



### **What is DoxyPEP?**

DoxyPEP (or dPEP) stands for doxycycline post-exposure prophylaxis.

Doxycycline is an antibiotic.

Post-exposure prophylaxis is the use of a medical treatment after potential exposure to an infectious agent (bacteria, virus, etc) to prevent an infection from occurring.

DoxyPEP is a relatively new way of preventing some sexually transmitted infections (STIs) by using doxycycline after condomless sex, including oral sex.

### **What STIs can DoxyPEP help to prevent?**

There is good emerging evidence that the correct use of doxyPEP can significantly reduce the chances of acquiring syphilis and chlamydia. The effectiveness of doxyPEP against gonorrhoea is less clear and appears to be lower than for syphilis and chlamydia. However, some studies have shown modest reductions in gonorrhoea among those using doxyPEP.

Remember, there are many ways STIs can be prevented using existing interventions, such as:

- Correct and consistent use of condoms (available for free here).
- Vaccination for Hepatitis A & B, HPV and mpox.
- Using PrEP or PEP to prevent HIV.

### **Who is it for and what kind of sex?**

DoxyPEP has been shown in studies to work well for people who were assigned male at birth and, who have sex with other persons who were assigned male at birth. This includes gay, bisexual and other men who have sex with men and transgender women having oral and anal sex. At this time, however, there is insufficient evidence to recommend doxy-PEP for STI prevention for individuals who report receptive vaginal/frontal sex.

Although current research has shown that DoxyPEP is only effective for people as described above, we know that cisgender women, trans men or others who have vaginal/frontal sex may still be interested in adding DoxyPEP to their STI prevention toolkit.

We encourage anyone who believes they may benefit from DoxyPEP to discuss the potential risks and benefits with their sexual health care provider to see if it may be an option for them.

In general, doxycycline is not recommended for use in pregnancy and should not be taken by anyone who is breastfeeding.

## Is there evidence that DoxyPEP works?

Current evidence from four major studies provides a mixed but generally promising picture of the effectiveness of doxycycline post-exposure prophylaxis (doxyPEP) for preventing bacterial STIs.

1. **French Trial (2017-2019):** Involving 232 gay and bisexual men taking HIV PrEP, this study demonstrated a significant reduction in bacterial STIs among those using doxycycline after sex. Specifically, over a 9-month follow-up period, there was a 47% overall reduction in STIs, with a 70% decrease in chlamydia infections and a 73% decrease in syphilis. However, doxycycline did not affect gonorrhoea rates, likely due to high levels of resistance in the region.
2. **US DoxyPEP Study (2022):** This trial included 501 participants, consisting of gay and bisexual men and trans women, both living with HIV and taking HIV PrEP. The study found a 66% reduction in the incidence of all STIs, prompting an early end of the study due to high efficacy. For participants living with HIV, there was a 74% reduction in chlamydia, 77% in syphilis (though not statistically significant), and 57% in gonorrhoea. Those on PrEP experienced even greater reductions: 88% for chlamydia, 87% for syphilis, and 55% for gonorrhoea. Unlike the French study, doxycycline was effective against gonorrhoea, likely due to lower resistance levels in the US.
3. **Doxyvac Study (2023):** Another French study with 502 gay and bisexual men on HIV PrEP, showing an 86% reduction in chlamydia and 79% in syphilis. Initial findings suggested a 51% reduction in gonorrhoea, but final results corrected this to a 33% reduction. The study highlights that doxyPEP can significantly lower the incidence of these STIs.
4. **dPEP Kenya Trial (2020-2022):** The only study focused on cisgender women, this trial found that doxyPEP did not significantly reduce STIs among 449 women taking HIV PrEP. High STI rates persisted, and the lack of efficacy was attributed to poor adherence, with objective measures indicating that nearly half of the women did not take the medication as prescribed.

These studies collectively indicate that while DoxyPEP is highly effective in reducing the incidence of chlamydia and syphilis among gay and bisexual men and trans women, its effectiveness against gonorrhoea varies by region due to differing levels of antibiotic resistance. The results, to date among cisgender women have not shown a benefit, probably because the medication was not taken as prescribed. This highlights the importance of taking doxyPEP correctly.

## Is there real-world evidence?

Following the promising results from clinical trials, San Francisco became the first city to recommend doxyPEP in 2022. The city's guidelines advise its use among gay and bisexual men and trans women at high risk of acquiring STIs. They also include a shared decision-making approach for trans men and individuals with multiple sexual partners who have not had a recent STI, allowing healthcare providers to discuss the potential benefits of doxyPEP even in the absence of specific evidence for these groups.

The San Francisco AIDS Foundation's Magnet sexual health clinic experienced significant interest, offering doxyPEP to 3,000 HIV PrEP users from November 2022. By September 2023, 39% of these PrEP users had taken doxyPEP. Among those using doxyPEP, the overall incidence of STIs fell by 58%,

with notable reductions in chlamydia (67%) and syphilis (78%). The reduction in new gonorrhoea cases was minimal and not statistically significant, with only an 11% decline.

