



*(Courtesy of CDC)*

Scanning electron micrograph of HIV-1, colored green, budding from a cultured lymphocyte.

## Hot Topic

### STDs and Teens

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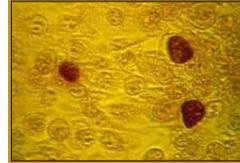
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#### Image Reference:

Goldsmith, C. (1984). Scanning electron micrograph of HIV-1 budding from cultured lymphocyte. This image has been colored to highlight important features; see PHIL 1197 for original black and white view of this image. Multiple round bumps on cell surface represent sites of assembly and budding of virions. Retrieved 08-21-2008 from <http://en.wikipedia.org/wiki/Aids>

## What is an STD?

- STD stands for “sexually transmitted disease.”
  - Many microbes that cause STDs can spread from one person to another only through intimate contact or exchange of body fluids, such as blood or semen.
  - Many STDs can be passed from pregnant women to the babies they are carrying.
- STDs occur in both men and women, and affect people of all backgrounds and economic levels.
- STDs are caused by infections by microorganisms.
  - Viruses (for example, HIV/AIDS)
  - Bacteria (for example, chlamydia)
  - Protozoans (for example, trichomoniasis)



Courtesy of the CDC

Bacteria that cause chlamydia



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### What is an STD?

There are more than 20 types of known sexually transmitted diseases. These illnesses pass from one person to another, primarily through sexual contact, and can be caused by bacterial, parasitic or viral infection. The spread of many of STD-causing microorganisms can be prevented by the avoidance of sexual activity, or reduced by the proper use of latex (or polyurethane) condoms for all sexual contact. Prompt screening for and treatment of common STDs, such as chlamydia, also reduces the risk of spreading or contracting a more serious infection, such as by HIV.

### References:

Sexually Transmitted Diseases. *MedLine Plus*. Retrieved 07-18-2008, from <http://www.nlm.nih.gov/medlineplus/sexuallytransmitteddiseases.html>.

*STDs Today*. National Prevention Information Network. Centers for Disease Control and Prevention. Retrieved 07-18-2008, from <http://www.cdcnpin.org/scripts/std/std.asp>.

### Image Reference:

*Bacteria that cause chlamydia*. Centers for Disease Control and Prevention. Retrieved 07-18-2008, from <http://www.cdcnpin.org/scripts/std/std.asp>

## HIV/AIDS

- HIV destroys the body's ability to fight disease. When people with HIV can no longer battle infections, they are considered to have AIDS.
- HIV spreads through close contact with body fluids of an infected person. Examples of such contact include:
  - having unprotected sex with an infected person;
  - sharing needles with an infected person; or
  - getting a tattoo or body piercing with a needle used on an infected person.
- Many people do not know they are infected, because symptoms of HIV may not appear for many years.
- HIV cannot be cured, only prevented.



Courtesy of the CDC  
Small particles of  
HIV on the surfaces  
of other cells



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### HIV/AIDS

**HIV/AIDS** refers to infection by the human immunodeficiency virus, which destroys the body's ability to fight infections and cancers. HIV can be transmitted through any close contact with the body fluids, such as blood or semen, of anyone who has the virus. It also can be transmitted from HIV-infected mothers to their children. Transmission most frequently occurs during unprotected sexual acts or when sharing needles to inject intravenous drugs. An existing infection with another STD increases the risk of contracting HIV, because the HIV virus can invade the body through tiny sores caused by the other STD. Appropriate use of latex (or polyurethane) condoms reduces the risk of contracting or spreading HIV through sexual activity.

According to the National Institutes of Health, "there is no evidence that HIV is spread by contact with saliva or through casual contact, such as shaking hands or hugging, or sharing of food utensils, towels and bedding, swimming pools, telephones, or toilet seats. HIV is not spread by biting insects such as mosquitoes or bedbugs."

The first signs of HIV infection generally occur a month or two after infection, and may be similar to symptoms of flu. Severe symptoms may not appear until many months or years later. More advanced stages of HIV infection—during which people are susceptible to many life-threatening diseases, including some forms of cancer—are referred to as acquired immunodeficiency syndrome (AIDS). Treatments now exist to fight HIV infection, but the virus always is deadly. HIV infection can be detected with a blood test.

#### **Reference:**

*What Are HIV and AIDS?* (2008). Eunice Kennedy Shriver National Institute of Child Health and Human Development. National Institutes of Health. Retrieved 07-18-2008, from

[http://www.nichd.nih.gov/health/topics/aids\\_hiv.cfm](http://www.nichd.nih.gov/health/topics/aids_hiv.cfm).

**Image Reference:**

Feorino, P., Palmer, E.I., and McMamus, W.R. *Small particles of HIV on the surfaces of other cells.* Centers for Disease Control and Prevention.

