Lymphatic System

The lymphatic system works to protect the body from cancer cells and microorganisms. Its components can be found throughout the entire body. The organs in the lymphatic system include the thymus, bone marrow, spleen, and tonsils. Paired lymph nodes and lymphatic tissues are distributed throughout the body. In addition to watching for cancer cells and microbes, the lymphatic system creates about three liters of lymphatic fluid per day from fluid and proteins found in the tissues. Lymph nodes filter this fluid, and eventually it dumps back into the venous blood vessels. Another function of lymphatic fluid is to transports lipids (fats) that come from the diet to adipose tissue.

As lymphatic fluid moves through the low-pressure lymphatic vessels, it passes through bean-shaped structures known as lymph nodes. The exact number of lymph nodes is unknown, but estimates suggest that individuals have anywhere between 500
and 700 of these paired structures, and this number is variable between persons. The lymph nodes trap microorganisms and cancer cells, and the white blood cells within the nodes destroy them. Other lymphatic tissues, and even the tonsils, also trap microorganisms. When the immune system gets involved, the lymphatic tissue may become red and swollen. The lymph nodes will become enlarged and can be easily felt by physical examination. The tonsils may become so inflamed that it is painful to swallow.

The white blood cells (leukocytes) involved in the inflammatory and immune responses are made in the red bone marrow, found in bones. Red blood cells (erythrocytes) and platelets are also made in the bone marrow. Loss of bone marrow function can lead to major problems involving oxygen transportation, immune response, and the stoppage of bleeding.

A special type of white blood cells, known as T lymphocytes, are made in the bone marrow, but then travel to the thymus. The thymus is found in the thoracic cavity, above the heart. It is larger at birth, but begins to atrophy (shrink) starting at around twenty years of age. In the thymus, T lymphocytes will either mature and be released into the blood or stay within the thymus to die.

The spleen is another major organ of the lymphatic system. It is made up of white and red pulp. In a fetus, the red pulp of the spleen makes red blood cells (erythrocytes). After birth, red-blood-cell production occurs exclusively in the bone marrow. Postnatally, the red pulp serves as a reservoir for approximately one liter of blood. This blood is available if needed, especially during major blood loss like a hemorrhage. The white pulp of the spleen is involved in scanning the blood for worn out red blood cells, platelets, and microorganisms such as bacteria. Red blood cells have a lifespan of 120 days, and then are removed from circulation by the white pulp of the spleen. Hemoglobin is recycled from the red blood cells, and what is left over will ultimately be converted into bilirubin.

The lymphatic system does a great job of finding and destroying cancer cells. Sometimes, however, cancer of the white blood cells occurs, resulting in lymphoma. Although lymphoma impacts numerous individuals, it is still poorly understood. The symptoms are general and may be confused with many other diseases or conditions.
Sources:

http://www.knowyournodes.org/index.php
