6 STDS AND SUBSTANCE ABUSE

OBJECTIVES

After reading the chapter, you should be able to do the following:

- List and describe the human sexual anatomies
- Define sexually transmitted diseases (STDs)
- List the common STDs and their symptoms
- Describe the difference between bacterial, parasitical, protozoal, and viral STDs
- Describe how STDs are spread
- Describe the methods of preventing STDs
- Define substance abuse
- List the major substances that are commonly abused today

Sexually transmitted diseases (STDs) are incredibly commonplace. Traditionally, STDs have been called venereal diseases or "VD" for short, and more recently, they have been referred to as sexually transmitted infections (STIs). The World Health Organization estimates that nearly 499 million new cases of curable STDs occur each year worldwide.[1] Add to this the number of individuals suffering from incurable STDs, such as HIV, with approximately 75 million recorded cases since its inception,[1] and herpes, with a reported 776,000 new cases a year in the United States alone, and it is easy to see why sexually transmitted diseases are widely regarded as a primary risk to human health and wellness.[2] Furthermore, STDs are knowns to cost over $16 billion annually.[2]

In the United States, STDs are quite prevalent, particularly among college-aged individuals. In fact, this demographic has the largest infection rate of any group, accounting for some two-thirds of all sexually transmitted infections.[2] Each year, more than 20 million Americans are infected with one or more of the over 20 known STDs.[2] Alarmingly, this number is increasing, and STDs present a grave health concern today. Fortunately, with education and foresight, they are all preventable.

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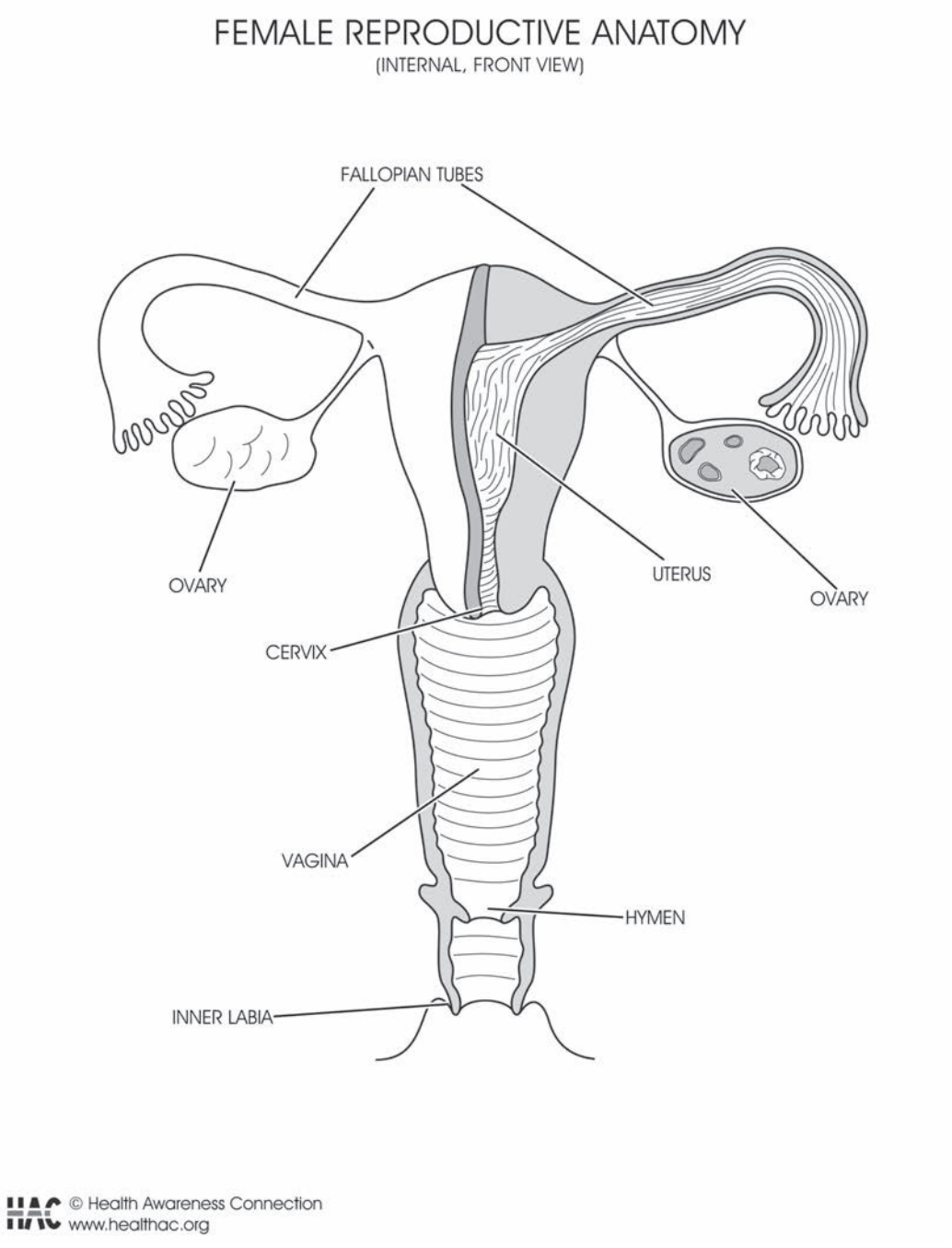
SEXUAL ANATOMY

Female Sexual Anatomy. The female internal sexual organs include the fallopian tubes, ovaries, uterus, and vagina (See Figures 6.1 and 6.2). The ovaries are almond-sized organs that produce hormones and human eggs called ova. Normally, each month, an ovum is released from an ovary, and it travels down the fallopian tube to be fertilized, if sperm are present. The fertilized ovum travels to the uterus—the fist-sized organ that is also called the womb—where it implants on the uterine wall and begins to develop. The lower end of the uterus is called the cervix. The cervix is connected to the vaginal canal, which eventually empties from the body. If the ovum is not successfully fertilized, the uterus sheds its lining—along with the unfertilized ovum—through menstruation, a process that is commonly called a woman's "period."

The external sexual organs of females are shown in Figure 6.3. The vulva is the outer area of skin. The inner labia are the inner pair of folds, and the outer labia are the outer folds. The clitoris is a highly sensitive erectile organ of females that is partially responsible for a woman achieving an orgasm.

Male Sexual Anatomy. The internal male sexual organs include the testes, seminal vesicles, prostate gland, vas deferens, epididymides, and urethra (See Figure 6.4). The external organs include the penis and scrotum (See Figure 6.3). The testes are responsible for the production of sperm, and are located within the scrotum. The male ejaculate is made up of sperm and other fluids secreted by the seminal vesicles and the prostate gland to form semen. The typical male ejaculate contains roughly 300 million sperm cells.

Figure 6.1


FEMALE REPRODUCTIVE ANATOMY
(INTERNAL, FRONT VIEW)
FALLOPIAN TUBES
OVARY
UTERUS
OVARY
CERVIX
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INNER LABIA
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Figure 6.2