At another site, City Clinic, uptake of doxyPEP was even higher, reaching 73% among 506 HIV PrEP users. This site reported a dramatic 90% reduction in positive chlamydia tests after the roll-out of doxyPEP, although the reduction in new syphilis cases was not statistically significant. Again, doxyPEP did not significantly impact the number of new gonorrhoea cases.

By late 2023, with three clinics in San Francisco offering doxyPEP, broader population-level trends could be analysed. Among more than 3,500 doxyPEP users, including gay and bisexual men and trans women, chlamydia cases decreased by 50% compared to expected levels based on 2021-2022 data. Syphilis cases decreased by 51% over 13 months. However, there was no significant change in gonorrhoea cases at the population level.

Interestingly, during the same period, new chlamydia cases among cisgender women—who were not offered doxyPEP—increased, underscoring the impact of doxyPEP in reducing STI incidence among the targeted populations. This data suggests that the observed decline in STIs among doxyPEP users was likely attributable to the intervention itself.

## What won't DoxyPEP prevent?

While DoxyPEP has shown potential to reduce chlamydia, syphilis and, to a lesser extent, gonorrhoea, it is important to note that it has not shown effectiveness in any other STIs.

When using DoxyPEP, it is still possible to acquire STIs such as HIV, HPV (genital warts), mpox, herpes, hepatitis A/B/C, *Mycoplasma genitalium*, trichomoniasis, etc.

Vaccines for Hepatitis A and B, HPV, and mpox can protect against these infections. It is recommended that your vaccines are up to date. You can check this with your local sexual health clinic.

If you are HIV-negative and considering using DoxyPEP it is strongly recommended that you consider using HIV PrEP to protect yourself from acquiring HIV. In Ireland, at the time of writing (August 2024), access to HIV PrEP through the national PrEP programme is extremely limited. If it is not possible to access HIV PrEP but you choose to use DoxyPEP for STI prevention, it is important to remember that DoxyPEP will not protect against HIV and so condoms are strongly recommended for anal, vaginal/frontal sex. To find out where you can access condoms for free, [click here](#).

It is also strongly recommended that people living with HIV who are considering using DoxyPEP continue their use of HIV treatment. There are no known interactions between doxycycline and antiretroviral medication for HIV treatment.

## Do other antibiotics work?

No. There is no evidence that taking any other antibiotics will provide any protection against STIs. It is important to remember that taking unprescribed antibiotics may cause you harm.

## How do I take doxyPEP?

Take a 200mg dose of doxycycline (two 100mg pills) as soon as possible, and no later than 72 hours after, condomless oral or anal sex.

During short periods of high-frequency sex, you may choose to take your doxyPEP up to 72 hours after the first sex you had, covering all sex during that 72 hour period (e.g. over a weekend).

Taking a 200mg dose every 24 hours may be more effective at preventing STIs but can cause more side effects (e.g. stomach upset, sun sensitivity) and use up your supply of doxyPEP faster.

Although it is safe to take daily, no more than one dose (200mg) should be taken in a 24-hour period.

Many STIs are acquired by oral sex – it is important to remember to take doxyPEP after oral sex too.

For more advice on how to take doxyPEP in a way that's best for you, talk to a healthcare professional at your local sexual health clinic.

**It's also important to know that when you're taking DoxyPEP, you should:**

- Take it with a glass of water and food, if possible, to help decrease any potential side effects like nausea or headaches.
- Avoid dairy, calcium supplements, and antacids 2 hours before or after taking DoxyPEP, as these can affect the drug's absorption and may reduce its effectiveness.
- Wear a high-factor sunscreen, limit exposure to the sun and avoid tanning beds. Doxycycline makes your skin very sensitive to the sun and can result in sunburn and other skin injuries.
- DoxyPEP is not 100% effective and not effective against all STIs, so it remains important to test regularly.
- If you are experiencing symptoms, it is advised to access a sexual health service, DoxyPEP is not intended to treat symptomatic infection.
- Do not share prescription medication with anyone else. Doxycycline is not suitable for some people and can cause very severe reactions in those who are allergic.

## **I am already using doxyPEP. What should I do?**

While it's great to see guys are motivated to try new STI prevention methods, it's important to access doxyPEP in conjunction with your local sexual health service to make sure it's being taken safely and effectively.

It will be important to get tested regularly, either at your local sexual health service or using the [HSE home STI testing service](#). If you develop symptoms, you will need to be tested and treated. Remember, doxyPEP is not 100% effective and not effective against all STIs so it's still possible to acquire them.

Please note that if your local sexual health service has decided to offer doxyPEP that they are doing this without any additional funding or staff resources at this time. Some sexual health services will not be in a position to offer DoxyPEP.

