Hormone Therapy for Gender Affirming

Estrogen and anti-androgen preparations for use in male to female gender reassignment therapy

		HIV drugs with no predicted effect	HIV drugs predicted to inhibit metabolism	HIV drugs predicted to induce metabolism
Estrogens		DOR, RPV, MVC, BIC, DTG, RAL ABC, ddI, FTC, 3TC, d4T, TAF, TDF, ZDV	ATV alone, ATV/cobi, DRV/cobi, EVG/cobi	ATV/r, DRV/r, FPV/r, IDV/r, LPV/r, SQV/r, TPV/r, EFV, ETV, NVP
Estradiol oral	*Starting dose*	2 mg/day	1 mg/day	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	4 mg/day	2 mg/day	
	Maximum dose	8 mg/day	4 mg/day	
Estradiol gel (preferred for >40 y and/or smokers)	*Starting dose*	0.75 mg twice daily	0.5 mg twice daily	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	0.75 mg three times daily	0.5 mg three times daily	
	Maximum dose	1.5 mg three times daily	1 mg three times daily	
Estradiol patch (preferred for >40 y and/or smokers)	*Starting dose*	25 µg/day	25 µg/day*	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	50-100 µg/day	37.5-75 µg/day	
	Maximum dose	150 µg/day	100 µg/day	
Conjugated estrogen†	*Starting dose*	1.25-2.5 mg/day	0.625-1.25 mg/day	Increase estradiol dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	5 mg/day	2.5 mg/day	
	Maximum dose	10 mg/day	5 mg/day	
Ethinylestradiol	*Starting dose*	No interaction expected, but not recommended due to thrombotic risks	Not recommended	Not recommended
	Average dose			
	Maximum dose			
Androgen Blockers		DOR, RPV, MVC, BIC, DTG, RAL ABC, ddI, FTC, 3TC, d4T, TAF, TDF, ZDV	ATV alone, ATV/cobi, ATV/r, DRV/cobi, DRV/r, EVG/cobi, FPV/r, IDV/r, LPV/r, SQV/r, TPV/r	EFV, ETV, NVP
Spironolactone	*Starting dose*	50 mg/day	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.
	Average dose	150 mg/day		
	Maximum dose	400 mg/day		
Finasteride	*Starting dose*	2.5 mg/day	Finasteride has a large safety margin. No dose adjustment required.	Increase finasteride dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	2.5 mg/day		
	Maximum dose	5 mg day		
Cyproterone acetate	*Starting dose*	50 mg/day	25 mg/day	Increase cyproterone dosage as needed based on clinical effects and monitored hormone levels.
	Average dose	150 mg/day	75 mg/day	
	Maximum dose	150 mg/day	75 mg/day	
Goserelin	*Starting dose*	3.6 mg/month	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.
	Average dose	3.6 mg/month		
	Maximum dose	3.6 mg/month		
Leuprorelin acetate	*Starting dose*	3.75 mg/month	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.
	Average dose	3.75 mg/month		
	Maximum dose	3.75 mg/month		
Triptorelin	*Starting dose*	3.75 mg/month	No interaction expected. No dose adjustment required.	No interaction expected. No dose adjustment required.
	Average dose	3.75 mg/month		
	Maximum dose	3.75 mg/month		

† Conjugated estrogen is associated with high thromboembolic risk and therefore should be avoided.

* Matrix type transdermal patch can be cut in order to reduce the amount of hormone delivered/day.

Colour Legend

No clinically significant interaction expected.

Potential interaction which may require dosage adjustment and/or close monitoring.

Coadministration is not recommended.

Recommendations for dose changes:

- All recommendations for dose changes are empirical and based on doses/formulations available in the UK (additional doses/formulations may be available in other countries).
- Recommendations for dose changes in presence of **inhibitors of estrogen metabolism** are based on the assumption that the magnitude of the drug-drug interaction is expected to be less pronounced for transdermal or topical applications than for oral drug administration as the first-pass metabolism is avoided.
- Recommendations for dose changes in presence of **inhibitors of testosterone metabolism** are based on the assumption that the magnitude of the drug-drug interaction is expected to be less pronounced for topical and intramuscular applications than for oral drug administration as the first-pass metabolism is avoided.
- *Note:* androgen deprivation treatment may prolong the QT interval. Caution should be taken when using with antiretroviral drugs that can potentially prolong the QT interval (i.e., ATV alone, ATV/r, ATV/cobi, LPV/r, SQV/r, EFV, RPV).