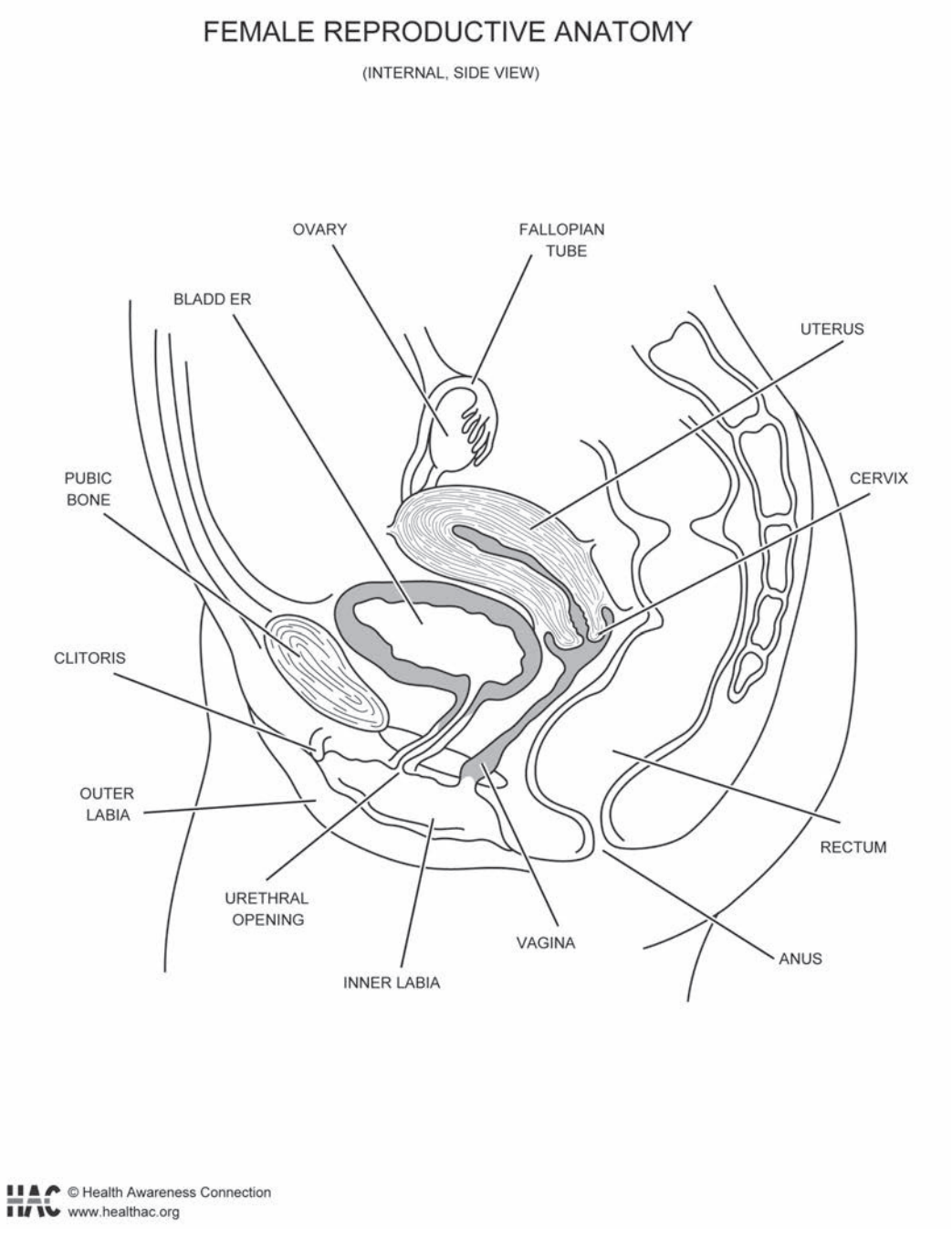
FEMALE REPRODUCTIVE ANATOMY
(INTERNAL, SIDE VIEW)
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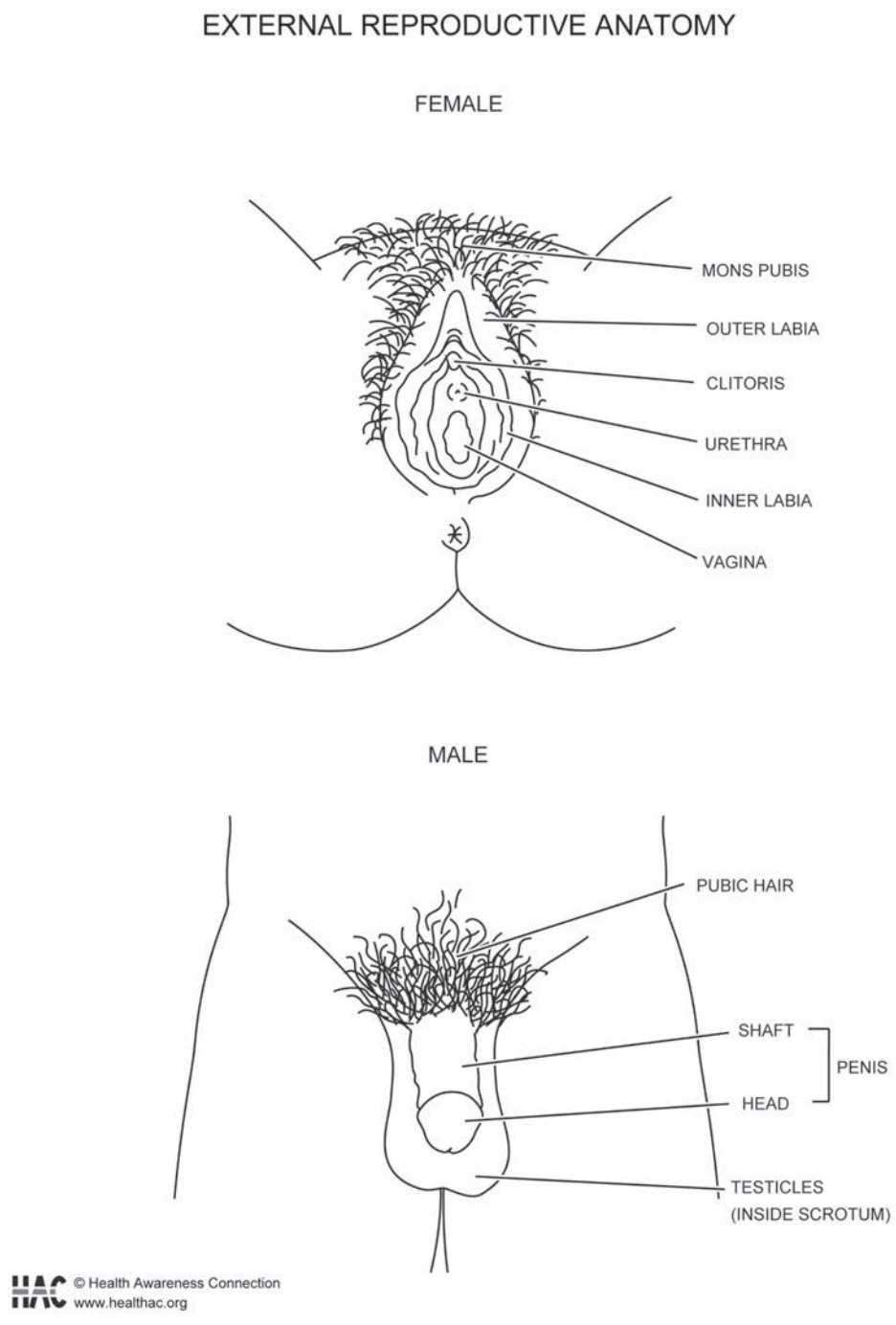
Figure 6.3


