Antiretroviral / HIV Drug Dosing for Children and Adolescents 2020-21 - Imperial College Healthcare NHS Trust

(NOT for neonatal vertical transmission post exposure prophylaxis – see BHIVA guidelines)

OD = Once a day, BD = Twice a day, QDS = Four times a day

Agent	Recommended dosage, class side effects and contraindications & warnings	Formulations	Additional information	Intake Advice
Nucleoside Reverse Transcriptase Inhibitors (NRTI): lactic acidosis, steatosis, mitochondrial toxicity				
Lamivudine (3TC) *Also see FDCs*	**Liquid**: (**≥3months**) 5 mg/kg BD or 10mg/kg OD (max dose 300mg/day). Well tolerated round up doses. **150mg tablet**: (**14-19kg**)→ ½ tab BD or 1 tab OD, (**>20-24kg**)→ ½ tab AM + 1 tab PM or 1½ tab OD **≥25kg**: 300mg OD Nausea, diarrhoea, headache, fatigue	**Tab**:100mg *(Zeffix)* (orange) 150mg (scored), 300mg Generic tabs scored, appearance varies **Liq**: 10mg/ml (*Epivir*) (1-month expiry)	Reduce dose in renal impairment (seek advice). Tablets can be crushed and mixed with small amount of water or food.	Take with or without food
Emtricitabine (FTC*)* *Also see FDCs*	**≥ 4months:** 6mg/kg OD of the oral solution. (max. dose 240mg OD) **≥33kg:** Capsule 200mg OD; oral solution: 240mg OD Headache, diarrhoea, nausea, rash, skin discolouration on palms and soles	**Cap**: 200mg (blue/white) ≡ 240mg liquid **Liq**: 10mg/ml – Fridge (Discard 45 days after opening) - **not** bioequivalent to caps. Liquid can be stored at room temperature after opening.	Reduce dose in renal impairment (seek advice). Do not give with lamivudine. Capsules contents can be dispersed in water.	Take with or without food
Abacavir (ABC) *Also see FDCs*	**Liquid:** (**≥3months**) 8mg/kg BD or 16mg/kg OD. Max dose: 600mg per day. Well tolerated round up doses. **300mg tablet**: (**14-19kg**)→ ½ tab BD or 1 tab OD, (**>20-24kg**)→ ½ tab AM + 1 tab PM or 1½ tab OD, **≥25kg**: 600mg OD ***Test HLA-B*5701 before starting, do not give abacavir if HLA-B*5701 +ve.*** Hypersensitivity reactions usually occur within first 6 weeks of therapy. **If occurs, not to be given again** Nausea, fever, headache, diarrhoea, rash, fatigue, respiratory symptoms	**Tab**: 300mg scored **Liq**: 20mg/mL (*2 month expiry)*	Tablets can be crushed and mixed with small amount of water or food.	Take with or without food
Zidovudine (AZT)	**Liquid**: (**4-9kg**)→12mg/kg BD, (**>9-30Kg**)→ 9mg/kg BD. Max dose 300mg BD. **100mg capsule**: (**8-13kg**)→100mg BD, (**14-21Kg**)→ 100mg am + 200mg pm, (**22-27kg**)→ 200mg BD **≥28kg** 250mg BD **IV dosing**: 80mg/m^2 QDS (alternatively total daily dose of 320 mg/m^2 may be given in 2 divided doses). Granulocytopenia and/or anaemia, nausea, headache, myopathy, hepatitis, nail pigmentation, neuropathy	**Cap**: 100mg, 250mg **Liq**: 10mg/ml (1-month expiry) **IV**: 10mg/ml (200mg/20ml vial)	Capsules contents can be dispersed in water.	Take with or without food
