



Don't Let It Burn: Doxycycline for post-exposure prophylaxis of sexually transmitted infections

CLINICAL QUESTION

Does post-exposure prophylaxis with doxycycline reduce the risk of developing bacterial sexually transmitted infections?

BOTTOM LINE

Single-dose doxycycline (200mg within 72 hours of condomless sex) reduces the risk of bacterial sexually transmitted infections from 36% with no prophylaxis to 23% at 9-14 months. Data is mainly limited to men who have sex with men, and a small number of transgender women; all taking HIV pre-exposure prophylaxis or living with HIV. Rates of chlamydia and syphilis are lowered but not gonorrhea.

EVIDENCE

- Results statistically different unless indicated.
- One systematic review of all four recent randomized controlled trials (RCTs). 1727 participants, median age 24-43, 73% men who have sex with men, 1% transgender women, 26% cisgender women, all on HIV pre-exposure prophylaxis or living with HIV. ¹ Single-dose doxycycline 200mg (within 72 hours of condomless sex) or no doxycycline. After 9-14 months:
 - Any bacterial sexually transmitted infection (STI): 36% versus 23% (doxycycline), number needed to treat (NNT)=8.
 - Chlamydia: 18% versus 7% (doxycycline), NNT=9.
 - Syphilis: 9.8% versus 2.5% (doxycycline), NNT=14.

- Gonorrhea: Not statistically different.
 - Participants took 4-7 doses/month.
 - Stopping due to adverse effects: 2%-7% across RCTs.
- Cisgender women subgroup: No outcome statistically different.¹
- Limitations: Only RCT in cisgender women performed in Kenya where 44% of women in the doxycycline group were possibly non-adherent with no evidence of doxycycline exposure in hair samples;^{1,2} all studies open-label.^{1,2}

CONTEXT

- Sexual practices remained similar between groups (examples: Number of partners or number of condomless sex acts).^{3,4}
- While development of isolates with antimicrobial resistance has been reported, clinical failures due to resistance were not reported in the RCTs of the systematic review above.⁵
- Guidelines recommend discussion of doxycycline post-exposure prophylaxis with all men who have sex with men and transgender women with a history of at least one bacterial STI (gonorrhea, chlamydia, and syphilis) in the last 12 months.⁶

REFERENCES

1. Sokoll PR, Migliavaca CB, Döring S, *et al.* Sex Transm Infect. 2025 Jan 29;101:59-67.
2. Stewart J, Oware K, Donnell D, *et al.* New Engl J Med. 2023 Dec 21;389:2331-40.
3. Molina JM, Bercot B, Assoumou L, *et al.* Lancet Infect Dis. 2024 Oct;24:1093-104.
4. Molina JM, Charreau I, Chidiac C, *et al.* Lancet Infect Dis. 2018 Mar;18:308-17.
5. Vanbaelan T, Manoharan-Basil SS, Kenyon C. BMC Infect Dis. 2024 Apr 4;24(1):376.
6. Centres for Disease Control and Prevention. Sexually Transmitted Infections (STIs). Doxy PEP for Bacterial STI Prevention. Available at: <https://www.cdc.gov/sti/hcp/doxy-pep/index.html#:~:text=Prescribe%20doxy%20PEP%2C%20as%20appropriate,200%20mg%20every%2024%20hours>. Accessed May 13, 2025.

AUTHORS

Adrienne J Lindblad, BSP
ACPR PharmD,
Nwakuru Osigbe, MRCP
CCFP
Jessica Kirkwood, MD CCFP
(AM)

*Authors do not have any
conflicts of interest to declare.*

IN PARTNERSHIP WITH



Tools for Practice are peer reviewed and summarize practice-changing medical evidence for primary care. Coordinated by **Dr. Adrienne Lindblad**, the articles are developed by the Patients, Experience, Evidence, Research (PEER) team, and supported by the College of Family Physicians of Canada, and the Alberta, Ontario, and Saskatchewan Colleges of Family Physicians. Feedback is welcome and can be sent to toolsforpractice@cfpc.ca. Archived articles can be found at www.toolsforpractice.ca

This communication reflects the opinion of the authors and does not necessarily mirror the perspective and policy of the College of Family Physicians of Canada.