

Guideline for prescribing weight-adjusted oral paracetamol in adults

Recommendations			
Suggested dosing guide for patients considered to be at risk of paracetamol toxicity ⁴ Clinical judgement must always be used when dosing patients with risk factors.			
	Adults weighing ≤ 40kg	Adults weighing 41kg to 49kg	Adults weighing 50kg & greater
Oral dose and frequency of administration	500mg Four times daily	500mg - 1g Three times daily	500mg - 1g Four times daily
Maximum daily Dose	2g	3g	4g

Irrespective of weight where the patient's eGFR is less than 30ml/min/1.73m², the interval between dosing must be a minimum of 6 hours.

Key Prescribing Points:-

- Low body weight is not directly correlated with an increased risk of oral paracetamol toxicity. However it is an indication that the patient may have other conditions, such as chronic malnutrition / anorexia or high alcohol consumption, which are known indications for considering a dose reduction of oral paracetamol.
- Medical review is required for patients identified as at risk who are taking regular paracetamol. This review should consider the dosage intervals and maximum daily doses as outlined in the table above.
- In all patients, the lowest dose which manages the patient's pain should be used. If recommending a dose reduction in a patient, please monitor pain control and offer alternate management strategies if needed.
- Ensure no other paracetamol containing product has been administered within the last 4-6 hours. E.g. Co-dydramol/Co-codamol.
- Patients taking regular combination analgesia (e.g Co-codamol, Co-dydramol) should be reviewed and if a reduction in paracetamol dose is indicated individual components should be prescribed.

Background

Some patients may be at increased risk of experiencing toxicity at therapeutic doses, particularly those with a body-weight under 50 kg and those with risk factors for hepatotoxicity. Clinical judgement should be used to adjust the dose of oral paracetamol in these patients.¹ Co-administration of enzyme-inducing medications may also increase toxicity; paracetamol doses should be reviewed and reduced.¹

The NICE Clinical Knowledge Summary could not find any clinical guidance or evidence that low body-weight alone, in the absence of other risk factors, causes hepatotoxicity^{2,3}

The summary of product characteristics (SPC) for oral formulations of paracetamol recommend a dose for adults of 0.5 to 1g every 4–6 hours up to a maximum of 4g in 24 hours with no dose reduction advised for older people.²

The risk of liver problems associated with paracetamol overdose is well established, but liver damage from standard doses of paracetamol in healthy people is rare. However, the pharmacokinetics of paracetamol may change with age and studies have shown a reduction in clearance of paracetamol associated with age and frailty. In addition, older people may have one or more risk factors, making them more prone to adverse effects of paracetamol, including liver damage. Risk factors for hepatotoxicity from paracetamol include low body weight, cardiac, pulmonary or renal insufficiency, co-administration of medicines that induce liver enzymes, hepatitis and chronic alcohol consumption. It is therefore prudent to consider whether a lower dose and/or reduced frequency of administration of paracetamol might be appropriate for frail people with low body weight and other risk factors for hepatotoxicity. As with all analgesics, there should be a regular clinical review of their effectiveness and assessment of adverse effects.^{2,3}

As a result of this Telford and Wrekin Medicines Management Team has developed guidance to aid prescribing for patients who may be at risk.

Risk Factors for hepatotoxicity with paracetamol:

- Low body weight plus elderly/frail
- Cardiac, pulmonary or renal insufficiency,
- Chronically malnourished patient
- Acutely malnourished patient e.g. patients that haven't eaten for several days
- Cachexia
- Alcoholism or regular consumption of alcohol in excess of recommended amounts (particularly if nutritionally compromised)
- Hepatitis C
- Long-term treatment with liver enzyme-inducing drugs e.g. Carbamazepine, Phenytoin, Primidone, Rifampicin, Phenobarbital, St John's Wort.

¹ BNF 74 September – March 2018 bnf.nice.org.uk

² BMJ Article <https://dtb.bmj.com/content/56/6/69> What does of paracetamol for older people?

³ Leeds Mdicines Information http://www.leedsformulary.nhs.uk/docs/MC_LowBodyWeightParacetamolDose.pdf

⁴ Paracetamol SPC <https://www.medicines.org.uk/emc/product/5164/smpc>

⁵ 3T's Formulary Guidelines On Appropriate Weight-Adjusted Dosing Of Oral and Intravenous Paracetamol https://www.gwh.nhs.uk/media/151017/4-guidelines_on_weight-adjusted_dosing_paracetamol.pdf