

# SEXUALLY TRANSMITTED DISEASES

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# True or false

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1. Most people with an STD experience painful symptoms.
2. Birth control pills prevent the spread of STDs.
3. Douching will cure STD.
4. Abstinence is the best way to prevent STDs.
5. If you get an STD once, and are treated, you can't get it again.
6. A person does not need to see a doctor if she/he notices sores on his/her genitals once, but then they go away.
7. Condoms help prevent the spread of STDs

# STDs

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- STDs are diseases and infections which are capable of being spread from person to person through:
  - sexual intercourse
  - oral-genital contact or in non-sexual ways.
  - IV drug

# STDs

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What are the symptoms?

How would I know if I have been infected?

- Sores (either painful or painless)
- Blood in urine
- Burning sensation when urinating
- Rashes
- Itching
- LAP
- Warts
- Unusual discharge

# Chlamidya

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- Four million new cases occur each year
- C.trachomatis
- SYMPTOMS: fever, weight loss for no reason, swollen glands, fatigue, diarrhea, white spots on the mouth.

## FEMALE SYMPTOMS:

Vaginal discharge (white or grey) or burning with urination

Lower abdominal pain

Bleeding between menstrual periods.

Low-grade fever (later symptom)

# Chlamidya

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# Chlamidya

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## MALE SYMPTOMS:

Discharge from the penis and/or burning when urinating

Burning and itching around the opening of the penis

Pain and swelling in the testicles

Low –grade fever (associated with epididymitis – inflammation of the testicles)

# Chlamidya





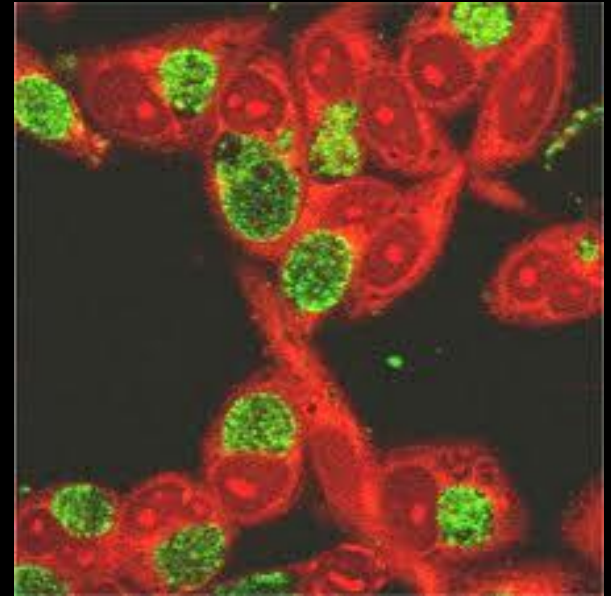
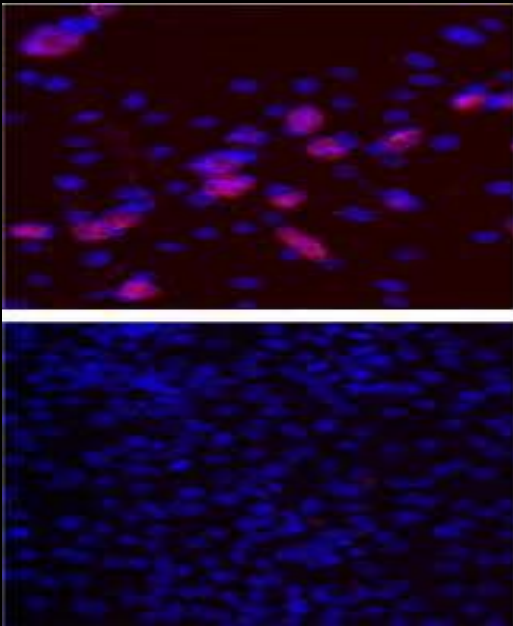
# Chlamidya

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- Diagnosis:
  - Cytologic examination
  - Cell culture
  - Antigen detection (IFA, ELISA)
  - Nucleic acid search (PCR, LCR, Hybridization)
  - Serology
    - Acute infections are not valued
    - Increased concentrations of IgM and IgG antibodies to chlamydial may be diagnostic
    - Enzyme immunoassay (EIA) and indirect fluorescent antibody test (IFAT)

# Chlamidya

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# Chlamidya

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- Treatment
- Azithromycin
- Doxycycline

