A GUIDE FOR HEALTH CARE PROVIDERS

PEP for HIV Prevention: FAQs

PEP (post-exposure prophylaxis) can be used to prevent HIV after a specific, high-risk exposure to HIV. By familiarizing yourself with PEP, you can help protect your patients from HIV.

Prescribe HIV Prevention
Learn more at: cdc.gov/HIVNexus.

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Ending the HIV Epidemic

What Is PEP?

Post-exposure prophylaxis (PEP) is the use of antiretroviral medication to prevent HIV infection in an HIV-negative person who has had a specific high-risk exposure to HIV. Such an exposure typically occurs through sex or sharing syringes (or other injection equipment) with someone who has or might have HIV. **Nonoccupational post-exposure prophylaxis (nPEP) can be used to clarify that the exposure was not work related.**

Exposure to HIV is a medical emergency, because HIV establishes infection very quickly, often within 24 to 36 hours after exposure.[1-3] Health care providers should evaluate patients rapidly for PEP when care is sought ≤72 hours after a potential exposure. HIV status should be determined in patients being considered for PEP using rapid combined antigen/antibody (Ag/Ab) or antibody blood tests.

If rapid HIV blood test results are unavailable, and PEP is indicated, administration of the first dose of PEP should be started without delay. PEP can be discontinued later if the person is determined to already have HIV infection or if the source of the exposure is determined not to have HIV infection.[4]

PEP is not recommended when care is sought >72 hours after exposure.

What Are the Guidelines for Prescribing PEP?

National Guidelines published by the Centers for Disease Control and Prevention (CDC) in 2005 were updated in April of 2016.[4] The update incorporates additional evidence about the use of PEP from animal studies and human observational studies, as well as consideration of new antiretroviral agents introduced after the publication of the last guidelines. One key change from the 2005 recommendations is a new, more effective preferred drug regimen that has fewer side effects.

The 2016 PEP recommendations also include considerations and resources for specific groups, such as pregnant patients, victims of sexual assault (including children), and patients without health insurance, as well as a suggested procedure for transitioning patients between PEP and HIV pre-exposure prophylaxis (PrEP) as appropriate.[4]

Find the updated guidelines at: cdc.gov/hiv/guidelines/index.html.

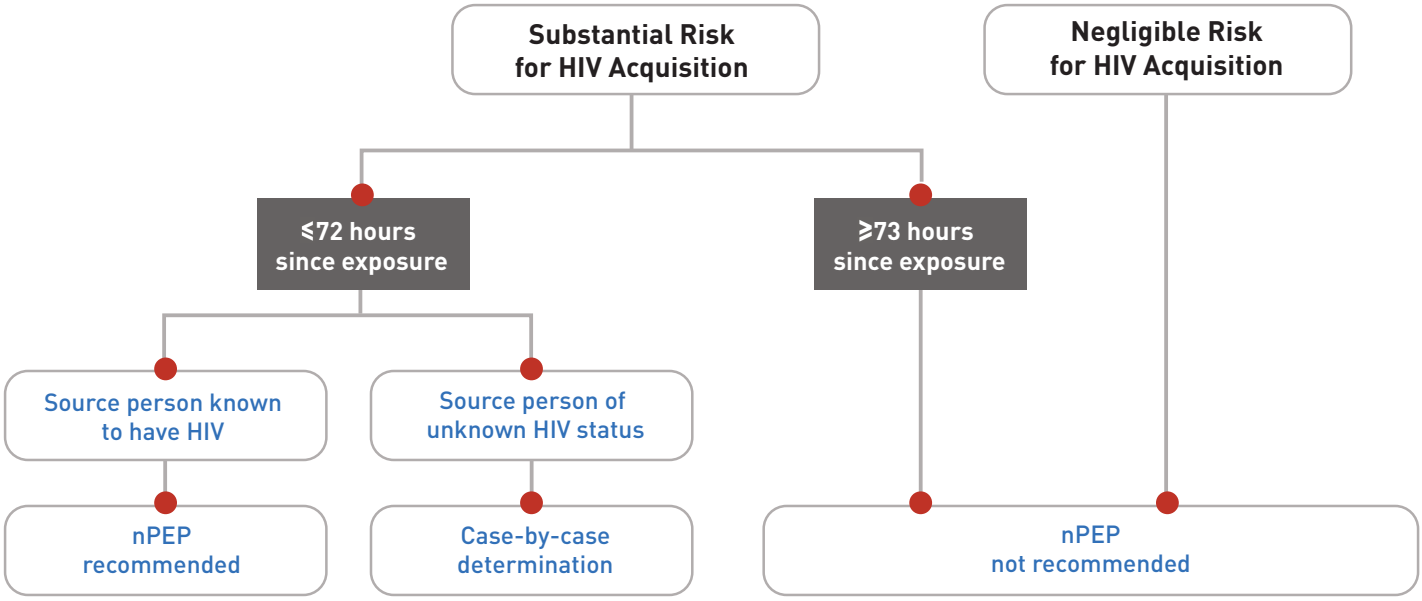
Which Types of Exposure Warrant PEP?