EXTERNAL REPRODUCTIVE ANATOMY
FEMALE
MONS PUBIS
OUTER LABIA
CLITORIS
URETHRA
INNER LABIA
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PENIS
HEAD
TESTICLES
(INSIDE SCROTUM)
© Health Awareness Connection
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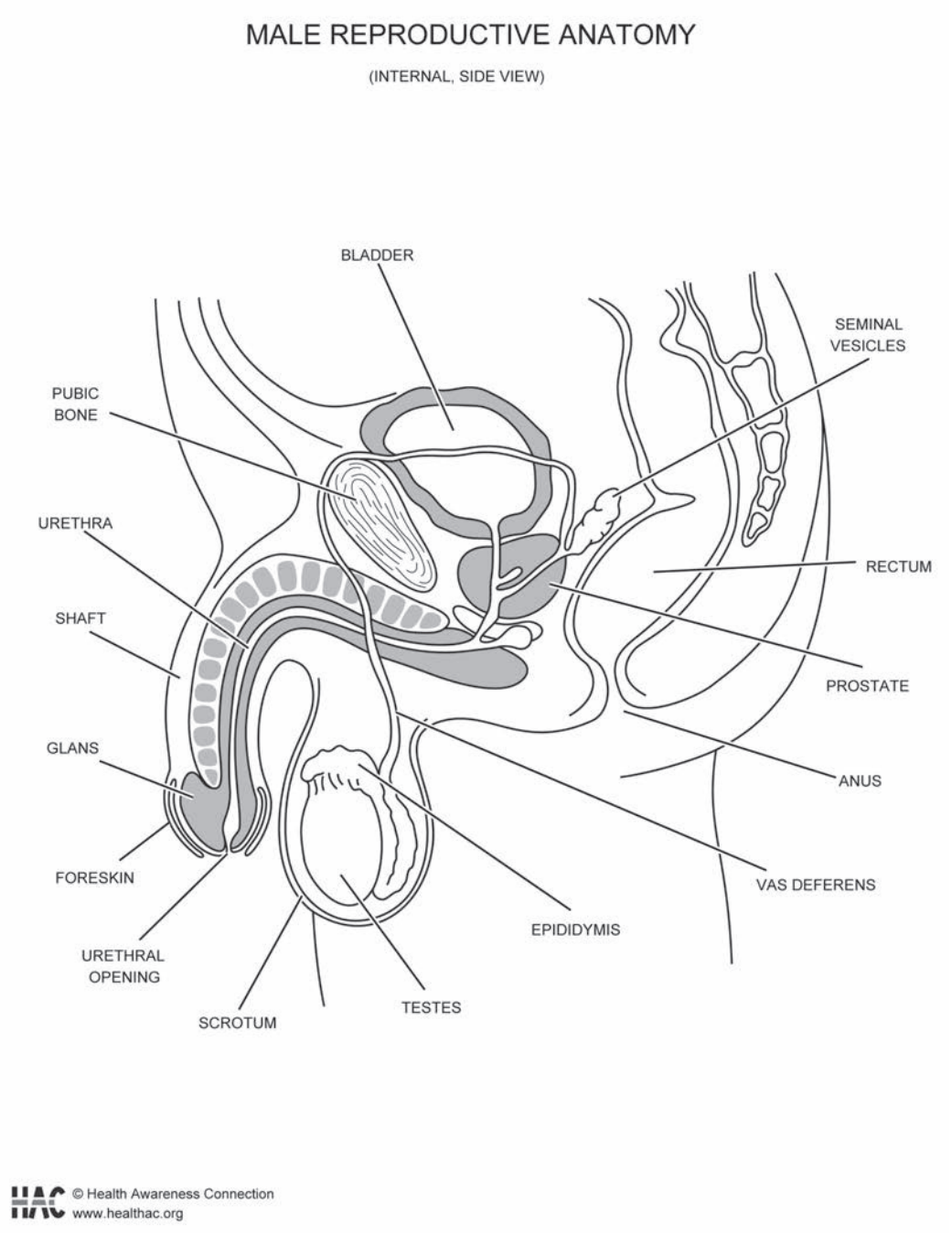
Figure 6.4


MALE REPRODUCTIVE ANATOMY
(INTERNAL, SIDE VIEW)
BLADDER
SEMINAL VESICLES
PUBIC BONE
URETHRA
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PROSTATE
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VAS DEFERENS
EPIDIDYMIS
URETHRAL OPENING
TESTES
SCROTUM
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STDS AND TRANSMISSION

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Many STDs exist (see Figure 6.5). Researchers have discovered some 20 STDs, with new, "more virulent, antibiotic-resistant, and untreatable strains appearing regularly," making treating them highly problematic.[3]

STDs result from either parasitical or microorganismal (i.e., viral, bacterial, or protozoal) infections. Parasitical infections are generally not very serious or dangerous, but they can be embarrassing and are a nuisance. Microorganismal infections, however, can be very dangerous, even life threatening. Luckily, most viruses, bacteria, and protozoa are rather fragile and can live only for a few minutes, if not seconds, when exposed to light, heat, air, or dryness.[3] Specifically, they need an environment that is dark, moist, and warm to survive. Thus, the mucous-lined membranes of the human reproductive system are ideal living conditions for these microorganisms, and it is easy to see why STDs are transmitted easily during sexual contact.

STUDY TIP:

STDs are quite prevalent, with the odds of contracting an STD over one's lifetime being one in four.

The main mode of STD transmission is, as the name implies, sexual contact. Sexual contact is not just limited to penile-vaginal intercourse. STDs can be spread from a variety of intimate contact including, but not limited to, oral sex, hand-to-genital contact, anal sex, and more rarely, mouth-to-mouth contact, such as kissing. Though very rare, transmission also can occur through contact with fluid from body sores, as well as from contact with bed linens and other materials that have been in contact with an infected individual. STDs are quite prevalent, with the odds of contracting an STD over one's lifetime being one in four.[4]

Body piercing, particularly of the genital region, increases the risk for STD transmission. Piercing the body provides an open "gateway" for STD-causing pathogens to enter the body. Moreover, pierced genitals may impede the use of condoms and reduce their effectiveness. Individuals who have their nipples, tongues, or lips pierced have a much higher rate of infection during oral sexual activity. This is further complicated with new piercings, as these sores need three to six months to heal fully.

STDs, as with all infectious diseases, have periods of communicability specific to each disease. As mentioned earlier, there are more than 20

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known STDs; however, only a few of these are very common and pose a serious risk to the average person. The most prevalent STDs are Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS), chlamydia, human papilloma virus (HPV), genital herpes, gonorrhea, and syphilis.

Figure 6.5

Sexually Transmitted Diseases (STDs)

Bacterial STDs	Parasitical STDs	Protozoal STDs	Viral STDs
Chlamydia	Lice ("crabs")	Trichomoniasis (vaginitis)	Acquired Immune Deficiency Syndrome (AIDS)
Gonorrhea	Mites ("scabies")		Genital Herpes
Syphilis			Human Papilloma Virus (HPV)
			Hepatitis B

THE PARASITICAL STDS

Some STDs are caused by external parasites. Two of the most prevalent parasitical STDs are pubic lice and scabies.

Pubic lice live on the shafts of pubic hair, while they feed off small blood vessels beneath the skin.

Pubic Lice. Pubic lice (*Phthirus pubis*), more commonly known as "crabs," are tiny insects that live on the shafts of pubic hair; they are rarely found on the hair of the head. The lice have claws that enable them to grasp the small-diameter hairs of the pubic region, while they feed off small blood vessels beneath the skin, which they pierce with their mouths. The bites can be irritating and itchy, which is one of the main signs of infestation. The lice are very small, but visible, and they look like small freckles. The lice also lay eggs, called nits, which attach to the shafts of the hair.

Pubic lice are transferred from human to human via physical activity, usually sexual activity. The lice also can be spread via contact with egg- or lice-infected bed linens, towels, or clothes. To treat an infestation of pubic lice, one would simply shampoo the infected area with a specially medicat-

ed shampoo. Care must be taken to wash all bed linens, clothes, or towels that could be infected. If not, the lice just return, and the cycle must be repeated. Pubic lice are a nuisance, rather than a serious health concern. That said, they should be eradicated as soon as possible to prevent further infestations and possible embarrassment.

According to the Centers for Disease Control and Prevention (CDC), a pubic lice infection should be treated as follows:

1. *Wash the infested area; towel dry.*
2. *Thoroughly saturate hair with lice medication. If using permethrin or pyrethrins, leave medication on for 10 minutes; if using Lindane, leave on for 4 minutes. Thoroughly rinse off medication with water. Dry off with a clean towel.*
3. *Following treatment, most nits will still be attached to hair shafts. Nits may be removed with fingernails.*
4. *Put on clean underwear and clothing after treatment.*
5. *To kill any lice or nits (attached to hairs) that may be left on clothing or bedding, machine-wash those washable items that were used by the infested person during the 2-3 days before treatment. Use the hot water cycle (130°F), followed by the hot dryer cycle for at least 20 minutes.*
6. *Dry-clean clothing that is not washable.*
7. *Inform any sexual partners that they are at risk for infestation.*
8. *Do not have sex until treatment is complete.*
9. *Do not have sex with infected partners until partners have been treated and infestation has been cured.*
10. *Repeat treatment in 7-10 days, if lice are still present.*

Scabies. An infection of the skin by extremely small mites, *sarcoptes scabiei*, results in a case of scabies. The mites are invisible to the naked eye, but they burrow into the skin to live and to lay their eggs. Their burrowing often creates nodules that are itchy and often result in a rash. Scabies can be transmitted via any physical contact, but it is often transmitted through sexual contact. Symptoms of infestation typically take a few weeks to appear. Fortunately, a scabies infection can be treated successfully with topical agents.