# Gonorrhoea

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- Each year approximately 650,000 people in the United States are infected with gonorrhoea
- People get gonorrhoea from close sexual contact (anal sex, oral sex and vaginal)
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- Gonorrhoea can also be spread from mother to child during birth
- Gonorrhoea infection can spread to other unlikely parts of the body

# Gonorrhoea

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# Gonorrhoea

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- Appear 5-7 days or can take up to 30 days to appear
- Sore or red throat : gonorrhea in the throat from oral sex
- Rectal pain
- Blood and pus in bowel

# Gonorrhoea

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## **FEMALE SYMPTOMS:**

- Symptoms may show up 2-21 days after having sex
- May notice a yellow or white discharge from the vagina
- May be a burning or pain when urinating
- Bleeding between periods
- Heavier and more painful periods
- Cramps or pain in the lower abdomen, sometimes with nausea or fever

# Gonorrhoea

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## **MALE SYMPTOMS:**

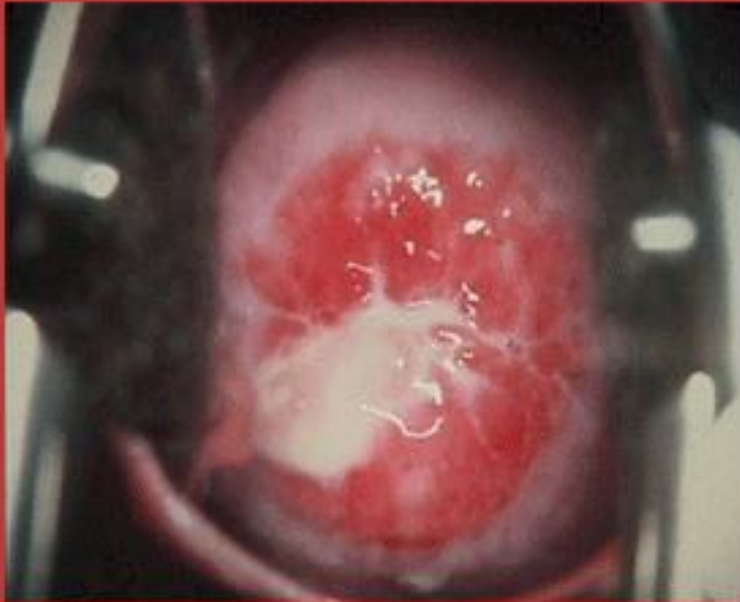
- Yellow or white discharge from penis
- Burning or pain when urinating
- Frequent urinating
- Swollen testicles



# Gonorrhoea

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## **GONNORHEA**



**FEMALE**



**MALE**

# Gonorrhoea

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## Diagnosis :

- Culture, gold standard
- Selective medium (thayer martin)
- Suitable material and speed
- Microscopic examination
  - Gram and methylene blue stain
- Polymerase chain reaction (PCR)
- Ligase chain reaction (LZR)
- Enzyme immunoassay
- Direct fluorescence microscopy

# Gonorrhoea

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# Gonorrhoea

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## Treatment

- Ceftriaxone 125 mg IM 1x1
- Cefixime 400 mg PO 1x1
- *C. trachomatis* infections are accompanied by 50% of gonorrhea cases
- Quinolone group have no place in the Gonorrhoea

# Syphilis

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- The long range effects can be very serious, including death.
- In the United States, an estimated 70,000 new cases of syphilis in adults
- Passed from person to person through direct contact with a syphilis sore
- Sores mainly occur on the external genitalia, vagina, anus, or rectum.
- Sores can also occur on the lips and in the mouth.
- Transmission of the organism occurs during vaginal, anal, or oral sex.

# Syphilis stage 1

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- Symptoms usually appear 10-90 days after contact.
- An infected person gets a sore (chancre), which may be painful at the point of contact (mouth, anus, rectum, throat or the sex organ).
- The chancre is usually firm, round, small, and painless.
  - It appears at the spot where the bacterium entered the body.
- The chancre lasts 1-5 weeks and heals on its own.
- In the female, the chancre is often internal and cannot be seen.

