

## Sexually Transmitted Diseases & Infections (STDs/STIs) - Introduction

An estimated 20 million new sexually transmitted disease (STD) infections happen each year, half among young people ages 15–24. There are more than 110 million total (new and existing) STD infections across the United States.<sup>1</sup> Most people have little knowledge of these diseases. It is important to educate yourself about them to protect yourself, your friends, and your loved ones.

### Bacterial and Viral Infections

Bacterial infections can usually be treated with an anti-biotic if they're caught. Viral infections stay in your body for life. Some symptoms from viral infections clear up or can be treated with special medications.

### Chlamydia

Chlamydia is a common sexually transmitted disease (STD) caused by bacteria. It can be spread during vaginal, anal or oral sex and can affect men and women.

More than 1,598,000 cases were reported in 2016 (the most recent data available), but the infection rate is much higher - nearly 2.86 million.<sup>4</sup> Over 75% of the cases reported were people 15-24 years old.<sup>1</sup> Many people have no symptoms. Some women might have an abnormal vaginal discharge or a burning when urinating. When the infection spreads, some women may have lower abdominal or back pain, nausea or fever.

The more sex partners a person has, the greater the risk of chlamydia infection. Chlamydia can be treated and cured with antibiotics. If not treated, the infection can cause an infection called pelvic inflammatory disease (PID) in 10-15% of women. PID can cause permanent damage to the fallopian tubes, uterus and tissues surrounding the ovaries. Women infected with chlamydia may also have higher risk of acquiring HIV infection (HIV causes AIDS) from an infected partner.<sup>4</sup>

### HPV - Human Papillomavirus

Genital HPV infection is the most common STD and is caused by human papillomavirus (HPV). Most people who become infected will clear it on their own. Nearly one in four people in the United States has HPV. However, some HPV viruses are "high-risk" types, which may lead to cancer of the cervix, vulva, vagina, anus or penis. About 79 million people are currently infected with HPV with 14 million new infections each year.<sup>5</sup>

HPV spreads primarily through genital contact. Most HPV infections have no symptoms. Some people get visible genital warts which may spread to the mouth through oral sex or have changes in cells of the cervix, vulva, anus or penis that could lead to cancer.<sup>5</sup>

About 13 of the more than 40 genital HPV types can lead to the development of cervical cancer. In 2015 in the United States, 12,845 women developed invasive cervical cancer and 4,175 women died from this disease.<sup>5</sup>

There is no "cure" for HPV infections. However, two vaccines, Cervarix and Gardasil have been approved by the FDA. Because the vaccines do not protect against all types of HPV, they will not prevent all cases of cervical cancer or genital warts. According to the Centers for Disease Control and Prevention (CDC), about 30% of cervical cancers and about 10% of genital warts will not be prevented by Gardasil - nor will it prevent other sexually transmitted infections.<sup>12</sup>

## Syphilis

Syphilis is an STD caused by a type of bacteria. In the U.S., over 88,000 cases of syphilis were reported in 2016 (the most recent data). Infectious syphilis occurs most in men 20 to 29 years of age. Men having sex with men accounted for the majority of primary and secondary cases in 2016.<sup>1,6</sup>

Syphilis is passed by direct contact with a syphilis sore. Sores occur mainly on the genitals, vagina, anus, in the rectum or on the lips or in the mouth. Syphilis can spread during vaginal, anal or oral sex. Many people infected with syphilis do not have any symptoms for years, but are at risk for later complications if they are not treated.

During the primary stage of syphilis one or more sores (called a chancre) appears. The last (hidden) stage of syphilis has no symptoms. Without treatment, it may damage internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones and joints.<sup>6</sup> Additionally, untreated early syphilis in pregnant women, if acquired during the 4 years before delivery, can lead to infection of the fetus in up to 80% of cases and may result in stillbirth or death of the infant in up to 40% of cases.<sup>1</sup>

## Trichomoniasis

Trichomoniasis (trick-oh-moe-nye-uh-sis) is caused by a parasite. Trichomoniasis is considered the most common curable STD. In the United States, an estimated 3.7 million people have the infection.

Trichomoniasis is spread through sexual activity. Infection is more common in women who have had multiple sexual partners. The parasite is sexually transmitted through penis-to-vagina intercourse or vulva-to-vulva (the genital area outside the vagina) contact with an infected partner. Trichomoniasis can increase the risk of getting or spreading other sexually transmitted infections. It can cause pre-term birth and other pregnancy related problems.

Symptoms include a frothy, yellow-green discharge with a strong odor and irritation and itching of the genital area. The drug metronidazole or tinidazole may be prescribed for treatment. About 1 in 5 people get infected again within 3 months after treatment.<sup>7</sup>

## Genital Herpes

Genital herpes is an STD caused by the herpes simplex viruses type 1 (HSV-1) and type 2 (HSV-2). HSV-2 is a lifelong and incurable infection that can cause recurrent and painful genital sores and can make those infected with the virus two-to-three times more likely to acquire HIV, the virus that causes AIDS.<sup>8</sup> About one in six people ages 14 to 49 have HSV-2 genital herpes infection.<sup>8</sup> Genital herpes can lead to miscarriages and early pre-term delivery. There is no cure for herpes.<sup>8</sup>

## HIV/AIDS

AIDS stands for Acquired Immunodeficiency Syndrome. AIDS is a disease caused by the HIV virus that weakens the immune system. It is a routinely fatal disease.