Nucleotide Reverse Transcriptase inhibitors (NtRTI): As NRTI's				
Tenofovir alafenamide fumarate (TAF)	**TAF is preferred NtRTI in all patients ≥6years & ≥25kg** Nausea, headache, dizziness, abnormal dreams, diarrhoea, vomiting, abdominal pain, flatulence, rash, fatigue	Only available as fixed-dose combinations – see below		
Tenofovir disoproxil (TD)	***All doses based on Tenofovir Disoproxil (TD)*** **Tablet:** (**17-21kg**)→ 123mg OD, (**22-27kg**)→ 163mg OD, (**28-34kg**)→ 204mg OD (**≥35kg**)→ 245mg OD. **Powder:** (**2 – 12yrs**) 6.5mg/kg OD - **1 scoop (scp) = 33mg** (**10-11kg**)→ 2 scp, (**12-13kg**)→ 2.5 scp, (**14-16kg**)→ 3 scp, (**17-19kg**)→ 3.5 scp, (**19-21kg**)→ 4 scp, (**22-23kg**)→ 4.5 scp, (**24-26kg**)→ 5 scp, (**27-28kg**)→ 5.5 scp (**29-31kg**)→ 6 scp, (**32-33kg**)→ 6.5 scp, (**34kg**)→7 scp, (**≥35kg**)→7.5 scp Headache, nausea, vomiting, renal tubular dysfunction, bone demineralization, exacerbations of viral hepatitis on discontinuation. **Important: Renal function, blood and urine monitoring.**	**Tab**: TD 245mg (blue) **Paed tab TD (TDF)**: 123mg (150mg), 163mg (200mg), 204mg (250mg) (white) **Powder**: TD 33mg/1g per scoop (TDF 40mg/1g per scoop) **245mg tenofovir disoproxil (TD) ≡ 300mg tenofovir disoproxil fumarate (TDF)**	Careful monitoring with boosted PI regimens for renal toxicity. Tablets can be cut or crushed and dispersed in water, but bitter taste. Orange juice can be used to mask taste.	Take with food. Granules should be mixed with soft food and not liquids
NRTI & NtRTI fixed dose combinations (FDCs) for use with third agent: Cross-reference with component drugs for side-effects and advice				
ABC + 3TC *Generic (Kivexa®)*	***Test HLA-B*5701 before starting, do not give abacavir if HLA-B*5701 +ve*** **≥25kg**: 1 tablet OD	**Tab**: ABC 600mg/3TC 300mg	Do not cut/crush	Take with or without food
FTC + TAF ('F/TAF') *Descovy®*	**Licensed ≥12 years or ≥35kg** *(trial evidence from ≥6yrs & ≥25kg – refer to PVC)* ***With RTV/COB:*** 200mg/10mg tab OD; ***Not with RTV/COB:*** 200mg/25mg tab OD	**Tab:** FTC 200mg/ TAF10mg (grey) FTC 200mg/ TAF 25mg (blue)	Do not cut/crush	Take with or without food
TD + FTC *Generic (Truvada®)*	**≥35kg:** 1 tablet OD	**Tab**: TD 245mg/FTC 200mg	See tenofovir disoproxil information	
Integrase Inhibitors: Seek advice from a pharmacist for all integrase inhibitors if patient requires oral cations (e.g. calcium/magnesium/iron/aluminium/zinc), including multivitamin/mineral products				
Dolutegravir (DTG) *Also see FDCs*	**≥14kg**: (**14-19kg**)→ 40mg OD, (**≥20kg**)→ 50mg OD **Integrase resistance:** 50mg BD *(refer to PVC)* Insomnia, mood changes, headache, hepatitis, rash	**Tab:** 50mg tabs (yellow) 25mg tabs (pale yellow) 10mg tabs (white) Can be cut/crushed	With inducers of CYP3A/UGT1A e.g. EFV, NVP, rifampicin use dolutegravir 50mg **BD** **Avoid antacids/mineral supplements containing polyvalent cations 6 hours before & 2 hours after taking – seek advice**	Take with food