## Common Treatable STDs

- Chlamydia (bacteria, curable with antibiotics)
- Gonorrhea (bacteria, curable with antibiotics)
- Herpes (virus, can be treated but not cured)
- Human papilloma virus, also called HPV (virus, can be prevented with a vaccine)
- Trichomoniasis (parasite, curable with antibiotics)



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### Common Treatable STDs

There are more than 20 types of known sexually transmitted diseases. These illnesses pass from one person to another, primarily through sexual contact, and can be caused by bacterial, parasitic or viral infection. The spread of many of STD-causing microorganisms can be prevented by the avoidance of sexual activity, or reduced by the proper use of latex (or polyurethane) condoms for all sexual contact. Prompt screening for and treatment of common STDs, such as chlamydia, also reduces the risk of spreading or contracting a more serious infection, such as HIV.

**Chlamydia**, the most commonly reported bacterium-related STD in the US, is caused by the bacterium, *Chlamydia trachomatis*. An estimated 2.8 million Americans are infected with chlamydia each year, but many do not seek treatment because the symptoms often are mild or absent. The highest rates of infection are among adolescents between 15 and 19 years of age. Chlamydia can spread during any kind of sexual contact; the risk of infection can be reduced by correct use of latex (or polyurethane) condoms. Even though initial symptoms may be negligible, the infection is particularly dangerous to women, because it can damage a woman's reproductive organs and cause serious problems, such as infertility, ectopic (outside the uterus) pregnancy and recurrent pelvic pain. Chlamydia can be treated and cured effectively with antibiotics.

**Gonorrhea** is an infection of the reproductive tract, mouth or anus caused by the bacterium, *Neisseria gonorrhoeae*. More than 700,000 persons in the US are infected with gonorrhea each year. Gonorrhea is spread through sexual contact. Several antibiotics can be used to cure this infection, but drug-resistant strains of gonorrhea are becoming more prevalent in many parts of

the world. Correct use of latex (or polyurethane) condoms reduces the risk of contracting gonorrhea.

**Herpes** is caused by the Herpes simplex virus (HSV). Herpes infections around the mouth (cold sores) usually are caused by a strain of the virus called HSV type 1. Another variant of the virus, HSV 2 typically infects the genitals and anal area. HSV can be transmitted through any kind of sexual contact, including oral sex, and can spread even when sores are not present. Once a person is infected, the virus will remain in certain nerve cells of the body for life. There is no cure for herpes, but some antiviral medications can shorten or prevent outbreaks. Condom (latex or polyurethane) use reduces, but does not eliminate the risk of contracting HSV.

**Human papillomaviruses (HPV)** are common viruses that cause warts. About 30 types of HPV are transmitted sexually, and as many as 24 million Americans are infected. Some forms of HPV are linked specifically to the development of cervical cancers in women. Precancerous changes in the cervix can be detected by a Pap smear (a simple test performed in a doctor's office). A new vaccine, Gardasil®, protects against four types of HPV that collectively cause 70% of HPV-related cervical cancers and 90% of genital warts. Correct use of latex (or polyurethane) condoms reduces, but does not eliminate, the risk of contracting or spreading HPV infection.

**Trichomoniasis** is caused by a single-celled parasite belonging to the protozoan group. It is the most common, curable STD in young, sexually active women. This disease also affects men, but the symptoms (irritation and yellowish discharge) are more common in women. Trichomoniasis usually can be cured with a prescription antibiotic. The use of latex condoms reduces, but does not eliminate, the risk of transmission.

#### **References:**

Sexually Transmitted Diseases. (2008). *MedLine Plus*. Retrieved 07-18-2008, from <http://www.nlm.nih.gov/medlineplus/sexuallytransmitteddiseases.html>.

STDs Today. National Prevention Information Network. *Centers for Disease Control and Prevention*. Retrieved 07-18-2008, from <http://www.cdcnpin.org/scripts/std/std.asp>.

#### **Image Reference:**

*Health care professional*. National Prevention Information Network. Centers for Disease Control and Prevention. Retrieved 07-18-2008, from <http://www.cdcnpin.org/scripts/population/index.asp>.

## STDs: A Hidden Epidemic

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- 19 million new cases of sexually transmitted disease (STD) are reported each year in the US.
- Young adults (15 to 24 years old) account for more than half of all new STD cases each year, even though they represent only one fourth of the sexually active population. Why is this so?
  - Many STDs produce mild or no symptoms initially, so teens do not know they are infected.
  - Teenagers may be reluctant to be screened and treated, because they do not want supervising adults to know that they are sexually active.
  - Teenagers have difficulty accessing prevention, screening and treatment resources.



