

# Paracetamol IV Prescribing Guideline

## 1.0 Guideline Statement

The guideline covers all clinical aspects which must be considered when prescribing paracetamol for administration by the intravenous route. The guideline has been developed following analysis of incidents involving IV paracetamol reported through the Trust Datix incident reporting tool.

The document provides guidance on dosing of adult and paediatric patients, and patients in defined high risk groups.

## 2.0 Accountabilities

All prescribers working for The Royal Wolverhampton NHS Trust must adhere to this guidance.

Clinical directors and matrons are responsible for ensuring dissemination of the contents of this document to all clinical staff.

## 3.0 Guideline Detail

### 3.1 Indications

- First-line management of mild to moderate pain and pyrexia when other routes of administration are not available or are contraindicated.

### 3.2 Notes

- There are significant patient safety risks attached to the use of IV paracetamol. Failure to prescribe the correct dose may result in paracetamol induced liver toxicity, which could lead to hepatic failure and death.
- Care must be taken when considering oral or intravenous doses of paracetamol, particularly for patients below 50kg.
- An accurate weight of the patient should be noted prior to dosing. If it is not possible to weigh the patient and they are visibly over 50 kg, this should be documented.
- Oral and IV doses are not equivalent. Care must be taken when switching from one route to another. If doses have already been administered by one route, these must be considered as part of the total recommended daily dose.
- A history of recent previous paracetamol use should be noted.

### 3.3 High Risk Patients

The following groups are considered high risk, therefore the dose should be reduced:

- Renal impairment: eGFR<30mL/minute
- Hepatocellular insufficiency (e.g. Cirrhosis grade Childs B or above)\*
- Chronic alcoholism\*
- Chronic malnutrition (low reserves of hepatic glutathione)\*

- Dehydration\*

**Ensure that the dose given is appropriate for the age and weight of the patient. There is a risk of accidental overdose, especially in infants and neonates.**

### 3.4 Adult IV Paracetamol Dosing

Patient weight	Dose per administration	Dosage interval		Maximum Daily Dose	Volume per administration	MAXIMUM volume of solution for infusion per administration (based on upper weight limits)
> 50 kg	1g	4 hours		4g	100mL	100mL
>50kg with risk factors for hepatotoxicity*	1g	4 hours		3g	100mL	100mL
Less than 50kg, OR renal impairment with creatinine clearance <30ml/min	15 mg/kg	6 hours		60mg/kg not exceeding 3g	1.5mL/kg	75mL

\*indicates patient groups identified with additional risk factors as listed above

### 3.5 Paediatric IV Paracetamol Dosing

Prescribe according to mg/kg in infants and children (see table below) keeping strictly to maximum daily doses.

Patient weight	Dose per administration	Dosage interval	Maximum Daily Dose	Volume per administration	MAXIMUM volume of solution for infusion per administration (based on upper weight limits)
Pre-term neonate	For specialist prescribing only – see additional neonatal paracetamol IV monograph				
Term newborn infants, infants, toddlers, and children weighing <10kg	7.5-10mg/kg	6-8 hourly	30mg/kg/24hrs	0.75ml – 1.0ml/kg	7.5-10ml
Children weighing >10kg and <50kg	15mg/kg	4 - 6 hourly	60mg/kg/24hrs	1.5mL/kg	75ml
Children ≥50kg	1g	4-6 hourly	4g/24hrs	100ml	100ml
Children ≥50kg with risk factors for hepatotoxicity	1g	4-8 hourly	3g/24hrs	100ml	100ml

<b>Children with renal impairment: creatinine clearance &lt;30mls/min</b>	As above, depending on weight	<u>6 hours</u>	As above, depending on weight		
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### 3.6 Administration

Paracetamol infusion should be administered using a volumetric pump suitable for the area of use.

#### **To avoid risk of overdose:**

Take care during prescribing and administration as confusion between milligram (mg) and millilitre (ml) may occur, which could cause accidental overdose and death.

