Sexually Transmitted Infections

Summary of CDC Treatment Guidelines—2021

Bacterial Vaginosis • Cervicitis • Chlamydial Infections • Epididymitis
Genital Herpes Simplex • Genital Warts (Human Papillomavirus) • Gonococcal Infections
Lymphogranuloma Venereum • Nongonococcal Urethritis (NGU) • Pediculosis Pubis
Pelvic Inflammatory Disease • Scabies • Syphilis • Trichomoniasis

U.S. Department of Health and Human Services
Centers for Disease Control and Prevention
National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention

National Network of STD Clinical Prevention Training Centers

This pocket guide reflects recommended regimens found in *CDC's Sexually Transmitted Infections Treatment Guidelines, 2021.*

This summary is intended as a source of clinical guidance. When more than one therapeutic regimen is recommended, the sequence is in alphabetical order unless the choices for therapy are prioritized based on efficacy, cost, or convenience. The recommended regimens should be used primarily; alternative regimens can be considered in instances of substantial drug allergy or other contraindications. An important component of STI treatment is partner management. Providers can arrange for the evaluation and treatment of sex partners either directly or with assistance from state and local health departments. Complete guidelines can be viewed online at https://www.cdc.gov/std/treatment/.

This booklet has been reviewed by CDC in July 2021.

Accessible version: https://www.cdc.gov/std/treatment-guidelines/default.htm

Bacterial Vaginosis

Risk Category	Recommended Regimen	Alternatives
	metronidazole oral 500 mg orally 2x/day for 7 days	clindamycin 300 mg orally 2x/day for 7 days
	OR metronidazole gel 0.75%, one 5 gm applicator intravaginally, 1x/day for 5 days	**OR** clindamycin ovules 100 mg intravaginally at bedtime for 3 days[1]
	OR clindamycin cream 2%, one 5 gm applicator intravaginally, at bedtime for 7 days	**OR** secnidazole 2 gm oral granules in a single dose[2]
		OR tinidazole 2 gm orally 1x/day for 2 days
		OR tinidazole 1 gm orally 1x/day for 5 days

1 Clindamycin ovules use an oleaginous base that might weaken latex or rubber products (e.g., condoms and diaphragms). Use of such products within 72 hours following treatment with clindamycin ovules is not recommended.

2 Oral granules should be sprinkled onto unsweetened applesauce, yogurt, or pudding before ingestion. A glass of water can be taken after administration to aid in swallowing.

Cervicitis[3]

Risk Category	Recommended Regimen	Alternatives
	doxycycline 100 mg orally 2x/day for 7 days	azithromycin 1 gm orally in a single dose

3 Consider concurrent treatment for gonococcal infection if the patient is at risk for gonorrhea or lives in a community where the prevalence of gonorrhea is high (see Gonorrhea section).

Chlamydial Infections

Risk Category	Recommended Regimen	Alternatives
Adults and adolescents	doxycycline 100 mg orally 2x/day for 7 days	azithromycin 1 gm orally in a single dose **OR** levofloxacin 500 mg orally 1x/day for 7 days
Pregnancy	azithromycin 1 gm orally in a single dose	amoxicillin 500 mg orally 3x/day for 7 days
Infants and children <45 kg[4] (nasopharynx, urogenital, and rectal)	erythromycin base 50 mg/kg body weight/day orally, divided into 4 doses daily for 14 days **OR** ethylsuccinate 50 mg/kg body weight/day orally, divided into 4 doses daily for 14 days	
Children who weigh ≥45 kg but who are aged <8 years (nasopharynx, urogenital, and rectal)	azithromycin 1 gm orally in a single dose	

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Risk Category	Recommended Regimen	Alternatives
Children aged ≥8 years (nasopharynx, urogenital, and rectal)	azithromycin 1 gm orally in a single dose	
	OR doxycycline 100 mg orally 2x/day for 7 days	
Neonates:[5] ophthalmia and pneumonia	erythromycin base 50 mg/kg body weight/day orally, divided into 4 doses daily for 14 days	azithromycin suspension 20 mg/kg body weight/day orally, 1x/day for 3 days
	OR ethylsuccinate 50 mg/kg body weight/day orally, divided into 4 doses daily for 14 days	

4 Data are limited regarding the effectiveness and optimal dose of azithromycin for treating chlamydial infection among infants and children who weigh <45 kg.

5 An association between oral erythromycin and azithromycin and infantile hypertrophic pyloric stenosis (IHPS) has been reported among infants aged <6 weeks. Infants treated with either of these antimicrobials should be followed for IHPS signs and symptoms.

