The Colon's Role in a Healthy Immune System

Abstract

A healthy immune system is dependent upon all the systems of the body working optimally. The colon is an organ that defends the body by providing a network of cells embedded within the walls, that are capable of fighting infection. The liver is necessary for the removal of toxic waste from the blood. The lymphatic system searches the cell fluids for bacterial invaders. Defense is enhanced when the walls of the colon are free of impacted fecal matter, parasite infestation and toxins. Colon hydrotherapy provides a means of cleansing the colon walls, while stimulating the lymphatic and circulatory systems as they support the immune system.

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The colon is important as it relates to the immune system and the cause of disease in the body. The digestive tract, composed of four concentric layers of tissue, starts at the mouth and ends at the anus. The colon, also called large intestine, or bowel, is the last five or six feet of the digestive tract. Liquid contents from the small intestine enter the large intestine through the ileocecal valve. The large intestine, or colon's primary function is to absorb water and electrolytes, or minerals, back into the body and to store fecal material until it can be expelled from the body.

The first layer of tissue is the mucosa, or mucous membrane, that performs special secretory and absorptive functions at different locations in the digestive tract. The mucosa secrets, or makes mucus that enables the contents to move smoothly through the colon. The mucosa absorbs water and minerals as mentioned above. Supporting the mucosa is a layer of connective tissue rich in immunocompetent cells. Immunocompetent cells are cells capable of protecting the body against infection. These cells are lymphoid cells, lymphatic nodules, plasma cells (the fluid portion of the blood), lymphocytes (a type of white blood cell) and macrophages (cells that circulate in the body ingesting microorganisms, foreign particles or other cells). Basically, the entire lining of the gut, or digestive tract is a major site of immunological response. (1)

Lymphatic nodules, composed of lymphoid cells are embedded in the connective tissues appearing as small oval bodies. Lymphoid cells are instrumental in the production of antibodies. Tissue fluid collects in lymphatic capillaries embedded in connective tissue throughout the body, empties into lymphatic vessels with one way valves, and is carried to the nodules. This fluid than becomes lymph, a clear liquid that contains large numbers of white blood cells (lymphocytes), a few platelets and red blood cells. Positioned along the lymphatic vessels are lymph nodes that filter bacteria from lymph, preparing the lymph for deposit into the blood stream. The lymphatic system is instrumental in keeping the blood free from microorganisms.

Lymph capillaries of the intestine are called lacteal; they absorb digested fat. Fat in the lymph gives it a milky appearance. Diets high in fat content create increased work for the lymphatic system. Causes of enlarged lymph nodes include infection, allergy, primary disease of the node, such as Hodgkin's disease, leukemia, and spread of malignant disease from other sites in the body. The lymphatic system is significant in the spread of tumors; tumor emboli detach, travel to a node and produce a secondary growth. This is called metastases. (2)

Returning tissue fluid to the blood stream via the lymphatic system requires the lymph flow be continuous. The body does this by producing new lymph and pushing old lymph forward; pulsating arteries produce a massaging effect on lymph vessels; peristaltic contractions of smooth muscle in the intestine and massaging action of the skeletal muscles on the lymph vessels. Exercise is important to keep the lymphatic system moving and functioning effectively.

The mucosa of the large intestine, or colon has a flat surface punctuated by the openings of straight tubular glands or crypts where mucus is made and secreted. Hundreds of bacterial species inhabit the large intestine of healthy individuals without causing ill effects. Microorganisms of the colon digest residual organic matter such as plant cell walls from undigested food. Trace nutrients synthesized by bacteria are also absorbed. (3) Bacteria are also instrumental in synthesizing vitamin K, B 12, thiamine and riboflavin for use in the intestine. The body uses minerals in the metabolic reactions, which is why it is important to provide ample minerals to the body. Bacterial action in the colon also creates gas, or flatus, which can be uncomfortable when it accumulates in the colon. (4)

The primary role of the colon is to absorb water from the liquid contents called chyme. The capillaries embedded in the mucosa, absorb water into the blood stream where it is delivered directly to the liver. If the lining of the colon is covered with hardened mucus, impacted fecal matter or infested with parasites, it interferes with the absorption of water from the chyme. In addition, the water that is absorbed will have increased toxins that are deposited into the blood stream. This waste in turn travels to the liver. The increased waste in the blood places an additional burden on the circulatory system.

