

HIV & AIDS Reference Sheet 1

What are HIV & AIDS and how do they act in the human body?

HIV is a virus carried in blood, semen, vaginal fluid and breast milk. HIV stands for **Human Immunodeficiency Virus**. HIV causes **Acquired Immune Deficiency Syndrome** or **AIDS**. AIDS is the last stage of **HIV Disease**.

Three out of four people with HIV have flu-like symptoms (sore throat, fever, fatigue) one to six weeks after catching it. One out of four people have no symptoms at all. They can still pass the virus to others if they have sex, share needles or get pregnant, even though they don't feel sick.

Once HIV gets into the blood, it invades the white blood cells, especially the "T-Helper cells," which are the coaches of the immune system. HIV turns a T-Helper cell into a little virus factory, producing more and more copies of the virus. Eventually, the infected T-Helper cell dies, and the new copies of HIV go off to infect other T-Helper cells in the person's body. HIV stays in the body. It can't be completely killed by drugs. There is no cure. For the rest of his or her life the person with HIV can transmit it to others.

At first, the person won't have enough antibodies in their blood to show up on a test. It might take weeks for their body to build up enough antibodies. After three months, though, a test will show that they are **HIV positive**.

With T-Helper cells sick and declining in number, the immune system can't work as well. This can take ten or more years, especially with treatment, but eventually most people reach the stage of AIDS.

A medical provider determines when a person has AIDS. It takes two things for the doctor to call it that. First, the person must have HIV. Second, their T-Helper cells must have dropped to a low number, or they must have gotten a rare infection. These infections are called "opportunistic" because they take the opportunity of a person's weak immune system to make the person sick. They're diseases that a healthy immune system could control.

AIDS doesn't directly cause death. It allows these other diseases to cause the person's death. One such disease is *Kaposi's sarcoma*, caused by an ordinarily harmless virus. It is a rare kind of cancer that causes skin sores and tumors. Another one of these diseases is *Pneumocystis Pneumonia*, a rare infection of the lungs.

These days there are better drugs to prevent and treat these infections, so that people are living longer. These drugs can help eliminate or control an opportunistic infection, or help increase the number of T-Helper cells so that their immune system begins to function better. Even so, they will always be considered to have AIDS.

HIV & AIDS Reference Sheet 2

Where did HIV come from?

Today HIV is found all over the world on every continent. People with HIV traveled from place to place, taking the virus with them to new places. It was long suspected that the virus passed from animals to humans in the beginning, changing (mutating) just enough to become deadly in its new host. However, many animals carry HIV-like viruses that do not harm humans.

After years of research, we now know that the virus began in a chimpanzee species from West Africa. It's likely that the chimpanzee passed the virus to a hunter when he killed the animal for food. If someone was cleaning the meat and got a cut, the chimp's infected blood could have passed the virus to the human.

In Africa and elsewhere, HIV infected the heterosexual population first. It passed from men to women and from women to men like other STDs. Today, most of the world's HIV burden is in sub-Saharan Africa. Meanwhile, in North America, during the early years of the HIV epidemic, it mainly infected the gay male population, so it passed mostly from men to other men. In other words, it's clear that HIV can infect *anyone*. It's what you do, not who you are, that puts you at risk for HIV. This is why testing is so important, whether people are gay or straight.

Why do people in sub-Saharan Africa and Western gay men have the highest rates of HIV disease?

Scientists have found a gene that evolved to protect Africans from malaria, but it actually makes them *more* susceptible to HIV. This gene partially explains why the epidemic is centered there.

What about gay men? Well, people tend to have sex within their own communities. Once HIV infected some gay men in Europe and North America, it stayed largely in that population for many years, partly because gay men were more likely to be *exposed* to HIV. That is, the odds were higher if a guy was gay that the person he liked had HIV. That's still true today for men who have sex with men (whether or not they think of themselves as gay).

Another factor is access to resources. In the US, gay men and people of color have high rates of HIV infection when compared to white people in straight or lesbian relationships. The Centers for Disease Control (also called the CDC) says that this is partly due to prejudice and fear -- homophobia and racism. Prejudice has created unequal access to jobs and therefore less access to health insurance. Prejudice makes healthy relationships harder to maintain. And some people have avoided getting tested due to past experiences of discrimination in health care settings. They feared being judged or mistreated. All of these conditions have allowed HIV to continue to spread.

HIV & AIDS Reference Sheet 3

How is HIV spread today?

For HIV to be transmitted, it has to get directly into the blood. There are three ways that ordinarily happens.

(1) The most common way is **during sex**. Infected blood, semen or vaginal fluid can pass from one person to another through a mucous membrane. Mucous membranes are the thin-skinned, wet parts of the body. They line certain openings -- the mouth, anus, vagina, and the opening to the urethra at the tip of the penis. These membranes are very delicate, almost skinless, to allow fluids in and out of the body.

Anal sex is riskiest because the membrane that lines the rectum can easily get microscopic tears. Also, blood vessels are close to the surface of the skin there. For women, vaginal sex can be especially risky if infected semen is ejaculated into the vagina. Oral sex can also transmit HIV, especially to the person's mouth or throat. In contrast, the skin on your arm could only be penetrated by the virus if you had a cut, scrape, or skin disease. HIV cannot travel through unbroken skin, only cuts and mucous membranes.