PEP initiation should be considered in people whose vagina, rectum, eye, mouth or other mucous membrane, nonintact skin, or perforated skin (e.g., needle stick) comes into contact with body fluids from a person with HIV, as long as exposure has occurred within a 72-hour window. If the source person is of unknown HIV status, a case-by-case determination can be made.[4]

PEP is not recommended for use in people whose exposure occurred 73 hours or more before they sought treatment or in people who are considered to have a negligible risk for HIV exposure because of exposure to non-blood-contaminated secretions such as urine, saliva, sweat, tears, or nasal secretions.[4]

People who are already adhering to a PrEP regimen under the care of their health care provider are not in need of PEP if they experience a potential HIV exposure while they are on PrEP.[4]

Algorithm for Evaluation and Treatment of Possible Nonoccupational HIV Exposures



Substantial Risk for HIV Acquisition

Exposure of:
vagina, rectum, eye, mouth or other mucous membrane, nonintact skin, or percutaneous contact

With:
blood, semen, vaginal secretions, rectal secretions, breast milk, or any fluid that is visibly contaminated with blood

When:
the source is known to have HIV

Negligible Risk for HIV Acquisition

Exposure of:
vagina, rectum, eye, mouth or other mucous membrane, intact skin or nonintact skin, or percutaneous contact

With:
urine, nasal secretions, saliva, sweat, or tears if not visibly contaminated with blood

Regardless:
of the known or suspected HIV status of the source

Who Can Prescribe PEP?

Any licensed prescriber can prescribe PEP. Emergency medicine physicians are among the most frequent prescribers of PEP, given the need for immediate treatment after exposure. Clinicians working in ambulatory care practices can also ensure that their patients who are HIV negative and report risk behavior are aware of PEP and know how to access it after-hours.

When health care providers are inexperienced with prescribing or managing patients on antiretroviral medication, or when information from the person or people who were the exposure source indicates the possibility of antiretroviral resistance, consultation with an infectious disease or other HIV-care specialist is warranted before prescribing PEP to determine the correct regimen—***but only if these specialists are immediately available.***

Similarly, consulting with specialists who have experience using antiretroviral drugs is advisable when considering prescribing PEP for certain people, e.g., those who are pregnant, children, and people with renal dysfunction. However, ***if such consultation is not available, PEP should be initiated promptly and, if necessary, revised after consultation is obtained.***

If questions arise or if prescribing assistance is needed, expert consultation can be obtained by calling the PEPline at the National Clinicians Consultation Center at 888-448-4911. Additional information is available at: nccc.ucsf.edu/clinician-consultation/pep-post-exposure-prophylaxis.

What Is the Recommended PEP Regimen?

