

Immune system, autoimmune disorders and AIDS/HIV.

Module 5, special care situations



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Learning objectives:

- Describe the Immune system structure and function.
- List the autoimmune disorders.
- Explain Acquired Immunodeficiency Syndrome (AIDS), Human Immunodeficiency Virus (HIV).
- Mention signs and symptoms of AIDS.
- Identify how to caring person with AIDS.
- Explain how to promoting safety and comfort for person with AIDS.

Immune System

Structure and

- ❖ The **immune system** protects the body from disease and infection. Abnormal body cells can grow into **tumors**.
- ❖ Sometimes the body produces **substances** that cause the body to attack itself.
- ❖ **Microorganisms** (bacteria, viruses, and other germs) can cause an **infection**.
- ❖ The **immune system** defends against threats inside and outside the body.
- ❖ The **immune system** gives the body **immunity**.
- ❖ **Immunity** means that a person has protection against a disease or condition. The person will not get or be affected by the disease.

Types of Immunity:



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graph TD; A[Types of Immunity:] --> B[Specific immunity]; A --> C[Non-specific immunity]; B --> D[is the body's reaction to a certain threat.]; C --> E[is the body's reaction to anything it does not recognize as a normal body substance.]
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❖ **Special cells and substances function to produce immunity:**

- **Antibodies**—normal body substances that recognize other substances. They are involved in destroying abnormal or unwanted substances.
- **Antigens**—substances that cause an immune response. Antibodies recognize and bind with unwanted antigens. This leads to the destruction of unwanted substances and the production of more antibodies.
- **Phagocytes**—white blood cells (WBCs) that digest and destroy microorganisms and other unwanted substances (Fig. 7-28).
- **Lymphocytes**—WBCs that produce antibodies. Lymphocyte production increases as the body responds to an infection.
- **B lymphocytes (B cells)**—cause the production of antibodies that circulate in the plasma. The antibodies react to specific antigens.

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- When the body senses an antigen from an unwanted substance, the immune system acts. Phagocyte and lymphocyte production increases. Phagocytes destroy the invaders through digestion. The lymphocytes produce antibodies that identify and destroy the unwanted



FIGURE 7-28 A phagocyte digests and destroys a microorganism.

Autoimmune Disorders:

- ❑ **Autoimmune disorders** can occur.
- ❑ The immune system attacks the body's own (auto) normal cells, tissues, or organs.
- ❑ **Most autoimmune disorders** are chronic.
- ❑ Signs and symptoms **depend on** the disease.
- ❑ Common autoimmune disorders include:
 - **Graves' disease:** The immune system attacks the thyroid gland. The thyroid gland produces excess amounts of the hormone thyroxine.
 - **Lupus:** This is an inflammatory disease affecting the blood cells, joints, skin, kidneys, lungs, heart, or brain.
 - **Multiple sclerosis.**
 - **Rheumatoid arthritis.**

Acquired Immunodeficiency

- ❖ **Acquired Immunodeficiency Syndrome (AIDS)** is caused by the **human immunodeficiency virus (HIV)**.
- ❖ The virus attacks the immune system, therefore it destroys the body's ability to fight infections and certain cancers.
- ❖ Some infections are life-threatening.
- ❖ The virus is **spread** through **body fluids**—blood, semen, vaginal secretions, and breast milk.
- ❖ **HIV** is not spread by saliva, tears, sweat, sneezing, coughing, insects, or casual contact.

Human Immunodeficiency HIV:

□ HIV is spread mainly by:

- Unprotected anal, vaginal, or oral sex with an infected person. "Unprotected" is without a new latex or polyurethane condom.
- Needle and syringe sharing among IV drug users.
- HIV-infected mothers. Babies can become infected during pregnancy, shortly after birth, and through breast-feeding.
- HIV infection is passed from one person to another primarily through unprotected sexual,
- Box 28-16 lists the signs and symptoms of AIDS.
- Some HIV-infected persons have symptoms within a few months.
- Others are symptom-free for more than 10 years. However, they carry the virus. They can spread it to others.
- Persons with AIDS are at risk for pneumonia, TB, Kaposi's sarcoma (a cancer), nervous system damage,

Stages of AIDS:

Acute HIV:

Flu like symptoms that occur **days** to **weeks** after contracting HIV.

Chronic HIV:

Also known as the **latent** or **asymptomatic** stage, can last for **several years**.

AIDS:

Makes a person vulnerable to opportunistic infections and AIDS defining condition.

- Appetite: loss of
- Cough
- Depression
- Diarrhea
- Energy: lack of
- Fatigue
- Fever
- Headache
- Memory loss, confusion, and forgetfulness
- Mouth or tongue:
 - Brown, red, pink, or purple spots or blotches
 - Sores or white patches
- Night sweats
- Pneumonia
- Shortness of breath
- Skin:
 - Rashes or flaky skin
 - Brown, red, pink, or purple spots or blotches on the skin, eyelids, or nose
- Swallowing: painful or difficult
- Swollen glands: neck, underarms, and groin
- Vision loss
- Weight loss

person may begin to experience signs and symptoms, including:

- Yeast infections (candidiasis) in the mouth (called thrush) or in other areas of the body, such as the vagina.
- Repeated episodes of diarrhea.
- Dry cough or shortness of breath.
- Swelling in the glands that does not go away.
- Fatigue.
- Fevers that occur again and again.
- Night sweats.