Raltegravir (RAL)	**MUST SPECIFY FORMULATION WHEN PRESCRIBING - Film coated tablets are not bioequivalent to sachets/chewable tablets** **≥4 wks**: 6mg/kg BD as **granules for oral suspension (up to 20kg):** max. 100mg BD or **Chewable tabs:** max 300mg BD **Sachets: (≥3kg)**→25mg BD, **(4-5kg)**→30mg BD, **(6-7kg)**→40mg BD, **(8-10kg)**→60mg BD, **(11-13kg)**→80mg BD, **(14-19kg)**→100mg BD **Chewable tablets: (11-13kg)**→ 3 x 25mg chewable tabs BD, **(14-19kg)**→ 1 x 100mg chewable tab BD, **(20-27kg)**→1½ x 100mg chewable tabs BD, **(28-39kg)**→2 x 100mg chewable tabs BD, **(≥40kg)**→3 x 100mg chewable tabs BD **Film coated tablet: (≥25kg)**: 400mg BD **Once-daily formulation:** (≥**40kg**): 1200mg OD (2x600mg film coated tablets) Nausea, dizziness, insomnia, mood changes, rash, pancreatitis, elevated liver enzymes	**100mg sachets for oral suspension:** Recommended dilution 10mg/ml but can be individualised if large volumes prohibitive. **Chewable tabs**: 25mg & 100mg (can be halved). **Film coated tablets**: 400mg (pink - can be cut/crushed) 600mg (yellow – do **not** cut/crush)	**Once-daily formulation:** Do not co-prescribe with rifampicin, unboosted atazanavir or aluminium, magnesium and calcium containing antacids or supplements Take with or without food.	**Twice-daily formulations**: Avoid antacids/mineral supplements containing polyvalent cations 4 hours before & after taking – seek advice
Non-nucleoside Reverse Transcriptase Inhibitors (NNRTI): Require TDM with rifamycins				
Nevirapine (NVP)	**Lead in period for 14 days:** (**3-5.9kg**)→ 50mg OD, (**6-9.9kg**)→ 80mg OD, (**10-13.9kg**)→ 100mg OD, (**14-19.9kg**)→ 130mg OD, (**20-24.9kg**)→ 150mg OD, then if no rash or LFT abnormalities after 14 days **see maintenance dose below.** **Maintenance dose:** (**3-5.9kg**)→ 50mg BD, (**6-9.9kg**)→ 80mg BD, (**10-13.9kg**)→ 100mg BD, (**14-19.9kg**)→ 130mg BD, (**20-24.9kg**)→ 150mg BD. Total daily dose may be given as OD dose if stable and fully suppressed. **(>25kg)**: **200mg OD lead in for 14 days, then increase to 200mg BD or 400mg OD if no rash or LFT abnormalities.** Rash, hepatitis, Steven-Johnson – usually within first 6 weeks, can occur up to 18weeks. **Check hepatic function at 2, 4, and 8 weeks.**	**Tab**: 200mg **Liq**: 10mg/ml (Shake well, 6-month expiry) **Prolonged-release tabs**: 100mg, 400mg [Generic tablets first-line] **Prolonged-release tabs not suitable for lead in period**.	Normal release tabs can be cut. Do not cut prolonged-release tabs. No dose reduction in renal impairment.	Take with or without food. Some patients have reported the tablet remnant in faeces – not known to affect response.
