Chlamydia

Chlamydia – CDC Detailed Fact Sheet

What is chlamydia?

Chlamydia is a common STD caused by infection with *Chlamydia trachomatis*. It can cause cervicitis, urethritis, and proctitis.

In women, these infections can lead to:

- pelvic inflammatory disease (PID),
- tubal factor infertility,
- ectopic pregnancy, and
- chronic pelvic pain.

Lymphogranuloma venereum (LGV) is another type of STD caused by *C. trachomatis*. LGV is the cause of recent proctitis outbreaks among gay, bisexual, and other men who have sex with men (MSM) worldwide.[1,2]

How common is chlamydia?

CDC estimates that there were four million chlamydial infections in 2018.[3] Chlamydia is also the most frequently reported bacterial sexually transmitted infection in the United States.[4] It is difficult to account for many cases of chlamydia. Most people with the infection have no symptoms and do not seek testing. Chlamydia is most common among young people. Two-thirds of new chlamydial infections occur among youth aged 15-24 years.[3] Estimates show that 1 in 20 sexually active young women aged 14-24 years has chlamydia.[5]

Disparities persist among racial and ethnic minority groups. In 2021, chlamydia rates for African Americans/Blacks were six times that of Whites.[4] Chlamydia is also common among MSM. Among MSM screened for rectal chlamydial infection, positivity ranges from 3.0% to 10.5%.[6,7] Among MSM screened for pharyngeal chlamydial infection, positivity has ranges from 0.5% to 2.3%.[7,8]

How do people get chlamydia?

Chlamydia spreads through vaginal, anal, or oral sex with someone with the infection. Semen does not have to be present to get or spread the infection.

Pregnant people can give chlamydia to their baby during childbirth. This can cause ophthalmia neonatorum (conjunctivitis) or pneumonia in some infants.[9-12] Rectal or genital infection can persist one year or longer in infants infected at birth.[13] However, sexual abuse should be a consideration among young children with vaginal, urethral, or rectal infection beyond the neonatal period.

People treated for chlamydia can get the infection again if they have sex with a person with chlamydia.[14]

Who is at risk for chlamydia?

Sexually active people can get chlamydia through vaginal, anal, or oral sex without a condom with a partner who has chlamydia. It is a very common STD, especially among young people.[3]

Sexually active young people are at high risk of getting chlamydia for behavioral, biological, and cultural reasons. Some don't always use condoms.[15] Some may move from one monogamous relationship to another during the likely infectivity period of chlamydia. This can increase the risk of transmission.[16] Teenage girls and young women may have cervical ectopy (where cells from the endocervix are present on the ectocervix).[17] Cervical ectopy may increase susceptibility to chlamydial infection. High chlamydia prevalence among young people also may reflect barriers to accessing STD prevention services. These barriers can include lack of transportation, cost, and perceived stigma.[16-20]

MSM are also at risk for infection since chlamydia can spread by oral or anal sex. Among MSM screened for rectal infection, positivity ranges from 3.0% to 10.5%.[6,7] Among MSM screened for pharyngeal infection, positivity ranges from 0.5% to 2.3%.[7,8]

What are the symptoms of chlamydia?

Some refer to chlamydia as a "silent" infection. This is because most people with the infection have no symptoms or abnormal physical exam findings. Studies find that the proportion of people with chlamydia who develop symptoms vary by setting and study methodology. Two modeling studies estimate that about 10% of men and 5-30% of women with a confirmed infection develop symptoms.[21,22] The incubation period of chlamydia is unclear. Given the relatively slow replication cycle of the organism, symptoms may not appear until several weeks after exposure in people who develop symptoms.

In women, the bacteria initially infect the cervix. This may cause signs and symptoms of cervicitis (e.g., mucopurulent endocervical discharge, easily induced endocervical bleeding). It also can infect the urethra. This may cause signs and symptoms of urethritis (e.g., pyuria, dysuria, urinary frequency). Infection can spread from the cervix to the upper reproductive tract (i.e., uterus, fallopian tubes), causing PID. PID may be asymptomatic ("subclinical PID")[23] or acute, with typical symptoms of abdominal and/or pelvic pain. Signs of cervical motion tenderness and uterine or adnexal tenderness also may occur during examination.

