



**Recommendations for the Use of Antiretroviral Drugs in
Pregnant Women with HIV Infection and Interventions to Reduce
Perinatal HIV Transmission in the United States**

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Pregnant Women Living with HIV Who Are Currently Receiving Antiretroviral Therapy (Last updated December 7, 2018; last reviewed December 7, 2018)

Panel's Recommendations

- Women living with HIV who are receiving antiretroviral therapy (ART) who present for pregnancy care should continue their ART during pregnancy, provided that the regimen is tolerated, safe, and effective in suppressing viral replication (i.e., HIV viral load less than lower limits of detection of the assay) (AII).
- Drugs that are not recommended for use because of toxicity (e.g., stavudine, didanosine) should be stopped and switched to another antiretroviral (ARV) drug in women who present during pregnancy on these medications (AIII), see Table 7.
- Women who are receiving a dolutegravir-containing regimen and who present to care in the first trimester should receive counseling about the possible increased risk of neural tube defects (NTDs) and the risks and benefits of continuing dolutegravir or switching to another ARV regimen (AIII)^{a,b} (see Interim Recommendations about the Use of Dolutegravir in Pregnancy in [Recommendations for the Use of Antiretroviral Drugs During Pregnancy](#) and [Table 7](#)). The following considerations should be addressed:
 - NTDs may have already occurred;
 - Depending on the current gestational age, the additional risk of NTDs developing during the remaining time in the first trimester may be small;
 - There is a background risk of NTDs regardless of antiretroviral treatment (ART) regimen or HIV status (this risk ranges from 0.05% to 0.1% for women without HIV and for women with HIV who are receiving ART that does not include dolutegravir); and
 - Changes in ART, even in the first trimester, are often associated with viral rebound that may increase the risk of perinatal HIV transmission.
- When women present to care on a atazanavir/cobicistat-, darunavir/cobicistat-, or elvitegravir/cobicistat-containing regimen, providers should consider switching to a regimen that is recommended for use in pregnant women due to concerns about pharmacokinetic changes and risk of virologic failure in the second and third trimesters of pregnancy (see [Table 6](#) and [Table 7](#)) (BIII). If one of these regimens is continued, absorption should be optimized, and viral load should be monitored frequently (i.e., every 1–2 months).
- If an ARV regimen is altered during pregnancy, drugs in the new regimen should be ARVs recommended for use in pregnancy (see [Table 6](#) and [Table 7](#)) (BIII) and more frequent virologic monitoring is warranted (CIII).
- HIV ARV drug-resistance testing should be performed to assist in the selection of active drugs when changing ARV regimens in pregnant women on therapy with virologic failure and HIV RNA levels >500 to 1,000 copies/mL (AII). In individuals with HIV RNA levels >500 but <1,000 copies/mL, testing may be unsuccessful but should still be considered (BII) (see [Lack of Viral Suppression](#)).

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

^a The first trimester is less than 14 weeks (up to 13 6/7 weeks) gestational age by last menstrual period. The term “12 weeks post-conception,” used in the Adult and Adolescent ARV Guidelines, is consistent with the first trimester.

^b Although dolutegravir is not Food and Drug Administration-approved for use in the first trimester, some Perinatal Panel members would consider using dolutegravir at 12 weeks gestational age by last menstrual period on an individual patient basis.

Women taking antiretroviral therapy (ART) for HIV infection should continue their ART regimen during pregnancy, provided it is well tolerated, safe, and effective in suppressing viral replication. Discontinuing or altering therapy could cause an increase in viral load, leading to disease progression, a decline in immune status, and an increased risk of perinatal HIV transmission.¹ Maintenance of viral suppression is paramount for both maternal health and the prevention of perinatal transmission. However, a change in ART may be indicated or considered in specific circumstances.

