

Imperial College Healthcare NHS Trust - Paediatric HIV Drug Dosing Chart 2014

(This is not for Neonatal post exposure prophylaxis – see BHIVA guidelines)

Agent	Recommended Dosage, Side effects and contraindications	Formulation	Comment	Intake Advice
Nucleoside Reverse Transcriptase Inhibitors (NRTI): lactic acidosis, steatosis, Lipoatrophy (effects of mitochondrial toxicity)				
Lamivudine (3TC) <i>Epivir^R / Zeffix^R</i> <i>ViiV/GSK</i>	Child: (≥3months) 4 mg/kg BD or 8mg/kg OD. Well tolerated round up doses. Max dose 300mg per day Paed dosing for 150mg tab: (14-21kg) → ½ tab BD or 1 tab OD, (>21-30kg) → ½ tab AM + 1 tab PM or 1½ tab OD, (>30kg) → 1 tab BD or 2 tab OD. Adult: (≥12 years) 150mg BD or 300mg OD Nausea, diarrhoea, headache, fatigue.	Tab: 100mg (<i>Zeffix</i>) (orange) 150mg (<i>Epivir</i>) (white) scored 300mg (<i>Epivir</i>) (grey) Generic tabs scored appearance varies Liq: 10mg/ml (<i>Epivir</i>) (30 day expiry)	Arrow study suggests full dose 3TC is safe/effective if >25kg; Reduce in renal failure	Can be given with food. Can be crushed and mixed with small amount of water or food.
Abacavir (ABC) <i>Ziagen^R ViiV</i>	Child: (≥3months) 8mg/kg BD or 16mg/kg OD. Well tolerated round up doses. Max dose: 600mg per day Paed dosing for 300mg tab: (14-21kg) → ½ tab BD or 1tab OD, (>21-30kg) ½ tab AM + 1 tab PM or 1½ tab OD, (>30kg) → 1 tab BD or 2 tabs OD Adult: (≥12 yrs): 300mg BD or 600mg OD Test HLA-B*5701 before starting, do not give abacavir if HLA-B*5701 +ve. Hypersensitivity reactions (usually within 1 st 6 weeks of therapy), rare in Afro-Caribbeans, require careful evaluation. If proven, not to be given again Nausea, fever, headache, diarrhoea, rash, fatigue, respiratory symptoms	Tab: 300mg (yellow) scored Liq: 20mg/ml (60-day expiry)	Arrow study suggests full dose ABC may be safe/effective if >25kg; but no long term safety data yet.	Can be given with food. Can be crushed and mixed with small amount of water or food.
Zidovudine (AZT) <i>Retrovir^R ViiV</i>	Child: 180mg/m ² BD. (max. dose 300mg BD) IV dosing: 60-80mg/m ² ods (May be given in 2 divided doses) Paed dosing for capsules: (8-14kg) → 100mg BD, (15-23kg) → 100mg morning + 200mg night, (24-34kg) → 200mg BD (>35kg) → 250mg BD. Adult: 250mg BD (300mg BD for Combivir or Trizivir combinations). Granulocytopenia and/or anaemia, nausea, headache, myopathy, hepatitis, nail pigmentation, neuropathy.	Cap: 100mg(white) 250mg (white/blue) - Generic Caps – Appearance may vary Liq: 10mg/ml – Sugar free (30 day expiry) IV infusion: 10mg/ml (20ml vial)	Do not give with stavudine.	Can be given with food. Capsules can be opened and dissolved in water.
Emtricitabine (FTC) <i>Emtriva^R Gilead</i>	Child: (≥ 3months) 6mg/kg OD of the oral solution. (max. dose 240mg OD) Adult: Capsule (≥33kg) 200mg OD; oral solution: 240mg OD Headache, diarrhoea, nausea, rash, skin discolouration on palms and soles (more prominent in non-Caucasians).	Cap: 200mg (blue/white)≡240mg liq Liq: 10mg/ml - Fridge (Discard 45 days after opening) (not bioequivalent to caps)	Reduce dose in renal impairment. Do not give with 3TC	Can be administered with food
