

ONLINE FEATURE

PrEP in Ireland: *Availability, Effectiveness, and Concerns*

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Key Points

- PrEP is an antiretroviral medication taken by HIV-negative individuals that reduces the risk of HIV infection by 44-92%.
- PrEP is commonly used by men who have sex with men (MSM), people with an HIV-positive partner, intravenous drug users, and individuals who regularly engage in risky sexual behaviour.
- The largest barrier to effective PrEP use is non-adherence.
- Truvada is the most well-known medication but generic PrEP has demonstrated similar efficacy.
- The HSE provides PrEP gratis to those who meet predefined [eligibility criteria](#).
- It is unknown how many people are currently taking PrEP in Ireland. Overall awareness of PrEP in Ireland is low, except among the LGBTQ+ community.
- PrEP is a safe and well-tolerated medication; the most common side effects are gastrointestinal and resolve after a few weeks.

Introduction

Pre-Exposure Prophylaxis (PrEP) is an effective, non-invasive HIV prevention method taken by HIV-negative individuals demonstrated to be at high risk for HIV infection. It is an oral retroviral medication taken both before and after potential HIV exposure. The most common PrEP regimen involves taking a single pill once daily, but event-based dosing is also possible. Event-based dosing involves taking a double dose 2-24 hours before potential HIV encounters and a single dose 24 hours after the first. PrEP is often contrasted with another HIV-prevention method, Post-exposure Prophylaxis (PEP), which involves the use of an antiretroviral drug only after a potential HIV exposure.

Truvada is the most well-known PrEP medication. It consists of two antiretroviral drugs: tenofovir disoproxil and emtricitabine (FTC-TDF). This is the most common medication prescribed as PrEP for HIV, and one of two drug combinations recommended by the World Health Organization (the other, Cimduo, contains tenofovir disoproxil and lamivudine).¹ Truvada refers to the branded version of FTC-TDF produced by Gilead Sciences but generic versions are also available and have demonstrated similar efficacy² and concentrations of FTC-TDF.³

There have been many studies which have demonstrated the efficacy of PrEP, with a reduction in relative risk (RRR) of HIV infection reported between 44-92%.⁴ The large discrepancy between these values is attributed to issues with adherence, which has been identified as the largest barrier to effective PrEP use;⁴ the effectiveness of PrEP directly correlates with increased adherence.⁵

Many studies have indicated that PrEP is a safe medication and is well-tolerated by the majority of its users.^{6,7} The commonest side effects are primarily gastrointestinal and frequently resolve a few weeks after starting PrEP.⁸ One study concluded that its side effect profile is as safe as that of aspirin.⁹

PrEP should be taken by HIV-negative individuals who are at risk of contracting HIV. This includes men who have sex with men (MSM), individuals who are in a relationship with an HIV-positive partner, people who regularly engage in risky sexual behaviour, and intravenous drug users.

PrEP status within Ireland

PrEP is currently available by private prescription, both in generic and branded forms. Truvada became available in August 2016 and was initially the only obtainable form of PrEP within Ireland. In July 2017, Truvada came off patent following a rejected injunction application from Gilead Sciences—the biopharmaceutical company that developed Truvada—which led to generic PrEP becoming available in Ireland in December 2017.¹⁰ Since November 2019, the Health Service Executive (HSE) has provided PrEP free of charge to those who meet certain criteria. To be eligible for free PrEP, one must test negative for HIV, attend check-ups once every three months and meet one of the following criteria: a) have condomless sex with HIV-positive partners who are not virally suppressed; b) be a MSM who engages in defined risky sexual behaviour; c) be considered by a specialist STI doctor to be at high risk for contracting HIV through sex.¹¹ PrEP use is contraindicated in individuals with a positive or unknown HIV status.¹²

As PrEP is still a relatively new medication in Ireland, it is difficult to determine how many people are currently taking it and estimates vary considerably. One study from 2017 estimated that only 1-3% of the MSM population in Ireland aged between 18-64 years would be prepared to take PrEP. This would constitute between 865-2596 individuals.¹³ Another study published in 2019 examined the difference between the number of people currently taking PrEP and the number of people who would be 'very likely' to take PrEP if they had

access. They concluded that less than 5% of HIV-negative MSM in Ireland are currently taking PrEP, but 25-30% would be very likely to do so if they had access.¹⁴

There is very little data regarding PrEP awareness in Ireland, but it appears to be limited. According to one survey of 969 Irish adults in 2019, 87% of respondents had not heard of PrEP.¹⁵ PrEP awareness is much higher among the LGBTQ+ population, with one survey reporting that 97% of LGBTQ+ respondents were aware of PrEP.¹⁶