## **I am interested in starting doxyPEP. What should I do?**

If you are interested in starting to use doxyPEP, you are encouraged to speak with your local sexual health service. Through a shared decision-making process, you can decide if doxyPEP will be a useful addition to your STI prevention toolkit.

It will be important to get tested regularly, either at your local sexual health service or using the [HSE home STI testing service](#). If you develop symptoms, you will need to be tested and treated. Remember, doxyPEP is not 100% effective and not effective against all STIs, so you may still get STIs and require treatment.

Please note that if your local sexual health service has decided to offer doxyPEP they are doing this without any additional funding or staff resources at this time. For this reason, some sexual health services will not be in a position to offer DoxyPEP.

## **What are the potential side effects?**

Doxycycline is generally safe and well-tolerated. Like all medication it does have potential side effects. The most common side effects are:

**Gastrointestinal issues**, such as diarrhoea, vomiting and nausea. Gastrointestinal side effects can be minimised by taking doxycycline with food and a full glass of water. Avoid lying down for one hour after taking it to prevent reflux.

**Photosensitivity** (rashes or sunburns upon exposure to sunlight), It is strongly recommended that you wear a high-factor sunscreen, limit exposure to the sun and avoid tanning beds. Doxycycline makes your skin very sensitive to the sun and can result in sunburn and other skin injuries.

In most instances, side effects resolve once doxycycline is discontinued.

In general, doxycycline is not recommended for use in pregnancy and should not be taken by anyone who is breastfeeding.

## **What are the unknowns and what is the concern?**

As DoxyPEP is the use of antibiotics to prevent some STIs, there are concerns about increased use and the potential for the development of antimicrobial resistance.

Antimicrobial resistance or antibiotic drug resistance is when bacteria adapt so that they are no longer affected by the medications that are used to treat them. Antibiotic resistance is considered a major threat to global public health. When antibiotics are overused, for

example, in intensive animal farming practices or when incorrectly prescribed, the risk of bacteria becoming resistant to antibiotics is increased. The more antibiotic resistance that occurs, the harder it will be to treat common infections with our currently available medications.

Research to date has not shown that DoxyPEP use leads to chlamydia or syphilis becoming resistant to doxycycline treatment. However, data on this is limited, and ongoing, long-term monitoring and surveillance will be important to ensure that doxycycline remains effective as a treatment, not only for chlamydia and syphilis but also for other common bacterial infections, not just STIs. There are also particular concerns that the use of doxyPEP could increase antimicrobial resistance to the medication, ceftriaxone, commonly used to treat gonorrhoea.

In addition, we are still learning about whether using DoxyPEP has any effects on the 'good' bacteria of the gut, the bacteria that live on our skin (for example, staphylococcus), and other bacteria that are not the target of these antibiotics but may be affected by its more regular use. For these reasons, it's important that we take the risk of antibiotic resistance very seriously. Potential antibiotic resistance needs to be monitored if there is an increased regular use of doxycycline.

However, concern about resistance should be balanced by the potential benefits DoxyPEP has to offer, especially for people with recurrent STIs.

## **Is doxyPEP available in Ireland?**

At this time, Ireland has not adopted formal guidelines and recommendations around DoxyPEP. However, the HSE has developed interim guidance around doxyPEP use in Ireland. This guidance is in place until such time that doxyPEP is formally considered for roll out in Ireland. It is anticipated that this will not be earlier than the middle of 2025 and may be later.

In the meantime, doxyPEP is available at some public STI clinics.

If you are interested in starting or are currently using doxyPEP, you are encouraged to speak with your local sexual health service.

Please note that if your STI clinic has decided to offer doxyPEP, they are doing this without any additional funding or staff resources at this time. For this reason, some sexual health services will not be in a position to offer DoxyPEP.

## Buying doxyPEP (doxycycline) online

**The following is not a recommendation but information to help you with any decision you choose to make:**

It is possible to purchase DoxyPEP online without a prescription. Ireland has laws in place, that prohibit the purchase of prescription medication by mail order (including over the internet). These laws are in place to protect the population from potential harm. It is also important to note that it is illegal for a person in Ireland to source prescription medication without a prescription.

The Health Products Regulation Authority (HPRA) monitor the Irish market for the importation of medication into Ireland. Should a package containing prescription medication that was sourced online without a prescription be found, the HPRA have enforcement powers to confiscate this product and may send a letter to you stating that they have done so. You can check the [HPRA website](#) for information in relation to sourcing medication over the internet.

These laws are in place to protect the public from bogus suppliers, and there is always a possible risk if you choose to buy DoxyPEP (or any other medication) online that you are not receiving a genuine product.

Regardless of how you source your DoxyPEP, please ensure that you engage with your sexual health clinic to discuss your use and to get regular testing.

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