Didanosine (ddl) <i>Videx^R BMS</i>	Child: (3 – 8 months) 100mg/m ² BD, (≥8months) 200mg/m ² OD, (max dose 400mg OD) Paed capsule dosing: (20-25kg) → 200mg OD, (25-60kg) → 250mg OD, (>60kg) → 400mg OD Adult: (<60kg) → 250mg OD, (≥60kg) → 400mg OD. Adult with TDF: (<60kg) → 200mg OD, (>60kg) → 250mg OD Peripheral neuropathy, pancreatitis, nausea, diarrhoea. Lipodystrophy, lactic acidosis and pancreatitis enhanced in combination with stavudine, non-cirrhotic portal hypertension ** Switch any child arriving in UK to a less toxic ARV -consider referring case to VIRTUAL CLINIC (see details overleaf)**	Enteric coated caps: 125/200/250/400 mg (white) Liq: 10mg/ml (refrigerate, stable for 30 days). Extemporaneous preparation made with Mylanta or Extra strength Maalox antacid suspensions	Consider 20-40% dose reduction when given with TDF – seek expert advice. Food restrictions not required with TDF	Liq: Give on empty stomach (2 hrs after and 1hr before food or milk) Caps can be opened and sprinkled on a spoonful of food e.g. yogurt.
Stavudine (d4T) <i>Zerit^R BMS</i>	Switch any child arriving in UK on this to alternative NRTI; consider referring to VIRTUAL CLINIC Peripheral neuropathy, pancreatitis, hepatitis, gastrointestinal disturbances, headache, rash. Lipodystrophy, lactic acidosis and pancreatitis enhanced in combination with didanosine			
AZT + 3TC <i>Combivir^R ViiV</i>	Child: (14-21kg) ½ tab BD (21-30kg) ½ tab AM + 1 tab PM (≥30kg) 1 tab BD Adult >30kg → 1 tab BD	Tab: AZT 300mg/3TC 150mg (White) Generic tab scored – appearance varies	Can be cut or crushed just before giving	Can be given with food
ABC + 3TC <i>Kivexa^R ViiV</i>	Child: Not recommended <25kg use individual ARV's Adult >25kg → 1 tab OD	Tab: ABC 600mg/3TC 300mg (Orange)	See 3TC and ABC	Can be given with food
ABC + 3TC + AZT <i>Trizivir^R ViiV</i>	Child: Not recommended <30kg use individual ARV's Adult: >30kg → 1 tab BD	Tab: AZT/ABC/3TC 300/300/150 (green)	Not to be cut	Can be given with food
Nucleotide Reverse Transcriptase inhibitors (NtRTI): As NRTI's				
Tenofovir (TDF) <i>Viread^R Gilead</i>	Child powder dosing: (2 – 12yrs) 8mg/kg OD; 1 scoop = 40mg: (10-12kg) → 2 scoops (scp), (12-14kg) → 2.5 scp, (14-17kg) → 3 scp, (17-19kg) → 3.5 scp, (19-22kg) → 4 scp, (22-24kg) → 4.5 scp, (24-27kg) → 5 scp, (27-29kg) → 5.5 scp, (29-32kg) → 6 scp, (32-34kg) → 6.5 scp, (34-35kg) → 7 scp, (≥35kg) 7.5 scp. Paed tab dosing: (17-22kg): 150mg OD, (23-28kg) 200mg OD, (28-34kg) 250mg OD, (≥35kg): 300mg OD Adult: (≥35kg) 300mg OD. All doses based on Tenofovir Disoproxil Fumarate. Headache, nausea, vomiting, renal tubular dysfunction, bone demineralization, exacerbations of hepatitis on discontinuation. Important: Renal function, blood and urine monitoring. Consider TDM.	Tab: TDF 300mg (blue) Note: 300mg tenofovir disoproxil fumarate (TDF) ≡ 245mg tenofovir disoproxil (TD), Paed tab TDF (TD): 150mg (123mg), 200mg (163mg), 250mg (204mg) Powder: TDF 40mg/1g per scoop	See ddl Dose reduction in renal impairment. Careful monitoring with LPV/r -	Can be administered with food Can disperse tabs in water or juice but unpalatable
TDF + FTC <i>Truvada^R Gilead</i>	Child: Not recommended <35kg use individual ARV's Adult: (> 35kg) → 1 tab OD	Tab: TDF/FTC 300/200mg (blue)	Can be cut	With or without food.