References for hormone therapy dosage recommendations in absence of antiretroviral drugs:

1. Good practice guidelines for the assessment and treatment of adults with gender dysphoria. *Royal College of Psychiatrists, London, 2013, Document CR181.*
2. Endocrine treatment of transsexual persons: an Endocrine Society clinical practice guideline. *Hembree WC et al. J Clin Endocrinol Metab, 2009, 94(9):3132-54.*
3. Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people. Department of Family & Community Medicine, University of California, 2016.
4. Endocrine care of transpeople part I. A review of cross-sex hormonal treatments, outcomes and adverse effects in transmen. Meriggiola MC, Gava G. Clin Endocrinol (Oxf). 2015, 83(5):597-606.

Abbreviations: ATV atazanavir, DOR doravirine, ABC abacavir, DRV darunavir, EFV efavirenz, ddI didanosine, EVG Elvitegravir, ETV etravirine, FTC emtricitabine, FPV fosamprenavir, NVP nevirapine, 3TC lamivudine, IDV indinavir, RPV rilpivirine, d4T stavudine, LPV lopinavir, MVC maraviroc, TAF tenofovir alafenamide, SQV saquinavir, BIC bictegravir, TDF tenofovir-DF, TPV tipranavir, DTG dolutegravir, ZDV zidovudine, /cobi cobicistat, RAL raltegravir, /r ritonavir

Androgen preparations for use in female to male gender reassignment therapy

		HIV drugs with no predicted effect	HIV drugs predicted to inhibit metabolism	HIV drugs predicted to induce metabolism
Androgens		DOR, RPV, MVC, BIC, DTG, RAL ABC, ddI, FTC, 3TC, d4T, TAF, TDF, ZDV	ATV alone, ATV/cobi, ATV/r, DRV/cobi, DRV/r, EVG/cobi, FPV/r, IDV/r, LPV/r, SQV/r, TPV/r	EFV, ETV, NVP
Testosterone topical gel 1%	*Initial low dose*	12.5-25 mg in the morning	12.5-25 mg in the morning	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	50 mg in the morning	25-50 mg in the morning	
	Maximum dose	100 mg in the morning	50-100 mg in the morning	
Testostereone enanthate or cypionate	*Initial low dose*	Not applicable	Not applicable	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	50-100 mg/week	25-50 mg/week	
	Maximum dose	Not applicable	Not applicable	
Testosterone undecanoate	*Initial low dose*	Not applicable	Not applicable	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	750 mg IM, repeat after 4 weeks and then every 10 weeks	375-500 mg IM, repeat after 4 weeks and then every 10 weeks	
	Maximum dose	Not applicable	Not applicable	
Mixed Testosterone Esters	*Initial low dose*	Not applicable	Not applicable	Increase testosterone dosage as needed based on clinical effects and monitored hormone levels.
	Initial average dose	250 mg/2-3 weeks	125 mg/2-3 weeks	
	Maximum dose	Not applicable	Not applicable	

Colour Legend

No clinically significant interaction expected.

Potential interaction which may require dosage adjustment and/or close monitoring.

Coadministration is not recommended.

Recommendations for dose changes:

- All recommendations for dose changes are empirical and based on doses/formulations available in the UK (additional doses/formulations may be available in other countries).
- Recommendations for dose changes in presence of **inhibitors of estrogen metabolism** are based on the assumption that the magnitude of the drug-drug interaction is expected to be less pronounced for transdermal or topical applications than for oral drug administration as the first-pass metabolism is avoided.
- Recommendations for dose changes in presence of **inhibitors of testosterone metabolism** are based on the assumption that the magnitude of the drug-drug interaction is expected to be less pronounced for topical and intramuscular applications than for oral drug administration as the first-pass metabolism is avoided.
- *Note:* androgen deprivation treatment may prolong the QT interval. Caution should be taken when using with antiretroviral drugs that can potentially prolong the QT interval (i.e., ATV alone, ATV/r, ATV/cobi, LPV/r, SQV/r, EFV, RPV).

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