water pick with bicarbonate and use it as a deodorant as well as take perhaps a half teaspoon a day when I am paying attention to my health. Whenever there is a health problem I always include it in my protocols for one can hardly go wrong with it. That said it is important to realize that there can be side effects and that one has to monitor with applied sensitivity their feelings and reactions to whatever one takes.
> A major point I make in the book is that bicarbonate is best taken in conjunction with other medical and healing substances. The primary substance we need to think about, when taking bicarbonate, is magnesium chloride. The two together offer tremendous returns for they cooperate together right down to the
> mitochondrial level meaning they make the perfect mitochondrial cocktail.
> Important Notes and pH controversy:
> What
> ph level should we get the urine or saliva up to? Your ph can go too high, which also invites certain illnesses and imbalances in the body, and this is the purpose of the monitoring with the pH paper - to keep ph in a proper, healthy range. For our purposes with my protocol we will measure urine and saliva pH and depending on how closely you want to monitor, this can be more than several times a day. In Sodium Bicarbonate, Rich Man's Poor Man's Cancer Treatment there is a model provided by a gentleman who used bicarbonate and black strap molasses. His testimony tracks his pH testing and bicarbonate dosage with the attempt and success of reaching urinary pH readings of over 8. The idea though is not to keep it there nor maintain proper pH through the use of bicarbonate alone. There is no compensation for a lack of exercise, improper breathing and bad dietary choices. Using bicarbonate indefinitely as compensation will not yield desirable results. That said, in our toxic polluted acidic world sodium bicarbonate should be held close by and used in a variety of different ways for oral and overall body care.
> When you take your saliva pH, take it at least one hour before or 2 hours after you eat. Take measurements 2-3
> times a day so you can get a feel for what your average is.
> pH levels in your saliva can be affected by bacteria in your mouth as well as food you recently ate. In a perfect world with all other health parameters in place, the "averaged" pH of both urine and saliva will be right around what? That's a good question and is best answered perhaps not by a pH strip but by ones optimum feelings and state of being. Some people think that a pH as low as 6.4 is a good urinary target but there are some large assumptions that can put us into doubt about this. Getting this one right is important because Oxygen levels in the body are directly related to pH. Increasing pH from 4 pH to 5 pH increases oxygen to the cells by ten fold. From a 4 to a 6 increases oxygen by 100 times and raising pH from 4 pH to 7 pH increases oxygen levels by 1,000 times.
> When body pH drops below 6.4, enzymes are deactivated, digestion does not work properly; vitamins, minerals

> and food supplements cannot effectively assimilate.
> Understand that pH can move all over the place.2 This is so because most individuals "total
> alkalinity" is not very strong and that is exactly what bicarbonate therapy as well as exercise, dietary sanity and good breathing promote, total alkalinity. So for instance two hours after a meal you may find the urine going acid as it is a reflection of the meals acid components pushing the pH. Now really, with life threatening situations especially, we don't want to be eating meals with large acid components so our urinary drift into the acidic with meals can be very mild if one is eating and even fasting correctly.
> The food we consume stores the flame of the sun. The more perfect our
> body's biological terrain, the more capacity we have to extract that flame to give us vibrant health and energy. Likewise we can eat close to the sun. Spirulina, for instance, from a esoteric energetic perspective can be viewed as practically crystallized sunlight that is most easy for the body to extract from. Its one of the reasons it makes a perfect survival food but as a mono fasting food it practically becomes the perfect medicine. When we eat this way or raw food our intake is highly alkaline so the acids being cleared in the urine would be more from the detoxification of the tissues then from the food.
> Sustained high urine pH is not what we are looking for though we do want to maintain "total
> alkalinity." One does not want to go over the deep edge with an alkaline urinary obsession. Some practitioners say you do not want to see urine above 6.5 for long periods of time and we should expect urinary changes up and down strongly depending on ones diet. We should not be surprised or disturbed when we see urinary pH getting down into the 5 range sometimes as this is a reflection of kidney capacity and it shows metabolic acids can and are being removed from the system. You want your urine able to move acid, and to essentially be acid when appropriate. If you are keeping urine above 6.5 and day to day are into neutral pH (7) or above numbers, this is actually not normal unless one is eating very purely. But for cancer treatment we want to break past this and establish a pH of around 8 for two weeks and then take a break letting urinary pH fall. The chapter on pH in the bicarbonate book deals in depth with this very important indicator of health.
> Correct Magnesium Levels: Highly
> absorbable magnesium chloride (magnesium oil) helps to build necessary acid buffers. Magnesium is often lost in urine as a consequence of too much acid in the body. If your urine is too acid you are losing magnesium. Soak in a tub of warm water with one cup or more of Magnesium (oil or flakes) and one cup of baking soda. Use warm, not hot water especially for diabetic patients, as the soak will cause vasodilation of all of the surface blood vessels and they might faint when they stand up. This soak will pull the acidic toxins out of the body and put magnesium into the body (thus putting buffering alkaline magnesium into the body's circulation) through the process of osmosis.
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