Non-nucleoside Reverse Transcriptase Inhibitors (NNRTI) Do TDM for both NNRTs and PIs in combination. Do TDM with Rifamycins. Long half life consider cover with PI after stopping				
Nevirapine (NVP) <i>Viramune^R</i> <i>Viramune-XR^R</i> <i>Boehringer</i>	Child lead in period: 150-200mg/m ² OD for 14 days (max 200mg/day), then if no rash or LFT abnormalities increase to 150-200mg/m ² BD or 300-400mg/m ² OD – Max 400mg/day - PR tabs not suitable for lead in period. Adult: 200mg OD for 14 days, then increase to 200mg BD or 400mg OD if no rash or LFT abnormalities. Rash, hepatitis, Steven-Johnson – usually first 12 weeks. Check hepatic function at 2, 4, & 8 weeks.	Tab: 200mg (white) [Generic 200mg tab due in 2014/15] Liq: 10mg/ml (Shake well) Prolonged-release tabs: (all yellow) 50mg, 100mg, 400mg	Normal release tabs can be cut. Normal dose in renal impairment. Do not cut PR tabs	Can be administered with food.
Efavirenz (EFV) <i>Sustiva^R</i> <i>BMS</i>	Child ≥3months-3 years: (3.5-5kg) → 100mg OD (open 50mg capsules), (5-7.5kg) → 150mg OD (open 50mg capsules), (7.5-15kg) → 200mg OD (open 50mg capsules), 3 to 5 years (13-15kg) 200mg OD (liq: 270mg), (15-20kg) → 250mg OD (liq 300mg), (20-25kg) → 300mg OD (liq: 360mg), (25-32.5kg) → 350mg OD (liq: 450mg), (32.5-40kg) → 400mg OD (liq: 510mg) Adult: (>40kg) → 600mg OD (liq: 720mg) Mood changes, vivid dreams (common but usually short lived), hypercholesterolemia, rash, gynaecomastia	Cap: 50mg (Yellow/White) 200mg (yellow) Tab: 600mg (yellow) [Generic tab due in 2014/15] Liq: 30mg/ml Not bioequivalent to tabs or caps (Colourless to yellow) NB: No PK on liquid for child < 13kg- Use capsules as sprinkles	No dose adjustments in renal impairment Tablet can be cut Higher EFV levels in CYP2B6-TT Genotype	Preferably before bedtime. Caps can be opened and added to liquids or 1-2 teaspoons of food. High fat meal can ↑ EFV AUC by 30%
Etravirine (ETR) <i>Intelence^R Janssen</i>	Child: (>6 years): (16-20kg) → 100mg BD, (21-25kg) → 125mg BD, (25-30kg) → 150mg BD, (>30kg) → 200mg BD **NOT for 1st line HAART** -seek specialist advice Adult: (>30kg) 200mg BD Investigational adult dose: 400mg OD Diarrhoea, flatulence, abdominal pain, headache, pruritis, rash. Rash usually resolves in 1-2 weeks	Tab: 100mg, 200mg dispersible (white) 25mg dispersible available on compassionate use	AUC decreased by 50% if taken on empty stomach	Take with food. Tablet disperses in water.
TDF + FTC + EFV <i>Atripla^R Gilead</i>	Child: individual TDF, FTC & EFV – max. dose as for adults Adult: (> 35kg) → 1 tab OD	Tab: TDF 300mg /FTC 200 mg /EFV 600mg (pink)	Do not cut	With or without food. See EFV and TDF
RPV + TDF + FTC <i>Rilpivirine (RPV)</i> <i>Eviplera^R Gilead</i>	Child: No data in children /adolescents **Approval required by virtual clinic before use** Adult: 1 tab OD MUST be with main meal (>500 calories) Rilpivirine: Headache, dizziness, mood changes, diarrhoea (less frequent than EFV,) see TDF/FTC	Tab: TDF 300mg/FTC 200mg/RPV 25mg Tab: Rilpivirine (Eudrant) 25mg	Do not cut Avoid in VL>100,000 copies/ml	Take with food RPV AUC 40% lower on empty stomach