All people offered PEP should be prescribed a 28-day course of a 3-drug antiretroviral regimen.* Since adherence is critical for PEP efficacy, it is preferable to select regimens that minimize side effects, the number of doses per day, and the number of pills per dose.[4]

The preferred PEP regimen for otherwise healthy adults and adolescents is:

tenofovir disoproxil fumarate (tenofovir DF or TDF)(300 mg) + emtricitabine (F)(200 mg) once daily	PLUS	raltegravir (RAL)(400 mg) twice daily or dolutegravir (DTG)(50 mg) once daily

An alternative regimen for otherwise healthy adults and adolescents is:

TDF (300 mg) + F (200 mg) once daily	PLUS	darunavir (DRV)(800 mg) + ritonavir* (RTV)(100 mg) once daily

Alternative regimens may be used in cases of potential HIV resistance, toxicity risks, clinician preference, or constraints on the availability of particular agents. In those cases, health care providers are encouraged to seek consultation with other providers knowledgeable in using antiretroviral medications for similar patients (e.g., children, individuals who are pregnant, and those with comorbid conditions).

Providers should be aware that abacavir sulfate should not be prescribed in any PEP regimen, as the prompt initiation of PEP does not allow for genetic testing for the HLA-B*5701 allele, which is associated with a hypersensitivity syndrome that can be fatal.[4]

* RTV, which is used with some drug combinations as a pharmacokinetic enhancer to increase the trough concentration and prolong the half-life of DRV and other protease inhibitors, is not considered to be part of the drug combination.

What Is the Evidence Base for PEP?

PEP was first attempted for HIV prevention in the 1980s among health care workers who experienced occupational exposures (now called "oPEP"). At that time, only AZT (zidovudine) was available.

Anecdotal evidence of success began to accumulate, leading to the first formal study of PEP effectiveness, a case-control study of occupational exposures. This study demonstrated an 81% reduction in HIV infection in those who received AZT alone compared with those who did not receive any treatment.[5] PEP was only proposed for nonoccupational exposures ("nPEP") more recently.

The additional evidence supporting PEP includes:

- **Its biologic plausibility (based on animal studies)**.[1,2]
- **The efficacy of antiretrovirals given post-partum in reducing mother-to-child transmission**.[3]
- **Observational studies (such as data from existing PEP programs).**[4,6]

In an updated series of studies of PEP initiation in men having sex with men, seroconversion was low and seemed mostly to be related to continued behavior associated with increased risk after completing PEP or non-adherence to the regimen.[4] Studies of children and adolescents evaluated after sexual assault reported that among 672 children or adolescents offered PEP, 472 were known to have initiated the regimen, and 126 were reported to have completed a 28-day PEP course. No new HIV infections were documented among the 472 patients who initiated PEP.[4]

In 15 studies conducted in mixed populations, 2,209 participants completed 28 days of PEP, of whom at least 19 individuals seroconverted. However, only 1 seroconversion was attributed to PEP failure. The other 18 seroconversions were attributed, variously, to continued behavior associated with increased risk after the end of PEP, non-adherence to PEP, and starting PEP after the 72-hour window.[4]

Is PEP Safe?

The current preferred regimen is generally safe and well tolerated.[7,8] Patients usually experience only mild side effects on the preferred PEP regimen. Most importantly, PEP is only taken for 28 days. In almost all cases, the benefits of HIV prevention outweigh any other risks posed by the medication. In a meta-analysis of 24 PEP-related studies, including 23 cohort studies and 1 randomized clinical trial, nausea, vomiting, diarrhea, and fatigue were the most commonly reported side effects.[9]

Who Is Not Eligible for PEP?

- PEP is only indicated for potentially exposed people without HIV infection.
- PEP is unlikely to be effective in people who have been exposed more than 72 hours before seeking medical assistance.
- PEP should be provided only for infrequent exposures. People who engage in behaviors that result in frequent, recurrent exposures to HIV should be considered for intensive sexual or injection risk-reduction interventions and PrEP. However, if the most recent recurring exposure was within the 72-hour window prior to an evaluation, PEP may be indicated with transition of the patient to PrEP after completion of 28 days of PEP medication.[4]

There are few absolute contraindications to the recommended PEP regimen. All medications in this regimen have minimal drug-drug interactions. In almost all cases, the first dose of a PEP regimen should be given and then further consultation obtained.