COVID-19 has radically altered the delivery of healthcare in Ireland, and the access to PrEP is no exception. In the pre-pandemic world, obtaining PrEP typically involved taking a detailed medical, sexual, and drug history during a face-to-face assessment. Medical tests such as an STI screen, urinary PCRs, and blood tests were also performed. Due to the lockdown, this is no longer possible, however, access to PrEP is still available as a result of a shift towards a virtual platform. As seen with many other outpatient services, face-to-face assessments were replaced with virtual clinic telephone reviews and eligible individuals were invited to attend a rapid appointment to obtain the appropriate tests. Patients taking PrEP pre-pandemic were contacted via telephone for the standard 3-month reviews, and six-month PrEP prescriptions were provided via mail. While the rapid shift to a virtual platform has been admirable, significant issues have arisen, primarily affecting new patients. Despite fewer individuals seeking PrEP during the pandemic (likely due to a reduction in sexual activity), some healthcare providers had to stop online bookings due to capacity constraints. Only a small number of PrEP users have discontinued their treatment, most of whom cited a reduction in sexual activity and thus risk, with plans to recommence with the lifting of the lockdown and resumption of sexual activity.¹⁷

How effective is PrEP?

Notable individual studies of PrEP effectiveness include the iPrEx study, the PROUD study, and the IPERGAY study.

The iPrEx study was published in 2010. It is a randomized control trial (RCT) that followed 2499 HIV-negative participants. Half of these participants took the FTC-TDF combination, while the other half took a placebo. It concluded that PrEP use was associated with a 44% reduction in the incidence of HIV ($p=0.005$).¹⁸ The protective effect against HIV was strongly correlated with detectable blood levels of PrEP, indicating that adherence to the daily pill regimen is of utmost importance. Self-reported pill use was 89% in the FTC-TDF group.

The PROUD study is an RCT that was published in 2015. It involved 544 participants, 275 of whom were given FTC-TDF immediately, with the remaining 269 receiving it after a deferral period of one year. Three HIV infections occurred among the group receiving immediate treatment compared to 20 infections among the group whose treatment was deferred. This occurred despite widespread use of post-exposure prophylaxis among the latter group (RRR: 86%; $p=0.0001$).¹⁹

Published in 2015, the IPERGAY study is a double-blind RCT which compares the effectiveness of PrEP to a placebo. While half of the participants were also given FTC-TDF, it differed from the other studies in that participants were not instructed to take it every day, but instead used event-based dosing. Of the 199 participants taking FTC-TDF, 2 were infected with HIV, compared to 14 of the 201 participants taking a placebo (RR: 86%; $p=0.002$).²⁰ Once again adherence was found to be

an issue, as only 43% of participants took the assigned drug correctly, 28% failed to take it at all and 29% took suboptimal doses.

Concerns regarding PrEP

One of the largest barriers identified that prevents likely candidates from taking PrEP is a concern about side effects. Most studies have concluded that the side effects of PrEP do not differ significantly from those experienced by participants taking placebos.^{6,7} While PrEP has demonstrated a favourable tolerability profile, there are some potential side effects of which individuals considering taking PrEP should be aware. The most common side effects are gastrointestinal and include nausea, vomiting, diarrhoea, and abdominal pain, although these typically resolve following one month of use.⁶ There are also concerns surrounding a reduction in kidney function and bone density. Although the drop in bone density is not thought to be clinically significant among the majority of PrEP users, those with a high risk of fracture who are also planning on prolonged PrEP usage should consider exploring other PrEP strategies.²¹ There is evidence that PrEP usage does result in a small, non-progressive decline in kidney function, but that this does not correlate with an increased incidence of adverse outcomes.⁷ However, more research is needed on the long-term effects of PrEP in those with borderline renal function and PrEP usage may not be advisable for these individuals.²²

One concern about the widespread adoption of PrEP is that it may result in an increase in risky sexual behaviour attributed to an overestimated feeling of safety. This phenomenon is known as 'risk compensation'. While PrEP is very effective in reducing the risk of HIV infection, it does not protect against other STIs and users may be more comfortable in forgoing condom use due to the decreased risk of HIV transmission. The evidence evaluating the influence of PrEP on sexual behaviour and the transmission rates of other STIs is inconsistent. One systematic review concluded that PrEP use did not significantly alter STI transmission rates and that accessing PrEP provides an opportunity to avail of sexual healthcare including testing, treatment, and counselling services.²³ However, another systematic review reported a drop in condom use and a resultant increase in STI transmission; most notably chlamydia.²⁴ It is also possible that widespread PrEP use may reduce the rates of condom use among individuals who are not taking PrEP, as they may also consider themselves to be at a reduced risk of HIV infection.²⁵ Individuals taking PrEP or considering taking PrEP should be cognisant that PrEP does not affect the transmission rates of other STIs and that they should take the appropriate sexual safety measures to protect against these.

Conclusion

PrEP is an effective and non-invasive HIV prevention method with minimal side effects, as reported by the majority of its users. While it is difficult to determine overall levels PrEP awareness and the number of current PrEP users in Ireland, both are expected to increase dramatically in the coming years following the national public access PrEP program that began in 2019. PrEP is taken by individuals who are at increased risk of HIV transmission and is now provided free of charge through the HSE to those who meet the eligibility criteria. Anyone who is interested in PrEP should visit www.sexualwellbeing.ie/sexual-health/prep/ to access information about eligibility and the current availability of PrEP services.

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