THE BACTERIAL AND PROTOZOAL STDS

Several STDs are caused by bacteria and protozoa and are curable with antibiotics. The major ones are chlamydia, gonorrhea, syphilis, and trichomoniasis (i.e., vaginitis).

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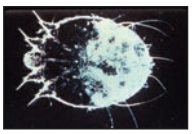

Scabies are small mites that burrow into the skin to live and lay their eggs.

The burrowing scabies mites often create nodules that result in an itchy rash.

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Chlamydia. Chlamydia is the most commonly reported bacterial STD, with more than 1.4 million cases each year.[2] It is caused by a bacterium, *Chlamydia trachomatis*, and is often asymptomatic—meaning that most individuals are unaware they are infected because they display no symptoms. For this reason, chlamydia is often referred to as a "silent" disease, and it is this lack of symptoms that results in its prevalence. More cases of chlamydia are reported in women than men; Hispanics have an incident rate three times as high as Caucasians; African Americans are ten times more likely to contract chlamydia than Caucasians.[4] Approximately 10 percent of all cases are in college students.[3]

Seventy percent of infected women are unaware of their condition because of a lack of symptoms. Those with symptoms experience a yellowish vaginal discharge, followed by occasional spotting. Symptoms generally appear one to three weeks after initial infection. Approximately one-half of infected men experience painful and difficult urination, coupled with a pus-like discharge from the penis.

Because chlamydia is often asymptomatic, many are unaware of their need for treatment, leading to serious health complications. In women, chlamydia can cause pelvic inflammatory disease (PID)—an infection of the fallopian tubes that can lead to infertility. According to the Centers for Disease Control and Prevention, PID affects some 1 million women each year, with some 100,000 becoming infertile and another 150 actually dying. Furthermore, the effects of chlamydia may increase the risk of women developing ectopic pregnancies.

Men can have serious complications with the prostate gland and seminal vessels, as well as develop epididymitis—an inflammation of the epididymides, the tube-like structures located on top of the testicles. Epididymitis is the male equivalent of PID, and involves swelling that fills the scrotum.

Chlamydia is controlled easily through responsible sexual behavior. However, if it is contracted and caught early enough, it is treated easily with antibiotics. Individuals who suspect that they may be at risk of contracting chlamydia should be tested immediately by their physician.

Gonorrhea. Gonorrhea, also know in street vernacular as "The Clap" or "The Drip," is caused by the bacterium, *Neisseria gonorrhoea*, and is second only to chlamydia in reported prevalence among bacterial STDs. Each year more than 820,000 cases are reported.[2] The incidence of gonorrhea is highest among males between ages 20 and 24, and is 40 times higher in African Americans than Caucasians.[4]

The gonorrheal bacterium infects the mucus membranes of the human body, typically affecting the genitals, mouth, throat, anus, and eyes. Unlike

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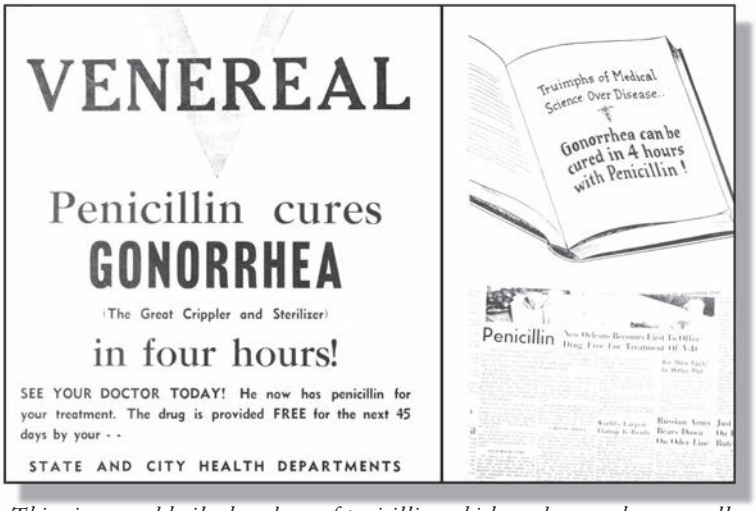

This vintage ad hails the advent of penicillin, which made gonorrhea, as well as other STDs, curable.

chlamydia, approximately 80 percent of men infected with gonorrhea display symptoms of the disease. Usually, the onset of symptoms occurs within two to nine days, characterized by excruciating pain while urinating and a yellow, milky discharge of pus from the penis. Very few men who have gonorrhea go untreated because the pain is so severe; they usually seek the help of a physician immediately. For those who are asymptomatic and who do not seek treatment through antibiotics, the disease can spread to the neighboring prostate gland and the rest of the urinary system, leading to further health problems, such as epididymitis. Ultimately, if untreated, gonorrhea can cause sterility.

Unlike men, women are usually asymptomatic, with only about 20 percent of infected women displaying symptoms. This is problematic in two ways. If a woman is sexually active with multiple partners, she may unknowingly infect others; approximately 5 percent of women are silent carriers of gonorrhea.[4] Second, if untreated, gonorrhea could spread throughout the entire reproductive system, eventually causing serious health problems, such as PID and infertility.

Often, individuals who test positive for gonorrhea also have chlamydia. The presence of multiple infections often means several antibiotics might have to be employed, as several antibiotic-resistance strains of the bacteria have evolved recently.

Syphilis. Syphilis is caused by the spirochete (a spiral-shaped bacterium) *Treponema pallidum*, and is very fragile. If exposed to air, cold, or dryness, it dies very quickly, so it is usually transmitted through direct sexual contact. Unborn infants can contract the disease from their mothers (i.e.,

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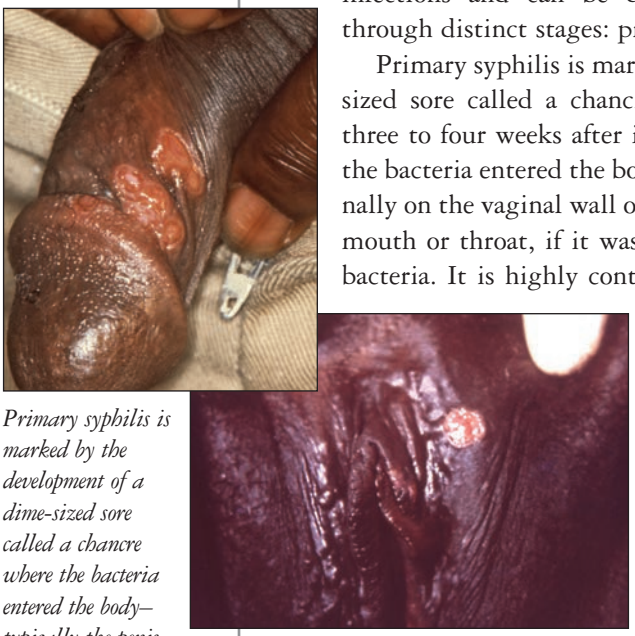
congenital syphilis), often as early as the ninth week of pregnancy. Syphilis is called the "great imitator" because it produces the symptoms of other infections and can be difficult to diagnose.[3] Syphilis progresses through distinct stages: primary, secondary, latent, and tertiary.

Primary syphilis is marked by the development of a painless, dime-sized sore called a chancre (pronounced "shanker"), usually within three to four weeks after initial contact. The chancre develops where the bacteria entered the body (i.e., the penis or scrotum on men; internally on the vaginal wall or cervix in women (it also could occur in the mouth or throat, if it was contracted through oral sex), and it oozes bacteria. It is highly contagious at this point. The chancre typically disappears within six weeks.



Primary syphilis is marked by the development of a dime-sized sore called a chancre where the bacteria entered the body–typically the penis or scrotum in men, and the external vulva or interal vaginal wall in women.

