



Immune System

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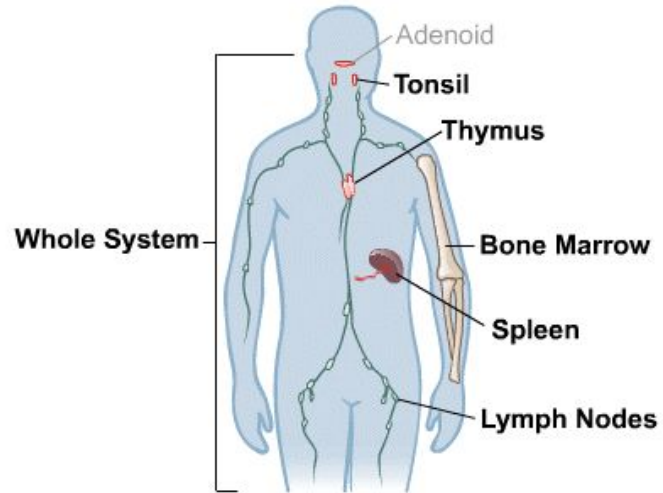


Purpose

- Makes white blood cells to defend the body against infectious organisms and diseases .
- The cycle the immune system goes through to destroy diseases is called immune response.
- When working properly, the immune system not only fights, but it also identifies the disease and distinguishes it from your body's healthy cells.
- It's a very important part of our body because without it we would die for diseases.

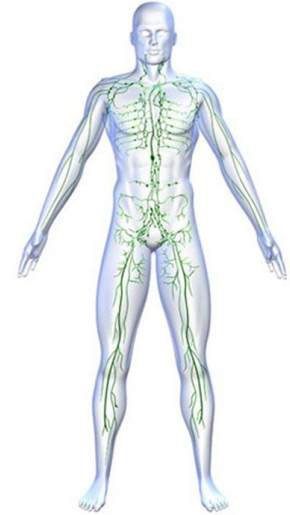
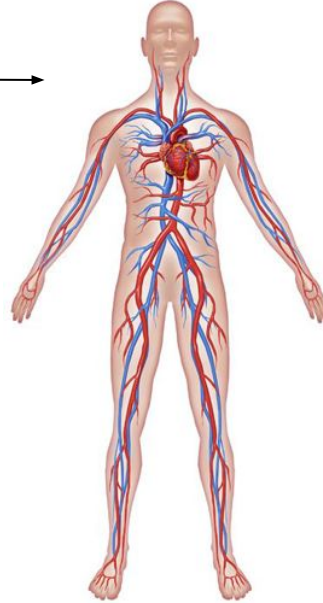
What's In The System

- Lymphoid Organs
 - Spleen, Tonsil, Thymus, Lymph Nodes
- Lymphatic Tissue
 - Sites for lymphocyte production
- Lymphocytes
 - Subtype of white blood cell



Relationship To Other Body Systems

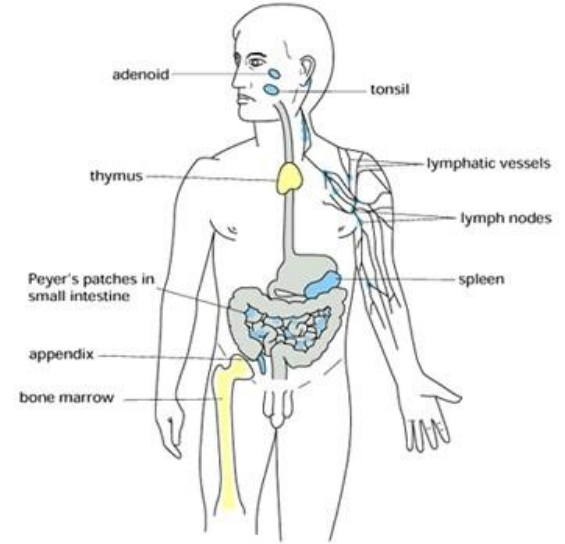
- Circular System
 - Moves Blood Cells
- Lymphatic System
 - Production of Lymphocytes



Lymphatic System

Lymphoid Organs

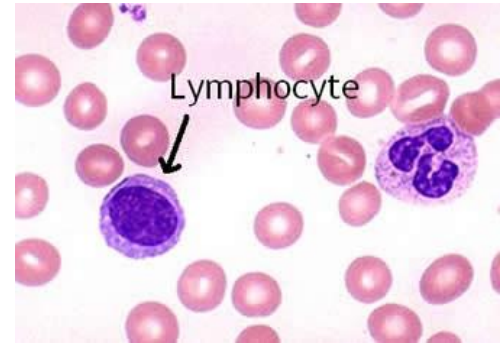
- Spleen
 - Produces and remove Blood Cells
- Tonsil
 - Blocks germs from entering the mouth and nose
- Thymus
 - Trains and Develops T-Cells
- Lymph Nodes
 - Carries Fluid, Nutrients, and Waste material between body tissues and blood stream