Drugs not recommended for use because of toxicity (e.g., stavudine, didanosine) **should be stopped** and switched to another antiretroviral (ARV) drug in women who present during pregnancy while taking these medications (see [Table 6](#) and [Table 7](#)). On the basis of recent safety data about the possible increased risk of NTDs when dolutegravir is taken near the time of conception,² women who present on a dolutegravir-based regimen should receive counseling about benefits and risks of continuing or changing therapy. A change in ART should be considered for pregnant women who present during the first trimester of pregnancy (<14

weeks [$\leq 13 \frac{6}{7}$ weeks] gestational age by last menstrual period) (see Interim Panel Recommendations Regarding the Use of Dolutegravir in Pregnancy in [Recommendations for the Use of Antiretroviral Drugs During Pregnancy](#) and [Table 7](#)). The following considerations should be addressed during counseling:

- NTDs may have already occurred;
- Depending on the current gestational age, the additional risk of NTD developing during the remaining time in first trimester may be small;
- There is a background risk of NTDs regardless of ART regimen or HIV status (this risk ranges from 0.05% to 0.1% for women without HIV and for women with HIV who are receiving ART that does not include dolutegravir); *and*
- Changes in ART, even in the first trimester, are often associated with viral rebound that may increase the risk of perinatal HIV transmission.

When a pregnant woman presents on a regimen that includes elvitegravir/cobicistat, atazanavir/cobicistat, or darunavir/cobicistat, providers should consider switching them to a more effective regimen with drugs that are recommended for use in pregnancy due to concerns about pharmacokinetic changes and risk of virologic failure in the second and third trimesters of pregnancy³⁻⁵ (see [Table 6](#) and [Table 7](#)).^{6,7} If one of these regimens is continued, absorption should be optimized by taking the drugs with food and by separating administration of the regimen and prenatal vitamins by ≥ 2 hours. In addition, viral load should be monitored frequently in these patients (e.g., every 1–2 months).⁶ Lack of virologic suppression on subsequent testing indicates a need for a regimen change and potential need for scheduled cesarean delivery when the [lack of suppression](#) is detected late in pregnancy (see [Increased Viral Load Monitoring for women receiving cobicistat-boosted regimens \[elvitegravir, atazanavir or darunavir\] in Recommendations for the Use of Antiretroviral Drugs During Pregnancy](#)).

Although pharmacokinetic data indicate that rilpivirine plasma concentration is reduced during the second and third trimesters of pregnancy, the reduction is less than the reductions seen with the cobicistat-containing regimens described above, and most women will have adequate exposure. Standard rilpivirine dosing is recommended, and viral load should be monitored frequently (e.g., every 1 to 2 months; see [Recommendations for the Use of Antiretroviral Drugs During Pregnancy](#)).

As newer, highly effective ARV drugs are approved, women living with HIV may present for prenatal care on ART regimens that include ARV drugs for which there is a lack of significant experience in pregnancy, with limited data on pharmacokinetics and safety. If questions arise about specific drugs in an ART regimen, providers are encouraged to consult with an HIV perinatal specialist before discontinuing or altering a regimen that is achieving full viral suppression and is well tolerated. In addition, more frequent virologic monitoring is warranted when an ARV regimen is altered during pregnancy. Because little is known about the use of newly approved drugs in pregnancy, providers should make every effort to report all ART exposures in pregnant women to the [Antiretroviral Pregnancy Registry](#).

Women with HIV who are on ART and who present for care during the first trimester should be counseled regarding the benefits and potential risks of administration of ARV drugs during this period. Providers should emphasize that continuing effective ART is recommended. There have been concerns regarding efavirenz use in the first trimester and the potential for neural tube defects, based on nonhuman primate data and retrospective case reports (for more details, see [Efavirenz](#)). However, a meta-analysis that included data on 2,026 women with first-trimester efavirenz exposure from 21 prospective studies did not find an increased relative risk (RR) of overall birth defects in infants born to women receiving efavirenz-based regimens versus infants born to women receiving regimens that did not include efavirenz (RR 0.78; 95% CI, 0.56–1.08).⁸ The Panel on Treatment of Pregnant Women Living with HIV and Prevention of Perinatal Transmission recommends that efavirenz be continued in pregnant women receiving efavirenz-based ART, provided that the ARV regimen is well tolerated and results in virologic suppression.

Resistance testing should be performed in pregnant women on ART when a change in active drugs is being considered because of virologic failure and HIV RNA levels are >1,000 copies/mL. In individuals with HIV RNA levels >500 but <1,000 copies/mL, testing may be unsuccessful, but it still should be considered. The results can be used to select a new regimen with a greater likelihood of suppressing viral replication to undetectable levels.

References

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