ORIGIN OF AIDS/HIV(ACQUIRED IMMUNODEFICIENCY SYNDROME/HUMAN IMMUNODEFICIENCY VIRUS)

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Abstract: *Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS). When a person becomes infected with HIV, the virus attacks and weakens the immune system. As the immune system weakens, the person is at risk for getting life-threatening infections and cancers.*

Key words: *AIDS, HIV, immune system, blood, CD4 cells, virus, symptoms, treatments.*

What is AIDS?

Human immunodeficiency virus is an infection that attacks the body's immune system. Acquired immunodeficiency syndrome is the most advanced stage of the disease.

HIV targets the body's white blood cells, weakening the immune system. This makes it easier to get sick with diseases like tuberculosis, infections and some cancers.

HIV is spread from the body fluids of an infected person, including blood, breast milk, semen and vaginal fluids. It is not spread by kisses, hugs or sharing food. It can also spread from a mother to her baby.

HIV can be treated and prevented with antiretroviral therapy (ART). Untreated HIV can progress to AIDS, often after many years.

Where Did AIDS Come From?

Scientists have traced the origin of HIV back to chimpanzees and simian immunodeficiency virus (SIV), an HIV-like virus that attacks the immune system of monkeys and apes.

In 1999, researchers identified a strain of chimpanzee SIV called SIVcpz, which was nearly identical to HIV. Chimps, the scientist later discovered, hunt and eat two smaller species of monkeys—red-capped mangabeys and greater spot-nosed monkeys—that carry and infect the chimps with two strains of SIV. These two strains likely combined to form SIVcpz, which can spread between chimpanzees and humans.

SIVcpz likely jumped to humans when hunters in Africa ate infected chimps, or the chimps' infected blood got into the cuts or wounds of hunters. Researchers believe the first transmission of SIV to HIV in humans that then led to the global pandemic occurred in 1920 in Kinshasa, the capital and largest city in the Democratic Republic of Congo.

The virus spread may have spread from Kinshasa along infrastructure routes (roads, railways, and rivers) via migrants and the sex trade.

In the 1960s, HIV spread from Africa to Haiti and the Caribbean when Haitian professionals in the colonial Democratic Republic of Congo returned home. The virus then moved from the Caribbean to New York City around 1970 and then to San Francisco later in the decade.

International travel from the United States helped the virus spread across the rest of the globe.

HIV transmission facts

Anyone can contract HIV. The virus is transmitted in bodily fluids that include:

- blood
- semen
- vaginal and rectal fluids
- breast milk

Some of the ways HIV is transferred from person to person.

HIV does NOT transfer through:

- skin-to-skin contact
- hugging, shaking hands, or kissing
- air or water
- sharing food or drinks, including drinking fountains
- saliva, tears, or sweat (unless mixed with the blood of a person with HIV)
- sharing a toilet, towels, or bedding
- mosquitoes or other insects

It's important to note that if a person living with HIV is being treated and has a persistently undetectable viral load, it's virtually impossible to transmit the virus to another person.

What are the symptoms of AIDS?

AIDS refers to acquired immunodeficiency syndrome. With this condition, the immune system is weakened due to HIV that's typically gone untreated for many years.

If HIV is found and treated early with antiretroviral therapy, a person will usually not develop AIDS.

People with HIV may develop AIDS if their HIV is not diagnosed until late or if they know they have HIV but don't consistently take their antiretroviral therapy.

They may also develop AIDS if they have a type of HIV that's resistant to (doesn't respond to) the antiretroviral treatment.

Without proper and consistent treatment, people living with HIV can develop AIDS sooner. By that time, the immune system is quite damaged and has a harder time generating a response to infection and disease.

With the use of antiretroviral therapy, a person can maintain a chronic HIV diagnosis without developing AIDS for decades.

Symptoms of AIDS can include:

- recurrent fever
- chronic swollen lymph glands, especially of the armpits, neck, and groin
- chronic fatigue
- night sweats
- dark splotches under the skin or inside the mouth, nose, or eyelids
- sores, spots, or lesions of the mouth and tongue, genitals, or anus
- bumps, lesions, or rashes of the skin
- recurrent or chronic diarrhea

- rapid weight loss
- neurologic problems such as trouble concentrating, memory loss, and confusion
- anxiety and depression

Antiretroviral therapy controls the virus and usually prevents progression to AIDS. Other infections and complications of AIDS can also be treated. That treatment must be tailored to the individual needs of the person.

HIV statistics

Here are today's HIV numbers:

- In 2019, about 38 million people worldwide were living with HIV. Of those, 1.8 million were children below the age 15 years.
- At the end of 2019, 25.4 million people living with HIV were using antiretroviral therapy.
- Since the pandemic began, 75.7 million people have contracted HIV, and AIDS-related complications have claimed 32.7 million lives.
- In 2019, 690,000 people died from AIDS-related diseases. This is a decline from 1.9 million in 2005.
- Eastern and Southern Africa are the hardest hit. In 2019, 20.7 million people in these areas were living with HIV, and 730,000 more contracted the virus. The region has more than half of all people living with HIV worldwide.
- Adult and adolescent women accounted for 19 percent of new HIV diagnoses in the United States in 2018. Almost half of all new cases occur in African Americans.
- Left untreated, a woman with HIV has a 15–45 percent Trusted Source chance of passing HIV to her baby during pregnancy or breastfeeding. With antiretroviral therapy throughout pregnancy and avoidance of breastfeeding, the risk is less than 5 percent Trusted Source.
- In the 1990s, a 20-year-old person with HIV had a life expectancyTrusted Source of 19 years. By 2011, it had improved to 53 years. Today, life expectancy is near normalTrusted Source if antiretroviral therapy is started soon after contracting HIV.

As access to antiretroviral therapy continues to improve around the world, these statistics will hopefully keep changing

Treatment options for HIV

Treatment should begin as soon as possible after a diagnosis of HIV, regardless of viral load.

The main treatment for HIV is antiretroviral therapy, a combination of daily medications that stop the virus from reproducing. This helps protect CD4 cells, keeping the immune system strong enough to take measures against disease.

Antiretroviral therapy helps keep HIV from progressing to AIDS. It also helps reduce the risk of transmitting HIV to others.

When treatment is effective, the viral load will be "undetectable." The person still has HIV, but the virus is not visible in test results.

However, the virus is still in the body. And if that person stops taking antiretroviral therapy, the viral load will increase again, and the HIV can again start attacking CD4 cells.

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