# Syphilis stage 1

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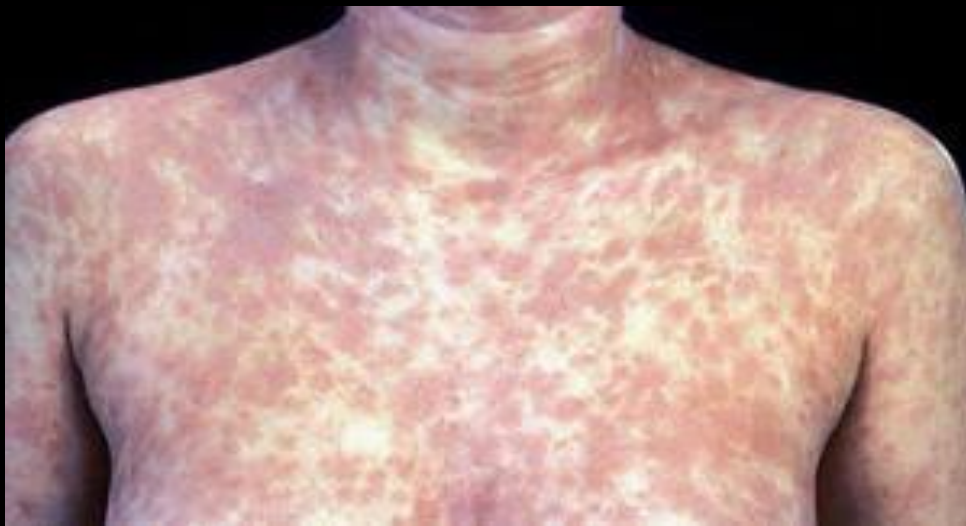
# Syphilis stage 2

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- Lasts 3-6 weeks.
- After the chancre comes a copper-colored skin rash which may appear on the palms of the hands, soles of the feet, or in more severe cases covers the entire body.
- The rash may be accompanied by
  - Fever
  - Headaches
  - Indigestion
  - Loss of appetite
  - Loss of hair in spots over the scalp.



# Syphilis stage 2



# Syphilis stage 3 Latent period

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- All symptoms disappear so that the victim thinks he/she is cured
- If not received treatment the bacterium remains in the body and begins to damage the internal organs including the
  - Brain
  - Nerves
  - Eyes
  - Heart
  - Blood vessels
  - Liver
  - Bones and joints

# Syphilis stage 4 (Tertiary)

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- The results of the internal damage from the 3<sup>rd</sup> stage shows up many years later
- Ten, twenty, even thirty years after the initial infection - sudden heart attack, failure of vision, loss of motor coordination or mental disturbances.

# Syphilis

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## Diagnosis

- As can be seen with the typical movements of spirochets on the microscopic dark field.
- The stained slides
  - Giemsa stain
  - Silvering method (pale pink)
  - India ink

# Syphilis

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Syphilis Curriculum

Pathogenesis

## *Treponema pallidum* on darkfield microscopy



Source: CDC/NCHSTP/Division of STD Prevention, STD Clinical 56443



# Syphilis

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## Non-treponemal tests

- Venereal Disease Research Laboratory (VDRL)
- Rapid Plasma Reagin (RPR)
  - 80% of patients with primary syphilis becomes positive 4-8 weeks
- Used in the monitoring of treatment
- The disadvantage ; false positives

# Syphilis

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## Treponemal tests

- High sensitivity and specificity
- Confirmation shall be used non-treponemal tests.
- T.pallidum Immobilization (TPI)
- T.pallidum hemagglutination (TPHA)
- T.pallidum microhemagglutination (TPMHA)
- Fluorescent treponemal antibody absorption test (FTA-ABS)
- treponemal tests

# Syphilis

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## Treatment

- Penicillin is still the drug of first choice
- Doxycycline
- Tetracycline
- Azithromycin
- Ceftriaxone



# Herpes simplex

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- Symptoms usually show 2-20 days after contact
- May be extremely painful or very mild
- “outbreaks” of blisters and ulcers
- Once infected with HSV, people remain infected for life
- Stress, bruising, chaffing, or a woman’s period may cause an onset of the disease

# Herpes simplex

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## FEMALE SYMPTOMS:

Blisters in or around the vagina, fever and headaches

## MALE SYMPTOMS:

Small sore or cluster of blisters on the penis

# Herpes simplex

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# Herpes simplex

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- Genital herpes is a chronic, lifelong viral infection
- Two HSV serotypes – HSV-1 & HSV-2
- HSV-2 causes the majority of cases of recurrent genital herpes in the U.S.
- Approximately 1 million new cases occur each year

# Herpes simplex

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- HSV-2 is transmitted sexually and perinatally
- Majority of genital herpes infections are transmitted by persons who are
  - unaware they are infected with HSV-2 or
  - asymptomatic when transmission occurs
- Efficiency of sexual transmission is greater from men to women than from women to men

