

INPATIENT INSULIN DOSE PRESCRIBING GUIDE

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- The range within which a dose of insulin can be both effective and safe is narrow. Too small or too large a dose may be dangerous, and so care and attention to detail when prescribing insulin are essential.
- The “Walking Wounded” Patient Insulin Guideline is an insulin regimen based on Body Weight.
- This regimen uses an Insulin Total Daily Dose (TDD) of 0.75 U/kg/day, and should either be used:
 - from the time of diagnosis (for those presenting well enough to eat and drink normally) *or*
 - on transitioning from intravenous to injected insulin therapy (for those presenting in ketoacidosis).
- This regimen is very useful *prior to* training in carbohydrate counting and Blood Glucose correction.

USING CALCULATION TABLES TO PRESCRIBE CARBOHYDRATE AND CORRECTION BOLUS INSULIN DOSES:

- The “Basal-Bolus” system of insulin prescription (TDD approx. 1 U/kg/day) is used for diabetes patients:
 - transitioning from the Walking Wounded regimen, prior to discharge home, and
 - established with the condition, and already using a Basal-Bolus regimen at home.
- **BASAL DOSES** are relatively set, at approx. 35% of Total Daily Dose (usually once daily at Dinner).
- **BOLUS DOSES** vary according to four factors, including:
 - Carbohydrate eaten (grams)
 - Current Blood Glucose (mmol/l)
 - Carb: Insulin Ratio (CR): (g/Unit) = Carbs eaten per Unit insulin to maintain BG after eating.
 - Insulin Sensitivity (IS): (mmol/l/Unit) = BG fall per Unit insulin.
- Carb: Insulin Ratio and Insulin Sensitivity are *prescribed*, rather than prescribing a particular insulin dose.
- Bolus doses can be directly calculated using the prescribed variables, but may also be calculated, rounded and displayed using a Table, as below, to minimise error and standardise dosage.

CARBOHYDRATE DOSE AND CARB: INSULIN RATIO:

- Carbohydrate Dose (Units) =
 - Carbohydrate amount eaten (grams) ÷
 - Carb: Insulin Ratio (grams/Unit).
- Carbohydrate Dose Table at Right takes into account Carbohydrate amount eaten and Carb: Insulin Ratio.
- Calculated Carbohydrate Dose (6 Units) = where:
 - “Carbohydrate Eaten” row (32 grams) meets
 - “Carb Ratio” column (5 g/Unit).

		CARBOHYDRATE: INSULIN RATIO (gr)							
		2	2.5	3	3.5	4	4.5	5	6
CARBOHYDRATE	5-9	2.5	2	1.5	1	1	1	1	0.5
	10-14	5	4	3	2.5	2.5	2	2	1.5
	15-19	7.5	6	5	4	3.5	3	3	2.5
	20-24	10	8	6.5	5.5	5	4	4	3
	25-29	12	10	8	7	6	5.5	5	4
	30-34	15	12	10	8.5	7.5	6.5	6	5
	35-39	17	14	11	10	8.5	7.5	7	5.5

CORRECTION DOSE AND INSULIN SENSITIVITY:

- Correction Dose (Units) =
 - (Current BG – Target BG) (mmol/l) ÷
 - Insulin Sensitivity (mmol/l/Unit).
- Note that there are *two* calculations necessary here:
 - Required BG Fall = (Current BG – Target BG) *and*
 - Dose = Required BG Fall ÷ Insulin Sensitivity.
- Correction Dose Table at Right *already takes into account* Required BG Fall = 6.5 mmol/l: (= Current BG (12.5 mmol/l) – Target BG (6 mmol/l)).
- Calculated Correction Dose (3 Units) = where:
 - “Current Bld Glucose” row (12.5 mmol/l) meets
 - “Insulin Sensitivity” column (2 mmol/l/Unit).

		INSULIN SENSITIVITY (mmol/l fall per U)							
		IS =	1	1.2	1.5	1.7	2	2.5	3
CURRENT BLOOD	7-7.9	1	0.5	0.5	0.5	0.5	0.5	-	-
	8-8.9	2	1.5	1	1	1	1	0.5	0.5
	9-9.9	3	2.5	2	1.5	1.5	1.5	1	1
	10-10.9	4	3	2.5	2	2	2	1.5	1
	11-11.9	5	4	3	2.5	2.5	2.5	2	1.5
	12-12.9	6	5	4	3.5	3	3	2	2
	13-13.9	7	5.5	4.5	4	4	3.5	2.5	2

- While it will not usually be expected that staff outside the GGC Children’ Diabetes Service (CDS) would routinely prescribe “Basal-Bolus” insulin dose regimens, when required it would be appreciated if insulin prescriptions could be rewritten/amended as recommended in this document or following appropriate guidance. Thank you.