

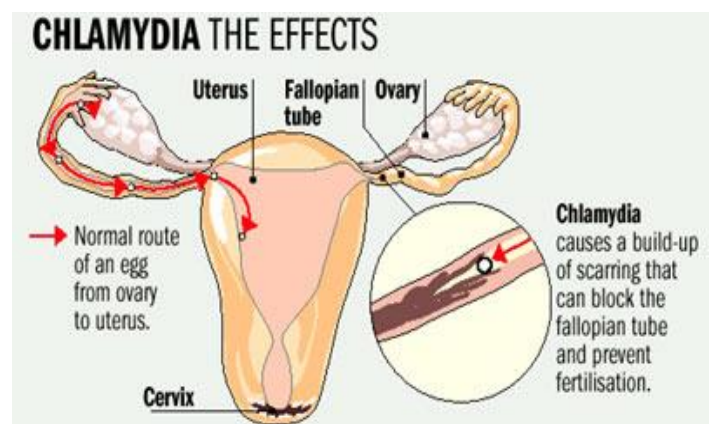
Sexually transmitted non viral infections

While educational campaigns have focused attention on prevention of viral STIs, particularly HIV, non-viral STIs continue to be a serious public health concern. By understanding their etiologies, the patient populations at high risk, and available treatment modalities, travelers and core staff alike can offer suggestions for better management of these sexually transmitted infections and help to prevent their spread. Here, we will describe clinical presentation, treatment, and prevention of some of the most common, non-viral STIs .

Chlamydia :

Chlamydia is a sexually transmitted disease characterized by a bacterial infection. In most cases, patients are asymptomatic, which means they hardly experience any kind of symptoms. If there ever be, Chlamydia could only cause a burning feeling at the genitals

when urinating. Chlamydia can be ably traced when it is already in the advanced stage, causing more complicated health problems. In men, Chlamydia may cause infertility by affecting the epididymis or the tube that carries sperm cells. In women, Chlamydia could cause pelvic inflammatory disease, which can pose serious troubles in pregnancy. Men and women are of equal risk to this disease, as long as they are sexually active.



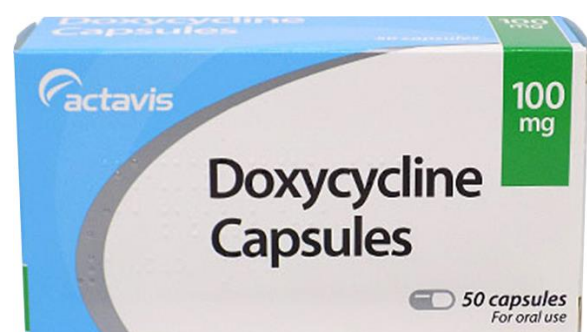
Symptoms : This "silent" disease has serious consequences for women. Two-thirds of those with chlamydia report no clinical symptoms, although in some cases initial exposure leading to infection of the cervix and urethra produces vaginal discharge or a burning sensation when urinating. If

untreated, chlamydial infection in women eventually spreads from the cervix into the fallopian tubes, leading to pelvic inflammatory disease (PID). Symptoms of PID caused by chlamydia are vague and easily overlooked: nausea, fever, lower back or lower abdominal pain, pain during intercourse, and bleeding between menstrual periods. In turn, PID causes scarring that can result in partial or complete blockage of the fallopian tubes, increasing the risks of ectopic pregnancy, pregnancy-related complications, and infertility.

Approximately 50 percent of men with chlamydia report no symptoms, although some of those infected may experience a burning sensation while urinating or a slight discharge from the penis. For men and women who engage in receptive anal intercourse, chlamydial infection can occur in the rectum, with clinical symptoms of pain, bleeding, and discharge. Oral sex can lead to chlamydial infection of the throat.