Secondary syphilis usually manifests itself anywhere from one to twelve months after the initial chancre disappears. The normal symptoms during this period include a skin rash or white patches on the mucous membranes of the throat. Some individuals encounter hair loss, have swollen lymph glands, and may even develop highly contagious sores around the mouth or genitals. After a few weeks or months, the disease once again returns to "hiding."

Latent syphilis is a period where the spirochetes invade various internal organs. Usually there are few symptoms, except for an occasional chancre, and this could last for several years. However, the disease loses its infectious ability during this period, except for transmission of the disease from a mother to a fetus, known as congenital syphilis.

Tertiary syphilis occurs ten to twenty years after initial infection. Here, the body is pervaded by disease, and symptoms are severe and clearly evident. Many internal organs are permanently damaged, and the final symptoms of blindness, deafness, and paralysis are manifested. Ultimately, an individual becomes senile.

The treatment of syphilis with antibiotics is quite successful. The major impediment to syphilis besides embarrassment—which keeps some from seeking proper medical attention—is its ability to "imitate" other diseases, resulting in occasional misdiagnosis and mistreatment.

Trichomoniasis. Trichomoniasis is a common STD caused by the protozoan *Trichomonas vaginalis*. It affects both men and women, but it is far more common in women. Each year, according to the CDC, some 7.4 million cases occur, mainly from penis-to-vagina or vulva-to-vulva contact.

Men typically are asymptomatic upon infection, whereas women often have a frothy, yellow-green discharge, accompanied by a strong odor. The infection is known to cause discomfort during intercourse and urination, and it may result in irritation and itching of the female genitalia. The symptoms typically occur from five to twenty-eight days after exposure. Trichomoniasis is treated with the prescription drug, metronidazole, via oral ingestion.

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STUDY TIP:

Unlike other STDs, viral STDs cannot be cured. Treatments may lessen the severity of symptoms, but the virus is always present in the body.

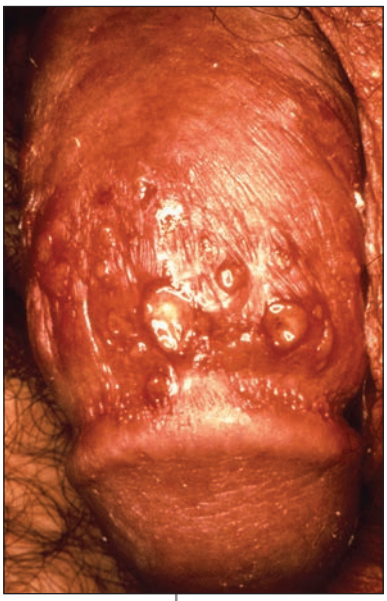
THE VIRAL STDS

Unlike the other STDs, viral STDs cannot be cured. Treatments are available to control and to lessen the severity of symptoms, but the virus is always present in the body. The virus may exist dormant in the nervous system for quite some time, only to flare-up suddenly during extended periods of stress.[5] More damaging though, the viral STDs can be horribly disfiguring, and one—HIV/AIDS—is ultimately fatal.

Genital herpes. Genital herpes is a common viral infection involving the herpes simplex virus 2. It is related to the herpes simplex virus 1 that produces cold sores and fever blisters on and around the lips and mouth; but they are two very distinct organisms, each with its own irritating and uncomfortable side effects.

The herpes virus is commonly asymptomatic in an individual, meaning it demonstrates no symptoms. However, it can produce outbreaks, usually triggered by stress or extreme fatigue, which produce highly contagious lesions. Often an outbreak is preceded by itching or tingling in the affected area. In addition to the lesions, an individual may encounter flu-like symptoms. Over time, however, outbreaks usually occur less often and are not as severe, but the virus is always present in the body, lying dormant on the nervous system.

Genital herpes is a common disease, with more than 500,000 new cases each year.[2] Some estimates have one out of four Americans infected with the virus, with one out of five being aware of it.[6] As such, the disease is often



Genital herpes is a common disease, with more than 500,000 new cases each year. Some estimates have as many as one out of four Americans infected with the disease.

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contracted from individuals who do not know they are infected.[7] When symptoms appear, they generally do so within three weeks after contact with the herpes virus.

Cold sores, or fever blisters, are generally caused by the herpes simplex virus 1 strain and are quite common.

For many years, researchers believed that asymptomatic individuals infected with genital herpes were not contagious. However, research indicates that even when an individual shows no signs of the disease, the virus is still present in genital secretions, and the risk of infection through sexual contact is high.[8] Viral "shedding" is responsible for these types of infections.

Further, condoms are not extremely effective at preventing genital herpes. This is because condoms only cover the shaft of the penis, thus leaving the scrotum and labia open to contact. It is this contact that allows the virus to spread, especially if lesions are present. Further, the herpes virus can infect the eyes—usually from hand-to-eye contact—leading to impaired vision and possibly blindness. Often, infants can be infected during childbirth if lesions are present in the birth canal. This type of infection can result in serious problems, such as brain damage or delayed development. Some 500 infants are born each year in the U.S. with a herpes infection; if untreated, roughly two-thirds of those infants die. Therefore, women who become pregnant should tell their physician if they have ever had a genital herpes infection.

No cure is available for genital herpes. Several prescription drugs are used to lessen the symptoms, lesion outbreaks, and the like, but the virus is always present in the body and prone to outbreaks when an individual is under stress. Women often have outbreaks during menstruation. Outbreaks typically diminish over time, but they can recur.[4]

Human Papilloma Virus (HPV). HPV is a pathogen resulting in genital warts (also called venereal warts, or *Condylomata acuminata*). Over 100 HPVs are known, with roughly 30 of them being able to spread through human-to-human contact. HPV infections are widespread. Researchers estimate that some 20 million American women are infected with HPV, along "with three out of four of their male sex partners."[4]

ORAL CANCERS FROM HPV INFECTIONS ARE INCREASING TREMENDOUSLY

Oral cancers are on the rise in the United States. The increase is believed to be related to oral sex, particularly the transmission of human papilloma viruses (HPV). Oral cancers as a result of an HPV infection are more prevalent in the United States than oral cancer from tobacco use. Researchers have found a 225-percent increase in oral cancers. Dr. Maura Gillison states that, "When you compare people who have an oral infection or not... the single greatest factor is the number of partners on whom the person has performed oral sex." It is known that individuals who have had six or more partners on whom they have performed oral sex have an eight-fold higher risk of contracting an HPV-related cancer affecting the neck, mouth, or throat.

The increase in the number of cases of oral cancer related to an HPV infection is shocking. It is clear that unprotected oral sex is not a "safe" alternative to sexual intercourse with respect to disease transmission. While oral sex may prevent pregnancy, it most definitely is not "safe sex." That said, if one chooses to participate in oral sex, using some sort of barrier method, such as a condom or a dental dam, is a must to help prevent, possibly, the transmission of a disease-causing pathogen, especially HPV, which is responsible for the increasing amount of cases of oral cancers.

Source: Gillison, M. L., et al. (2000). Evidence for a Causal Association Between Human Papillomavirus and a Subset of Head and Neck Cancers. Journal of the National Cancer Institute, 92(9), 709-720.

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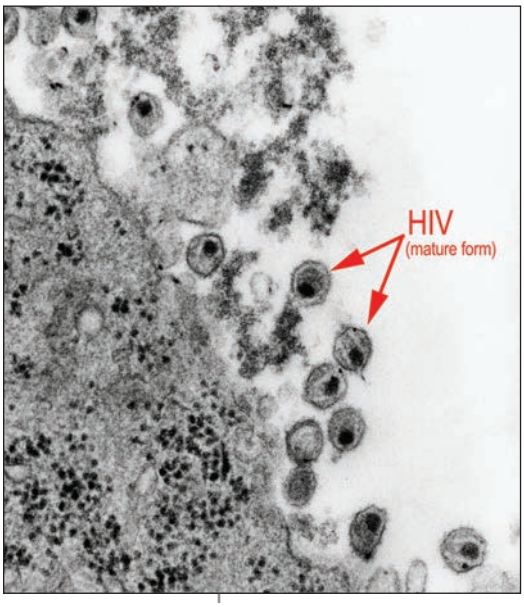
Furthermore, college-aged females are at high risk for contracting HPV infections, with 10 to 46 percent having a cervical HPV infection.[4] This is very troubling because HPV infections tend to increase a woman's risk of uterine or cervical cancer. If left untreated, approximately 30 percent of genital warts can become pre-cancerous growths, and if still left untreated, 70 percent of these will become malignant.[9-10] HPV increases the cancer risk of a woman and "may be the single most important risk factor in 95 percent of all cases of cervical cancer."[4]

Full-blown genital warts are very unsightly and disfiguring, and should be removed by a physician.

