

Reproductive Options for Couples When One or Both Partners Have HIV

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Panel's Recommendations

For Couples Who Want to Conceive When One or Both Partners Have HIV:

- Expert consultation is recommended to tailor guidance to couples' specific needs **(AIII)**.
- Both partners should be screened and treated for genital tract infections before attempting to conceive **(AII)**.
- Partners with HIV should achieve sustained viral suppression (e.g., two recorded measurements of plasma viral loads that are below the limits of detection at least 3 months apart) before attempting conception to maximize their health, prevent HIV sexual transmission **(AI)** and, for pregnant persons with HIV, to minimize the risk of HIV transmission to the infant **(AI)**.
- When partners have different HIV statuses, sexual intercourse without a condom allows conception with effectively no risk of sexual HIV transmission to the partner without HIV if the partner with HIV is on antiretroviral therapy (ART) and has achieved sustained viral suppression **(BII)**.
- Additional guidance might be required in the following scenarios:
 - The partner with HIV has not achieved sustained viral suppression or the partner's HIV viral suppression status is unknown,
 - There are concerns that the partner with HIV might be inconsistently adherent to ART during the periconception period, *or*
 - The provider wishes to share additional information with the patient regarding options to prevent sexual HIV transmission during the periconception period.
- In these circumstances, providers can choose to counsel their patient about the following options:
 - Administration of antiretroviral pre-exposure prophylaxis (PrEP) to the partner without HIV reduces the risk of sexual acquisition of HIV **(AI)** see [Pre-exposure Prophylaxis \(PrEP\) to Reduce the Risk of Acquiring HIV During Periconception, Antepartum, and Postpartum Periods](#).
 - Timing condomless sex to coincide with ovulation (peak fertility) is an approach that can optimize the probability of conception **(AIII)**.
 - When partners with different HIV statuses attempt conception, the partner without HIV can choose to take PrEP even if the partner with HIV has achieved viral suppression **(CIII)**.

Rating of Recommendations: A = Strong; B = Moderate; C = Optional

Rating of Evidence: I = One or more randomized trials with clinical outcomes and/or validated laboratory endpoints; II = One or more well-designed, nonrandomized trials or observational cohort studies with long-term clinical outcomes; III = Expert opinion

The objective of this section is to provide guidance for safer conception and pregnancy while maximizing efforts to prevent HIV transmission to partners and infants. For couples who want to conceive while one or both partners have HIV, expert consultation is recommended so that approaches can be tailored to their specific needs.

The Centers for Disease Control and Prevention (CDC) states that people with HIV who take antiretroviral therapy (ART) as prescribed and who maintain an undetectable viral load have effectively no risk of transmitting HIV through sex.¹ Couples in which one or both partners have HIV should be counseled that once the partner(s) with HIV have initiated ART and have maintained HIV viral suppression, condomless sex to achieve conception is associated with effectively no risk of HIV sexual transmission.²⁻⁵ HIV viral suppression can be demonstrated with two recorded measurements of plasma viral loads that are below the limits of detection and that were taken at least 3 months apart.

Before attempting to conceive, both partners should be screened for genital tract infections. Treatment of such infections is important, because genital tract inflammation is associated with increased genital tract shedding of HIV.^{6,7}

If conception does not occur within 6 months, providers should pursue a workup for infertility, including a semen analysis. HIV, and possibly the use of antiretroviral (ARV) drugs, can be associated with a greater prevalence of semen abnormalities such as low sperm count, low motility, a higher rate of abnormal forms, and low semen volume. Early evaluation is indicated because of concerns about higher rates of infertility among people with HIV.^{8–10} Coordination of care across multiple disciplines, including HIV primary care, OB/GYN (specifically reproductive endocrinology and infertility), case management, and peer support, is advised. Integration of reproductive health counseling, including counseling about pregnancy desires and/or prevention, is recommended.¹¹

Couples with Differing HIV Status

Before attempting conception, the partner with HIV should be on ART and should have achieved sustained viral suppression. The implications of initiating therapy before conception, the selection of ART for women trying to conceive and the need for adherence to achieve durable plasma viral loads below the limits of detection should be discussed with the couple. Consultation with an expert in HIV care **is strongly recommended**.