Epididymitis

Risk Category	Recommended Regimen	Alternatives
For acute epididymitis most likely caused by sexually transmitted chlamydia and gonorrhea	ceftriaxone 500 mg IM in a single dose[6] **PLUS** doxycycline 100 mg orally 2x/day for 10 days	
For acute epididymitis most likely caused by chlamydia, gonorrhea, or enteric organisms (men who practice insertive anal sex)	ceftriaxone 500 mg IM in a single dose[6] **PLUS** levofloxacin 500 mg orally 1x/day for 10 days	
For acute epididymitis most likely caused by enteric organisms only	levofloxacin 500 mg orally 1x/day for 10 days	

6 For persons weighing ≥150 kg, 1 gm of ceftriaxone should be administered.

Genital Herpes Simplex

Risk Category	Recommended Regimen	Alternatives
First clinical episode of genital herpes[7]	acyclovir 400 mg orally 3x/day for 7–10 days[8] **OR** famciclovir 250 mg orally 3x/day for 7–10 days **OR** valacyclovir 1 gm orally 2x/day for 7–10 days	
Suppressive therapy for recurrent genital herpes (HSV-2)	acyclovir 400 mg orally 2x/day **OR** valacyclovir 500 mg orally 1x/day[9] **OR** valacyclovir 1 gm orally 1x/day **OR** famciclovir 250 mg orally 2x/day	
Episodic therapy for recurrent genital herpes (HSV-2)[10]	acyclovir 800 mg orally 2x/day for 5 days **OR** acyclovir 800 mg orally 3x/day for 2 days **OR** famciclovir 1 gm orally 2x/day for 1 day **OR** famciclovir 500 mg orally once, **FOLLOWED BY** 250 mg 2x/day for 2 days **OR** famciclovir 125 mg orally 2x/day for 5 days **OR** valacyclovir 500 mg orally 2x/day for 3 days **OR** valacyclovir 1 gm orally 1x/day for 5 days	

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Risk Category	Recommended Regimen	Alternatives
Daily suppressive therapy in persons with HIV infection	acyclovir 400-800 mg orally 2–3x/day **OR** famciclovir 500 mg orally 2x/day **OR** valacyclovir 500 mg orally 2x/day	
Episodic infection in persons with HIV infection	acyclovir 400 mg orally 3x/day for 5–10 days **OR** famciclovir 500 mg orally 2x/day for 5–10 days **OR** valacyclovir 1 gm orally 2x/day for 5–10 days	
Daily suppressive therapy of recurrent genital herpes in pregnant women[11]	acyclovir 400 mg orally 3x/day **OR** valacyclovir 500 mg orally 2x/day	

7 Treatment can be extended if healing is incomplete after 10 days of therapy.

8 Acyclovir 200 mg orally five times/day is also effective but is not recommended because of the frequency of dosing.

9 Valacyclovir 500 mg once a day might be less effective than other valacyclovir or acyclovir dosing regimens for persons who have frequent recurrences (i.e., ≥10 episodes/year).

10 Acyclovir 400 mg orally three times/day is also effective but is not recommended because of frequency of dosing.

11 Treatment recommended starting at 36 weeks' gestation. (Source: *American College of Obstetricians and Gynecologists. Clinical management guidelines for obstetrician-gynecologists. Management of herpes in pregnancy.* ACOG Practice Bulletin No. 82. Obstet Gynecol 2007;109:1489–98.)

Genital Warts (Human Papillomavirus)

Risk Category	Recommended Regimen	Alternatives
External anogenital warts[12]	**Patient-applied**	
	imiquimod 3.75% or 5%[13] cream	
	OR podofilox 0.5% solution or gel	
	OR sinecatechins 15% ointment[13]	
	Provider-administered	
	cryotherapy with liquid nitrogen or cryoprobe	
	OR surgical removal either by tangential scissor excision, tangential shave excision, curettage, laser, or electrosurgery	
	OR trichloroacetic acid (TCA) or bichloroacetic acid (BCA) 80%–90% solution	
Urethral meatus warts	cryotherapy with liquid nitrogen	
	OR surgical removal	
Vaginal warts[14]	cryotherapy with liquid nitrogen	
	OR surgical removal	
	OR TCA or BCA 80%–90% solution	

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Risk Category	Recommended Regimen	Alternatives
Cervical warts[15]	cryotherapy with liquid nitrogen	
	OR surgical removal	
	OR TCA or BCA 80%–90% solution	
Intra-anal warts[16]	cryotherapy with liquid nitrogen	
	OR surgical removal	
	OR TCA or BCA 80%–90% solution	

12 Persons with external anal or peri-anal warts might also have intra-anal warts. Thus, persons with external anal warts might benefit from an inspection of the anal canal by digital examination, standard anoscopy, or high-resolution anoscopy.

13 Might weaken condoms and vaginal diaphragms.

14 The use of a cryoprobe in the vagina is not recommended because of the risk for vaginal perforation and fistula formation.