HPV infections occur through sexual contact, with the virus penetrating the skin and typically lodging in the mucous membranes of the genitalia or anus. The virus is highly contagious, usually incubates in six to eight weeks after initial contact, and forms one of two types of warts: full-blown genital warts or flat warts, the latter being invisible to the naked eye.[3] Full-blown genital warts are very unsightly and disfiguring, and should be removed by a physician via several means—cryosurgery, laser surgery, topical applications, or simple excision.

In 2006, The U.S. Food and Drug Administration approved a vaccine, Gardasil (Merck & Co., Inc.), for HPV. The vaccine is intended for girls and



The human immunodeficiency virus (HIV) that causes AIDS is transmitted through exchange of bodily fluids.

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women ages 9 to 26 years, and it works by preventing the infection of four strains of HPV. Two of the HPV strains are responsible for some 70 percent of cervical cancer cases; the remaining two HPV strains cause some 90 percent of genital warts. The vaccine is thought to be 99 percent effective! Today, the vaccine is available for both males and females.

Acquired Immune Deficiency Syndrome (AIDS). AIDS is a fatal, viral disease, resulting from infection with the human immunodeficiency virus (i.e., HIV). HIV destroys the immune system and leaves the body defenseless against a wide variety of diseases. Eventually, the person dies because the body can no longer defend itself against invading pathogens.

Since its onset, more than 75 million individuals have been infected with HIV, and roughly 1.5 million have died from AIDS each year worldwide.[1] The hardest hit area in the world is sub-Saharan Africa, containing 70 percent of the world's HIV cases and 90 percent of the AIDS deaths.[11] Sub-Saharan Africa has an estimated 25.5 million HIV cases, and Southeast Asia has a reported 7.1 million cases.

In the U.S., an estimated 1.1 million individuals (i.e., 1 in approximately 280) are infected with HIV, and this number continues to climb. The HIV epidemic is continually growing at an alarming rate and is estimated to double every ten years. Each year in the U.S., some 50,000 individuals are believed to be infected with HIV, with two-thirds being African American or Hispanic.[2]

What was once commonly regarded as a disease of homosexual men has now pervaded all sectors of society. HIV does not discriminate; it does not care if someone is homosexual, heterosexual, male, female, black, or white. HIV is interested only in finding a new host in which to live and proliferate. However, HIV is ultimately the author of its own demise, because it eventually fatally weakens its host.

HIV is transmitted through the exchange of bodily fluids (i.e., blood, semen, vaginal secretions, and occasionally, saliva), commonly through sexual behavior. It is also transmitted intravenously.

Approximately three-fourths of all AIDS cases in the U.S. involve men, specifically homosexuals. The primary reason for this is the practice of anal intercourse, specifically the tissue damage this practice causes. As was mentioned earlier, viruses need a dark, moist, warm environment to survive, and the mucous membranes in the rectum are the perfect environment for HIV to live. Anal intercourse causes microscopic tears in the lining of the rectum and

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provides a pathway for the virus to the bloodstream. From there, it spreads throughout the body, eventually destroying the body's immune system. Anal intercourse is an extremely high-risk behavior for contracting AIDS.

In the U.S., women account for one-fourth of all AIDS cases. Women are usually infected through the sharing of hypodermic needles or heterosexual contact, specifically vaginal and anal intercourse, and account for approximately 25 percent of new cases.[2] Men, however, are much less likely to contract HIV from vaginal intercourse. The reason for this is simple. During vaginal intercourse, women have minor tearing in the vaginal lining. When male ejaculate is deposited in the female vagina, a woman easily can be infected if HIV is present. However, men rarely have damage to the outer layer of skin on the penis during vaginal intercourse. Thus, they are less likely to become infected; nonetheless, it is still possible for men to become infected through vaginal intercourse.

The symptoms of HIV/AIDS do not manifest themselves very quickly. Some individuals can go for years, even ten or more, before any symptoms appear. The initial signs of HIV/AIDS are flu-like symptoms, fatigue, weight loss, and high susceptibility to colds and sore throats. In the later stages, heavy night sweats, extreme weight loss, skin disorders, and swollen lymph nodes are signs of HIV/AIDS infection.

Currently, no functional cure for HIV/AIDS is available. So prevention is the only means of curtailing this disease. Care must be taken to avoid the exchange of bodily fluids, because once infected, it is simply a matter of time before the disease runs its course and the person dies. Advances in treatments and therapies have improved both the longevity and the quality of life for persons infected with HIV/AIDS. Nonetheless, HIV/AIDS is a fatal disease.

Hepatitis B. Hepatitis B is a viral disease that affects the liver. The hepatitis B virus (HBV) is transmitted generally through sexual activity and via blood-borne pathogens, similar to HIV. The initial symptoms of hepatitis B are flu-like symptoms, and they usually occur within the first three months of infection. Once liver disease begins to set in, the symptoms include low-grade fever, fatigue, loss of appetite, nausea, and jaundice. The treatment of hepatitis B is simple rest, a proper diet, and avoidance of alcohol consumption. The recovery process can be very lengthy. A vaccine is available, so individuals who are at high risk of infection should consider being vaccinated.

STUDY TIP:

Currently, HIV/AIDs cannot be cured. Once infected, it is simply a matter of time before the disease runs it course and the person dies.

AIDS VIRUS HITS AFRICAN AMERICANS HARDER

In the United States, more than one-half of the individuals who are newly infected with HIV—the virus that causes AIDS—are African American. Of the new cases of AIDS, 44 percent occurred in African Americans, even though African Americans make up of only 12 percent of the population in those states. The United States Centers for Disease Control and Prevention (CDC) reported that, "Despite reductions in diagnoses among African American men and women, HIV continues to pose a major health threat…and despite possible signs of success, HIV continues to exact a disproportionate and devastating toll on African Americans."

The news is not all bad, however, as the rate of new infections overall has declined in black women and in many black men—with the exception of homosexual men. The HIV diagnosis rate has falled for both black men and black women, but African Americans still had the highest diagnosis rate of any racial group. Further troubling, however, is a separate study conducted on black men who reside in the Baltimore area. Male African Americans who have sex with other men, which includes homosexual and bisexual activity, have a significantly higher rate of HIV infection than other black men. That rate is significantly higher than the 1-in-280 infection rate of the total American population. In the end, HIV/AIDS is still a very dangerous disease, with high incidence rates in specific populations, such as African Americans and homosexual men.

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PREVENTING STDS

The only absolute way to prevent an STD is to abstain from sexual activity—that is, practice abstinence. However, abstinence is impracticable or unreasonable for many individuals. Specific steps can be taken to lessen one's odds of contracting an STD. But remember, these steps only lessen the odds of contracting an STD, they are not 100 percent effective. To lessen the odds of contracting an STD, follow these guidelines:

1. *Avoid sexual contact with an infected person.*
2. *Maintain a monogamous relationship with an uninfected person.*
3. *Avoid having "casual sex," or sex with many partners. The more partners one has, the higher the chances of contracting an STD.*
4. *Always use a latex condom during every sexual act, including oral sex (a dental dam for cunnilingus). Condoms must be used immediately and during the entire time to be effective. Also, condoms only lessen the odds of contracting an STD; they are not 100 percent effective. A spermicide should be used, as well. For further protection, women should also use a diaphragm.*

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A latex condom should be used during every sexual act, including oral sex (a dental dam for cunnilingus). Condoms must be used immediately and during the entire time to be effective. It is important to remember that condoms only lessen the odds of contracting an STD; they are not 100 percent effective. A spermicide and diaphragm provide extra protection.