In two large studies that included heterosexual couples with differing HIV statuses (HPTN 052 [HIV Prevention Trials Network trial 052] and PARTNER [Partners of People on ART-A New Evaluation of the Risks] study), no genetically linked HIV transmissions occurred while the partner with HIV was virally suppressed. HPTN 052 was a randomized clinical trial designed to evaluate whether immediately initiating ART in people with CD4 T lymphocyte (CD4) cell counts of 350 to 550 cells/mm³ could prevent sexual transmission of HIV among couples with differing HIV statuses more effectively than delaying ART. Most of the participants were from Africa (54%), with 30% from Asia and 16% from North and South America. This study showed that initiating ART earlier led to a 93% reduction in the rate of sexual transmission of HIV to the partner. During the study, 877 participants with HIV delayed initiation of ART until their CD4 cell counts fell below 250 cells/mm³, and 886 participants with HIV began ART immediately. Forty-six cases of HIV infection were genetically linked to the partner with HIV during the study; 43 of these cases occurred in couples where one partner delayed initiation of ART, and three cases occurred in couples where one partner began immediate ART. No linked infections occurred between partners when the partner with HIV had a viral load that was stably suppressed by ART. Thus, this randomized trial clearly demonstrated that providing treatment to persons with HIV can reduce the risk of HIV transmission to their sexual partners.¹² In addition, the PARTNER study—which studied 1,166 couples of differing HIV statuses (both heterosexual couples and men who have sex with men) where the partner with HIV was on suppressive ART and had sex without using a condom—reported no cases of transmission after a median follow up of 1.3 years and approximately 58,000 condomless sex acts.¹³

A prospective cohort study evaluated couples with differing HIV statuses who were planning to conceive. Among 161 couples (133 couples included a male partner with HIV) where the partner with HIV received suppressive ART for at least the previous 6 months and the couple opted for natural conception, a total of 144 natural pregnancies occurred and 107 babies were born. No cases of sexual (to partner) or vertical (to infant) transmission occurred.¹⁴

For couples with differing HIV statuses where the partner with HIV is on ART and has achieved sustained viral suppression, sexual intercourse without a condom allows conception with effectively no risk of sexual transmission to the partner without HIV. It is not known how frequently viral load testing should be conducted when a patient is relying on treatment and viral suppression as a prevention strategy.¹ Not enough evidence currently exists to determine the optimal schedule for viral load testing in people with HIV who rely on this

prevention strategy. Consider monitoring the viral load more frequently in these individuals than the current treatment guidelines recommend.

Timing condomless sex to coincide with ovulation (peak fertility) can optimize the probability of conception. The use of an ovulation kit is the optimal method for identifying the most fertile time of the cycle.¹⁵

Pre-Exposure Prophylaxis and Other Options for Couples with Differing HIV Statuses and Inconsistent and Unknown Viral Suppression

For couples with differing HIV statuses who attempt conception via sexual intercourse without a condom when the partner with HIV has not been able to achieve viral suppression or when viral suppression status is not known, administering PrEP to the partner without HIV is recommended to reduce the risk of sexual transmission of HIV (see [Prophylaxis \(PrEP\) to Reduce the Risk of Acquiring HIV During Periconception, Antepartum, and Postpartum Periods](#)). PrEP is the use of ARV medications by an individual without HIV to maintain blood and genital drug levels sufficient to prevent acquisition of HIV. Only daily dosing of a combination of tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC) is currently approved by the Food and Drug Administration for use as PrEP. Tenofovir alafenamide (TAF) and FTC has also been approved for PrEP in men but not in women. **Adherence is critical.**

When a woman with HIV is in a relationship with a partner who does not have HIV, assisted insemination during the periovulatory period at home or in a provider's office with semen from her partner is an option for conception that eliminates the risk of HIV transmission to her partner.

When a man with HIV is in a relationship with a partner without HIV, the use of donor sperm from a man without HIV is an option for conception that eliminates the risk of HIV transmission to the partner without HIV. When a man with HIV is in a relationship with someone who does not have HIV, the use of sperm preparation techniques (e.g., "sperm washing" followed by testing the sample for HIV RNA), coupled with either intrauterine insemination or *in vitro* fertilization with intracytoplasmic sperm injection, has been reported. However, the appropriate role of semen preparation techniques in the current context is unclear, particularly given their expense and technical requirements. These sperm preparation techniques were largely developed before studies had demonstrated the efficacy of ART and PrEP in decreasing the risk of HIV transmission to sexual partners without HIV. Assisted reproductive technologies might be useful in cases of male infertility or for couples who are using donor sperm or a surrogate parent.

