

# CHAPTER 12: The Lymphatic System

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## Consists of two semi-independent parts:

- ✓ V Lymphatic vessels
- ✓ V Lymphoid tissues and organs

## Lymphatic System functions:

- ✓ V Transport fluids back to the blood
- ✓ V Play essential roles in body defense and resistance to disease

## Lymphatic Characteristics:

**Lymph** – excess tissue fluid carried by lymphatic vessels

## Properties of Lymphatic Vessels:

- ✓ V One way system toward the heart
- ✓ V No pump
- ✓ V Lymph moves toward the heart
  - a) Milling action of skeletal muscle
  - b) Rhythmic contraction of smooth muscle in vessel walls

## Lymphatic Vessels:

### Lymph Capillaries

- ✓ V Walls overlap to form flap-like minivalves
- ✓ V Fluid leaks into lymph capillaries
- ✓ V Capillaries are anchored to connective tissue by filaments
- ✓ V Higher pressure on the inside closes minivalves



## Lymphatic Collecting Vessels

- ✓ V Collects lymph from lymph capillaries
- ✓ V Carries lymph to and away from lymph nodes
- ✓ V Returns fluid to circulatory veins near the heart
- ✓ V Right lymphatic duct
- ✓ V Thoracic duct



## Lymph

### Materials returned to the blood:

- ✓ V Water
- ✓ V Blood cells
- ✓ V Proteins

### Harmful materials that enter lymph vessels:

- ✓ V Bacteria
- ✓ V Viruses
- ✓ V Cancer cells
- ✓ V Cell debris

## Lymph Node

- ✓ V Filter lymph before it is returned to the blood
- ✓ V Defense cells within lymph nodes
  - a) **Macrophages** – engulf and destroy foreign substances
  - b) **Lymphocytes** – provide immune response to antigens



# Lymphatic System Study Guide

**W. J. Leverich**



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