Paracetamol 10mg/ml solution for infusion is 10mg paracetamol per 1 mL solution.

1. Ensure correct dose is prescribed
2. Ensure dose is appropriate to weight and age of patient
3. Check other medicines administered do not contain paracetamol (this includes undertaking an accurate drug history) to avoid risk of overdose
4. Consider other risk factors e.g. chronic alcoholism, chronic malnutrition.
5. When writing prescriptions, include the MAXIMUM dosage frequency appropriate for the patient

#### 4.0 Equipment Required

Paracetamol IV must be administered using a volumetric pump suitable for the area of use.

#### 5.0 Training

No training required.

#### 6.0 Financial Risk Assessment

1	Does the implementation of this document require any additional Capital resources	No
2	Does the implementation of this document require additional revenue resources	No
3	Does the implementation of this document require additional manpower	No
4	Does the implementation of this document release any manpower costs through a change in practice	No
5	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programs or allocated training times for staff.	No
	Other comments	N/A

#### 7.0 Equality Impact Assessment

Not applicable.

#### 8.0 Maintenance

The guidance will be reviewed by the Trust Medication Safety Officer in line with the Trust approved frequency, or sooner if clinical need suggests otherwise.

#### 9.0 Communication and Training

The document will be made available on the Trust Intranet Site: Adult Medical Guidelines and Children's Services – Other Clinical Resources.

## 10.0 Audit Process

Criterion	Lead	Monitoring method	Frequency	Evaluation
Datix Incidents	Medication Safety Officer	Datix search for incidents involving *paracetamol*	6 monthly	Medication Safety Group

## 11.0 References

The following resources were accessed for information regarding indication for use, dosing guidance, caution and high risk patient groups.

[www.medicines.org.uk/emc](http://www.medicines.org.uk/emc) Summary of Product Characteristics for Paracetamol 10mg/mL solution for infusion (Baxter Healthcare Ltd), last updated on emc 14/07/2021

[www.bnf.nice.org.uk/drug/paracetamol.html](http://www.bnf.nice.org.uk/drug/paracetamol.html)

[www.bnfc.nice.org.uk/drug/paracetamol.html](http://www.bnfc.nice.org.uk/drug/paracetamol.html)

## Part A - Document Control

Procedure/ Guidelines number and version  1.0	<b>Title of Guideline:</b>  <b>Paracetamol IV Prescribing Guideline</b>	<b>Status:</b>  Final		<b>Author:</b>  Trust Medication Safety Officer  <b>For Trust-wide Procedures and Guidelines Chief Officer Sponsor:</b>  Chief Medical Officer
Version / Amendment History	Version	Date	Author	Reason
	1.0	October 2020	See above	New Guideline
<b>Intended Recipients:</b> All prescribers employed by RWT.				
<b>Consultation Group / Role Titles and Date:</b> Medication Safety Group (MSG) Medicines Management Group (MMG)				
<b>Name and date of group where reviewed</b>		As above Trust Policy Group – January 2022		
<b>Name and date of final approval committee(if trust-wide document)/ Directorate or other locally approved committee (if local document)</b>		Medicines Management Group Approved 7 <sup>th</sup> September 2021 Trust Management Committee – January 2022		
<b>Date of Procedure/Guidelines issue</b>		February 2022		
<b>Review Date and Frequency</b> (standard review frequency is 3 yearly unless otherwise indicated – see section 3.8.1 of Attachment 1)		January 2025		