In addition to reducing the risk of HIV transmission between partners, starting ART before conception in women with HIV can also further reduce the risk of perinatal transmission.¹⁶ Evidence suggests that early and sustained control of HIV can decrease the risk of perinatal transmission,^{17,18} but it does not eliminate the risk completely.¹⁸ In addition, reports are mixed on the possible effects of ART on prematurity and low birthweight, with some, but not all, data, suggesting that such outcomes might be more frequent among women who are on ART at conception.^{19–23}

Monitoring of Pregnant Women Without HIV Who Have Partners with HIV

Women without HIV who present during pregnancy and indicate that their partners have HIV should, like all pregnant women, be notified that HIV screening is recommended and that they will receive an HIV test as part of the routine panel of prenatal tests unless they decline (this is the opt-out strategy; see [Maternal HIV Testing and Identification of Perinatal HIV Exposure](#)). Women who test HIV seronegative and have partners with HIV should continue to be counseled regularly regarding consistent condom use to decrease their risk of sexual transmission of HIV if the partner with HIV has not achieved sustained virologic suppression. They should also be counseled on the importance of their partners' adherence to ART and the need to achieve sustained virologic suppression to reduce the risk of sexual transmission of HIV. Women should also be counseled

regarding the symptoms of acute retroviral syndrome (i.e., fever, pharyngitis, rash, myalgia, arthralgia, diarrhea, and headache) and the importance of seeking medical care and testing if they experience such symptoms. Women with acute HIV infection during pregnancy or lactation are at high risk of transmitting HIV to their infants and should receive HIV testing with an HIV RNA polymerase chain reaction assay if acute HIV infection is suspected (see [Maternal HIV Testing and Identification of Perinatal HIV Exposure](#) and [Acute HIV Infection](#)).^{24,25} Repeat HIV testing in the third trimester is recommended for pregnant women who initially test HIV negative but who are at increased risk of acquiring HIV. Women who are at increased risk include those living in a city or state or ZIP code that is considered a high-risk jurisdiction by CDC. More frequent testing is indicated when a woman's partner has HIV; these women should be tested every trimester.

Monitoring of Men Without HIV Who Have Partners with HIV

Men without HIV who are attempting pregnancy with partners who have HIV should continue to be counseled regularly on methods to prevent acquisition of HIV, including suppressive ART for his partner and PrEP. CDC recommends HIV testing every 3 months for the partner who does not have HIV while the couple is attempting to conceive without condoms. The National Perinatal HIV Hotline (888-448-8765) is a resource for a list of institutions that offer reproductive services for couples where one or both partners have HIV.

Couples Where Both Partners Have HIV

Both partners with HIV should be on ART with sustained viral suppression before attempting conception. The risk of HIV superinfection or infection with a resistant virus is negligible when both partners are on ART and have fully suppressed plasma viral loads.²⁶

References

1. Centers for Disease Control and Prevention. Evidence of HIV treatment and viral suppression in preventing the sexual transmission of HIV. 2018. Available at: <https://www.cdc.gov/hiv/pdf/risk/art/cdc-hiv-art-viral-suppression.pdf>.
2. Baza MB, Jeronimo A, Rio I, et al. Natural conception is safe for HIV-serodiscordant couples with persistent suppressive antiretroviral therapy for the infected partner. *J Womens Health*. 2019;28(11):1555-1562. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/31329519>.
3. Schwartz SR, Bassett J, Mutunga L, et al. HIV incidence, pregnancy, and implementation outcomes from the Sakh'umndeni safer conception project in South Africa: a prospective cohort study. *Lancet HIV*. 2019;6(7):e438-e446. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/31160268>.
4. Matthews LT, Kiarie JN. Safer conception care to eliminate transmission of HIV. *Lancet HIV*. 2019;6(7):e413-e414. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/31160267>.
5. Bhatt SJ, Douglas N. Undetectable equals untransmittable (U = U): implications for preconception counseling for human immunodeficiency virus serodiscordant couples. *Am J Obstet Gynecol*. 2020;222(1):53 e51-53 e54. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/31526794>.
6. Wall KM, Kilembe W, Vwalika B, et al. Risk of heterosexual HIV transmission attributable to sexually transmitted infections and non-specific genital inflammation in Zambian discordant couples, 1994-2012. *Int J Epidemiol*. 2017;46(5):1593-1606. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/28402442>.
7. de Melo MG, Varella I, Gorbach PM, et al. Antiretroviral adherence and virologic suppression in partnered and unpartnered HIV-positive individuals in southern Brazil. *PLoS One*. 2019;14(2):e0212744. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/30811480>.
8. Jeronimo A, Baza MB, Rio I, et al. Factors associated with seminal impairment in HIV-infected men under antiretroviral therapy. *Hum Reprod*. 2017;32(2):265-271. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/28007791>.
9. Savasi V, Oneta M, Laoreti A, et al. Effects of antiretroviral therapy on sperm DNA integrity of HIV-1-infected men. *Am J Mens Health*. 2018;12(6):1835-1842. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/30132391>.
10. Savasi V, Parisi F, Oneta M, et al. Effects of highly active antiretroviral therapy on semen parameters of a cohort of 770 HIV-1 infected men. *PLoS One*. 2019;14(2):e0212194. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/30789923>.
11. Iyer JR, Van Rie A, Habermen SA, et al. Subfertility among HIV-affected couples in a safer conception cohort in South Africa. *Am J Obstet Gynecol*. 2019;221(1):48 e41-48 e18. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/30807762>.
12. Cohen MS, Chen YQ, McCauley M, et al. Antiretroviral therapy for the prevention of HIV-1 transmission. *N Engl J Med*. 2016;375(9):830-839. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/27424812>.
13. Rodger AJ, Cambiano V, Bruun T, et al. Sexual activity without condoms and risk of HIV transmission in serodifferent couples when the HIV-positive partner is using suppressive antiretroviral therapy. *JAMA*. 2016;316(2):171-181. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/27404185>.

