



## Resource: ART Drug-Drug Interactions

August 2024

Table 48: Gender-Affirming Hormones [a] [Coleman, et al. 2022; Cirrincione, et al. 2020; Irving and Lehault 2017] (also see drug package inserts)		
→ Dutasteride, estradiol, finasteride, goserelin, leuprolide acetate, spironolactone, testosterone		
Class or Drug	Mechanism of Action	Clinical Comments
<ul style="list-style-type: none"> <li>Fostemsavir (FTR)</li> <li>Maraviroc (MVC)</li> <li>Lenacapavir (LEN)</li> </ul>	No clinically significant interactions expected.	No dose adjustments are necessary.
Cobicistat (COBI)	<ul style="list-style-type: none"> <li><b>Estradiol:</b> COBI-boosted PIs and EVG/COBI may increase estradiol levels via CYP3A inhibition.</li> <li><b>Finasteride, dutasteride:</b> COBI-boosted PIs and EVG/COBI may increase finasteride or dutasteride levels, but with minimal clinical significance.</li> <li><b>Progestins (oral medroxyprogesterone, micronized progesterone):</b> COBI-boosted PIs and EVG/COBI may increase progestin levels via CYP3A4 inhibition.</li> <li><b>Testosterone:</b> COBI-boosted PIs and EVG/COBI may increase testosterone levels via CYP3A4 inhibition. Relevance of this interaction is expected to be low in transgender men.</li> <li><b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> No interactions expected.</li> </ul>	<ul style="list-style-type: none"> <li><b>Estradiol:</b> When taken concomitantly with COBI-boosted ARVs, monitor serum estradiol levels.</li> <li><b>Finasteride, dutasteride, progestins (oral medroxyprogesterone, micronized progesterone), testosterone:</b> No dose adjustments are necessary.</li> <li><b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> Drug interactions are unlikely.</li> </ul>
Doravirine (DOR)	<b>Estradiol, dutasteride, finasteride, progestins (oral medroxyprogesterone, micronized progesterone), testosterone:</b> No interactions expected.	N/A
Efavirenz (EFV)	<ul style="list-style-type: none"> <li><b>Estradiol:</b> EFV may reduce estradiol levels via CYP3A induction.</li> <li><b>Finasteride, dutasteride:</b> EFV may reduce finasteride and dutasteride levels via CYP3A induction.</li> <li><b>Progestins (oral medroxyprogesterone, micronized progesterone):</b> EFV may reduce progestin levels via CYP3A induction.</li> <li><b>Testosterone:</b> EFV may reduce testosterone levels via CYP3A induction.</li> <li><b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> No interactions expected.</li> </ul>	<ul style="list-style-type: none"> <li><b>Estradiol:</b> Monitor serum estradiol levels; may require increased estradiol dose.</li> <li><b>Finasteride, dutasteride, progestins (oral medroxyprogesterone, micronized progesterone), testosterone:</b> No dose adjustments are necessary.</li> <li><b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> Drug interactions are unlikely.</li> </ul>

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Etravirine (ETR)	<ul style="list-style-type: none"> <li>• <b>Estradiol:</b> ETR may reduce estradiol levels via CYP3A induction.</li> <li>• <b>Finasteride, dutasteride:</b> ETR may reduce finasteride and dutasteride levels via CYP3A induction.</li> <li>• <b>Progestins (oral medroxyprogesterone, micronized progesterone):</b> ETR may reduce progestin levels via CYP3A induction.</li> <li>• <b>Testosterone:</b> ETR may reduce testosterone levels via CYP3A induction.</li> <li>• <b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> No interactions expected</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Estradiol:</b> Monitor serum estradiol levels; may require increased estradiol dose.</li> <li>• <b>Finasteride, dutasteride, progestins (oral medroxyprogesterone, micronized progesterone), testosterone:</b> No dose adjustments are necessary.</li> <li>• <b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> Drug interactions are unlikely.</li> </ul>
Nevirapine (NVP)	<ul style="list-style-type: none"> <li>• <b>Estradiol:</b> NVP may reduce estradiol levels via CYP3A induction.</li> <li>• <b>Finasteride, dutasteride:</b> NVP may reduce finasteride and dutasteride levels via CYP3A induction.</li> <li>• <b>Progestins (oral medroxyprogesterone, micronized progesterone):</b> NVP may reduce progestin levels via CYP3A induction.</li> <li>• <b>Testosterone:</b> NVP may reduce testosterone levels via CYP3A induction.</li> <li>• <b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> No interactions expected.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Estradiol:</b> Monitor serum estradiol levels; may require increased estradiol dose.</li> <li>• <b>Finasteride, dutasteride, progestins (oral medroxyprogesterone, micronized progesterone), testosterone:</b> No dose adjustments are necessary.</li> <li>• <b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> Drug interactions are unlikely.</li> </ul>
<ul style="list-style-type: none"> <li>• Rilpivirine (RPV)</li> <li>• INSTIs, <i>non-boosted</i></li> <li>• NRTIs, <i>non-boosted</i></li> </ul>	<b>Estradiol, dutasteride, finasteride, progestins (oral medroxyprogesterone, micronized progesterone), testosterone:</b> No interactions expected.	N/A
Ritonavir (RTV)	<ul style="list-style-type: none"> <li>• <b>Estradiol:</b> RTV may reduce estradiol levels via CYP1A2 induction; RTV may increase estradiol levels via CYP3A4 inhibition.</li> <li>• <b>Finasteride, dutasteride:</b> RTV-boosted PIs may increase finasteride or dutasteride levels.</li> <li>• <b>Progestins (oral medroxyprogesterone, micronized progesterone):</b> RTV-boosted PIs may increase progestin levels via CYP3A4 inhibition.</li> <li>• <b>Testosterone:</b> RTV-boosted PIs may increase testosterone levels via CYP3A4 inhibition.</li> <li>• <b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> No interactions expected.</li> </ul>	<ul style="list-style-type: none"> <li>• <b>Estradiol:</b> When taken concomitantly with RTV-boosted ARVs, monitor serum estradiol levels.</li> <li>• <b>Finasteride, dutasteride, progestins (oral medroxyprogesterone, micronized progesterone), testosterone:</b> No dose adjustments are necessary.</li> <li>• <b>Spironolactone, bicalutamide, leuprolide, goserelin:</b> No interactions expected.</li> </ul>

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<p><b>Abbreviations:</b> ARV, antiretroviral; CYP, cytochrome P450; INSTI, integrase strand transfer inhibitor; N/A, not applicable; NRTI, nucleoside reverse transcriptase inhibitor; PI, protease inhibitor.</p> <p><b>Note:</b></p> <p>a. For recommended dosing and monitoring of gender-affirming hormones, refer to [Coleman, et al. 2022].</p>		

## References

- Cirrincione LR, Senneker T, Scarsi K, et al. Drug interactions with gender-affirming hormone therapy: focus on antiretrovirals and direct acting antivirals. *Expert Opin Drug Metab Toxicol* 2020;16(7):565-82. [PMID: 32479127] <https://pubmed.ncbi.nlm.nih.gov/32479127>
- Coleman E, Radix AE, Bouman WP, et al. Standards of care for the health of transgender and gender diverse people, version 8. *Int J Transgend Health* 2022;23(Suppl 1):S1-259. [PMID: 36238954] <https://pubmed.ncbi.nlm.nih.gov/36238954>
- Irving A, Lehault WB. Clinical pearls of gender-affirming hormone therapy in transgender patients. *Ment Health Clin* 2017;7(4):164-67. [PMID: 29955517] <https://pubmed.ncbi.nlm.nih.gov/29955517>