Efavirenz (EFV) *Also see FDCs*	***Not recommended for patients <3 years*** **≥3months:** (**3.5-<5kg**)→100mg OD, (**5-<7.5kg**)→ 150mg OD, (**7.5-<15kg**)→ 200mg OD**,** (**15-<20kg**)→ 250mg OD, (**20-<25kg**)→300mg OD, (**25-<32.5kg**)→ 350mg OD, (**32.5-39kg**)→ 400mg OD (**≥40kg**)→ 600mg OD Mood changes, vivid dreams (common but usually short lived), hypercholesterolemia, rash, gynaecomastia	**Cap**: 50mg (Yellow/White), 200mg (yellow) **Tab**: 600mg [Generic tablet first-line] Capsules can be used as sprinkles and added to liquid of 1-2 teaspoons of food	No dose adjustments in renal impairment. 600mg tablet can be cut. ***Higher EFV levels in CYP2B6-TT Genotype***	Take on empty stomach, preferably before bedtime. **High fat meal can ↑ EFV AUC by 30% and ↑ adverse reactions**

Agent	Recommended dosage, class side effects and contraindications & warnings	Formulations	Additional information	Intake Advice
Protease Inhibitors (PI): Lipodystrophy, hyperlipidaemia, diabetes mellitus, important interactions with a range of other drugs: consider TDM				
Darunavir (DRV) *Also see FDCs*	**≥3years no DRV-resistance mutations: (10kg)**→ 360mg OD + RTV 64mg OD**, (11kg)**→ 400mg + RTV 64mg OD**,** **(12kg)**→ 420mg + RTV 80mg OD**, (13kg)**→ 460mg + RTV 80mg OD, **(14kg)**→ 500mg + RTV 96mg**,** **(15-34kg)**→ 600mg OD + RTV 100mg OD (**≥35kg)** →800mg OD + RTV 100mg OD ***≥3 years with DRV-resistance mutations: (10kg)**→ 200mg BD + RTV 32mg BD, **(11kg)**→ 220mg BD + RTV 32mg BD,* ***(12kg)**→ 240mg BD + RTV 40mg BD, **(13kg)**→ 260mg BD + RTV 40mg BD, **(14kg)**→ 280mg BD + RTV 48mg BD,* ***(15-24 kg)**→ 375mg DRV BD + RTV 50mg BD, **(25-34 kg)**→ 400 mg DRV BD + RTV 100mg BD,* *(**≥35kg)** → 600mg BD + RTV 100mg BD* Rash, nausea, diarrhoea, headache. **Contains sulphonamide moiety–check allergies especially Co-trimoxazole (Septrin)**	**Tab**: 75mg (white), 150mg (white), 400mg (light orange), 600mg (orange) & 800mg (dark red) **Liq:** 100mg/ml	Tablets can be cut/crushed if necessary.	Take with food. Some patients may be allergic to iron oxide in 800mg tablet formulation. 400mg tablets can be used.
Atazanavir (ATV)	**≥6years: (≥15-34kg)**→ 200mg OD + RTV 100mg OD *(Consider TDM for patients 25-35kg if not suppressed and adherent)* **(≥35kg):** 300mg OD with RTV 100mg OD Nausea, headaches, rash, jaundice	**Caps**: 150mg (dark blue/light blue), 200mg (dark blue), 300mg (dark blue/red) Capsules can be opened and contents mixed with water/apple sauce	Proton pump inhibitors (PPIs) contraindicated (↓ATV exposure).	Take with food. If dyspepsia, use Gaviscon or ranitidine 12-hours apart from dose.
