

Appendix B: Safety and Toxicity of Individual Antiretroviral Agents in Pregnancy

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Overview

Nucleoside and Nucleotide Analogue Reverse Transcriptase Inhibitors

Nucleoside and nucleotide reverse transcriptase inhibitors (NRTIs) interfere with HIV reverse transcriptase by competitive inhibition. Nucleoside analogue drugs require three intracellular phosphorylation steps to form the triphosphate nucleoside, which is the active drug moiety. The nucleotide analogue tenofovir contains a monophosphate component attached to the adenine base and requires only two phosphorylation steps to form the active moiety.

For information regarding the nucleoside analogue drug class and potential mitochondrial toxicity in pregnant people and infants, see [Recommendations for Use of Antiretroviral Drugs During Pregnancy](#) and [Long-Term Follow-Up of Infants Exposed to Antiretroviral Drugs](#).

- [Abacavir \(Ziagen, ABC\)](#)
- [Emtricitabine \(Emtriva, FTC\)](#)
- [Lamivudine \(Epivir, 3TC\)](#)
- [Tenofovir Alfenamide \(Vemlidy, TAF\)](#)
- [Tenofovir Disoproxil Fumarate \(Viread, TDF\)](#)
- [Zidovudine \(Retrovir, ZDV\)](#)

[Didanosine](#) and [stavudine](#) are no longer recommended for use in pregnant people. [Zalcitabine](#) is not available in the United States. Information on these drugs can be found in the [Archived Drugs](#) section.

Non-Nucleoside Reverse Transcriptase Inhibitors

Non-nucleoside reverse transcriptase inhibitors (NNRTIs) interfere with HIV reverse transcriptase by binding directly to the enzyme.

- [Doravirine \(Pifeltro, DOR\)](#)
- [Efavirenz \(Sustiva, EFV\)](#)
- [Etravirine \(Intelence, ETR\)](#)
- [Nevirapine \(Viramune, NVP\)](#)
- [Rilpivirine \(Edurant, RPV\)](#)

- [Delavirdine](#) is no longer available in the United States. Information on this drug can be found in the [Archived Drugs](#) section.

Protease Inhibitors

Protease inhibitors (PIs) block the activity of the protease enzyme, which is required to assemble new HIV viral particles that are capable of infecting new cells.

Using PIs during pregnancy may increase the risk of adverse outcomes in the birthing parent and neonate; see [Antiretroviral Drug Regimens and Pregnancy Outcomes](#) for more information.

- [Atazanavir \(Reyataz, ATV\)](#)
- [Darunavir \(Prezista, DRV\)](#)
- [Lopinavir/Ritonavir \(Kaletra, LPV/r\)](#)

[Fosamprenavir](#), [indinavir](#), [nelfinavir](#), [saquinavir](#), and [tipranavir](#) are no longer recommended for use in pregnant people. [Amprenavir](#) is no longer available in the United States. Information on these drugs can be found in the [Archived Drugs](#) section.

Entry and Attachment Inhibitors

Entry and attachment inhibitors block viral binding or fusion of HIV to host cells.

- [Fostemsavir \(Rukobia, FTR\)](#)
- [Ibalizumab-uiyk \(Trogarzo, IBA\)](#)
- [Maraviroc \(Selzentry, MVC\)](#)
- [Enfuvirtide](#) is not recommended for use in pregnant people. Information on this drug can be found in the [Archived Drugs](#) section.

Integrase Inhibitors

Integrase inhibitors block integrase, the viral enzyme that catalyzes the two-step process that inserts HIV DNA into the genome of the host cell.

- [Bictegravir \(BIC\)](#)
- [Cabotegravir \(CAB\)](#)
- [Dolutegravir \(Tivicay, DTG\)](#)
- [Elvitegravir \(EVG\)](#)
- [Raltegravir \(Isentress, RAL\)](#)

For information regarding the possible increased risk of neural tube defects in infants born to birthing parents who were receiving dolutegravir at the time of conception, see [Teratogenicity and Recommendations for Use of Antiretroviral Drugs During Pregnancy](#).

Pharmacoenhancers

Pharmacoenhancers reduce the metabolism of antiretroviral drugs and prolong their presence in plasma, allowing for more convenient dosing regimens.

- [Cobicistat \(Tybost, COBI\)](#)
- [Ritonavir \(Norvir, RTV\)](#)

Capsid Inhibitors

Capsid inhibitors interfere with HIV capsid, a protein shell that protects HIV's genetic materials and the enzymes required for its replication. Capsid inhibitors can disrupt HIV capsid in multiple stages of the viral life.

- [Lenacapavir \(Sunlenca, LEN\)](#)