If questions arise or if prescribing assistance is needed, expert consultation can be obtained by calling the PEPline at the National Clinician Consultation Center at 888-448-4911. Additional information is available at: nccc.ucsf.edu/clinician-consultation/pep-post-exposure-prophylaxis.

Because pregnancy has been demonstrated to increase susceptibility to sexual HIV acquisition, PEP can be especially important for people who are pregnant. If the person exposed to HIV is pregnant, expert consultation should be sought. In general, however, PEP is indicated at any time during pregnancy when a significant exposure has occurred, despite a possible risk to the pregnant patient and the fetus. The recommended PEP regimen remains the same.

In people with compromised renal function (creatinine clearance <50 mL/min), the dose of F/TDF must be adjusted.

Additional information and special considerations when prescribing PEP are provided in CDC's *Updated Guidelines for Antiretroviral Postexposure Prophylaxis After Sexual, Injection Drug Use, or Other Nonoccupational Exposure to HIV— United States, 2016*, available at: **cdc.gov/hiv/pdf/programresources/cdc-hiv-nPEP-guidelines.pdf**.

What Baseline Assessment Is Required for Individuals Beginning PEP?

Guidelines Recommend the Following Baseline Screening Before Initiating PEP[4]:

- HIV rapid test at baseline:
  - If the baseline rapid test indicates existing HIV infection, PEP should not be started. However, if rapid HIV baseline testing is not available, there should be no delay in starting PEP. Oral HIV tests are not recommended for use among patients being evaluated for PEP.
- Pregnancy test:
  - Perform a pregnancy test if the patient is a woman or person assigned female at birth of reproductive age, not using highly effective contraception (e.g., intrauterine devices or other long-acting reversible contraceptives, oral contraceptives, or properly used condoms), and experiencing vaginal exposure to semen.
- Serum liver enzyme testing
- Blood urea nitrogen/creatinine test
- Sexually transmitted infection (STI) screening:
  - Patients being evaluated for PEP because of a sexual encounter should have STI-specific nucleic acid amplification testing for chlamydia and gonorrhea at each site of potential exposure, as well as a blood test for syphilis.
- Hepatitis B (HBV) testing, including HBV surface antigen, surface antibody, and core antibody
- Hepatitis C (HCV) antibody

Note: PEP should be administered if indicated, even before all testing and testing results are received.

What Additional Support Is Required for Patients on PEP?

Providers should maintain contact with their patients on PEP, either by telephone or clinic visits, for the entire duration of PEP. This is both to support adherence and to facilitate follow-up HIV testing at 30 and 90 days to determine if HIV infection has occurred. Additionally, people whose sexual or injection-related exposures result in concurrent acquisition of HCV and HIV infection might have delayed HIV seroconversion. See the table on the next page for the recommended schedule of laboratory evaluations for people who have been exposed to HIV.

Patients should be counseled to take measures that reduce the risk of transmission during the 12-week follow-up period, such as using condoms consistently; avoiding pregnancy/breastfeeding; avoiding needle-sharing; and refraining from donating blood, plasma, organs, tissue, or sperm.

Recommended Schedule of Laboratory Evaluations of Source and Exposed Patients for Providing nPEP With Preferred Regimens