Lopinavir/ritonavir (LPV/RTV)	*****PLEASE SPECIFY FORMULATION WHEN PRESCRIBING***** **Liquid:** (3-5 kg)→ 1ml BD, (6-9kg)→ 1.5ml BD, (10-13kg)→ 2ml BD, (14-19kg)→ 2.5ml BD, (20-24kg)→ 3ml BD **Paed tablet: (10-13kg)**→ 2 tabs morning + 1 tab night, (**14-24kg**)→ 2 tabs BD, (**25-34kg**)→ 3 tabs BD, (**≥35kg**)→ 4 tabs BD **Adult tablet**: (**≥35kg**) 2 tablets BD [= 4 paed tablets BD = 5ml BD of solution] Cautious use with hepatic insufficiency. Diarrhoea, headache, nausea, vomiting	**Tab (adult):** LPV/RTV 200/50mg (yellow) **Tab (paed):** LPV/RTV 100/25mg (yellow) **Liq**: 5ml = LPV/RTV 400/100mg (clear) – Fridge (contains 42% ethanol and propylene glycol) - caution in neonates.	Do NOT use once daily **Liq:** Once opened can store out of fridge - discard 42 days after opening	**Liq**: Take with food **Tab**: Take with or without food (no data in <18 years of age)
ATV + COB *Evotaz®*	**≥12 years & ≥35kg**: 1 tablet OD **Check for additional drug interactions when switching from ritonavir to cobicistat**	**Tab**: ATV 300mg/COB 150mg (pink)	Do not cut/crush	Take with food
DRV + COB *Rezolsta®*	**≥12 years & ≥35kg**: 1 tablet OD **Check for additional drug interactions when switching from ritonavir to cobicistat**	**Tab**: DRV 800mg/COB 150mg (pink)	Do not cut/crush	Take with food
Pharmacokinetic boosters – Not to be used as single PI				
Ritonavir (RTV)	**Child: For boosting other PIs see specific drug.** ≥**15kg: For boosting other PIs**: 100mg OD or 100mg BD e.g. with ATV or DRV Nausea, diarrhoea, flushing, rash	**Tab**: 100mg (white) **100mg sachets for oral suspension:** (see package insert for administration)	Do not cut/crush	Take with food
Cobicistat (COB) *Tybost®* *Also see FDCs*	**≥6 years & >25kg:** 150mg OD ***Check for additional drug interactions when switching from ritonavir to cobicistat*** Nausea, sleep disturbance, headache, dizziness, vomiting, diarrhoea, abdominal pain, flatulence, dry mouth, rash	**Tab**: 150mg (orange) Also see FDCs.	Do not cut/crush. Do not use in pregnancy – lower PI exposure (use RTV)	Take with food
Single-pill FDCs: Cross-reference with component drugs for full side-effects and advice				
DTG + 3TC + ABC *Triumeq®*	***Test HLA-B*5701 before starting, do not give abacavir if HLA-B*5701 +ve*** **≥25kg**: 1 tablet OD	**Tab:** DTG 50mg/3TC 300mg/ABC 600mg (pale grey/purple)	Can be cut/crushed. Can be used even if VL>100,000	Take with or without food. See DTG
ELV+COB+TAF+FTC *Genvoya®*	**≥6 years & ≥25kg**: 1 tablet OD	**Tab**: ELV 150mg/ COB 150mg/ TAF 10mg / FTC 200mg/(light green)	Can be cut. Do not crush	Take with food. Avoid antacids/mineral supplements with polyvalent cations 4 hours before & after taking
ELV+COB+TD+FTC *Stribild®*	**≥12 years & ≥35kg**: 1 tablet OD	**Tab:** ELV 150mg/COB 150mg/ /TD 245mg/FTC 200mg (Green)	Do not cut/crush. Avoid in GFR<70mL/min	
BIC + TAF + FTC **Bictegravir (BIC)** *Biktarvy®*	**Licensed ≥18 years** **≥6 years & ≥25kg**:1 tablet OD *(refer to PVC)* Bictegravir: headache, diarrhoea, nausea, rash, mood changes	**Tab:** BIC 50mg/TAF 25mg/FTC 200mg (Purplish-brown)	**Seek advice for co-administration with rifamycins & antacids/mineral supplements containing polyvalent cations** Do not cut/crush	Take with or without food