# Herpes simplex

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## First Clinical Episode

- Primary infection
  - First infection **ever** with either HSV-1 or HSV-2
  - No antibody present when symptoms appear
  - Disease is more severe than recurrent disease
- Non-primary infection
  - Newly acquired HSV-1 or HSV-2 infection in an individual previously seropositive to the other virus
  - Symptoms usually milder than primary infection
  - Antibody to new infection may take several weeks to a few months to appear

# Herpes simplex

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## Recurrent symptomatic infection

- Antibody present when symptoms appear
- Disease usually mild and short in duration

## Asymptomatic infection

- Serum antibody is present
- No known history of clinical outbreaks

# Herpes simplex

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## Primary episodes without treatment

- Characterized by multiple lesions that are more severe, last longer, and have higher titers of virus than recurrent infections
- Typical lesion progression:
  - papules → vesicles → pustules → ulcers → crusts → healed
- Often associated with systemic symptoms including fever, headache, malaise, and myalgia
- Illness lasts 2-4 weeks



# Herpes simplex

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## Recurrent infection without treatment

- Prodromal symptoms are common (localized tingling, irritation) - begin 12-24 hours before lesions
- Illness lasts 5-10 days
- Symptoms tend to be less severe than in primary infection
- Usually no systemic symptoms
- HSV-2 primary infection more prone to recur than HSV-1

# Herpes simplex

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- Clinical diagnosis is insensitive and nonspecific
- Clinical diagnosis should be confirmed by laboratory testing:
  - Virologic tests
  - Type-specific serologic tests