All considered to be part of Lymphatic Tissue

Lymphocytes

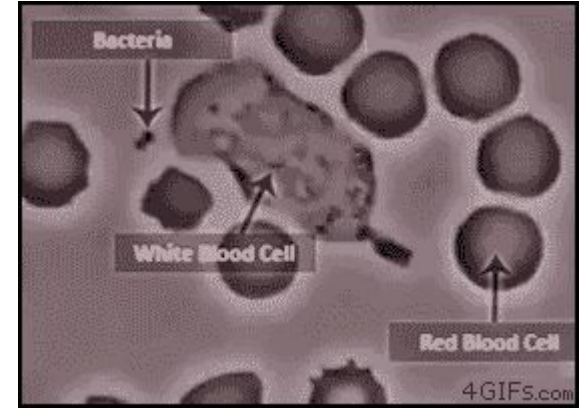
- Subtype of white blood cells
 - Main type of cell found in the Lymph
 - The lymph is the fluid that circulates through the Lymphatic System
- 3 Types of Lymphocyte cells
 - T cells
 - Also known as Thymus cells
 - Involved in cell-mediated immunity
 - B cells
 - Bone marrow or Bursa Derived cells
 - Primarily responsible for humoral immunity
 - NK cells
 - Natural Killer cell
 - Plays a major role in defending the host from both tumors and virally infected cells.



Medical Problems / Diseases

- Asthma
- Ataxia telangiectasia
- Autoimmune polyglandular syndrome
- Burkitt lymphoma
- Diabetes, type 1
- DiGeorge syndrome
- Familial Mediterranean fever
- Immunodeficiency with hyper-IgM
- Leukemia, chronic myeloid
- Severe combined immunodeficiency

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Here you can see
a white blood cell
chasing bacteria.



Here you can see
a strand of
bacteria being
attacked by White
Blood cells.



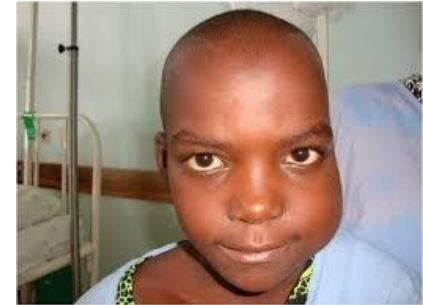
Ataxia telangiectasia

- A rare inherited disorder that affects the nervous system, immune system, and other body systems.
- Affected typically develop difficulty walking, problems with balance and hand coordination, involuntary jerking movement (chorea), muscle twitches (myoclonus), and disturbance in nerve function (neuropathy).
- People also have slurred speech and trouble moving their eyes to look side-to-side (oculomotor apraxia).
- Also have small cluster of enlarged blood vessels called telangiectasia, which occur in the eyes and on the surface of the skin



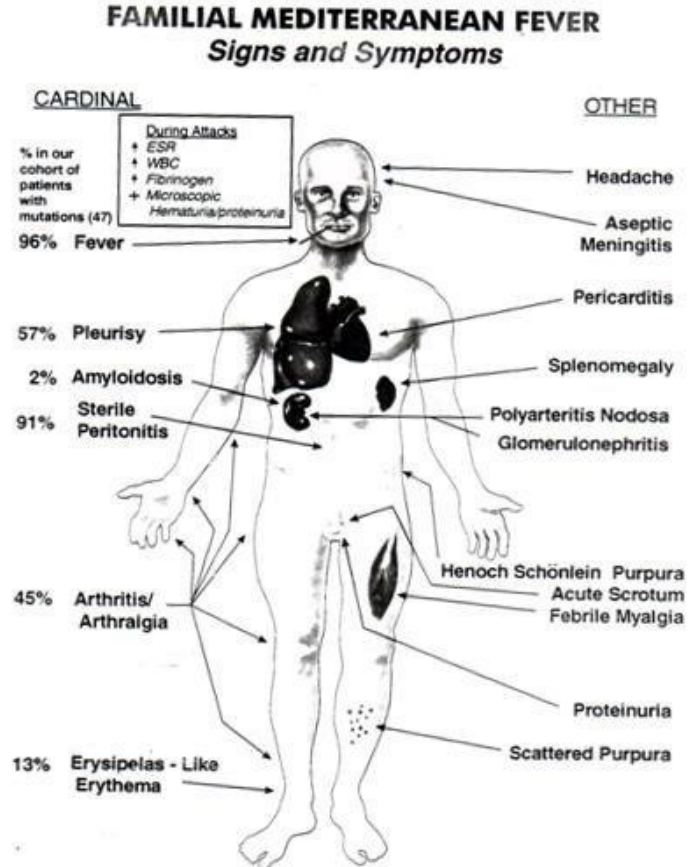
Burkitt Lymphoma

- A form of non-Hodgkin's lymphoma in which cancer starts in immune cells called B-cells.
- Recognized as the fastest growing human tumor
- 3 different types
 - Endemic (African)
 - affects african children 4 to 7 and is twice as common in boys
 - Sporadic (non-African)
 - globally and accounts for 1% to 2% of adult lymphoma cases
 - Immunodeficiency-associated
 - most common in people with HIV / Aids , people with congenital conditions that cause immune deficiency and in organ transplant patients who take immunosuppressive drugs



Familial Mediterranean Fever

- An inherited condition characterized by recurrent episodes of painful inflammation in the abdomen, chest, or joints
- Often accompanied by fever and sometimes a rash or headache
- Episodes typically last 12 to 72 hours and can vary in severity and length of time between attacks can range from days to years
 - During these period, affected individuals usually have no signs or symptoms related to the condition.
 - without treatment to help prevent attacks and complications, a buildup of protein deposits (amyloidosis) in the body's organs and tissues may occur, most common in the kidneys, which can lead to kidney failure



Sources

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