

The Pancreas, Bicarbonate and Diabetes

Pancreas

Bicarbonate physiology is entirely ignored in diabetes as it is in oncology though a wide range of clinicians use sodium bicarbonate for a host of medical problems. Who would stop long enough to think deeply enough to make the connection between acid producing diets (junk foods) and destruction of the pancreas after decades of obsessing with sugar as the main culprit?

Parhatsathid Napatalung from Thailand writes, "The pancreas is harmed if the body is metabolically acid as it tries to maintain bicarbonates. Without sufficient bicarbonates, the pancreas is slowly destroyed, insulin becomes a problem and hence diabetes becomes an issue. Without sufficient bicarbonate buffer, the effect of disease is far reaching as the body becomes acid."

Understanding of the use of sodium bicarbonate begins with a trip to the pancreas, which is the organ most responsible for producing the bicarbonate our bodies need. The pancreas is a long, narrow gland which stretches from the spleen to about the middle of the duodenum. It has three main functions. Firstly, it is to provide digestive juices, which contain pancreatic enzymes in an alkaline solution to provide the right conditions for the digestive process to be completed in the small intestines. Secondly, the pancreas produces insulin, the hormone which controls blood sugar by the metabolism of sugar and other carbohydrates. Thirdly, it produces bicarbonate to neutralize acids coming from the stomach to provide the right environment for the pancreatic enzymes to be effective.

Allergies generally start with the body's inability to produce a certain enzyme, or to produce enough enzymes for the digestive process to work effectively. In conjunction with this is an inability to produce enough bicarbonate essential for the pancreatic enzymes to function properly. When this happens undigested proteins penetrate the bloodstream inducing more allergic reactions. Inflammation in such a scenario is systemic but can focus on the pancreas forcing decreases in the production of bicarbonate, insulin and necessary enzymes. [1]

The bicarbonate ion acts as a buffer to maintain the normal levels of acidity (pH) in blood and other fluids in the body. Bicarbonate levels are measured to monitor the acidity of the blood and body fluids. The acidity is affected by foods or medications that we ingest and the function of the kidneys and lungs. The chemical notation for bicarbonate on most lab reports is HCO_3^- or represented as the concentration of carbon dioxide (CO_2).

The normal serum range for bicarbonate is 22-30 mmol/L. A bicarbonate test is usually performed along with tests for other blood electrolytes. Disruptions in normal bicarbonate levels may be due to diseases that interfere with respiratory function, kidney diseases, metabolic conditions and a failing pancreas. The pancreas, an organ largely responsible for pH control,[2] is one of the first organs affected when general pH shifts to the acidic. "Monitoring of blood-sugar levels, insulin production, acid-base balance, and pancreatic bicarbonate and enzyme production before and after test exposures to potentially allergic substances reveals that the pancreas is the first organ to develop inhibited function from varied stresses,[3] writes Dr. William Philpott and Dr. Dwight K. Kalita in their book Brain Allergies.

Dr. Robert Young, states, "Excess acidity is a condition that weakens all body systems. The pancreas is one of our body's organs charged with the awesome responsibility to "alkalinize" us. Can you start to see how our serious acidosis has overwhelmed our pancreas' ability to operate effectively, which then results in a state called "diabetes?"