Agent	Recommended Dosage, Side effects and contraindications	Formulation	Comment	Intake Advice
Protease Inhibitors (PI): Lipodystrophy, hyperlipidaemia, diabetes mellitus, important interactions with a range of other drugs. If on dual PI, NNRTI or TB therapy need TDM				
Lopinavir/r (LPV/r) <i>Kaletra^R</i> <i>(Abbvie/Abbott)</i>	Child Liquid: (<15kg)→300mg/m ² BD, (>15kg)→230-300 mg/m ² BD. Dose in mls = (300 or 230) x SA Paed tab dosing: (15-25kg)→ 2 tabs BD, (25-35kg)→ 3 tabs BD, (>35kg)→ 4 tabs BD. 80 Adult: (400mg BD) = 2 adult tabs BD = 4 paed tabs BD = 5ml BD of solution **All doses based on LPV** **PLEASE SPECIFY FORMULATION WHEN PRESCRIBING**	Tab (adults): LPV/RTV 200/50mg (yel) Tab (paed): LPV/RTV 100/25mg (yel) Liq: 5ml = LPV/RTV 400/100mg (clear) – Fridge (contains 42% ethanol and propylene glycol) - caution in neonates.	Licensed 230 mg/m ² /BD → lower trough levels in children, clinicians may consider using 300mg/m ² /BD.	Liq: Give with or after food Tab: Can be given with or without food (no data in <18 years of age)
Darunavir (DRV) <i>Prezista (Janssen)</i>	Child: 3- 6 years with no DRV-resistance mutations DRV 35mg/kg/OD + RTV 7mg/kg/OD: (10-11kg)→360mg OD + RTV 64mg OD, (11-12kg)→ 400mg + RTV 64mg OD, (12-13kg) → 420mg + RTV 80mg OD, (13-14kg)→460mg + RTV 80mg OD, (14-15kg) → 500mg + RTV 96mg, 6 years: (15-30kg) → 600mg OD + RTV 100mg OD, (30-40kg) 675mg OD + RTV 100mg OD, (≥40kg) →800mg + RTV 100mg OD, (≥1 DRV-resistance mutation 3-6 years):(10-11kg)→ 200mg BD + RTV 32mg BD, (11-12kg)→ 220mg BD + RTV 32mg BD, (12-13kg)→ 240mg BD + RTV 40mg BD, (13-14kg)→ 260mg BD + RTV 40mg BD, (14-15kg)→ 280mg BD + RTV 48mg BD ≥6 years: (15-30 kg) → 375mg DRV BD + RTV 50mg BD, (30-40 kg) → 450 mg DRV BD + RTV 60mg BD, (>40kg) → 600mg DRV BD + RTV 100mg BD. Adult: (DRV experienced): 600mg BD + RTV 100mg BD. (No DRV-resistance mutations): 800mg OD + RTV 100mg OD Rash, nausea, diarrhoea, headache. Contains sulphonamide moiety–check allergies esp Co-trimoxazole (Septrin)	Tab: 75mg (white), 150mg (white), 400mg (light orange), 600mg (orange) and 800mg (dark red). Liq: 100mg/ml available on Compassionate use from Janssen.	DRV and ETV levels reduced in combination - Seek specialist advice	Give with or after food
Atazanavir (ATV) <i>Reyataz^R</i> <i>(BMS)</i>	Child: (>6years) (15-20kg)→150mg OD + RTV 100mg OD, (20-40kg)→ 200mg OD + RTV 100mg OD, (>40kg)→ 300mg OD + RTV 100mg OD Adult: 300mg OD with RTV 100mg OD Nausea, headaches, rash, jaundice and elevated total bilirubin	Caps: 150mg (dark blue/light blue) 200mg (dark blue) 300mg (dark blue/red)	H ₂ antagonists and PPIs contraindicated (↓ATV exposure), use Gaviscon if necessary.	Give with food.