14. Del Romero J, Baza MB, Rio I, et al. Natural conception in HIV-serodiscordant couples with the infected partner in suppressive antiretroviral therapy: a prospective cohort study. *Medicine (Baltimore)*. 2016;95(30):e4398. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/27472733>.
15. Stanford JB, White GL, Hatasaka H. Timing intercourse to achieve pregnancy: current evidence. *Obstet Gynecol*. 2002;100(6):1333-1341. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/12468181>.
16. Mandelbrot L, Tubiana R, Le Chenadec J, et al. No perinatal HIV-1 transmission from women with effective antiretroviral therapy starting before conception. *Clin Infect Dis*. 2015;61(11):1715-1725. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/26197844>.
17. Townsend CL, Cortina-Borja M, Peckham CS, et al. Low rates of mother-to-child transmission of HIV following effective pregnancy interventions in the United Kingdom and Ireland, 2000-2006. *AIDS*. 2008;22(8):973-981. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/18453857>.
18. Tubiana R, Le Chenadec J, Rouzioux C, et al. Factors associated with mother-to-child transmission of HIV-1 despite a maternal viral load <500 copies/ml at delivery: a case-control study nested in the French perinatal cohort (EPF-ANRS CO1). *Clin Infect Dis*. 2010;50(4):585-596. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/20070234>.
19. Kourtis AP, Schmid CH, Jamieson DJ, et al. Use of antiretroviral therapy in pregnant HIV-infected women and the risk of premature delivery: a meta-analysis. *AIDS*. 2007;21(5):607-615. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/17314523>.
20. Rudin C, Spaenhauer A, Keiser O, et al. Antiretroviral therapy during pregnancy and premature birth: analysis of Swiss data. *HIV Med*. 2011;12(4):228-235. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/20726902>.
21. Jao J, Abrams EJ. Metabolic complications of in utero maternal HIV and antiretroviral exposure in HIV-exposed Infants. *Pediatr Infect Dis J*. 2014;33(7):734-740. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/24378947>.
22. Hoffman RM, Brummel SS, Britto P, et al. Adverse pregnancy outcomes among women who conceive on antiretroviral therapy. *Clin Infect Dis*. 2019;68(2):273-279. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/29868833>.
23. Stringer EM, Kendall MA, Lockman S, et al. Pregnancy outcomes among HIV-infected women who conceived on antiretroviral therapy. *PLoS One*. 2018;13(7):e0199555. Available at: <https://www.ncbi.nlm.nih.gov/pubmed/30020964>.
24. Marinda ET, Moulton LH, Humphrey JH, et al. In utero and intra-partum HIV-1 transmission and acute HIV-1 infection during pregnancy: using the BED capture enzyme-immunoassay as a surrogate marker for acute infection. *Int J Epidemiol*. 2011;40(4):945-954. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/21471020>.
25. Humphrey JH, Marinda E, Mutasa K, et al. Mother to child transmission of HIV among Zimbabwean women who seroconverted postnatally: prospective cohort study. *BMJ*. 2010;341:c6580. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/21177735>.
26. Waters L, Smit E. HIV-1 superinfection. *Curr Opin Infect Dis*. 2012;25(1):42-50. Available at: <http://www.ncbi.nlm.nih.gov/pubmed/22156898>.