Queensland Paediatric Emergency Care

Skill Sheets

Medication Dosing in Extremes of Weight

Paediatric medications are routinely dosed according to actual (measured) body weight. In children who are considered obese (measured body weight 20% above ideal body weight for age), dosing may need to be adjusted. Instead, ideal body weight using Moore's Method may be used. This guide provides steps to determine which children require dose adjustment and the different methods that may be required. It will also identify some of the common medications that require dose adjustment in obesity - please note this list is not exhaustive. Additional guidance is also provided for paracetamol dosing.

Common Measures of Weight Used in Medication Dosing

Measure	How to calculate
Total Body Weight (TBW)	Measured weight in kilograms (kg)
Body Mass Index (BMI)	TBW in kg / Height in meters squared
Ideal Body Weight (IBW)	Moore's Method - see below
Adjusted Body Weight (AdjBW)	IBW + [Adjustment Factor (0.3) x (TBW-IBW)]

Medications Requiring Dose Adjustment in Obesity

Medications	Method	Notes
Aciclovir	Ideal Body Weight	IBW initially, dose adjust within 24 hours
Digoxin	Ideal Body Weight	IBW initially, then according to therapeutic drug monitoring
Furosemide Oxycodone	Ideal Body Weight	IBW initially, then titrate
Voriconazole	Adjusted Body Weight	AdjBW initially, then according to therapeutic drug monitoring
Enoxaparin	Other	Seek Haematologist advice, utilise Anti-Xa for adjustments

Medications	Method
Benzodiazepines, Metoclopramide, Paracetamol (see below), NSAIDs	Ideal Body Weight
Amikacin, Gentamicin, Tobramycin, Dexmedetomidine, Fentanyl	Adjusted Body Weight

Paracetamol Dosing

A child who is ≥ 12 years who weighs ≥ 50kg can safely receive adult paracetamol doses: 1g four times per day (maximum 4g in 24 hours). In all other children, their dose must be calculated using 15mg/kg (maximum dose 1g) up to four times per day. This is based on Total Body Weight or Ideal Body Weight if obese.

Explanation of Moore's Method

Moore's Method is a way of calculating IBW in children using growth charts. The child's measured height is plotted against a height-for-age centile chart to gain the child's height centile. This centile is then translated onto a weight-for-age growth chart to provide an estimated ideal body weight.

Process of Moore's Method

1 Determine Requirement for Dose Adjustment

1. Check the suggested weight for age using the CREDD resource.
2. Calculate the upper weight limit for age = CREDD suggested weight for age x 1.2
3. If the patient's actual measured body weight is higher than the calculated upper weight limit in the previous step, ideal body weight should instead be used.

2 Determine Height/Length Centile

Measure the patient's actual height/length. Determine height centile using the appropriate height-for-age growth chart:

0-2 years

WHO Growth Charts

2-20 years

CDC Growth Charts

3 Determine IBW Using Moore's Method

Using the height/length centile from the previous step, find the corresponding weight on the same centile on the weight-for-age growth chart. **Use the derived weight as the IBW for relevant dose calculations.**

Example

12-month male with a TBW of 14.5kg

Step 1:
Upper weight limit = 10kg (CREDD) x 1.2 = 12kg
The patient weighs more than the upper weight limit. IBW required.

Step 2:
Measure patient's length, for this example we will use 79cm.
Plot the height on a height-for-age centile chart:
79cm = 91st centile

Step 3:
Plot the centile on the weight-for-age centile chart:
91st centile = 11.2kg

The IBW is 11.2kg and medications should be dosed accordingly.

ALERT

Documentation in ieMR: TBW must always be recorded under "Weight Measured" in ieMR interactive view. This weight will auto populate at the top of the patient's medical record. Medications should be prescribed using the IBW or AdjBW with the rationale and calculations documented in the order sentence of the prescription and in the clinical notes. Never record an IBW/AdjBW as a measured weight in ieMR.

References:

This Queensland Paediatric Skill Sheet was developed by the Emergency Care of Children working group (funded by the Queensland Emergency Department Strategic Advisory Panel) with the help of the following resources:

Atyia, S., Smetana, K., Tong, M., Thompson, M., Cape, K., & May, C. (2023). Evaluation of Dexmedetomidine Dosing in Obese Critically Ill Patients. Journal of Pharmacy Practice, 36(1) 67-73. DOI: 10.1177/08971900211021578

Queensland Health. (2023). Guideline for Safe Paracetamol Use. Accessed 4 December 2025 from https://www.health.qld.gov.au/__data/assets/pdf_file/0016/1211443/guideline-safe-paracetamol-use.pdf

Sydney Children's Hospital. (2013). Drug Dosing for Overweight and Obese Patients. Accessed 4 December 2025 from https://resources.schn.health.nsw.gov.au/policies/policies/pdf/2013-7034.pdf

UK Medicines Information Group. (2021). How should medicines be dosed in children who are obese? Accessed 4 December 2025 from https://nppg.org.uk/wp-content/uploads/2024/08/UKMIQA-drug-dosing-in-childhood-obesity.pdf

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- Supporting consumer rights and informed decision making in partnership with healthcare practitioners including the right to decline intervention or ongoing management.
- Advising consumers of their choices in an environment that is culturally appropriate and which enables comfortable and confidential discussion. This includes the use of interpreter services where necessary.
- Ensuring informed consent is obtained prior to delivering care.
- Meeting all legislative requirements and professional standards.
- Applying standard precautions, and additional precautions as necessary, when delivering care.
- Documenting all care in accordance with mandatory and local requirements.

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