Ritonavir (RTV) <i>Norvir^R</i> <i>(Abbott)</i>	Child: For boosting other PIs see specific drug. Not recommended as a single PI. Adult: For boosting other PIs: 100mg BD or 100mg OD e.g. with ATV or DRV Perioral paraesthesia, nausea, diarrhoea, flushing, rash, hepatitis with treatment dose	Tab: 100mg (white) Liq: 80mg/ml (contains 42% ethanol)- Store at room temp.	When purchasing ritonavir liquid consider relatively short expiry.	Give with or after food Chocolate milk may help with bitter taste.
Fosamprenavir (FOS) <i>Telzir^R</i> <i>(ViiV)</i>	Child: ARV-naïve: (2-5 years)→ 30mg/kg BD, (≥6 yrs)→30mg/kg BD (without RTV – see comment) or 18mg/kg BD (max. dose 700mg BD) with RTV 3mg/kg BD (max. dose 100mg BD) ARV-experienced: (≥6 years) 18mg/kg BD (max. dose 700mg BD) with RTV 3 mg/kg BD (max. dose 100mg BD) Adult: (≥18 yrs and >39kg): 1400mg BD or 700mg BD with RTV 100mg BD Rash, perioral parasthesia, nausea, diarrhoea	Tab: 700mg (pink) Liq: 50mg/ml (white/off-white)	Unboosted PIs not recommended unless intolerant to Ritonavir	Give with or after food to aid palatability of liquid Tablets – take without food
Fusion & Entry Inhibitors				
Enfuvirtide (T-20) <i>Fuzeon^R</i> <i>(Roche)</i>	Child: (6 -16 yrs): 2mg/kg BD sub-cut. (max. dose 90mg BD) **NOT for 1st line HAART** Adult: 90mg BD sub-cut injection Local injection site reactions common, less common bacterial pneumonia.	Inj: 108mg/1.1ml vial for subcutaneous injection (90mg/1ml) Clear	Limited data on IV dosing. SC route the preferred route	Subcut injection (upper arm, thigh abdomen) – see product information
Maraviroc (MVC) <i>Celsentri^R</i> <i>(Pfizer)</i>	Child: Insufficient data - seek specialist advice Adult: 150mg BD (with CYP3A4 inhibitor), 600mg BD (with CYP3A4 inducer), 300mg BD (with NVP) Investigational dose in Adult: 150mg to 300mg OD (with boosted PI) ** ONLY FOR CCR5 TROPIC VIRUS → ASSAY FOR CO-RECEPTOR TROPISM ** Nausea, diarrhoea, headache, dizziness, pruritus, insomnia, altered parameters (ALT, AST, Lipase, ANC)	Tabs: 150mg, 300mg (blue)	Always check dosing with pharmacy	With or without food
Integrase Inhibitors				
Raltegravir (MK518) <i>Isentress^R</i> <i>(MSD)</i>	Child: (4 wks-6 yrs): 6mg/kg/dose BD as Oral Suspension: (max 100mg BD) or Chewable tabs: (max 300mg BD) 3kg→1ml (20mg) BD, 4-5kg→1.5ml (30mg) BD, 6-7kg→2ml (40mg) BD, 8-10kg→3ml (60mg) BD, 11-13kg→4ml (80mg) BD or 3 x 25mg chewable tabs BD, 14-19kg→5ml (100mg) BD or 1 x 100mg chewable tab BD, 20-24kg→1½ x 100mg chewable tabs BD, 25-27kg→1½ x 100mg chewable tabs BD or 1 x 400mg film coated tab BD, 28-39kg→2 x 100mg chewable tabs BD or 1 x 400mg film coated tab BD, >40kg→3 x 100mg chewable tabs BD or 1 x 400mg film coated tab BD Film coated tab (note; not bioequivalent to above): (>6 years and >25kg) 400mg BD Adult: (≥16 yrs): 400mg BD Adult with Rifampicin: 800mg BD Nausea, dizziness, insomnia, rash, pancreatitis, elevated ALT, AST, Gamma GT	Oral suspension: 20mg/ml Tab: 400mg tabs (pink) Chewable tab: 25mg and 100mg (can be split)	Suspension and Chewable tabs are not bioequivalent to Standard tabs	With or without food Avoid indigestion remedies.