5. *Do not have sexual contact with prostitutes or intravenous drug users.*
6. *Do not share needles, razors, toothbrushes, or any other objects that could be soiled with body fluids.*
7. *Wash hands, genitals, and mouth before and after any sexual contact.*
8. *Urinate after having sexual intercourse.*
9. *Be tested for STDs regularly if you are sexually active.*

SUBSTANCE ABUSE

Mind and mood-altering substances have been prevalent in society for thousands of years and remain popular even today. The use of some of these substances is legal, as in the case of alcohol and tobacco. The use and even possession of some of these substances is illegal, such as heroin and cocaine. Each of these substances produces effects on the body, and with the right dosage, can result in detrimental side effects—even death.

For this text, three groups of substances are discussed: tobacco, alcohol, and illicit drugs. The purpose of this text is not to tell someone whether to use or abstain from these substances. Ultimately, the decision to use any

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substance is up to the individual. Instead, the following section will describe each of the groups of substances, their effects on the body, and the repercussions of their abuse so that individuals can make their own informed choice.

Under no circumstances should a woman smoke while she is pregnant.

Tobacco. Tobacco is used in two forms: smoking (i.e., cigarette, cigar, and pipe) and smokeless (i.e., chewing, dipping, and snuff). No matter what the form, tobacco has negative effects on the body.

The universal acceptance and glamour once associated with smoking has greatly diminished in the past few decades. Once, smoking was considered a "right-of-passage" into adulthood, and many Hollywood stars glamorized smoking as sexy and sophisticated behavior. Today, however, smoking is known to be a contributing factor in many diseases (e.g., cardiovascular disease, cancer), and it serves no positive purpose to a person's health.

Tobacco smoke contains hundreds of dangerous and damaging chemicals, and 43 of these have been shown to be carcinogens.[12] Carbon monoxide is found in tobacco smoke, and is deadly, especially in high doses because it displaces oxygen from the blood. That is why many smokers are frequently "short of breath."

It would be irresponsible to say that smoking directly causes cancer. Some individuals who smoke never develop cancer because they are not genetically predisposed. However, smoking certainly increases one's risk of developing cancer. That additional risk can be as much as 25 times that of a non-smoker.[12] In fact, half of all individuals who smoke eventually die from a smoking-related disease, often cancer.[4]

Another troubling aspect of smoking is the damage it causes to non-smokers through second-hand smoke, or environmental tobacco smoke (ETS). ETS has been shown to lead to some 3,000 deaths from lung cancer and another 35,000 deaths from heart disease each year in non-smokers.[13] Smoking does not affect just the smoker! But adults can consciously avoid tobacco smoke, either directly, by not smoking, or indirectly, by staying away from people who do smoke. Infants and children are a different matter. They often have no choice. Research indicates that infants who are exposed to ETS are 23 times more likely to die from sudden infant death syndrome (SIDS). Additionally, children of smokers have higher incidence rates of asthma, middle-ear infections, and other respiratory problems.[12]

Smokeless tobacco products are not a safe substitute for smoking. Smokeless tobacco is available in many forms, such as dip, snuff, and chewing tobacco, often in a "plug" or a "twist." Individuals who use these forms of tobacco place themselves at much higher risk for mouth, throat, and lip

cancer. Some 28 chemicals found in smokeless tobacco are known to be cancer-causing,[13] and the cancer rates for smokeless tobacco users is significantly higher than that of non-users.

Alcohol. Alcohol is produced during the fermentation of substances containing natural sugars. Microorganisms ingest the natural sugars during fermentation and release alcohol as a by-product. A "drink" of alcohol is considered one of the following:

- *One 12-oz. beer (approximately 5 percent alcohol)*
- *One 4-oz. glass of wine (approximately 12 percent alcohol)*
- *One "shot" of distilled spirits, such as rum, whiskey, or vodka (approximately 50 percent alcohol)*

Excessive alcohol consumption can lead to risky behavior, such as unprotected sex, illicit drug use, and drunken driving.

Moderate alcohol consumption (i.e., 1-2 drinks per day) usually has no negative health effects. In fact, it has been shown to be beneficial by increasing HDL levels in the blood, thus reducing the risk for cardiovascular disease and cognitive decline. However, excessive alcohol consumption can be very dangerous.

Excessive alcohol consumption can result in very negative consequences. Alcoholism, drunken driving, and negative health effects are just a few. Alcoholism is an intense dependency on alcohol, characterized by an obsession with drinking and a perceived inability to function without being under the influence of alcohol. Alcoholism leads to troublesome behavior, as alcohol impairs the alcoholic's ability for rational thought, often resulting in wide mood swings and violence. Drunken driving is another serious problem associated with alcohol. Alcohol consumption reduces response times to stimuli. Excessive drinking of alcohol and then driving can, thus, easily result in disaster, as a drunk driver cannot adequately respond to sudden or unexpected driving conditions. Some report that drunken driving is one of the most frequently committed crimes in the U.S.[4] In drunk driving accidents, alcohol is not to blame; people are. If one chooses to drink, he or she must drink responsibly, and that means not driving

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while intoxicated. Lastly, excessive drinking can cause serious health problems, such as intestinal disorders, liver damage, an impaired immune system (i.e., white blood cell production is inhibited), and ultimately, brain damage.

Drinking alcohol is a personal decision. Moderate consumption of alcohol has been shown to be beneficial in the prevention of CVD; however, if abused, alcohol can be very damaging to the body. The choice is simple: if one chooses to drink, do so in moderation (i.e., no more than 1-2 drinks per day), and never drive a motorized vehicle while intoxicated.

Illicit Drugs. Illicit drugs are very prevalent in the United States. On average, about one in three American adults has tried an illicit drug; however, less than 5 percent of adults are regular users.[14] Nevertheless, illicit drugs cost Americans nearly $100 billion a year through increased crime, increased health care costs, increased substance abuse treatment and prevention costs, lost wages, lost productivity, and social welfare programs.

MARIJUANA USE MAY LEAD TO SEXUAL DYSFUNCTION IN MEN

Marijuana (technically known as cannabis, but commonly referred to as "pot," "weed," "grass," "reefer") use is very prevalent, and it is the most widely used illicit drug in the world. However, with the passage of legislation in many states legalizing marijuana use under the terms of medical marijuana (MMJ) or legalizing it all together, its use (and unfortunately abuse) probably is going to continue to increase. But the long-term effects of marijuana use on one's sexual health is not fully known.

The research on the effects of marijuana use and its effects of sexual function is limited, and many of the studies have conflicting findings. Anecdotal evidence suggest that some users actually claim that smoking marijuana enhances their desire and ability to have sexual relations, but new research indicates that cannabis use may actually lead to erectile dysfunction. Specifically, it seems that the penis's smooth muscle tissue contains receptors for the active ingredient in marijuana (tetrahydrocannabinol, better known as THC). THC is known to have an inhibitory effect on the smooth muscle. With the smooth muscle making up some 80 percent of the penis, any inhibition in its functioning can lead to, as Shamloul and Bella state, "potentially hazardous effects on male sexual function," that is impotence. Erectile dysfunction obviously can make sexual intercourse difficult if not impossible, so rolling, lighting up, and smoking a marijuana "joint" potentially can have much longer and lasting effects other than getting one "high." Remember, unforeseen consequences are out there, but it is clear that the long-term effects of marijuana use could be disastrous for a man's sex life.

Source: Shamloul, R. & A. J. Bella. (2011). Impact of cannabis Use on Male Sexual Health. The Journal of Sexual Medicine. Published online 26 JAN 2011 at the journal's website http://onlinelibrary.wiley.com/doi/10.1111/j.1743-6109.2010.02198.x/full.

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Figure 6.6

Blood Alcohol Level Chart

Find your blood alcohol level by using the chart below.

