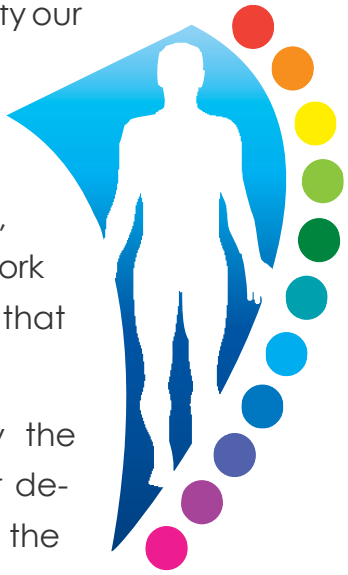
TRANSFORMATION

A Nutritional Approach to

THE LYMPHATIC SYSTEM



As we get older, our bodies simply cannot effectively detoxity our blood and lymphatic system without help. For decades, millions of concerned consumers have tried a variety of self-administered ways to detoxify. They experimented with everything—macrobiotic and other vegetarian diets, fasting, herbal regimens, etc. Most of these approaches work to some degree, however my studies have convinced me that enzyme supplements are the missing ingredient.

When taken consistently, supplemental enzymes purify the blood by breaking down its undigested proteins, cellular debris, and other toxins. With the blood healthy once again, the body gradually rebuilds itself and replenishes its storehouse of enzymes. The ultimate result? A balanced body capable of functioning at peak efficiency.

Remember, disease is not bound to happen… it can be overcome! I personally believe that good health is not an unobtainable privilege meant to be savored only by the fortunate, but rather it is a right that should be enjoyed by anyone who is willing to take the time to learn how to take care of his or her own body. I have dedicated myself to the idea that everyone is entitled to the healthiest and vital lifestyle they are capable of obtaining.

What Is the Lymphatic System?

The lymphatic system is one of the most complex and vital systems inside the body. A companion to the circulatory system, its primary purpose is to isolate and eliminate dangerous infections. The lymphatic system circulates more or less parallel to the blood, where it filters out waste products. For example, white blood cells attack bacteria. As part of that process, they die along with the bacteria.

The lymphatic system ushers all these waste products to the lymph glands where the fragments break down and assimilate harmlessly into the body.

In order to accomplish these important functions, the lymphatic system requires a complex network of ducts, nodes and other organs located throughout the body. The lymph glands, or nodes, are made up of valves and filters that circulate the lymph fluid throughout the body. The major parts of the lymphatic system are the bone marrow, spleen, thymus gland, lymph nodes, and the tonsils. Lymphatic tissue can also be found in every part of the body except the central nervous system. Other organs such as the heart, lungs, intestines, liver, and skin all contain lymphatic tissue.

LYMPH FLUID is a clear, watery fluid containing **lymphocytes** (white blood cells). These are the principal component of the body's immune system. Acting as scavengers, the white blood cells travel from site to site through the arteries, veins, and capillaries, where they assist with the repair of the body. White blood cells can also leave the bloodstream and filter into the lymphatic tissues if necessary to fight infection. Vastly outnumbered by the red blood cells, the average healthy human has only about seventy-five billion lymphocytes in the blood. Although these cells are produced in large quantities in the bone marrow or the lymph nodes, they die within a few days.

Main Functions of The Lymphatic System

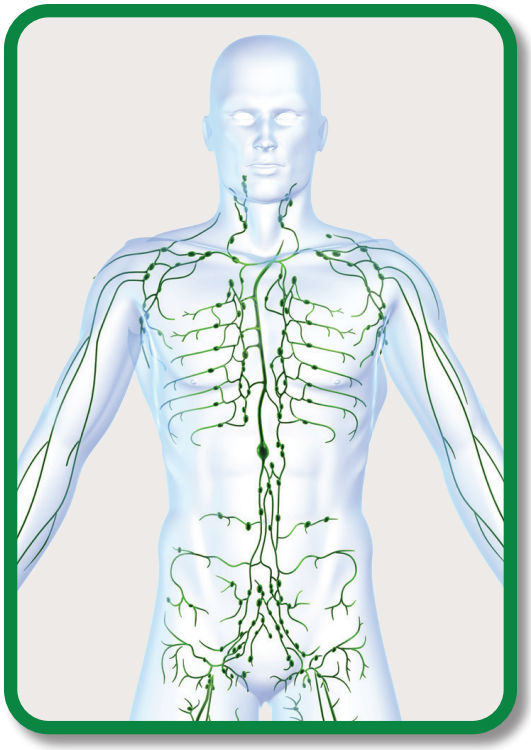
- Collects and returns interstitial fluid and plasma protein to the blood to help maintain fluid balance
- Defends the body against disease by producing lymphocytes
- Absorbs lipids from the intestine and transports them to the blood

LYMPH NODES serve as defense outposts against germs attacking the body. Infectious diseases are contagious and can spread quickly. The pathogen or any other organism enters the body and multiplies to survive. Fortunately, the lymphatic system functions as the first line of defense against all the possible infectious diseases that are caused due to spread of bacteria and pathogens. The

lymph nodes are located in the lymphatic system, which is distributed throughout the body, and can be imparted independently or in groups. About 500-600 lymph nodes are present in the human body.

