# PARACETAMOL – For Analgesia

| Trade Name | Oral: Children’s Panadol, Paracetamol  
| IV: Perfalgan |
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| Class | Antipyretic and analgesic |
| Mechanism of Action | Inhibits prostaglandin synthesis within the CNS. Acts peripherally by blocking pain impulse generation. Relieves fever by central action in hypothalamic heat regulating centre. |
| Indications | **Oral and Rectal:**  
1. Fever  
2. Mild to moderate pain  
**IV:** *(Change to oral or pr dosing as soon as possible)*  
1. Postoperative pain where the oral and rectal routes are not possible or the onset of action from the rectal route is deemed to be too slow  
2. As an adjunct to allow weaning of morphine |
| Contraindications | Hypersensitivity to paracetamol  
Hepatic failure  
G6PD deficiency can lead to haemolytic anaemia |
| Precautions | Caution in renal failure  
Caution with hepatocellular insufficiency  
Dehydration  
Clearance falls with unconjugated hyperbilirubinaemia |
| Supplied As | **Oral:** Liquid – 120mg/5mL, (250mg/5mL also available)  
**Rectal:** Suppository – 25mg, 50mg  
**IV:** 10mg/mL in 100mL glass vials |
| Dilution | Oral and Rectal: Nil  
IV: can be diluted in 0.9% saline and 5% dextrose if needed |
| Dosage and Interval | **Corrected GA** | <37 weeks | ≥ 37 weeks |
| Oral: | 10mg/kg/dose  
6 hourly | 15mg/kg/dose  
6 hourly |
| Rectal: | 20mg/kg/dose  
8 hourly | 20mg/kg/dose  
6 hourly |
| IV: **Loading dose, then,**  
**Maintenance dose** | 15mg/kg/dose  
7.5mg/kg /dose  
6 hourly | 15mg/kg/dose  
10mg/kg/dose  
6 hourly |

Review IV dosing after 72 hours and if to continue check LFTs. Trough paracetamol levels are not routinely needed. Change to oral or rectal dosing as soon as possible.
| Administration | Oral: Liquid  
| Rectal: Suppository  
| If part of the suppository is required, the suppository should be cut lengthwise (through the tip).  
| In small babies < 1.2kg the rectal dose will be less than a 25mg suppository so if dosing is too hard to calculate then recommend not using the rectal route to avoid any chance of overdosing  
| IV: Infusion over 15 minutes |

| Intravenous Dose Compatible With | Sodium chloride 0.9% and 5% dextrose.  
| Do NOT mix with other medications or IV fluids.  

| Intravenous Dose Incompatible With | Enzyme inducers such as phenobarbitone, phenytoin, carbamazepine, isoniazid, zidovudine  

| Monitoring | IV:  
| Review IV dosing after 72 hours and if continuing check LFTs  
| Trough paracetamol levels are not routinely needed but if there are any concerns about toxicity then the trough level for analgesia to target is < 60micromol/L* (equates to 10mg/L)  

| Stability | Oral and Rectal: Months  
| IV: If diluted, administer within 30 minutes.  
| Vials are preservative free and are for single use only.  

| Storage | Oral and Rectal: Store at room temperature  
| IV: Do not store in the fridge, store at room temperature  
| Single use only. Complete IV infusion within 1 hr of opening the vial  

| Adverse Reactions | Pain at injection site  
| Rash, fever, bone marrow depression  
| Beware of accumulation if used regularly  
| Hepatotoxicity in neonates rare.  
| Use with caution in hepatic or renal failure  
| **Overdose:** hepatotoxicity, renal tubular acidosis, metabolic acidosis, encephalopathy. Monitor LFT and coag profile and treat with n-acetylcysteine  

| Metabolism | Oral: Peak serum concentration occurs approximately 60 min after an oral dose. First-pass hepatic metabolism 10-40% of oral dose. Most metabolised in the liver, primarily by sulphation and excreted in the urine. Half life 5hrs in infants over 32 wks, up to 11 hrs in more immature infants.  

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| IV: | 100% bioavailability. Onset of pain relief within 5-10 mins, peak effect at 1 hour | Metabolised in the liver by conjugation and metabolism by cytochrome P450. Excreted in the urine 90% |
| Rectal: | Absorption is slower and more variable. | |

**Comments**

- IV: Licensed for use in term newborns.
- Safety and efficacy data have not been established on preterm infants
- See Neofax for treatment of serious overdose

**References**

2. Medsafe data sheet
3. *Princess Margaret Hospital Perth. Paracetamol protocol June 2008*
9. Allegaert K et al. Not all iv paracetamol formulations are created equal… *Pediatr Anaesthesia* 2007;17, 809-18.

**Updated By**

- J McKie November 2001
- P Schmidt & B Robertshawe January 2005
- A Lynn, B Robertshawe June 2010
- A Lynn, B Robertshawe Nov 2012 (re-order profile)
- A Lynn June 2014 (decrease GA to 28 weeks)
- A Lynn, B Dixon 2018 (combined PO,PR,IV, decreased GA, new PDA drug profile)