



Doxycycline Post-Exposure Prophylaxis (DoxyPEP) to Prevent Bacterial Sexually Transmitted Infections

- Doxycycline can be used off-label to prevent bacterial STIs in men who have sex with men and transgender women. Studies for use in other populations are ongoing.
- Offer DoxyPEP in alignment with current guidance as part of comprehensive sexual health care

Doxycycline is a broad spectrum antibiotic available for off-label use as STI prevention. A single dose can be taken within 24 hours (and no later than 72 hours) after condomless oral, anal or vaginal sex to prevent infection of a bacterial STI. This existing intervention has been found effective in populations of MSM and transgender women in three controlled studies. This strategy is referred to as doxycycline post exposure prophylaxis, or DoxyPEP.

An NIH-funded study published by the New England Journal of Medicine in April 2023 found that **doxycycline as post-exposure prophylaxis (PEP) reduced syphilis by 87%, chlamydia by 88%, and gonorrhea by 55% in people taking HIV PrEP. Moreover, doxycycline as STI PEP reduced syphilis by 77%, chlamydia by 74%, and gonorrhea by 57% in people living with HIV** (N Engl J Med 2023; 388:1296-1306). Current efficacy data only applies to adult gay and bisexual men and transgender women. Studies among heterosexual cisgender women are ongoing.

Current studies support prescribing DoxyPEP to MSM and transgender women who have sex with cis men or transgender people, have had multiple partners, or have had a bacterial STI in the last year. MSM and trans women who have multiple sexual partners and inconsistent condom use may also benefit from using DoxyPEP. If prescribing doxyPEP to cis women or men who have sex with women who have had a bacterial STI (particularly syphilis) in the past year, the patient should be informed that this population was not included in studies and there are limited data on efficacy in this population.

Importantly, doxycycline does not prevent infection with HIV or other viral STIs. People with behaviors that put them at risk for HIV infection (such as condomless vaginal or anal sex, or unsafe injection drug use) should be counseled for and prescribed HIV pre-exposure prophylaxis (PrEP) if they do not have HIV infection. HIV PrEP can be prescribed by any clinical provider. If you would like training to prescribe HIV PrEP, please email prepmeSC@dhec.sc.gov or visit [DHEC's PrEP webpage](#).

Population-Level Antibiotic Use Issues

The three studies showing high efficacy of DoxyPEP were short term in nature, and our knowledge of long-term population effects is incomplete. There is concern that increasing antibiotic use can lead to antimicrobial resistance (AMR). This is a concern particularly for *Neisseria gonorrhoea*, which already has some strains with tetracycline resistance. Doxycycline is not commonly used to treat gonorrhea; more

study and surveillance for AMR is needed. Chlamydia and syphilis infections are treatable with doxycycline, and there are no significant AMR concerns with these bacteria and doxycycline.

The increased use of doxycycline in the short term to prevent STIs may reduce full treatment courses needed for STIs. The effect of DoxyPEP on aggregate antibiotic use remains unknown. It's important to provide DoxyPEP to those who will benefit and avoid unnecessary antibiotic prescribing and AMR. A reduction in STIs will also contribute to a meaningful overall decrease in antibiotic use.

DoxyPEP may affect the user's microbiome, but individual and population level effects are not known at this time. Evaluations of long-term impacts of doxyPEP are planned or are underway.

Ethical Considerations

Interest in doxyPEP among MSM and transgender women is high, as the use of doxyPEP is empowering and allows patients to take charge of their sexual health. Offering individualized care and STI prevention strategies to this population that has been historically isolated and disempowered is an important aspect of health equity. People with indications for doxyPEP should also receive HIV prevention care, if not on PrEP or already living with HIV. Sexual, gender and racial or ethnic minorities are disproportionately affected by STIs, and providers should anticipate a disparate uptake in DoxyPEP by these groups. Training clinical staff and community health workers about the importance of addressing STIs in these populations may help increase equitable access to STI and HIV prevention. Failing to adopt equitable STI care policies like providing HIV PrEP and DoxyPEP to sexual and gender populations that have often been left out may further erode trust in the health care and public health systems.

Recommendations

Integrate DoxyPEP into clinical practices as an additional tool to reduce the burden of high STI incidence in communities. Prescribe DoxyPEP based on interim understanding of individual and population efficacy, and stay current with changing guidelines in the future. Please consult the below resources or [contact DHEC Division of STD, HIV, and Viral Hepatitis](#).

Resources and References:

[National Coalition of STD Directors DoxyPEP Resource Center](#)

[King County, WA Department of Health DoxyPEP Guidelines](#)

[NY State DoxyPEP Guidelines](#)

[CA Department of Health DoxyPEP Guidelines](#)