



Government of South Australia
SA Health

INTRAVENOUS INSULIN INFUSION TYPE 2 DIABETES CHART - ADULT

MR-INF-T2D

Affix patient identification label in this box

U.R. Number:
Surname:
Given Name:
Second Given Name:
D.O.B.: Sex/Gender:
Visit No. (if applicable):

Site/Facility:

Blood Glucose (BG) Frequency <input type="checkbox"/> Hourly <input type="checkbox"/> 2 Hourly	Blood Ketone (BK) Frequency <input type="checkbox"/> Hourly <input type="checkbox"/> 2 Hourly	Dr's Name: Signature: Phone No: Review need for IV Insulin Infusion daily before 12:00 pm. If continuing, rewrite on a new page.	Target BG Range: Adult Inpatient 7.0 - 10.0mmol/L Obstetric Inpatient _____ mmol/L
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20..... Day/Month	Time	BG Record (mmol/L)									
		20 15 10 5 4 3 2									
For out of target results, refer to rapid detection and response instructions.											
BG mmol/L											
Insulin Infusion Rate (Units/hour)											
Column 1, 2, 3											
Nurse(s) initials											
BK mmol/L Hypo intervention (✓)											
MO notified (✓)											

Intravenous Insulin Hourly Rate Algorithm TYPE 2 DIABETES

Column 1		Column 2		Column 3	
BG mmol/L	Unit/hour	BG mmol/L	Unit/hour	BG mmol/L	Unit/hour
BG less than 4.0mmol/L is hypoglycaemia		BG less than 4.0mmol/L is hypoglycaemia		BG less than 4.0mmol/L is hypoglycaemia	
less than 6.4	Off	less than 6.4	Off	less than 6.4	Off
6.5 - 7.9	0	6.5 - 7.9	1.0	6.5 - 7.9	2.0
8.0 - 9.9	1.0	8.0 - 9.9	2.0	8.0 - 9.9	4.0
10.0 - 11.4	1.5	10.0 - 11.4	3.0	10.0 - 11.4	5.0
11.5 - 12.9	2.0	11.5 - 12.9	4.0	11.5 - 12.9	6.0
13.0 - 14.9	3.0	13.0 - 14.9	5.0	13.0 - 14.9	8.0
15.0 - 16.4	3.0	15.0 - 16.4	6.0	15.0 - 16.4	10.0
16.5 - 17.9	4.0	16.5 - 17.9	7.0	16.5 - 17.9	12.0
18.0 - 20.0	5.0	18.0 - 20.0	8.0	18.0 - 20.0	14.0
greater than 20.0	6.0	greater than 20.0	12.0	greater than 20.0	16.0

Patients always begin in the green column - Column 1.

Moving up

At each BG measurement ask the following two questions:

- Is the BG 10.0mmol/L or less?
- Did BG drop by 2.5mmol/L - 4.9mmol/L in the last hour?

If the answer to **either question** is **YES** - remains in the current column.

If the answer to **both questions** is **NO** - moves up **one column**.

Call MO if BG falling at a rapid rate of 5.0mmol/L or more in past hour.

Moving Down

If BG less than 4.0mmol/L OR insulin suspended OR BG is 15.0mmol/L or less OR BG falling at a rapid rate of 5.0mmol/L or more in past hour - moves down **one column**.

NURSING ADMINISTRATION RECORD (IV Insulin Infusion)

Insulin (units) and Sodium Chloride 0.9% (mL)	Date/time commenced	Nurse 1	Nurse 2	Time stopped	Volume infused (mL)
50units Insulin Neutral (Actrapid®) + 49.5mL Sodium Chloride 0.9%					
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Indications for use

- Hyperglycaemic hyperosmolar state (HHS) in a new diagnosis or in pre-existing type 2 diabetes.
- Surgical management of pre-existing type 2 diabetes.
- Fasting or unable to tolerate food and fluids in pre-existing type 2 diabetes.
- Peripartum management of pre-existing type 2 diabetes.
- FeSS Sugar Protocol (Stroke management procedure & protocol guideline).

Not for use in;

- Paediatric patients: consultation with the MedSTAR paediatrician or paediatric service is recommended.

Blood glucose target & frequency

- Blood glucose (BG) target range during an IV Insulin Infusion is 7.0 – 10.0mmol/L for adult inpatients.
- BG target for obstetric patients is determined by the consulting physician: generally 6.0 – 10.0mmol/L.
- HHS: hourly BG monitoring is required for the duration of the IV Insulin Infusion.
- Fasting: hourly BG monitoring is required for the duration of the IV Insulin Infusion.
- Perioperative: hourly or 2hourly, refer to perioperative instructions.

Note: ePOC point of care system will read 'HI' if the BG result is greater than 30.0mmol/L and bedside Freestyle Optium Neo H blood glucose meter will read 'HI' if the BG is greater than 27.8mmol/L. Recording a 'HI' BG level when exact BG level is unknown is not recommended without MedSTAR or diabetes specialist advice.

Blood ketone monitoring & frequency

- Hourly blood ketone (BK) monitoring while ketones are present, otherwise monitor QID.
- Do not cease IV Insulin Infusion until BK are less than 0.6mmol/L and acidosis has resolved.

Rapid Detection and Response Instructions

Senior registered nurse (RN) review when:

- BG not returning to target at anticipated rate of 2.5 – 4.9mmol/L in last hour & column escalation is pending.
- BG is greater than 20.0mmol/L in any column.
- BG is less than 4.0mmol/L.
- When IV Insulin Infusion has been switched off and when resumed.

Multidisciplinary team (MDT) review when:

- BK not decreasing at anticipated rate of 0.5mmol/L per hour.
- BG is 15.0mmol/L or less, commence IV Glucose Infusion.
- Moving up one column.
- BG not decreasing at anticipated rate of 2.5 – 4.9mmol/L in last hour despite moving up one column or being in Column 3.
- 12units/hour is being used in Column 3.
- BG decreasing too fast (e.g. 5.0mmol/L or more in last hour).

Consult MedStar as may require transfer to HDU or ICU

Medical emergency response (MER) review when:

- BG is less than 4.0mmol/L and has not responded to the Hypoglycaemia Protocol oral treatment in 45 minutes.
- Drowsy, confused, unsafe to swallow, unresponsive or unconscious.
- Breathing rapidly or having difficulty breathing or complaining of severe abdominal pain.

Consult MedStar as may require transfer to HDU or ICU

Reviews

Record intervention below and note corresponding letter in intervention row on page 1.

	Initial	Designation
A		
B		
C		
D		
E		

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