HIV (human immunodeficiency virus) is the virus that causes AIDS. This virus may be passed from one person to another through sexual and blood-to-blood contact. At the end of 2013 there were an estimated 1,200,000 people living with HIV/AIDS in the U.S. with 6,721 deaths attributed directly to HIV in 2014.<sup>13</sup> Having other STDs

can make the risk of becoming infected with AIDS two to five times more likely.<sup>14</sup>

The most common ways that HIV is transmitted from one person to another is by having sex (anal, vaginal or oral) with an HIV-infected person, by sharing needles or injection equipment with an injection drug user who is infected with HIV, from HIV-infected women passing the virus to their babies before or during birth or through breast-feeding after birth.

The only way to know if you are infected is to be tested for HIV. You cannot rely on symptoms, because they are similar to those of many other diseases.<sup>9</sup>

## Gonorrhea

Gonorrhea is a common STD caused by a bacteria. A total of 395,216 cases of Gonorrhea were reported in the US in 2015.<sup>1</sup> Gonorrhea is spread through contact between the penis, vagina, mouth and anus.

Any sexually active person can be infected with gonorrhea. In the U.S., the highest rates are among sexually active teenagers, young adults and African Americans. In men, symptoms include a burning sensation when urinating or a white, yellow or green discharge from the penis. In women, the symptoms are often mild or absent.

Untreated gonorrhea can cause permanent health problems. In women, it can cause pelvic inflammatory disease (PID) with severe abdominal pain, fever and long-lasting pelvic pain. PID can cause infertility or ectopic pregnancy. In men, gonorrhea can cause a painful condition of the testicles that can lead to infertility if untreated. Drug resistant strains of Gonorrhea have become more common and only one remaining class of antibiotics is left that can treat it. It will become untreatable unless other treatments are found.<sup>10</sup>

## Bacterial Vaginosis

Bacterial vaginosis (BV) is the most common vaginal infection in women of childbearing age, with over 29% women between the ages of 14-49 being infected.<sup>11</sup> The cause of BV is not fully understood. However, risk of infection increases based on lifetime number of sexual partners.

Women with BV may have an abnormal vaginal discharge with an unpleasant odor. Some women report a strong fish-like odor, especially after intercourse. Discharge, if present, is usually white or gray.

Having BV can increase a woman's chances of getting HIV infection if she is exposed to the HIV virus. Having BV and developing PID following surgical procedures seem to be related. BV can make it easier to become infected with other STDs, such as chlamydia and gonorrhea. BV can be treated with medicines prescribed by a health care provider and can be taken by pregnant women.<sup>11</sup>

## Hepatitis B and C

Hepatitis B and C are serious diseases caused by viruses that attack the liver and can cause lifelong infection, cirrhosis (scarring) of the liver, liver cancer, liver failure and death. The estimated number of Hepatitis B Chronic Cases is anywhere from 850,000 to 2.2 million with about 20,900 new cases in 2016. Approximately 2.7 - 3.9 million persons are chronically Hepatitis C infected with 18,153 deaths in 2016.

Hepatitis is spread by contact with the blood of an infected person and can be sexually transmitted. Sharing of

needles among drug users also spreads the disease.

Many infected people have no symptoms. Others might have jaundice (yellow skin), fatigue, dark urine, abdominal pain, loss of appetite or nausea. 70% of those infected with Hepatitis C may have chronic liver problems; 15% may develop scarring of the liver; 3% may die. Vaccine is available for hepatitis B, but is only effective if used before infection. There is no vaccine for Hepatitis C.<sup>15</sup>

## How Can STDs be Prevented?

The surest way to avoid infection with any sexually transmitted disease is to practice sexual abstinence (abstain from any sexual contact) while single. If you marry, select a partner who is not infected with an STD and remain sexually faithful during marriage.

Condoms do not provide complete protection from STIs. Infection can occur in both males and females whether or not a condom is used. When used consistently and correctly, they can reduce the risk of transmission of chlamydia<sup>4</sup>, gonorrhea<sup>10</sup>, and trichomoniasis.<sup>7</sup>

Genital ulcer diseases, like syphilis, can occur in both male and female genital areas that are covered or protected by a latex condom, as well as in areas that are not covered. Correct and consistent use of latex condoms can reduce the risk of syphilis, as well as genital herpes, only when the infected area or site of potential exposure is protected.<sup>6</sup> Condoms may lower the risk of HPV, if used every time and following the correct procedure.<sup>5</sup>

Condoms were found to reduce the risk of HIV/AIDS transmission during vaginal sex by 85% when used consistently (following the directions exactly and using them at every occurrence of sex, without exception).<sup>9,16</sup> Using condoms 100% correctly 100% of the time still leaves a 15% risk of HIV infection compared to not using condoms at all. HIV is the virus that causes AIDS, a routinely fatal disease.

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