Men with symptoms typically have urethritis, with a mucoid or watery urethral discharge and dysuria. Some men develop epididymitis (with or without symptomatic urethritis) with unilateral testicular pain, tenderness, and swelling.[24]

Chlamydia can infect the rectum in men and women. This can happen either directly (through receptive anal sex), or via spread from the cervix and vagina in a woman.[25, 26] While these infections often have no symptoms, they can cause symptoms of proctitis (e.g., rectal pain, discharge, and/or bleeding).[26-28]

Conjunctivitis can occur in both men and women through contact with infected genital secretions.[29]

While chlamydia can also spread to the throat by having oral sex, there are typically no symptoms. It also does not appear to be an important cause of pharyngitis.[26]

What health problems can result from chlamydia?

The initial damage that chlamydia causes is often unnoticed. However, infections can lead to serious health problems with both short- and long-term effects.

If a woman does not receive treatment, chlamydia can spread into the uterus or fallopian tubes, causing PID. Symptomatic PID occurs in about 10-15% of women who do not receive treatment.[30,31] However, chlamydia can also cause subclinical inflammation of the upper genital tract ("subclinical PID"). Both acute and subclinical PID can cause long-term damage to the fallopian tubes, uterus, and surrounding tissues. The damage can lead to chronic pelvic pain, tubal factor infertility, and potentially fatal ectopic pregnancy.[32,33]

Some patients with PID develop perihepatitis, or "Fitz-Hugh-Curtis Syndrome". This syndrome includes inflammation of the liver capsule and surrounding peritoneum, which can cause right upper quadrant pain.

In pregnant people, untreated chlamydia can lead to pre-term delivery,[34] ophthalmia neonatorum (conjunctivitis), and pneumonia in the newborn.

Reactive arthritis can occur in men and women, following infection with or without symptoms. This is sometimes part of a triad of symptoms (with urethritis and conjunctivitis) formerly referred to as Reiter's Syndrome.[35]

What about chlamydia and HIV?

Untreated chlamydia may increase a person's chances of getting or transmitting HIV.[36]

How does chlamydia affect a pregnant person and their baby?

In newborns, untreated chlamydia can cause:

- pre-term delivery,[34]
- ophthalmia neonatorum (conjunctivitis),
- and pneumonia.

Prospective studies show that chlamydial conjunctivitis and pneumonia occur in 18-44% and 3-16%, respectively, of infants born to those with chlamydia. [9-12] Neonatal prophylaxis against gonococcal conjunctivitis routinely performed at birth does not effectively prevent chlamydial conjunctivitis.[37-39]

Screening for and treating chlamydia in pregnant people is the best way to prevent disease in infants. At the first prenatal visit and during the third trimester, screen:

- All pregnant people under age 25; and
- All pregnant people 25 years and older at increased risk for chlamydia (e.g., those who have a new or more than one sex partner).

Retest those with infection four weeks and three months after they complete treatment.[40]

Who to test for chlamydia?

Anyone with the following genital symptoms should not have sex until they see a healthcare provider:

- A discharge
- A burning sensation when peeing
- Unusual sores, or a rash

Anyone having oral, anal, or vaginal sex with a partner recently diagnosed with an STD should see a healthcare provider.

Because chlamydia usually has no symptoms, screening is necessary to identify most infections. Screening programs can reduce rates of adverse sequelae in women.[31,41] CDC recommends yearly chlamydia screening of all sexually active women younger than 25. CDC also recommends screening for older women with risk factors, such as new or multiple partners, or a sex partner who has a sexually transmitted infection.[40] Screen and treat those who are pregnant as noted in "How does chlamydia affect a pregnant person and their baby?" Women who are sexually active should discuss their risk factors with a healthcare provider to determine if more frequent screening is necessary.

Routine screening is not necessary for men. However, consider screening sexually active young men in clinical settings with a high prevalence of chlamydia. This can include adolescent clinics, correctional facilities, and STD clinics. Consider this when resources permit and do not hinder screening efforts in women.[40]

Screen sexually active MSM who have insertive intercourse for urethral chlamydial infection. Also screen MSM who have receptive anal intercourse for rectal infection at least yearly. Screening for pharyngeal infection is not recommended. MSM, including those with HIV, should receive more frequent chlamydia screening at 3- to 6-month intervals, if risk behaviors

persist or if they or their sexual partners have multiple partners.[40]

At the initial HIV care visit, providers should test all sexually active people for chlamydia. Test at least each year during HIV care. A patient's healthcare provider might determine more frequent screening is necessary, based on the patient's risk factors.[42]

How is chlamydia diagnosed?