The liver filters more than a quart of blood every minute as it orchestrates it's activities of altering the composition of the blood and returning it to the heart and lungs to receive oxygen. The liver receives blood directly from the stomach, pancreas, small intestine and large intestine. The blood passes through the liver with good nutrients, preparing them for conversion to energy, and for removal of toxins and chemicals. If the liver becomes overburdened with removing toxic waste, it may become dysfunctional, and the waste stays in the blood creating many health problems.

A healthy stomach produces hydrochloric acid, activating the enzymes necessary to break down protein as it passes through the stomach. If this process is not successful and undigested protein enters the small and large intestine, it starts to putrefy. Putrefaction is one of the sources of the foul odor and gases which originate in the colon. It also creates a toxic colon with symptoms such as nausea, excessive bile, loss of appetite, bad breath, gray appearing skin and headache. (5) Putrefaction in the colon provides a perfect environment for parasites to hatch and live. The waste from the parasites contribute to the already toxic colon.

The discharge from the colon is feces, or bowel movement, consisting of materials not absorbed by the body, mucus, water, electrolytes and bacteria. The odor results from the compounds produced by the bacteria. These compounds are phenol, hydrogen sulfide, indole, skatole and ammonia. (6) Years ago the Royal Society in Great Britain reported on the condition of auto-intoxication, which is the re-absorption of these toxins into the body, creating a variety of conditions and illnesses. These conditions were reported to be elevated blood pressure from tryptophan, headache, racing heart beat and depression from the accumulation of histamine, blood circulation problems, muscle irritations, liver and kidney problems from excessive phenol and congestion in the body from hydrogen sulfide. Symptoms of a toxic colon and auto-intoxication are bad breath, as the body expels toxins from the lungs, a coated tongue, sore joints, stiffness, fatigue and skin problems and rashes. When these toxins and poisons reenter the blood stream, they create problems all over the body. (7) These conditions are then given a label, or diagnosis, and medications are given to treat the symptoms. These chemical medications enter an already intoxicated

body and can create further toxicity.

Approximately seventy years ago, it was common medical knowledge that slow passage of food through the colon enabled increased absorption of bacterial `toxins' resulting in various systemic diseases. Although this theory has long been discredited, it deserves to be re-examined in light of new information on the role of the colon in the colon-liver recirculation of steroid hormones and bile salts, and the length of time the fecal matter is in contact with bacteria in the colon. (8)

Constipation among women is common; so common that few seem to believe it is a problem. It is a subject that has a variety of definitions and one that most people are uncomfortable discussing with anyone, even their physicians. Each individual establishes a pattern that seems normal to them, and aren't aware that it may be the cause of other health problems they are experiencing. Natural health consultants teach that the human body should have the urge to eliminate after each sizeable meal. With the exception of physicians who specialize in digestive tract disorders, many medical doctors reassure patients that one or two stools a week is sufficient. The contents should be formed, soft, easily expelled and brown in color. (9)

A study was made of 123 breast cancer cases and their bowel movements to determine if there was a direct relationship. An association was inferred, but no direct evidence could be established. (10)

Decreasing the toxic waste, or detoxification benefits all systems of the body, enabling them to support a strong immune system. Various methods of detoxification include: exercise, sunlight, massage therapy, several fasting methods, raw foods diet, taking herbal preparations, emersion in salt and herbal baths, administering enemas and receiving colon hydrotherapy.

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