- Weight loss.
- Memory loss or confusion.
- Pain and difficulty when moving.

- Follow Standard Precautions and the Bloodborne Pathogen Standard.
- Provide daily hygiene. Avoid irritating soaps.
- Follow the care plan for oral hygiene. A toothbrush with soft bristles is best.
- Provide oral fluids as ordered.
- Measure and record intake and output.
- Measure weight daily.
- Encourage deep-breathing and coughing exercises as ordered.
- Prevent pressure ulcers.
- Assist with ROM exercises and ambulation as ordered.
- Encourage self-care. The person may use assistive devices (walker, commode, eating devices).
- Encourage the person to be as active as possible.
- Change linens and garments when damp or wet.
- Listen and provide emotional support.

Promoting safety and comfort:

- Care measures for the person with **HIV/AIDS** include taking steps to relieve uncomfortable symptoms and protecting the person from opportunistic infections.
- A person who has **AIDS** is particularly susceptible to infection caused by contact with people who have contagious illnesses, foods that have not been handled safely and pets.
- Prevent the person from being exposed to people who are ill with contagious illnesses, such as a cold or the flu.
- Practice good infection control measures, including the safe handling of food.
- Finally, be aware that the person should not perform pet care activities that involve possible contact with animal stool (for

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- Many **new drugs** help **slow the spread of HIV** in the body. They also **reduce complications** and **prolong life**.
- **AIDS** has **no vaccine** and **no cure** at present. It is a **life-threatening** disease.
- You may **care** for **persons** with **AIDS** or for persons who are **HIV carriers** (Box 28-17).
- You may have **contact** with the **person's blood** or **body fluids**. **Protect yourself** and others. **Follow Standard Precautions** and the **Bloodborne Pathogen Standard**.
- A person may have the **HIV virus** but **no symptoms**. In some persons, **HIV** or **AIDS** is **not yet diagnosed**.

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- By the time a person with **HIV** develops **AIDS**, his immune system is very damaged and the person is no longer able to fight off other infections.
- This makes the person vulnerable to opportunistic infections (infections that healthy people can resist or control), such as **pneumocystis pneumonia (PCP)**.
- The person may also develop cancers rarely found among people with healthy body defenses, such as Kaposi's sarcoma (which causes red or purplish spots on the skin) and invasive cervical cancer.
- You may be afraid to care for a person with **HIV/AIDS**. Knowing the facts about how **HIV/AIDS** is transmitted can help to relieve some of those fears (Table 18-1).
- **Practice standard precautions** when you provide care for someone who has **HIV/AIDS**, just as you practice standard precautions when you provide care for anyone.
- You do not have to do anything differently when caring for a person with **HIV/AIDS**. You can safely touch, help and hug the person, as well as laugh and talk with her

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- The person may also require a great deal of emotional support and compassion.
- People who used to be close to the person may stop coming to visit when they learn of the person's diagnosis (for example, because they do not understand how the virus is transmitted and are afraid of getting the disease themselves, or because they do not approve of behaviors that may have led to the person getting the infection).
- Because **HIV/AIDS** is a terminal condition, the person may have many worries about what the future holds. As with each person in your care, be a good listener and practice the five principles of caregiving.

Table 18-1 Myths About HIV/AIDS

Myth	Fact
You can get HIV through casual contact (shaking hands, hugging, using a toilet, drinking from the same glass).	HIV is not transmitted through casual contact. The virus does not live long outside of the body.
You can get HIV by breathing the air after an infected person coughs or sneezes, or by sharing food with the person.	HIV is not an airborne or food-borne virus.
Only homosexuals are at risk for HIV infection.	Any person, regardless of sexual orientation, can get HIV as a result of unprotected sexual activity.
Men cannot get HIV from women.	Any person, regardless of gender, can get HIV as a result of unprotected sexual activity.
You can get HIV through receiving donated blood or organs.	Stringent policies for HIV screening and testing of blood transfusion products and donated organs have been in place in the United States since 1985, making the U.S. supply of donated blood and organs among the safest in the world.
You can get HIV through donating blood.	Donating blood does not put a person at risk for becoming infected with HIV. Sterile procedures and disposable equipment are used when collecting blood. Each needle is used only once.
There are medications that can cure HIV/AIDS.	There are medications that can delay the progression of the disease, but currently, there is no cure for HIV/AIDS.

FOCUS ON OLDER PERSONS

Acquired Immunodeficiency Syndrome

Older persons get and spread HIV through sexual contact and IV drug use. Aging and some diseases mask the signs and symptoms of AIDS. Older persons are less likely to be tested for HIV/AIDS. Often the person dies without the disease being diagnosed.

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Any Questions ?



Thank you !