RPV + TAF + FTC **Rilpivirine (RPV)** *Odefsey®*	**≥12 years or ≥35kg**: 1 tablet OD ***Rilpivirine single agent*: ≥12 years & ≥35kg:** 25mg OD with solid food >533 calories Rilpivirine: Headache, dizziness, mood changes, diarrhoea (less frequent than EFV,) see TD/FTC	**Tab:** RPV25mg/TAF 25mg/FTC 200mg (grey) **Tab:** Rilpivirine (*Eudrant*) 25mg (white/off-white)	Do not cut/crush. Avoid in VL>100,000 copies/ml. PPIs and rifampicin contraindicated (significantly↓RPV plasma levels). Seek advice if mycobacterial co-infection.	Take with food. RPV AUC 40% lower on empty stomach. If dyspepsia, use Gaviscon or ranitidine 12-hours apart from Eviplera dose
RPV + TD + FTC *Eviplera ®*	**≥12 years & ≥35kg**: 1 tablet OD	**Tab:** RPV 25mg/TD 245mg/FTC 200mg/ (pale pink)		
TD + FTC + EFV *Generic (Atripla®)*	**≥ 35kg:** 1 tablet OD	**Tab**: TD 245mg /FTC 200 mg /EFV 600mg	Do not cut/crush	Take on empty stomach, preferably at bedtime
DRV+COB+TAF+FTC *Symtuza®*	**≥12 years & ≥35kg**: 1 tablet OD	**Tab**: DRV 800mg/COB 150mg/TAF 10mg/FTC 200mg (Yellow/yellow-brown)	Can be cut. Do not crush	Take with food
RPV + DTG *Juluca®*	**Licensed ≥18 years** **≥12 years & ≥35kg**: 1 tablet OD *(refer to PVC)*	**Tab:** RPV 25mg/DTG 50mg (pink)	Can be cut/crushed	Take with food (>533kcal) See DTG & RPV
3TC + DTG *Dovato®*	**≥12 years & ≥40kg:** 1 tablet OD *(refer to PVC - Individual drug components have demonstrated safety at these doses from ≥25kg)*	**Tab:** 3TC 300mg/DTG 50mg (white)	Can be cut/crushed	Take with or without food. See DTG & 3TC
DOR + 3TC + TD *Delstrigo®*	**≥18 years:** 1 tablet OD ***Doravirine single agent*: ≥18 years:** 100mg OD	**Tab**: DOR 100mg/3TC 300mg/TD 245mg (yellow) **Tab:** DOR 100mg (white)	Do not cut/crush	Take with or without food
Supportive care				
Co-trimoxazole *Septrin®*	***PCP prophylaxis: Daily dosing preferred*** **(3-5kg)**→ 120mg OD**, (6-13kg)**→ 240mg OD**, (≥14kg)**→ 480mg OD	**Tab**:480mg (white) **Liq**: 240mg/5ml(paed), 480mg/5ml(adult)		Take with or without food

The PAEDIATIC VIRTUAL CLINIC (PVC) takes place on the 1st Thursday of the month. Please consider referring any child initiating ART, with virological failure/resistance, hepatitis, malignancy, TB, atypical mycobacterial infection, requiring simplification or on older more toxic drugs for review. Email: caroline.foster5@nhs.net

***** Prescribers retain responsibility for all prescribing decisions, including funding arrangements. Prescribing should be in line with CHIVA/BHIVA guidelines, NHS England commissioning, local policy and formulary restrictions may apply*****

Important information: Doses may not be as per license and have been referenced literature and trial data. Full prescribing information should always be reviewed concomitantly with this table. Patients with renal/liver impairment may require dose modification, discuss with a pharmacist. To ensure accurate dosing always use oral/enteral syringes to measure liquid medicines. Prescribers should round up doses to the nearest 'sensible' measurable volume/dose to facilitate simple administration. Always check potential drug interactions between all ARVs and with concomitant therapy, see www.hiv-druginteractions.org. TDM is available for majority classes of ARV including NRTI's, NNRTI's, PIs & Integrase Inhibitors - available via www.Lab21.com

This table was prepared as the consensus view of the Imperial College Healthcare Trust Family Clinic August 2020. The table is intended to be used by practitioners experienced in paediatric HIV care. Please do not use this outside these recommendations.

The table will be reviewed by August 2022 Tel: Family clinic: 020-3312-6349, Paed HIV Pharmacist: 020-3312-7617 Contributors: Caroline Foster, Hermione Lyall, Gareth Tudor-Williams, Neil Tickner Please email feedback to: ntickner@nhs.net Version 6