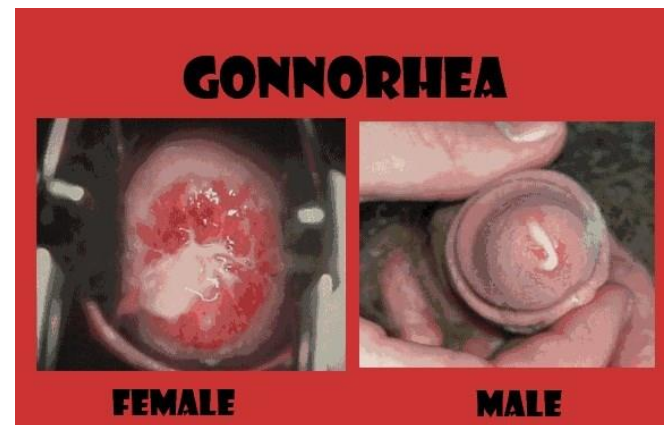
Diagnosis : In addition to relying on information gleaned from physical examination and a detailed health history, providers utilize several diagnostic tools to determine a chlamydia diagnosis. These include enzyme-linked immunosorbent assay (ELISA, EIA), direct fluorescent antibody test (DFA), nucleic acid amplification tests (NAAT), nucleic acid hybridization tests (DNA probe testing), and chlamydia culture.

Treatment : A single dose of azithromycin or a week-long course of doxycycline is sufficient in most cases. The challenge is that both the healthcare provider and the infected individual are likely to be unaware of the infection, and consequently treatment is never offered. CDC recommends that all sexually active women age 25 and younger, and older women who may be at risk, be tested for chlamydia at least once a year.



Gonorrhea :

Caused by *Neisseria gonorrhoea*, gonorrhea is another bacterial STI that can infect both men and women without causing obvious clinical symptoms, at least in the early stages of the disease. Infection can occur through vaginal, anal, or oral sex.



Symptoms : Clinical signs and symptoms following initial infection may include penile or vaginal discharge and a burning sensation while urinating. Men might experience pain or swelling in the testicles following initial infection. Women infected with gonorrhea could experience non-specific symptoms such as abdominal pain and bleeding between periods. If rectal infection occurs, patients may present with bleeding or itching. Those with throat infections may experience a sore throat. Notably, infection in women can be asymptomatic, and often gonorrhea goes undiagnosed until complications, such as pelvic inflammatory disease, have occurred. If untreated, gonorrhea can cause infertility in both men and women, and disseminated gonorrhea can be fatal.

Diagnosis : Gonorrhea is diagnosed through standard microbiologic or serologic tests, including NAAT, nucleic acid hybridization test (DNA probe test and molecular probe test), gonorrhea culture, gram stain, and ELISA (or EIA).

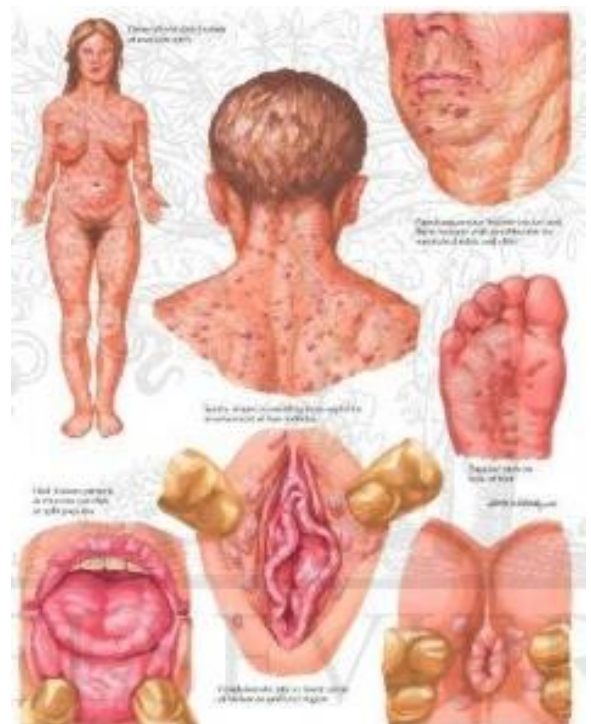
Treatment : For adults with gonorrhea, the following treatments are recommended: a single oral dose of cefixime (400 mg), ciprofloxacin (500 mg), ofloxacin (400 mg), or levofloxacin (250 mg). Alternatively, a single intramuscular injection of ceftriaxone (125 mg) can be given. Treatment of gonorrhea is somewhat complicated by the fact that quinolone-resistant strains of *Neisseria gonorrhoea* have emerged in regions, such as Asia, where drug-resistance is widespread.

Co-infection with *C. trachomatis* is common in patients with gonorrhea, and it is more cost-effective to offer dual therapy than to test for chlamydial infection. Therefore, in cases where chlamydial infection cannot be ruled out, CDC recommends adding antimicrobial therapy for chlamydial infection, using either a single oral dose of azithromycin (1 g) or a 7-day course of doxycycline (100 g twice daily). A dual regimen offers the added advantage of possibly decreasing the likelihood of the emergence of drug-resistant strains of *N. gonorrhoea*.



