An excess of **acidity** in the body produces **inflammation** in the body and that this results in the development of many common illnesses.

Protein molecules are the basic structural building blocks of organisms from single cells (e.g., amoebae) through the entire animal kingdom, including humans. A behavioral character of proteins is that these molecules can change their conformation (shape) in response to complementary environmental signals. When a protein changes its conformation, the resulting movements are harnessed by cells to drive life functions, such as metabolism, respiration, digestion, mobility, and immune protection.

The mechanics behind a protein's conformational shape are directly linked to the distribution of positive and negative charges along the protein's molecular backbone. These shape-controlling molecular charges are directly influenced by environmental factors that include salt and ion balance, ambient temperature, electromagnetic fields and especially pH. To ensure normal protein function, the environment must be tightly regulated. This is why normal tissue function requires such a narrow range of pH between 7.37 and 7.47.

Immune system function is directly linked to protein receptors and protein effector molecules built into the membranes of the innate and adaptive immune cell lines. These immune protein molecules respond to antigenic signals derived from infective bacteria, viruses and parasites, by changing their conformation. The "activated" immune proteins engage switches in the cell's immune pathways to fight the infection. In a state of acidosis, below pH 7.37, the acidic environment impairs immune cell receptor-effector protein conformation changes, which have a direct influence on a broad range of immunological functions. An acid tissue environment is associated with immunodeficiency, including a decrease in white cell numbers, gamma immunoglobulins, and a diminution of the inflammatory response and delayed phagocytosis by macrophages.

Neutrophils, the most numerous of the white blood cells, demonstrate mainly inhibition of chemotaxis (the ability to track down infectious antigens), respiratory activity, and bactericidal capacity when in an acid pH environment. The function of cytotoxic and antibody-producing lymphocytes of the adaptive immune system is also suppressed in low pH, leading to increased inflammation and an impaired immune response.

All humans are infected with toxic bacteria and viruses referred to as "opportunistic organisms." In a normal pH environment the immune system suppresses the growth and development of these infective agents. However, in patients with acute metabolic acidosis, suppression of immune functions enables these opportunistic organisms to take the "opportunity" to become more virulent which in turn makes the patient more susceptible to infection.

Bruce H. Lipton, Ph.D., Cell biologist and bestselling author of *The Biology of Belief* and coauthor of *Spontaneous Evolution.* His most recent book is *The Honeymoon Effect: The Science of Creating Heaven on Earth.*

His discoveries, which ran counter to the established scientific view that life is controlled by the genes, presaged one of today's most important fields of study, the science of epigenetics. Two major scientific publications derived from these studies defined the molecular pathways connecting the mind and body. Many subsequent papers by other researchers have since validated his concepts and ideas.