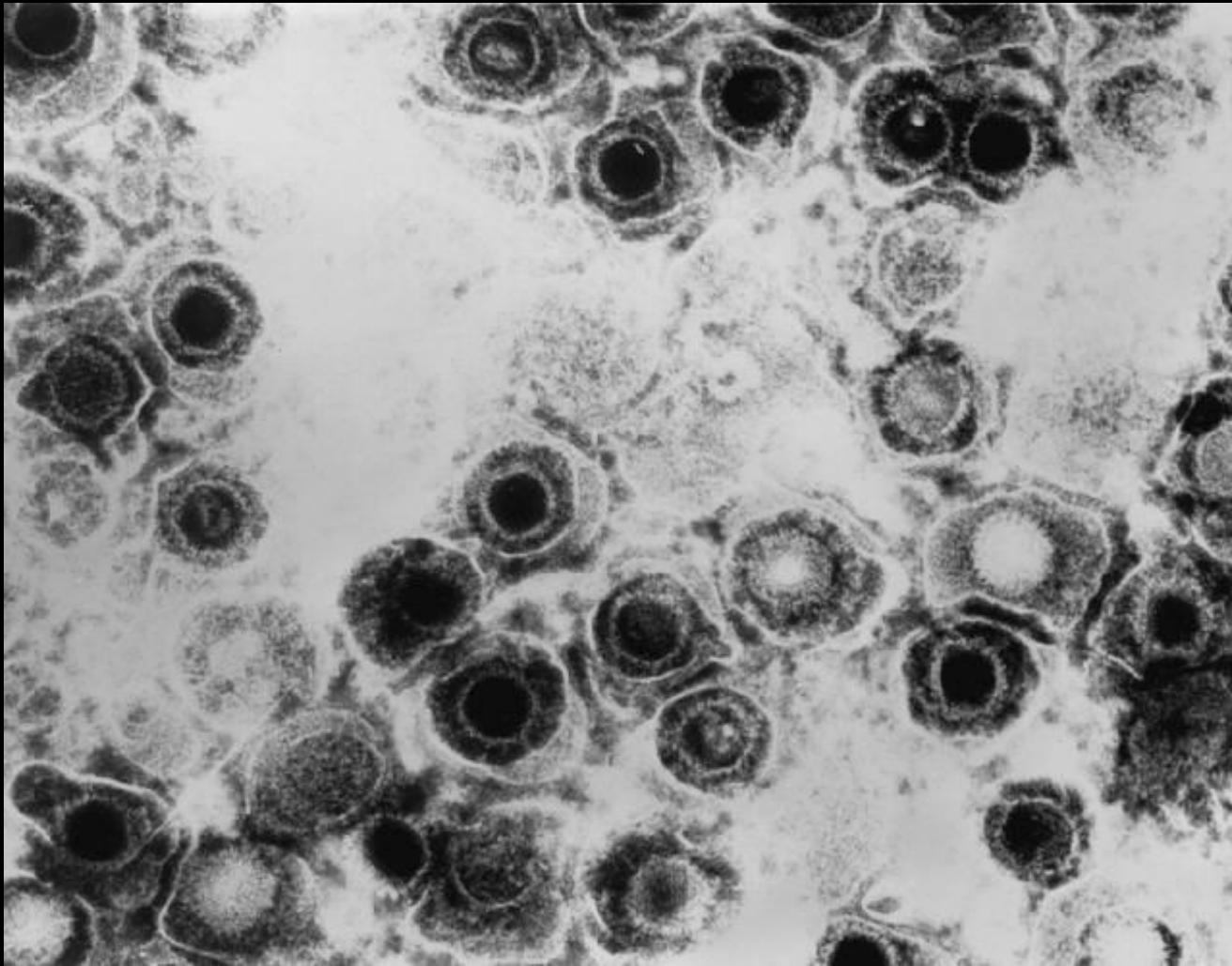
# Herpes simplex

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- Viral culture (gold standard)
  - Preferred test if genital ulcers or other mucocutaneous lesions are present
  - Highly specific (>99%)
  - Sensitivity depends on stage of lesion; declines rapidly as lesions begin to heal
  - Positive more often in primary infection (80%–90%) than with recurrences (30%)
  - Cultures should be typed
- Polymerase Chain Reaction (PCR)
  - More sensitive than viral culture; has been used instead of culture in some settings; however PCR tests are not FDA-cleared or widely available
  - Preferred test for detecting HSV in spinal fluid

# Herpes simplex

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# Herpes simplex

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- Antigen detection (DFA or EIA)
  - Fairly sensitive (>85%) in symptomatic shedders
  - Rapid (2-12 hours)
  - May be better than culture for detecting HSV in healing lesions

# Herpes simplex

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- Antiviral chemotherapy
  - Partially controls symptoms of herpes
  - Does not eradicate latent virus
- Does not affect risk, frequency or severity of recurrences after drug is discontinued
- Systemic antiviral chemotherapy includes 3 oral medications:
  - Acyclovir
  - Valacyclovir
  - Famciclovir

# Genital warts (HPV)

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- Growths that appear on the vagina or penis, near the anus, and sometimes in the throat.
- They are caused by viruses and spread through sexual contact.
- Warts is spread by vaginal or anal intercourse and by oral sex.
- Warts may appear within several weeks after sex with a person who has HPV; or they may take months or years to appear; or they may or never appear.
- A person can be infected and pass on the virus without knowing it
- Approximately 5.5 million new cases of HPV (one third of all new STDs) occur in the U.S. each year, with at least 20 million people currently infected.
- Three out of four Americans between the ages of 15 and 49 have been infected with genital HPV in their lifetimes.

# Genital warts

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- Usually the warts look like tiny cauliflowers, but sometimes they are flat.
- The warts may cause itching, burning and some pain, but often don't cause any pain at all.
- Warts may be inside the vagina or on the cervix, or in the rectum or throat, so you might not notice them.
- They might also be so small that you cannot see them.



# Trichomaniasis

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- An estimated 5 million new cases occur each year in women and men.
- Occurs in vagina of women so may be sexually transmitted to men using infected washcloths and towels.
- It is transmitted to the baby during delivery.
- It also can occur in the urethra (carries urine to penis) in men, doesn't have symptoms usually.

# Trichomaniasis

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## SYMPTOMS:

Appear within 5 to 28 days of exposure

Women usually have a vaginal discharge that

## FEMALE SYMPTOMS:

Itching and burning at the outside of the opening of the vagina and vulva.

Painful and frequent urination

Heavy, unpleasant smelling greenish, yellow discharge

## MALE SYMPTOMS:

Usually nothing, or discomfort in urethra, inflamed head of the penis.

# NGU

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- An inflammation or infection of the urethra
- It is passed from person to person during intimate physical contact.

## FEMALE SYMPTOMS:

Pain

Itching or burning around the vagina

Any discharge may be a sign of NGU. (because the disease is internal, women sometimes do not show any obvious symptoms.)

# NGU

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## MALE SYMPTOMS:

Discharge from the penis (this may be thin and watery or thick and white)

Burning and itching around the opening of the penis

Sometimes the signs appear only in the morning, then go away and come back.

About 10% of men show no symptoms