



*Physiology*  
OF THE CARDIOVASCULAR SYSTEM

# Capillary Circulation

## Capillaries

### Characteristics

Smallest blood vessels

Exchange vessels

### Capillary Network

Blood flows from arterioles through metarterioles, then through capillary network

Venules drain network

Smooth muscle in arterioles, metarterioles, precapillary sphincters regulates blood flow

### Types of Capillaries

Types classified by diameter/permeability

Continuous  
• Do not have fenestrae.

Fenestrated  
• Have pores

Sinusoidal  
• Large diameter with large fenestrae.

### Capillary Beds

Vascular shunt  
– directly connects an arteriole to a venule.

True capillaries  
– exchange vessels.  
• Oxygen & nutrients cross to cells  
• Carbon dioxide & metabolic waste products cross into blood

### Lymphatic System

Lymphatic vessels present b/w capillaries permeability

3 basic functions:  
– Drain excess interstitial (tissue) fluid back to the bl, in order to maintain original bl volume.  
– Transports absorbed fat from small intestine to the bl.  
– Helps provide immunological defenses against pathogens.