

CHAPTER 25
INFECTIONS OF THE BLOOD
AND LYMPH

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CIRCULATING PATHOGENS IN
BLOOD AND LYMPH

- ◆ Blood and lymph travel throughout the body, and an infection in any part of the body can be spread throughout the body if pathogens gain entry to the blood or lymph
- ◆ All types of pathogenic organism can enter the blood

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CIRCULATING PATHOGENS IN
BLOOD

- ◆ Pathogens, especially bacteria, in the blood can lead to sepsis and septic shock, which can result in multiorgan failure and death
- ◆ Pathogens in the blood can cause damage to cardiovascular structures such as endocarditis

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BACTERIAL INFECTIONS OF THE BLOOD AND LYMPH

- ◆ Bacterial infections of the blood include plague, tularemia, brucellosis, Lyme disease, and relapsing fever
- ◆ Plague is one of the most virulent bacterial infections ever known
- ◆ Plague can present as either pneumonic plague or bubonic plague

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BACTERIAL INFECTIONS OF THE BLOOD AND LYMPH

- ◆ Tularemia and brucellosis are zoonotic infections
- ◆ Lyme disease and relapsing fever are caused by the spirochete *Borrelia*

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RICKETTSIAL INFECTIONS OF THE BLOOD

- ◆ Rickettsia are bacteria but they have some properties usually associated with viruses
- ◆ Rickettsial infections of the blood include Rocky Mountain spotted fever, epidemic typhus, and endemic typhus

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VIRAL INFECTIONS OF THE BLOOD

- ◆ Cytomegalovirus and Epstein-Barr virus both infect white blood cells
- ◆ Cytomegalovirus causes a latent infection
- ◆ Epstein-Barr virus causes mononucleosis and Burkitt's lymphoma

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VIRAL INFECTIONS OF THE BLOOD

- ◆ Three important infections caused by arboviruses are yellow fever, hemorrhagic fever, and dengue fever
- ◆ Ebola and Marburg are the only filoviruses that infect humans

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PARASITIC INFECTIONS OF THE BLOOD AND LYMPH

- ◆ Chagas' disease (American trypanosomiasis) and filariasis are important parasitic blood infections
- ◆ Chagas' disease is caused by the flagellate protozoan *Trypanosoma cruzi*, which is vector-transmitted by reduviids, flying insects known as kissing bugs

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PARASITIC INFECTIONS OF THE BLOOD AND LYMPH

◆ Filariasis is caused by the parasites *Wuchereria bancrofti* and *Brugia malayi*, which infect the human lymphatic system and can cause acute inflammatory responses and, in severe cases, elephantiasis

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