15 Management of cervical warts should include consultation with a specialist. For women who have exophytic cervical warts, a biopsy evaluation to exclude high-grade squamous intraepithelial lesion should be performed before treatment is initiated.

16 Management of intra-anal warts should include consultation with a specialist.

Gonococcal Infections

Risk Category	Recommended Regimen	Alternatives
Uncomplicated infections of the cervix, urethra, and rectum: adults and adolescents <150 kg[6]	ceftriaxone 500 mg IM in a single dose[17]	If cephalosporin allergy: gentamicin 240 mg IM in a single dose **PLUS** azithromycin 2 gm orally in a single dose If ceftriaxone administration is not available or not feasible: cefixime 800 mg orally in a single dose[17]
Uncomplicated infections of the pharynx: adults and adolescents <150 kg[6]	ceftriaxone 500 mg IM in a single dose[17]	
Pregnancy	ceftriaxone 500 mg IM in a single dose[17]	
Conjunctivitis	ceftriaxone 1 gm IM in a single dose[18]	
Disseminated gonococcal infections (DGI)[19]	ceftriaxone 1 gm IM or by IV every 24 hours[17]	cefotaxime 1 gm by IV every 8 hours **OR** ceftizoxime 1 gm every 8 hours

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Risk Category	Recommended Regimen	Alternatives
Uncomplicated gonococcal vulvovaginitis, cervicitis, urethritis, pharyngitis, or proctitis: infants and children ≤45 kg	ceftriaxone 25–50 mg/kg body weight by IV or IM in a single dose, not to exceed 250 mg IM	
Uncomplicated gonococcal vulvovaginitis, cervicitis, urethritis, pharyngitis, or proctitis: children >45 kg	Treat with the regimen recommended for adults (see above)	
Ocular prophylaxis in neonates	erythromycin (0.5%) ophthalmic ointment in each eye in a single application at birth	
Ophthalmia in neonates and infants	ceftriaxone 25–50 mg/kg body weight by IV or IM in a single dose, not to exceed 250 mg	For neonates unable to receive ceftriaxone due to simultaneous administration of intravenous calcium: cefotaxime 100 mg/kg body weight by IV or IM as a single dose

17 If chlamydial infection has not been excluded, treat for chlamydia with doxycycline 100 mg orally two times/day for 7 days (if pregnant, treat with azithromycin 1 gm orally in a single dose).

18 Providers should consider one-time lavage of the infected eye with saline solution.

19 When treating for the arthritis-dermatitis syndrome, the provider can switch to an oral agent guided by antimicrobial susceptibility testing (AST) 24–48 hours after substantial clinical improvement, for a total treatment course of at least 7 days.

Lymphogranuloma Venereum

Risk Category	Recommended Regimen	Alternatives
	doxycycline 100 mg orally 2x/day for 21 days	azithromycin 1 gm orally 1x/week for 3 weeks[20] **OR** erythromycin base 500 mg orally 4x/day for 21 days

20 Because this regimen has not been validated rigorously, a test-of-cure with *Chlamydia trachomatis* nucleic acid amplification test (NAAT) 4 weeks after completion of treatment can be considered.

Nongonococcal Urethritis (NGU)

Risk Category	Recommended Regimen	Alternatives
	doxycycline 100 mg orally 2x/day for 7 days	azithromycin 1 gm orally in a single dose **OR** azithromycin 500 mg orally in a single dose, **THEN** 250 mg daily for 4 days
Persistent and recurrent NGU: test for *Mycoplasma genitalium:*		
If *M. genitalium* resistance testing is unavailable but *M. genitalium* is detected by an FDA-cleared NAAT	doxycycline 100 mg orally 2x/day for 7 days, **FOLLOWED BY** moxifloxacin 400 mg 1x/day for 7 days	For settings without resistance testing and when moxifloxacin cannot be used: doxycycline 100 mg 2x/day for 7 days, **FOLLOWED BY** azithromycin 1 gm orally on first day, **FOLLOWED BY** azithromycin 500 mg orally 1x/day for 3 days and a test-of-cure 21 days after completion of therapy

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Risk Category	Recommended Regimen	Alternatives
Persistent and recurrent NGU: test for *M. genitalium:*		
If resistance testing is available, use resistance-guided therapy	**Macrolide sensitive** doxycycline 100 mg orally 2x/day for 7 days, **FOLLOWED BY** azithromycin 1 gm orally initial dose, **FOLLOWED BY** azithromycin 500 mg orally 1x/day for 3 additional days (2.5 gm total)	
	Macrolide resistance doxycycline 100 mg orally 2x/day for 7 days, **FOLLOWED BY** moxifloxacin 400 mg orally 1x/day for 7 days	
Test for *Trichomonas vaginalis* in heterosexual men in areas where infection is prevalent	metronidazole 2 gm orally in a single dose **OR** tinidazole 2 gm orally in a single dose	

