

Enteral Paracetamol Dosing in Overweight Children

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Background

Nursing staff often query prescribed paracetamol doses that exceed the age-banded British National Formulary for Children (BNFc) dose.

Often enteral paracetamol is prescribed at a dose of 15mg/kg.

No clear local guidance exists on how, or when, doses of paracetamol should be adjusted when a child is overweight.

Incident report forms have been submitted in relation to this issue.

Aim

To produce a clear local guidance on when, and how, to adjust paracetamol doses for overweight children.

Our findings

In a survey of nurses on our ward, 100% responded that paracetamol dosing in overweight children was an issue that they would like further clarification on.

Confidence in checking the dose of paracetamol prescribed for an overweight child was on average 6.8 out of 10 (**Fig. 2.**)

Paediatric pharmacists in the other Health and Social Care Trusts in Northern Ireland were contacted. They also had no set guidance on how to dose paracetamol in overweight children.

A literature search revealed that specific guidance on when and how to adjust paracetamol doses was lacking (1,2,3). We looked at different methods to calculate ideal body weight (4,5).

Our actions

We then created a flow chart (**Fig. 1**), to guide staff on dosing enteral paracetamol in overweight children. This included how to calculate an ideal body weight using the Moore method (1,4), and when this should be done. This was based on guidance from UK Medicines Information (1). Overweight children receive a dose based on ideal body weight.

Follow up

Six months after the introduction of the flowchart, nursing staff completed a survey.

Confidence in checking the dose of paracetamol prescribed for an overweight child had increased from 6.8 out of 10 to 9 out of 10 (**Fig. 2**).

Nursing staff felt that the new flowchart was useful, with an average rating of 9.2 out of 10 (**Fig. 3**).

Anaesthetic colleagues and another paediatric ward in our trust welcomed the flowchart as they also had issues surrounding paracetamol dosing in overweight children.

Nursing confidence in checking paracetamol doses prescribed for overweight children before and after introduction of the flowchart



Figure 2

Perceived usefulness of paracetamol dosing flowchart to nursing staff

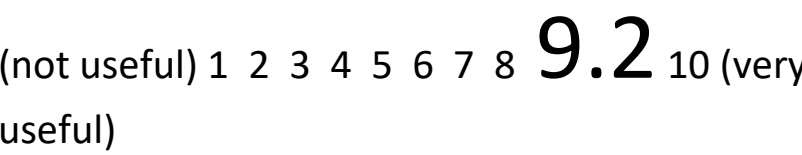


Figure 3

Conclusion

Overweight children now receive a paracetamol dose based on an ideal body weight. Staff have specific guidance, available at all times, to show them how to do this.

Conflicts of interest

None to declare.

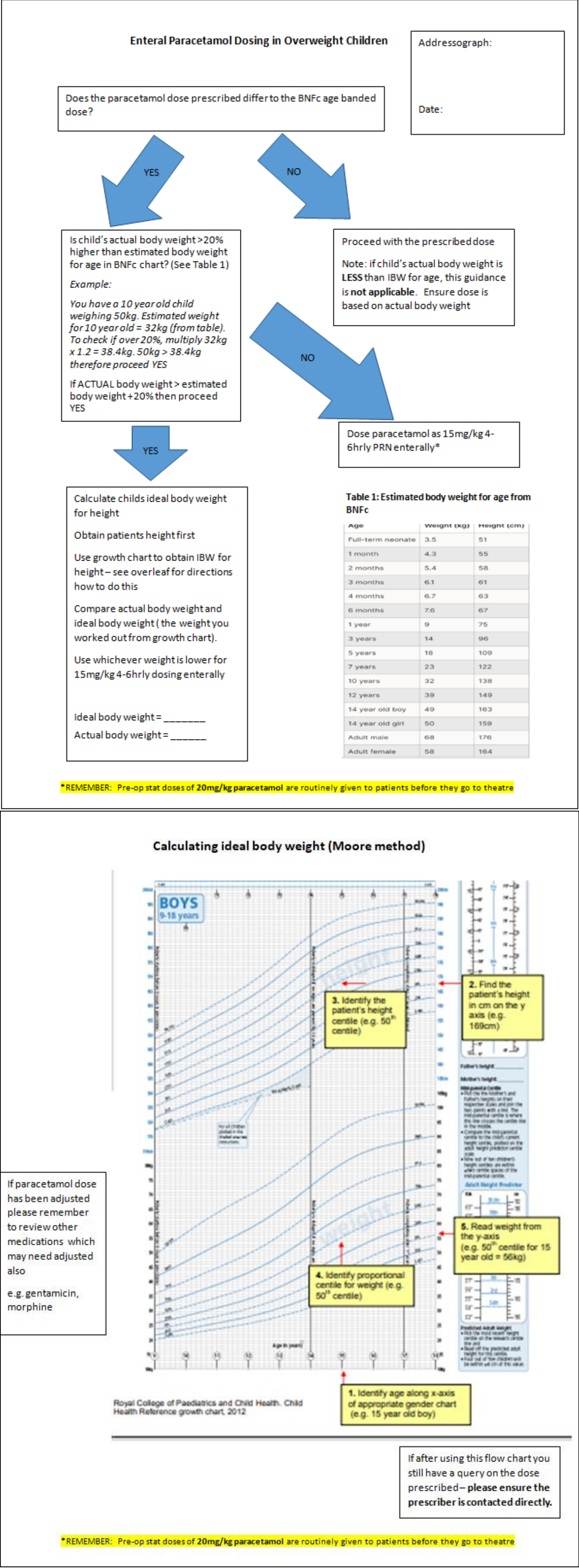


Figure 1 Flowchart for dosing enteral paracetamol

References:

- How should medicines be dosed in children who are obese. UK Medicines Information, 2021
- Prescribing in paediatric obesity: methods to improve dosing safety in weight-based dose calculations. *Archives of Disease in Childhood - Education and Practice* 103:274-277. Callaghan LC, 2018
- Drug Dosing in Children with Obesity: A Narrative Updated Review. *Italian journal of pediatrics* 48.1: 1–14. Gaeta, Francesca et al, 2022
- Evaluation of Different Methods Used to Calculate Ideal Body Weight in the Pediatric Population. *J Pediatr Pharmacol Ther.* 24(5):421-430. Kang K, Absher R, Farrington E, Ackley R, So TY, 2019
- Ideal Body Weight in Children. *Nutrition in clinical practice.* 22.2: 240–245. Phillips S, Edlbeck A, Kirby M, Goday P, 2007