Groups of lymph nodes are located in the neck, collarbone, under the arms (in the armpits) and groin. The lymph nodes are named according to their location in the body:

- **Auxiliary** – present in the underarm area and are divided into two types (superficial and deep)
- **Cervical** – located in the head and neck and are six in number
- **Femoral** – located in the upper thigh portion along the femoral veins
- **Inguinal** – located in the groin area and may be supercritical or deep
- **Mediastinal** – present between the air sacs of the lungs
- **Mesenteric** – distributed in the lower abdomen
- **Supraclavicular** – situated along the collarbone or clavicle



Healthy lymph nodes retain their normal size (from a few millimeters to two centimeters) and are not sensitive to touch, however they can become swollen, inflamed and painful in certain health conditions. The enlargement of size is due to increased production of beta cells in the lymph nodes. Significant changes are observed in mild problems like the common cold or life-threatening conditions such as cancer.

Hence, the size of lymph nodes is very important in determining various medical conditions. The size of lymph nodes in adults is smaller as compared to those in children ages 10-12. They play a major role in normal immune function.

LYMPH ORGANS include the bone marrow, lymph nodes, spleen, and thymus. Precursor cells in the bone marrow produce lymphocytes. B-lymphocytes (B-cells) mature in the bone marrow. T-lymphocytes (T-cells) mature in the thymus gland.

LYMPH DUCTS provide transportation for proteins, fats, and other substances in the lymph fluid and provide a home for lymphocytes (B-cells and T-cells).

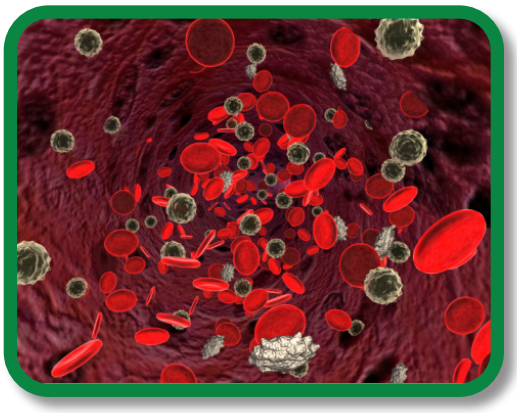
LYMPHOID TISSUE is the digestive tract's immune system and works to protect the body from invasion. GALT is an example of mucosa-associated lymphoid tissue that stores immune cells such as T and B lymphocytes, carries out attacks and defends against pathogens. Lymphoid tissue in the gut comprises the following:

- Tonsils
- Adenoids
- Small intestine ileum (Peyer's Patches)
- Appendix and large intestine
- Lymphoid tissue accumulating with age in the stomach
- Small lymphoid aggregates in the esophagus
- Diffusely distributed lymphoid cells and plasma cells in the mucous membranes that line the gut

How the Lymphatic System Helps the Body

Our lymphatic system functions as the lifeline of the body and conducts a variety of vital functions. Thus, it is important to always keep the lymphatic system functioning properly.

IMMUNITY We would fall prey to various diseases and disorders if not for the lymphatic system. As outlined above, our lymphatic system assists immune function in various ways. The lymph fluid circulated throughout the body consists of antibodies and lymphocytes which act as barriers for different types of microorganisms and other foreign bodies. When these foreign bodies are exposed to the human body, production of lymphocytes is triggered immediately. Thus, disease-causing microorganisms are destroyed.



EXCRETION The lymphatic system removes dead blood cells, excess fluid, waste, and debris from the body, thereby assisting in the excretion of waste materials. The lymphatic system also removes pathogens, toxins, and cancer from the body's cells as well as from intercellular spaces. Thus, a healthy and properly functioning lymphatic system is necessary for the overall well being of the human body.

DIGESTION Our lymphatic system is required for proper assimilation of fats in the body. While most all other nutrients absorbed by the small intestine are passed on to the liver for processing, fats (lipids) are passed on to the lymphatic system

to be transported into blood circulation. This happens via lymphatic vessels located in the gastrointestinal lining called **lacteals**. The enriched lymph fluid originating in the lymphatics of the small intestine is called **chyle**. This fluid is important because it leaks out into the body tissues as the blood circulates, carrying food to the cells and waste back to the bloodstream. A properly functioning lymphatic system therefore prevents accumulation of "bad" fat in the body, whereas failure by the lymphatic system may result in serious malnutrition.