One drink is considered:

- (1) 12 fl oz beer
- (1) 5 fl oz glass of wine
- (1) 1.5 fl oz shot of hard liquor

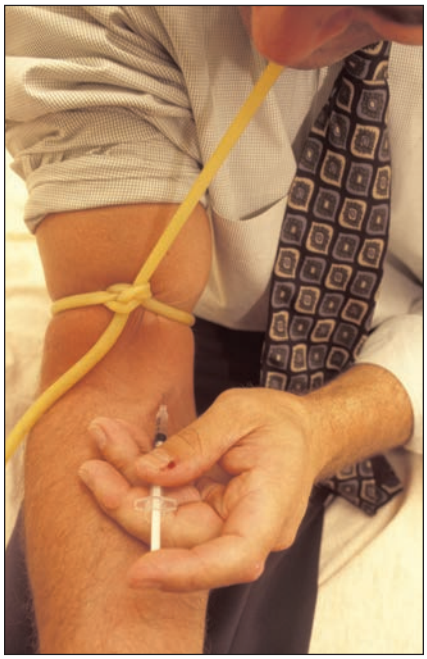
BLUE = Impaired Driver RED = Legally Drunk Driver

Weight	Number of Drinks								
	1	2	3	4	5	6	7	8	9
100	0.032	0.065	0.097	.0129	.0162	0.194	0.226	0.258	0.291
120	0.027	0.054	0.081	0.108	0.135	0.161	0.188	0.215	0.242
140	0.023	0.046	0.069	0.092	0.115	0.138	0.161	0.184	0.207
160	0.020	0.040	0.060	0.080	0.101	0.121	0.141	0.161	0.181
180	0.018	0.036	0.054	0.072	0.090	0.108	0.126	0.144	0.162
200	0.016	0.032	0.048	0.064	0.080	0.097	0.113	0.129	0.145
220	0.015	0.029	0.044	0.058	0.073	0.088	0.102	0.117	0.131
240	0.014	0.027	0.040	0.053	0.067	0.081	0.095	0.108	0.121

Over $50 million is attributed to crime, alone.

As one can see, illicit drugs are problematic in America. The decision to use or not to use illicit drugs is purely personal. Illicit drugs, with few medicinal exceptions, are seldom beneficial to one's health, and many are outright deadly. Furthermore, they are illegal, and individuals who are caught using them may face serious legal ramifications.

The most commonly abused drugs, with their street names and effects, are listed in Figure 6.7. All information is from the National Institute on Drug Abuse.[13]



Illicit drug use is prevalent in the United States. Intravenous injection of substances is very dangerous, especially with the increased risk of disease transmission if contaminated needles are used.

Figure 6.7a

Commonly Abused Drugs

CATEGORY *Name*	Commercial Name/ Street Names	Administration Method	Intoxication Effects/ Potential Health Consequences
CANNABINOIDS ***Hashish***	boom, hash	Ingested, smoked	Euphoria, confusion, impaired balance and coordination. Cough, frequent respiratory infections, impaired memory, panic attacks.
Mariujana	hemp, dope, grass, Mary Jane, pot, reefer, weed	Ingested, smoked	
DEPRESSANTS ***Barbiturates***	Amytal, Nembutal, Seconal, Phenobarbital/Barbs, reds, phennies, toolies, yellow jackets	Ingested, swallowed	Reduced pain and anxiety, feeling of well-being, lowered inhibitions, slowed pulse and breathing, lowered blood pressure, poor concentration. Confusion, fatigue, impaired coordination, memory, judgment, respiratory depression and arrest, addiction. Additional for GHB: drowsiness, nausea and vomitting, headache, loss of consciousness, loss of reflexes, seizures, coma, death. Additional for Methaqualone: depression, poor reflexes, slurred speech, coma.
Benodiazepines	Ativan, Halcion, Librium, Valium, Xanax/candy, downers, sleeping pills, tranks	Swallowed	
Flunitrazepam	Rohypnol/forget-me pill, rophies, roofies, roofinal, R2, Roche	Swallowed, snorted	
GHB	Gamma-hydroxybutyrate/G, Georgia Home Boy, liquid ecstacy	Swallowed	
Methaqualone	Quaalude, Sopor, Parest/ludes, quad, quay	Injected, smoked	
DISSOCIATIVE ANESTHETICS ***Ketamine***	Ketalar SV/cat Valiums, K, Special K, vitamin K	Injected, snorted, smoked	Increased heart rate and blood pressure, impaired motor function/memory loss, numbness, nausea.
PCP	Phencyclidine/angel dust, boat, hog, love boat, peace pill	Injected, swallowed, smoked	Decrease in BP and heart rate, panic, aggression/loss of appetite.

Figure 6.7b

Commonly Abused Drugs (continued)

CATEGORY *Name*	Commercial Name/ Street Names	Administration Method	Intoxication Effects/ Potential Health Consequences
HALLUCINOGENS			
LSD	Lysergic acid diethylamide, acid, blotter, cubes, midrodot	Swallowed, absorbed through mouth tissues	Altered states of perception and feeling, nausea, chronic mental disorders, flashbacks. Increased body temperature, heart rate, blood pressure, loss of appetite, sleeplessness, numbness, weakness, paranoia.
Mescaline	Buttons, cactus, mesc, peyote	Swallowed, smoked	
Psilocybin	Magic mushrooms, purple passion, shrooms	Swallowed	
OPIODS			
Codeine	Empirin w/Codeine, Fiorinal w/Codeine, Captain Cody, Cody	Injected, swallowed	Pain relief, euphoria, drowsiness, respiratory depression and arrest, nausea, confusion, constipation, sedation, unconsciousness, coma.
Heroin	Diacetylmorphine, brown sugar, H, dope, horse, junk, skunk, smack, white horse	Injected, smoked, snorted	
Morphine	Roxanol, Duramorph, M, Miss Emma, monkey, white stuff	Injected, swallowed, smoked	
STIMULANTS			
Amphetamines	Biphetamine, Dexadrine, Bennies, black beauties, crosses, hearts, LA turnaround, speed, uppers	Injected, swallowed, smoked, snorted	Increased heart rate, blood pressure, metabolism, feelings of exhilaration, energy, rapid or irregular heartbeat, appetite loss, weight loss, heart failure, increased temperature, chest pain, respiratory failure, nausea, abdominal pain, strokes, seizures, headaches, impaired memory and learning, aggression, violence, psychotic behavior, cardiac and neurological damage.
Cocaine	Cocaine hydrochloride, blow, bump, C, candy, Charlie, coke, crack, flake, rock, snow, toot	Injected, swallowed, smoked, snorted	
Methamphetamines	Desoxyn, chalk, crank, crystal, fire, glass, ice, meth, speed	Swallowed, injected, smoked, snorted	
Nicotine	Tobacco	Smoked, snorted, chewed	

Source: National Institute on Drug Abuse[12]

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SUMMARY

STDs and substance abuse are very prevalent in America today. Millions of Americans are affected by these each year. Several types of STDs exist: bacterial, parasitical, protozoal, and viral. The major bacterial STDs include chlamydia, gonorrhea, and syphilis, and are relatively easy to cure. Genital herpes, HPV, and HIV/AIDS are the most common viral STDs; however, these diseases only can be treated, not cured. The best means of preventing the spread of STDs is through abstinence; however, if one chooses to be sexually active, the use of a latex condom, during every sexual activity, is highly recommended, as is being in a monogamous relationship. Many substances are abused, ranging from tobacco and alcohol to illicit drugs. The use of tobacco and illicit drugs has detrimental effects upon the body and should be avoided to maintain high-level wellness. Moderate alcohol consumption can be healthy, but one should not start drinking for the modest preventive factors alone.

CHECK YOUR UNDERSTANDING

REVIEW QUESTIONS

1. What is a sexually transmitted disease (STD)?
2. What are the most common STDs? What are their symptoms?
3. What are the different types of STDs? How do they differ?
4. How are STDs spread?
5. How can STDs be prevented?
6. What is the absolute best method for preventing the spread or contraction of an STD?
7. What is substance abuse?
8. What are the major categories of substances that are abused?
9. What are the major dangers associated with using tobacco?

RELATED WEBSITES

American Social Health Association
www.ashastd.org

Centers for Disease Control and Prevention
www.cdc.gov/std/

Health Awareness Connection
www.healthac.org

National Institute on Drug Abuse
www.nida.nih.gov

Smoke Free
smokefree.gov

Prevention First
prevention.org

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