Pediculosis Pubis

Risk Category	Recommended Regimen	Alternatives
	permethrin 1% cream rinse applied to affected area, wash after 10 minutes	malathion 0.5% lotion applied to the affected areas, wash after 8–12 hours
	OR pyrethrin with piperonyl butoxide applied to affected area, wash after 10 minutes	**OR** ivermectin 250 µg/kg repeated in 7–14 days

Pelvic Inflammatory Disease

Risk Category	Recommended Regimen	Alternatives
Parenteral treatment	ceftriaxone 1 gm by IV every 24 hours **PLUS** doxycycline 100 mg orally or by IV every 12 hours **PLUS** metronidazole 500 mg orally or by IV every 12 hours	ampicillin-sulbactam 3 gm by IV every 6 hours **PLUS** doxycycline 100 mg orally or by IV every 12 hours
	OR cefotetan 2 gm by IV every 12 hours **PLUS** doxycycline 100 mg orally or by IV every 12 hours	**OR** clindamycin 900 mg by IV every 8 hours **PLUS** gentamicin 2 mg/kg body weight by IV or IM, **FOLLOWED BY** 1.5 mg/kg body weight every 8 hours. Can substitute with 3–5 mg/kg body weight 1x/day
	OR cefoxitin 2 gm by IV every 6 hours **PLUS** doxycycline 100 mg orally or by IV every 12 hours	

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Risk Category	Recommended Regimen	Alternatives
Intramuscular/oral treatment	ceftriaxone 500 mg IM in a single dose[6] **PLUS** doxycycline 100 mg orally 2x/day for 14 days **WITH** metronidazole 500 mg orally 2x/day for 14 days	
	OR cefoxitin 2 gm IM in a single dose **AND** probenecid 1 gm orally, administered concurrently in a single dose **PLUS** doxycycline 100 mg orally 2x/day for 14 days **WITH** metronidazole 500 mg orally 2x/day for 14 days	
	OR Other parenteral third-generation cephalosporin (e.g., ceftizoxime or cefotaxime) **PLUS** doxycycline 100 mg orally 2x/day for 14 days **WITH** metronidazole 500 mg orally 2x/day for 14 days	

The complete list of recommended regimens can be found in Sexually Transmitted Infections Treatment Guidelines, 2021.

Pelvic Inflammatory Disease

Scabies

Risk Category	Recommended Regimen	Alternatives
	permethrin 5% cream applied to all areas of the body (from neck down), wash after 8–14 hours[21]	lindane 1% 1 oz. of lotion or 30 gm of cream applied thinly to all areas of the body (from neck down), wash after 8 hours[23]
	OR ivermectin 200 µg/kg body weight orally, repeated in 14 days[22]	
	OR ivermectin 1% lotion applied to all areas of the body (from neck down), wash after 8–14 hours; repeat treatment in 1 week if symptoms persist	

21 Infants and young children (aged <5 years) should be treated with permethrin.

22 Oral ivermectin has limited ovicidal activity; a second dose is required for cure.

23 Infants and children aged <10 years should not be treated with lindane.

Syphilis[24]

Risk Category	Recommended Regimen	Alternatives
Primary, secondary, and early latent: adults (including pregnant women and people with HIV infection)	benzathine penicillin G 2.4 million units IM in a single dose	
Late latent adults (including pregnant women and people with HIV infection)	benzathine penicillin G 7.2 million units total, administered as 3 doses of 2.4 million units IM each at 1-week intervals	
Neurosyphilis, ocular syphilis, and otosyphilis	aqueous crystalline penicillin G 18–24 million units per day, administered as 3–4 million units by IV every 4 hours or continuous infusion, for 10–14 days	procaine penicillin G 2.4 million units IM 1x/day **PLUS** probenecid 500 mg orally 4x/day, both for 10–14 days
For children or congenital syphilis	See Sexually Transmitted Infections Treatment Guidelines, 2021.	

24 The complete list of recommendations on treating syphilis among people with HIV infection and pregnant women, as well as discussion of alternative therapy in people with penicillin allergy, can be found in Sexually Transmitted Infections Treatment Guidelines, 2021.

Trichomoniasis[25]

Risk Category	Recommended Regimen	Alternatives
Women	metronidazole 500 mg 2x/day for 7 days	tinidazole 2 gm orally in a single dose
Men	metronidazole 2 gm orally in a single dose	tinidazole 2 gm orally in a single dose

25 For management of persistent or recurrent infection, refer to Sexually Transmitted Infections Treatment Guidelines, 2021.

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PubNo. 222108
CS325034-A