<p><b>Training and Dissemination:</b> The document will be available on the Trust Intranet site, and disseminated via the Clinical Directors and Matrons at first use.</p>	
<p><b>Publishing Requirements: Can this document be published on the Trust's public page:</b>  <b>Yes</b></p>	
<p><b>To be read in conjunction with:</b> Not Applicable</p>	
<p><b>Initial Equality Impact Assessment: Completed: No</b> <b>Full Equality Impact assessment (as required): Not Applicable</b> If you require this document in an alternative format e.g., larger print please contact Policy Administrator 85887 for Trust- wide documents or your line manager or Divisional Management office for Local documents.</p>	
<p><b>Contact for Review</b></p>	Trust Medication Safety Officer
<p><b>Monitoring arrangements</b></p>	Medication Safety Group Datix Incidents
<p><b>Document summary/key issues covered.</b> This document provides guidance for the safe prescribing of intravenous paracetamol to all patient groups including patients at high risk of paracetamol toxicity and paediatrics.</p>	
<p><b>Key words for intranet searching purposes</b></p>	Paracetamol IV

**(Part B) Ratification Assurance Statement**

**Name of document: Paracetamol IV Prescribing Guideline**

**Name of author: Paula Haydon      Job Title: Medication Safety Officer**

I, the above named author confirm that:

- The Guideline presented for ratification meet all legislative, best practice and other guidance issued and known to me at the time of development of the said document.
- I am not aware of any omissions to the said document, and I will bring to the attention of the Executive Director any information which may affect the validity of the document presented as soon as this becomes known.
- The document meets the requirements as outlined in the document entitled Governance of Trust- wide Strategy/Policy/Procedure/Guidelines and Local Procedure and Guidelines(OP01).
- The document meets the requirements of the NHSLA Risk Management Standards to achieve as a minimum level 2 compliance, where applicable.
- I have undertaken appropriate and thorough consultation on this document and I have detailed the names of those individuals who responded as part of the consultation within the document. I have also fed back to responders to the consultation on the changes made to the document following consultation.
- I will send the document and signed ratification checklist to the Policy Administrator for publication at my earliest opportunity following ratification.
- I will keep this document under review and ensure that it is reviewed prior to the review date.

Signature of Author: Paula Haydon

Date: 16.11.2021

Name of Person Ratifying this document (Chief Officer or Nominee):

Job Title:

Signature:

- I, the named Chief Officer (or their nominee) am responsible for the overall good governance and management of this document including its timely review and updates and confirming a new author should the current post-holder/author change.

To the person approving this document:

Please ensure this page has been completed correctly, then print, sign and email this page only to:  
The Policy Administrator

## IMPLEMENTATION PLAN

To be completed when submitted to the appropriate committee for consideration/approval

<b>Procedure/Guidelines number and version</b>	<b>Title of Procedure/Guidelines</b> Paracetamol IV Prescribing Guideline	
<b>Reviewing Group</b>	Medicines Management Group Policy Group	<b>Date reviewed:</b> September 2021 January 2022
<b>Implementation lead: Print name and contact details</b>		
<b>Implementation Issue to be considered (add additional issues where necessary)</b>	<b>Action Summary</b>	<b>Action lead / s (Timescale for completion)</b>
Strategy; <b>Consider</b> (if appropriate) 1. Development of a pocket guide of strategy aims for staff 2. Include responsibilities of staff in relation to strategy in pocket guide.	Not applicable	
Training; Consider 1. Mandatory training approval process 2. Completion of mandatory training form	Not applicable	
Development of Forms, leaflets etc.; Consider 1. Any forms developed for use and retention within the clinical record <b>MUST</b> be approved by Health Records Group prior to roll out. 2. Type, quantity required, where they will be kept / accessed/stored when completed	Not applicable	
Procedure/Guidelines communication; Consider 1. Key communication messages from the policy / procedure, who to and how?	Guideline to be shared via Trust Brief, Clinical Directors, Matrons, Pharmacy Team Brief	Paula Haydon January 2022
Financial cost implementation Consider Business case development	Not applicable	
<b>Other specific issues / actions as required e.g. Risks of failure to implement, gaps or barriers to implementation</b>	Link to guidance added to ePMA template when guideline approved	Paula Haydon & Trust ePMA team January 2022