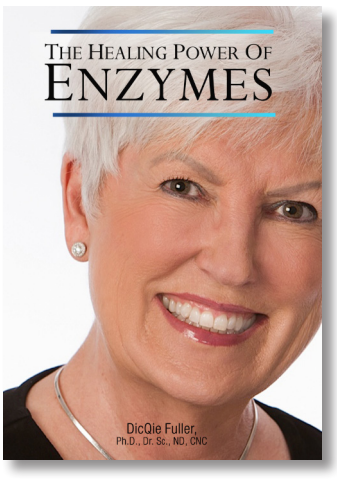
TRANSPORTATION OF NUTRIENTS

As described above, the lymphatic system works in collaboration with the circulatory system to deliver oxygen, hormones, and various essential elements throughout the blood and to the body's cells. Without the lymphatic system, our cells would therefore be deprived of these essential nutrients.

FLUID AND PROTEIN BALANCE

When blood circulates throughout the body, some of the fluid filtered by the capillaries is trapped in the tissues of the body. This trapped fluid, also called **interstitial fluid**, comprises about 10% (1-2 liters) of the total fluid. The loss of this fluid is substantial, as it is rich in several vital proteins required by the body. The lymphatic system prevents this loss by collecting this fluid in the lymphatic vessels and returning it to the circulatory system.

This fluid-balancing function is the most important of all lymphatic system functions. Lymphatic capillaries act like drains and collect the excess fluid from the body. This fluid is then filtered and returned back to the blood. Filtration is required, as large molecules of protein cannot enter the blood directly. The lymphatic system's walls are more permeable than blood capillaries. In the absence of the lymphatic system, excessive edema will occur and the body would blow up like a balloon. This eventually would result in destruction of cells and finally death of the individual.



My Clinical Experience

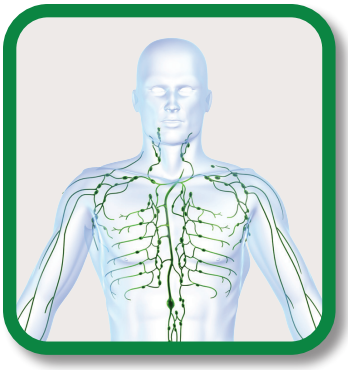
There are many ways to observe the health of the lymphatic system. I began my nutritional practice in 1976 and found **Dark Field Microscopy** invaluable not only as an assessment tool but also as a wonderful teaching tool. Using the microscope, I could show the patient the health

of their blood and how their choices made a difference. After making dietary changes and adding enzymes to their supplement regimen, the most notable and constant improvements could be seen in the size, number, and activity of the white blood cells as well as the flow of the red blood cells. This I attributed to better nutrition and proteolytic enzymes.

I have also used **Biological Terrain Assessment**, which helped me identify lymphatic congestion. Remember, the lymphatic vessels parallel the blood vessels and help transport and deliver nutrients and remove toxins. When the lymphatic system becomes congested, this delivery and removal process is slowed and can create major nutritional imbalances as well as compromise our immune system. I have observed lymphatic congestion resolve very quickly with use of proteolytic enzymes (PROTEASE, PROTEASE 375K, and PUREZYME) along with lymphatic massage and sauna.

More recently I have been using **Bio-Impedance Assessment** (BIA) to monitor fluid balance inside and outside the cell. This is important because the health of the cell and its ability to perform its functions is dependent upon the nutrient exchange and fluid balance surrounding the cell. You want more fluid inside the cell compared to outside the cell, approximately 3:2 (or 60% intracellular fluid and 40% extracellular fluid). More often than not, the first BIA on a patient shows a 1:1 ratio, or equal fluid inside and outside the cell. This imbalance can hinder nutrient exchange and communication among the cells and thus impact the health of the entire body.

Again, once we assess their **Biochemical Type**, make the appropriate dietary changes, and support them with the right enzymes, their body is capable of regaining balance.



Conclusion

The primary function of the immune system is to protect the body from infection, damage, and ultimately disease. Recurrent or chronic infections occur only when the immune system is weakened by a lack of proper nutrition or by excesses of stress, pollution, radiation, toxins, and exposure to a vast array of infectious microorganisms.

In a healthy lymphatic system, the initial exposure to these offending agents creates an allergic reaction, an inflammatory response, and then healing. However, long-term exposure without proper support to the immune system, may lead to chronic allergies, systemic inflammation, and oxidative stress, which can manifest as autoimmune disorders and various cancers.

A nutrient-rich diet and optimal digestion paves the way for a strong immune system and helps reduce the risk for disease. The intent of enzyme therapy is to provide nutritional support to help bring your patient into balance. The practitioner's goal is to:

- ensure the absorption of nutrients
- support optimal circulation and immune function
- assist in the elimination of toxicity and free radicals

Proteolytic enzymes in particular act to restore lymphatic transport capacity and break down the undesired excess proteins that contribute to swelling and inflammation. Additionally, various herbs and antioxidants can lend support to improve lymphatic flow and remove toxins. Additional nutritional support with specific herbs, glandulars, nutrients, and antioxidants can strengthen the immune system, help fight against pathogens, and minimize the damaging effects of oxidative stress.

For a complete listing of protocols and product information, please visit our website at www.transformationenzymes.com or call 800-777-1474 for assistance.

***These statements have not been evaluated by the Food and Drug Administration. This product is not intended to diagnose, treat, cure, or prevent any disease.**

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