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### STDs: A Hidden Epidemic

“STDs affect men and women of all backgrounds and economic levels. However, STDs disproportionately affect women, infants of infected mothers, adolescents and young adults, and communities of color. Although 15-24-year-olds represent only one-quarter of the sexually active population, they account for nearly half of all new STDs each year.

Some contributing factors in the rise of STDs, particularly among young people, are that teenagers are increasingly likely to have more sex partners at earlier ages, and sexually active teenagers often are reluctant to obtain STD services, or they may face serious obstacles when trying to obtain them. In addition, health care providers often are uncomfortable discussing sexuality and risk reduction with their patients, thus missing opportunities to counsel and screen young people for STDs.” Quote from *STDs Today* (National Prevention Information Network, Centers for Disease Control and Prevention.

<http://www.cdcnpin.org/scripts/std/std.asp>

### References:

*25 Sexually Transmitted Diseases*. Healthy People 2010. Centers for Disease Control and Prevention. Retrieved 07-18-2008, from <http://www.healthypeople.gov/document/HTML/Volume2/25STDs.htm>.

*STDs Today*. National Prevention Information Network. Centers for Disease Control and Prevention. Retrieved 07-18-2008, from <http://www.cdcnpin.org/scripts/std/std.asp>.

## STDs: Social Factors

- Women suffer more frequent and serious STD complications than men.
  - Some STDs are more easily passed from a man to a woman (than vice versa).
  - An STD in a pregnant woman can cause health problems for the unborn or newborn baby.
  - Women are more likely (than men) to be coerced or forced to participate in sexual acts.
- Drugs and alcohol contribute to the spread of STDs, because they interfere with good decision-making.
- In the US, people are reluctant to discuss their personal sexual histories or STD prevention and treatment.



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### STDs: Social Factors

STDs do not affect all groups equally. Women are more likely than men to become infected, and to suffer serious long-term complications from STDs, such as cervical cancer or pelvic inflammatory disease. Women also are more likely than men to be coerced into sexual activity that places them at risk. Use of drugs and alcohol, which impair judgment, also can lead to acts that place participants at risk of infection.

Even though US culture is bombarded with sexual messages, STDs still are stigmatized in the US. This stigmatization leads to a reluctance to discuss STDs, to seek assistance in preventing infection, or to seek treatment and counseling.

### Reference:

*25 Sexually Transmitted Diseases*. Healthy People 2010. Centers for Disease Control and Prevention. Retrieved 07-18-2008, from <http://www.healthypeople.gov/document/HTML/Volume2/25STDs.htm>.

### Image Reference:

*Teens*. National Prevention Information Network. Centers for Disease Control and Prevention. Retrieved 07-18-2008, from <http://www.cdcnpi.org/scripts/std/std.asp>.

## Personal Protection for Teens

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- The only way to avoid all risk of contracting a sexually transmitted disease (STD) is not to have sex.
- To lower the risk of catching an STD, always use a latex condom or **insist** that your partner use a latex condom.
  - Condoms work by keeping blood, semen and other fluids from passing from one person to another.
  - Use a new condom for each act of sex.
- Drugs or alcohol may cloud your judgment or interfere with using a condom correctly.
- It is not possible to tell from looking at someone whether he or she has HIV or another STD.
- If you think you may have an STD, get tested and follow the treatment recommendations.



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### Personal Protection for Teens

The Centers for Disease Control and Prevention provide the following facts regarding sexually transmitted diseases.

- \* Sexually transmitted diseases affect about 19 million Americans each year, many of whom are teenagers or young adults.
- \* Drugs and alcohol increase your chances of getting STDs because these substances can interfere with your judgment and your ability to use a condom properly.
- \* Intravenous drug use puts a person at higher risk for HIV and hepatitis B because IV drug users usually share needles.
- \* The more partners you have, the higher your chance of being exposed to HIV or other STDs. This is because it is difficult to know whether a person is infected, or has had sex with other people who are infected due to intravenous drug use or other high-risk behaviors.
- \* Sometimes, early in an infection, there may be no symptoms of the STD, or the symptoms may be confused with other illnesses.
- \* You cannot tell by looking at someone whether he or she is infected with HIV or another STD.

The CDC provides a variety of electronic health cards that can be sent to friends and family. They contain reminders and helpful information on a variety of health topics. Send a Health-e-Card by visiting the following site, maintained by the CDC:  
<http://www2a.cdc.gov/ecards/browse.asp?act=brs&chkcategory=STD%2BAwareness&submit1=GO>.

**Reference:**

*On the Teen Scene: Preventing STDs.* (1998). US Food and Drug Administration. Retrieved 07-17-2008, from [http://www.fda.gov/fdac/reprints/ots\\_std.html](http://www.fda.gov/fdac/reprints/ots_std.html).