ELV/COB/TDF/FTC <i>Stribild^R</i> <i>(Gilead)</i>	Child: No data in children /adolescents Adult: 1 tab OD with food Elvitegravir/Cobisistat: diarrhoea, rarely nausea, elevated serum creatinine with decrease in GFR	Tab: ELV 150mg/COB 150mg/FTC 200mg/TDF 300mg (Green)	Avoid in GFR <70mL/min.	With or after food
Dolutegravir (DOL) <i>Tivicay^R</i> <i>(ViiV)</i>	Child: >12 years >40kg Integrase Naïve: 50mg OD Integrase-experienced: 50mg BD With strong CYP3A/UGT1A EFV, FOS/r, Rifampicin; 50mg BD Hypersensitivity reaction (severe rash, fever, malaise, muscle/joint pain, oral blisters, conjunctivitis, facial oedema), insomnia, headache, transaminase elevation in underlying hepatitis B or C.	Tab: 50mg tabs available on named-patient program for triple class resistant/intolerant EMA approval late 2014		With or after food (High fat significantly increases absorption)
Co-trimoxazole <i>Septrin^R</i> <i>Bactrim^R</i>	PCP prophylaxis - All doses OD 3 x weekly (Monday, Wednesday, Friday) or ½ the dose given daily; Child: 3-5.9kg→120mg OD, 6-13.9kg→240mg OD, 14-24.9kg→480mg OD, >25kg→960mg OD	Tab: 480mg, 960mg (white) Liq: 240mg/5ml (paed),480mg/5ml (adult)		Can be administered with food
Selected Antiretrovirals used overseas – Not exhaustive list	[AZT 300 mg + 3TC 150 mg + NVP 200 mg] → Duovir-N, ZIDOVEX-L-N. [AZT 300 mg + 3TC 150 mg]→ Duovir, Virocom, Zidlam. [d4T 30 mg + 3TC 150 mg + NVP 200 mg]→ GPO-VIR S 30, STAVEX-30 LN, TRIOMUNE-30, VIROLANS 30, [d4T 40 mg + 3TC 150 mg + NVP 200 mg] → GPO-VIR S 40, TRIOMUNE-40 VIROLANS 40 STALANEV. [d4T 30 mg + 3TC 150 mg]→ LAMISTAR 30, LAMIVIR-S-30, VIROLIS 30. [d4T 40 mg + 3TC 150 mg]→ LAMISTAR 40 LAMIVIR-S-40, VIROLIS 40. Pedimune baby (NVP 50mg, D4T 6mg, 3TC 30mg) Pedimune Jnr (NVP 100mg, D4T 12mg, 3TC 60mg). Stocrin (EFV), Aluvia (red tab)(LPV/r), [ABC] →Abamune, Viro, [ABC+3TC] → Epzicom, ABEC-L, Abamune-L [TDF] → Tenvir, [TDF+3TC] → Tenvir-L, [TDF+FTC+EFV] → Trioday [TDF+FTC] → Tenvir-EM [TDF+FTC+EFV] → Viraday,			

The PAEDIATRIC VIRTUAL CLINIC takes place on the 1st Thursday of the month, please consider referring any child on older or more toxic drugs for review and simplification

email Dr Caroline Foster; Caroline.Foster@imperial.nhs.uk

Important notes: To ensure accurate dosing always use oral syringes to measure liquid medicines.

Doses are not necessarily manufacturers' recommended dose and may not be licensed in children. (Doses may change – please check)

Always check potential drug interactions with concomitant therapy see www.hiv-druginteractions.org

TDM available for classes of ARV including NNRTIs, Entry/ Fusion/Integrase Inhibitors available via www.Lab21.com

Mosteller surface area equation:

$$BSA(m^2) = \sqrt{\frac{\text{height(cm)} \times \text{weight(kg)}}{3600}}$$