Test	Source Baseline	Baseline	4–6 Weeks After Exposure	3 Months After Exposure	6 Months After Exposure
		*For all patients considered for or prescribed nPEP for **any exposure***			
HIV Ag/Ab testing[a] (or antibody testing if Ag/Ab test unavailable)	■	■	■	■	■ [b]
HBV serology, including: HBV surface antigen HBV surface antibody HBV core antibody	■	■	—	—	■ [c]
HCV antibody test	■	■	—	—	■ [d]
		For all patients considered for or prescribed nPEP for sexual exposure			
Syphilis serology[e]	■	■	■	—	■
Gonorrhea[f]	■	■	■ [g]	—	—
Chlamydia[f]	■	■	■ [g]	—	—
Pregnancy[h]	—	■	■	—	—
		For patients prescribed: TDF + F + RAL or TDF + F + DTG			
Serum creatinine (for calculating estimated creatinine clearance[i])	—	■	■	—	—
Alanine transaminase, aspartate aminotransferase	—	■	■	—	—
		For all patients with HIV infection confirmed at any visit			
HIV viral load	■	■ [j]	■ [j]	■ [j]	■ [j]
HIV genotypic resistance	■	■ [j]	■ [j]	■ [j]	■ [j]

a. Any positive or indeterminate HIV antibody test should undergo confirmatory testing of HIV infection status.

b. Only if HCV infection was acquired during the original exposure; delayed HIV seroconversion has been seen in people who simultaneously acquire HIV and HCV infection.

c. If exposed person susceptible to HBV at baseline.

d. If exposed person susceptible to HCV at baseline.

e. If determined to be infected with syphilis and treated, should undergo serologic syphilis testing 6 months after treatment.

f. Testing for chlamydia and gonorrhea should be performed using nucleic acid amplification testing. For patients diagnosed with a chlamydia or gonorrhea infection, retesting 3 months after treatment is recommended. Comprehensive STI testing and treatment guidelines are available from CDC: cdc.gov/std/treatment-guidelines/default.htm.

- Screening of transgender and gender-diverse patients should be based on anatomy and sexual behaviors and exposure. Access CDC's full screening recommendations: cdc.gov/std/treatment-guidelines/screening-recommendations.htm.
- For men or people assigned male at birth reporting insertive vaginal, anal, or oral sex, a urine specimen (preferred) or urethral swab should be tested for chlamydia and gonorrhea.
- For women or people assigned female at birth reporting receptive vaginal sex, a vaginal (preferred) or endocervical swab or urine specimen should be tested for chlamydia and gonorrhea.
- For any patient reporting receptive anal sex, a rectal swab specimen should be tested for chlamydia and gonorrhea.
- For any patient with urogenital or rectal gonorrhea reporting receptive oral sex, pharyngeal testing for gonorrhea should be performed. If chlamydia is identified while screening for pharyngeal gonorrhea, provide appropriate treatment. Review CDC's guidelines for treating gonococcal infections: cdc.gov/std/treatment-guidelines/gonorrhea-adults.htm.

g. If not provided presumptive treatment at baseline or if symptomatic at follow-up visit.

h. If a woman or person assigned female at birth of reproductive age, not using effective contraception, and with vaginal exposure to semen.

i. eCrCl = estimated creatinine clearance calculated by the Cockcroft-Gault formula; eCrClCG= [(140 – age) x ideal body weight] ÷ (serum creatinine x 72) (x 0.85 for females).

j. At first visit where determined to have HIV infection.

Will PEP Be Covered by My Patients' Health Insurance?

In many states, PEP is covered by insurance, including Medicaid. If the patient is not covered under insurance, there are assistance programs run by various manufacturers.

Providers can assist their patients by:

- Applying for assistance with the medication co-pay if the patient is insured; or
- Applying for complete coverage of the medication if the patient does not have insurance or needs financial assistance. The paperwork must be signed and submitted by a licensed clinical provider.

Application forms for Gilead's patient assistance programs can be found at: **gileadadvancingaccess.com**.

Application forms for Teva's patient assistance programs can be found at: **tevahivgenerics.com**.

The application form for Merck's patient assistance program can be found at: **merckhelps.com**.

In addition, the Partnership for Prescription Assistance can also help qualified patients get the prescriptions they need at a very low cost. For more information, visit: **medicineassistancetool.org**.

For more information about prescribing PEP, visit:
cdc.gov/hiv/pdf/programresources/cdc-hiv-nPEP-guidelines.pdf.

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PubNo. 300985
July 2022