Diagnose chlamydia with nucleic acid amplification tests (NAATs), cell culture, and other types of tests. NAATs are the most sensitive tests to use on easy-to-obtain specimens. This includes vaginal swabs (either clinician- or patient-collected) or urine.[43]

To diagnose genital chlamydia in women using a NAAT, vaginal swabs are the optimal specimen. Urine is the specimen of choice for men. Urine is an effective alternative specimen type for women.[43] Self-collected vaginal swab specimens perform as well as other approved specimens using NAATs.[44] Patients may prefer self-collected vaginal swabs or urine-based screening to more invasive specimen collection.[45] Adolescent girls may be good candidates for self-collected vaginal swab- or urine-based screening.

Diagnose rectal or pharyngeal infection by testing at the anatomic exposure site. While useful for these specimens, culture is not widely available. Additionally, NAATs have better sensitivity and specificity compared with culture for detecting *C. trachomatis* at non-genital sites.[46-48] Most tests, including NAATs, are not FDA-cleared for use with rectal or pharyngeal swab specimens. NAATs have better sensitivity and specificity compared with culture for the detection of *C. trachomatis* at rectal sites.[46-48] However, some laboratories have met set requirements and have validated NAAT testing on rectal and pharyngeal swab specimens.

What is the treatment for chlamydia?

Antibiotics can easily cure chlamydia. Treatment options are the same, whether a person also has HIV or not.

Patients treated with single-dose antibiotics should not have sex for seven days. Patients treated with a seven-day course of antibiotics should not have sex until they complete treatment, and their symptoms are gone. This helps prevent spreading the infection to sex partners. It is important to take all medicine prescribed to cure chlamydia. Medicine should not be shared with anyone. Although treatment will cure the infection, it will not repair any long-term damage done by the disease. If a person's symptoms continue for more than a few days after receiving treatment, a healthcare provider should reevaluate them.

Repeat infection with chlamydia is common.[49] Women whose sex partners do not receive appropriate treatment are at high risk for re-infection. Having multiple chlamydial infections increases a woman's risk of serious reproductive health problems (e.g., PID and ectopic pregnancy).[50,51] A healthcare provider should retest those with chlamydia about three months after treatment of an initial infection. Retesting is necessary even if their partners receive successful treatment.[40]

Infants with chlamydia may develop conjunctivitis and/or pneumonia.[10] Healthcare providers can treat infection in infants with antibiotics.

What about partners?

People treated for chlamydia should tell their recent sex partners so the partner can see a healthcare provider. "Recent" partners include anyone the patient had anal, vaginal, or oral sex with in the 60 days before symptom onset or diagnosis. This will help protect the partner from health problems and prevent re-infection.

Patients treated with single-dose antibiotics should not have sex for seven days. Patients treated with a seven-day course of antibiotics should not have sex until they complete treatment, and their symptoms go away.

For tips on talking to partners about sex and STD testing, visit www.gytnow.org/talking-to-your-partner/

In some states, healthcare providers may give people with chlamydia extra medicine or prescriptions to give to their sex partner(s). This is called “expedited partner therapy”, or “EPT.” Clinical trials comparing EPT to asking the patient to refer their partners in for treatment find that EPT leads to fewer re-infections in the index patient and more partner treatment.[52] EPT is another strategy providers use to manage the partners of people with chlamydial infection. Partners should still seek medical care, regardless of whether they receive EPT. For more information about EPT, including the legal status in a specific area, see Legal Status of Expedited Partner Therapy.

How can chlamydia be prevented?

Condoms, when used correctly, every time someone has sex can reduce the risk of getting or giving chlamydia.[53] The only way to completely avoid chlamydia is to not have vaginal, anal, and oral sex. Another option is being in a long-term, mutually monogamous relationship with a partner who has been tested and does not have chlamydia.

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