(2) HIV infection can also happen when an infected person **injects drugs into a vein** ("shoots up"), and then **shares the syringe**. There's some amount of blood inside the syringe after the first person uses it, even if it isn't visible. If that blood is infected with HIV, the second user is putting it right into his or her bloodstream.

HIV could be transmitted by sharing needles for tattoos and piercings, as well.

(3) HIV infection can also be passed from an HIV-positive **mother to the fetus** when the mother is pregnant. It can travel from her blood to the fetus through the placenta. Transmission can also occur during delivery or by breast feeding.

Today, medication can *greatly* reduce the chance of a mother passing HIV to her baby. In the US, about one in four women with HIV (25%) pass the infection to their fetuses if they don't get treatment during the pregnancy. But among those who DO get medication while they're pregnant, fewer than one in 50 (2%) give it to the fetus. Also, a doctor can deliver a baby by C-section instead of through the vagina. However, drugs and C-sections are not available in all parts of the world. And in some places breast feeding is a mother's only option if she doesn't have access to clean water or baby formula.

Before 1985, donated blood wasn't tested for HIV. Therefore, some people became infected with HIV by transfusions. Others were infected by medicine made with clotting factor from blood. It wasn't routinely heated to kill HIV until 1985. But since 1985, all donated blood in the US (and other developed countries) is tested for HIV. Transfusions are *extremely* unlikely to transmit the virus (one chance in 1½ million) and there's no risk at all of catching HIV by donating blood.

HIV & AIDS Reference Sheet 4

How can HIV infection be prevented?

ABSTAINING FROM SEX

People don't have to abstain for their whole lives. The safest thing is to wait to have sex until they find someone they want to stay with for years, someone who's shown they can be trusted in other ways and who they're confident will have sex only with them. Some people decide not ever to have sex if they've been drinking or using drugs; they know they'd be less careful about protection. Some people decide not to have sex with new partners for a certain amount of time (for example, three months or two years or until they're married) to make sure they know a person really well.

When people *do* have sex, they can reduce the risk of getting or giving HIV by using a **condom** or a dental dam. These barriers, when people use them correctly every single time, greatly reduce the risk of transmitting HIV and other STDs.

People can also reduce the risk of catching HIV by limiting the **number of people** they have sex with in their lives. The problem is you can't tell if people have HIV or another STD by just looking at them; often *they* don't even know if they're infected.

What difference would having another STD make in terms of catching HIV? There are two reasons another STD increases the risk. Infections like herpes leave sores; chlamydia can make mucous membranes raw. That offers easy pathways for HIV. And all STDs draw a lot

of white blood cells to the infected area to fight the infection. Those are the very cells HIV can infect. So **getting tested** and treated for *other* STDs lowers a couple's HIV risk. It's also recommended that people wait for sex until they both get tested for HIV and retest in three months. Then they should get tested yearly or before they get with someone new.

ABSTAINING FROM DRUGS

The safest thing is to never inject drugs into the body with a needle or use *any* kind of mind-altering drugs. Even using alcohol can mess up people's ability to make the best decisions. After drinking, people are less likely to have safer sex because they stop thinking clearly.

People who are *already* addicted to injection drugs (drugs that they put into their body with a needle) can protect themselves and others, until they're able to quit, by never **sharing** needles -- by using a new needle every time. New needles are free at needle exchange programs in some areas.

PREVENTING MOTHER-TO-CHILD TRANSMISSION

Men and women who want to have a child should get tested for HIV before starting a pregnancy. If a woman learns she's HIV-positive, she can take medicine during the pregnancy to *greatly* reduce the chance of passing HIV to the fetus.

HIV is one of the few entirely preventable diseases. You can decide not to risk getting it!

HIV Hotline Handout

Name _____

Period _____

DIRECTIONS: *Imagine you work on an HIV hotline. Answer one of the questions below from your callers. Circle the number of the question you are answering. You may ask the person more questions if you need to. Write what you would ask them and your answer to their question below and on the back of this page.*

Caller # 1, a man: “I was in San Francisco last week and someone who looked gay sneezed all over me when they passed me on the street. I think they may have given me HIV. Do I need an HIV test? What should I do?”

Caller # 2, a woman: “I just found out my girlfriend of three years has been sleeping with a guy. We don’t use dental dams because we were only supposed to have sex with each other. Do I need an HIV test? What should I do?”

Caller # 3, a woman: “I’ve been going out with a man who’s a lot older than me. We haven’t gone all the way yet, but we have done a lot of touching and a little...um, oral sex. I just found out that he shoots drugs. Do I need an HIV test? What should I do?”

Caller # 4, a man: “Me and my girlfriend have an open relationship, so we always use condoms with other people. She finally told me a condom broke with this other guy a week ago, but we’ve already had unprotected sex. Do I need an HIV test? What should I do?”

Individual Homework: Who gets HIV and how could they avoid it?

NAME: _____ PERIOD: _____

Write or draw something based on what you learned in class today.

Answer these questions in a two-paragraph essay, a poem, a spoken word piece, or through art:

- Who gets HIV? Get beyond the stereotypes. Why do certain people get it more than others? What's the truth?
- What could someone like you do to reduce their risk?

If you write a spoken word piece and would prefer to tape it instead of handing it in in written form, it is OK to make it into a YouTube video, post it and turn in the URL.

If you create art, be prepared to explain it to your teacher.