Syphilis :

A venereal disease caused by the bacterium *Treponema pallidum*, syphilis is difficult to diagnose. Perhaps the largest challenge is that signs and symptoms are similar to example, genital ulcers are characteristic not only of syphilis, but also of genital herpes (a viral disease) and chancroid. Due to the insidiousness of this disease, it can initially be overlooked, progressing to later stages that are associated with increased morbidity.

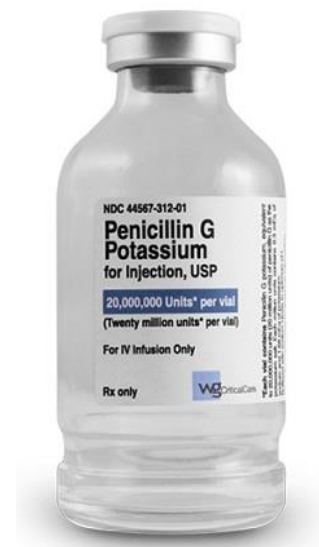


Symptoms : The first stage of infection is characterized by the appearance of firm, round lesions known as chancres, which usually emerge within 3 weeks at the site of initial infection. Chancres are painless and disappear after a few weeks, even without treatment.

The secondary stage may be characterized by skin rashes and mucocutaneous lesions. Patients can also present with "flu-like symptoms" (malaise, fever, myalgia), lymphadenopathy, sore throat, patchy alopecia, and weight loss. If left untreated, disease progression can lead to severe neurological impairment and death.

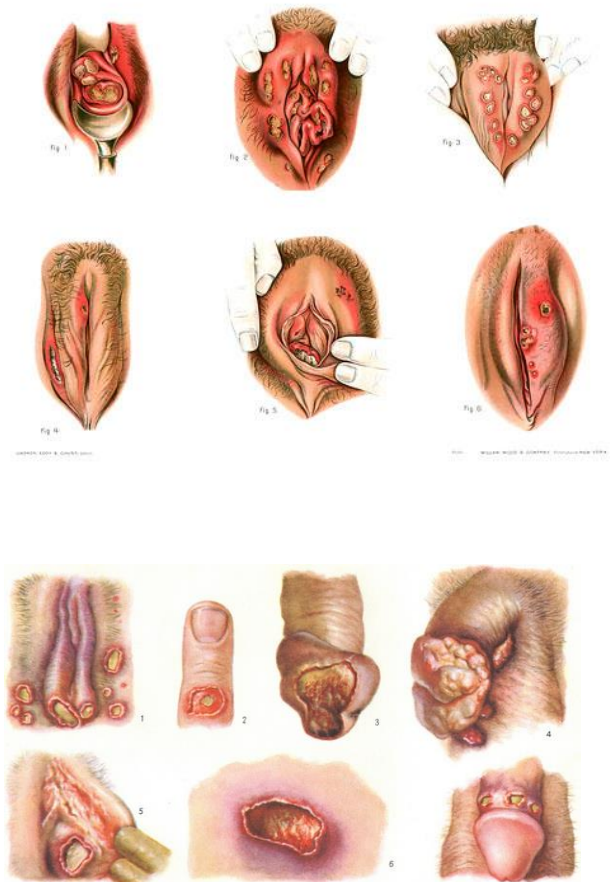
Diagnosis : Typically, syphilis is diagnosed through serologic examination. Screening is performed via venereal disease research laboratory (VDRL) and rapid plasma reagin (RPR) tests. The fluorescent treponemal antibody absorption (FTA-ABS) test, microhemagglutination assay (MHA-TP), and treponema pallidum particle agglutination assay (TPPA) are examples of diagnostic studies used to confirm infection after a positive screening. Darkfield microscopy may also be used to examine syphilis bacteria from sample fluid or tissue retrieved from a chancre.

Treatment : Parenteral administration of penicillin G is the preferred method of treatment. Late-stage syphilis may require a course of longer duration.



Chancroid :

This disease, caused by *Haemophilus ducreyi* infection, is widespread in such tropical countries as Asia and Africa and considered an emerging STI in the U.S. Unlike many other sexually transmitted infections, its presence is visible in the early stages, especially in men. Occurring more frequently in men than in women, infection is spread by direct contact with the lesion or by contact with the exudate from the lesion. Men who have frequent contact with prostitutes are at increased risk for chancroid, and uncircumcised males are more vulnerable to infection (and more refractory to antibiotic treatment) than their circumcised counterparts. Women infected with chancroid might be asymptomatic or may experience only mild symptoms.



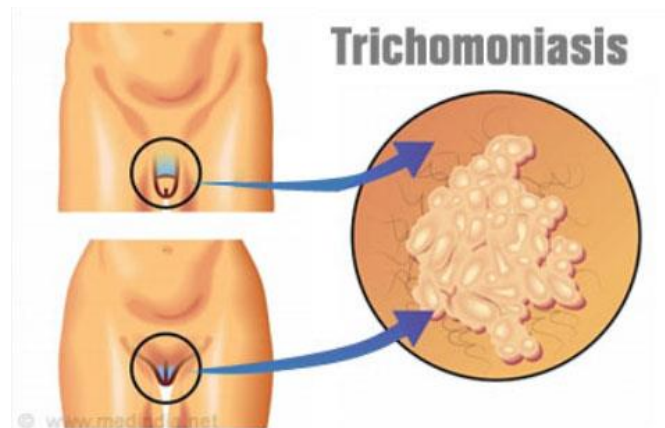
Symptoms : For men, chancroid produces painful sores and pus-filled ulcers in the genital region, often accompanied by swollen lymph nodes on one side of the groin. The sores usually appear within a week after the initial exposure.

Diagnosis : While the chancre can look similar to a lesion caused by syphilis or herpes, bacterial culture or polymerase chain reaction (PCR) can provide a definitive diagnosis.

Treatment : Azithromycin or other antibiotics is standard therapy.



The second most common STI in America, "trich" is caused by the protozoan parasite *Trichomonas vaginalis*. CDC estimates that approximately 7.4 million new cases occur each year in both sexes, ranking the disease as the most common curable STI in young women. Infection can be spread by direct contact with an infected partner. Latex condoms reduce the risk of transmission during vaginal intercourse; however, women engaging in lesbian sex can be infected by vulva-to-vulva transmission.



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with intercourse, patchy red areas on the cervix, or painful or frequent urination have also been reported. Typically, symptoms appear within a week of original infection, but could take 1 to 6 months to develop.

Diagnosis : Microscopic examination of vaginal secretions is the most common test to determine diagnosis in women. A culture also may be collected from females but is more often utilized in screening male patients. Another diagnostic tool, usually available in research studies, is the DNA probe test.

Treatment : The recommended regimen is a single oral dose of 2 g metronidazole. Sexual partners should also be treated to prevent reinfection. If untreated, trichomaniasis can lead to PID.



How can I reduce the risk of getting an STI?

There are many ways you can reduce your risk of getting an STI:

- Know your sexual partners and limit their number Your partner's sexual history is as important as your own. The more partners you or your partners have, the higher your risk of getting an STI.
- Use a latex condom Using a latex condom every time you have vaginal, oral, or anal sex decreases the chances of infection.

Condoms lubricated with spermicides do not offer extra protection. Frequent use of some spermicides can increase the risk of HIV.

- Avoid risky sex practices Sexual acts that tear or break the skin carry a higher risk of STIs. Even small cuts that do not bleed let germs pass back and forth. Anal sex poses a high risk because tissues in the rectum tear easily. Body fluids also can carry STIs. Having any unprotected sexual contact with an infected person poses a high risk of getting an STI.
- Get immunized Vaccinations are available that will help prevent hepatitis B and some types of HPV

Advocating prevention :

The key to preventing STIs is education and screening. Whether you are a healthcare traveler or permanent staff member, you can talk to patients about STIs and also let them know about available educational resources.

To assist with early detection, make a point to ask questions about potential risk factors when performing a health history and physical exam. Encourage patients to undergo screening for STIs. And stress that while infection is often asymptomatic, it can have particularly devastating consequences, especially for girls and young women who may wish to bear children.

Keep in mind, too, that with many non-viral STIs, reinfection can occur when individuals' partners are also infected but never treated. By urging patients to notify partners of their infection status and suggesting these individuals also undergo screening and treatment, you can help prevent further spread of disease and assist everyone involved in managing their conditions and improving their quality of life.