All eligible patients **must** be within **24 hours** of admission ICU and likely to be ventilated for >24 hours. Diabetic emergencies (diabetic ketoacidosis; non-ketotic, hyperosmolar coma) are not suitable. Only measure blood glucose using a glucometer, not the gas machine.

Feeding or glucose

Run IV 50% glucose at **20 ml/hour** centrally until **full** enteral feeding or TPN is established. Full enteral feeding means feed is running at full target rate with minimal aspirates (usually after 4 hours, as per ICU feeding algorithm). Once **full** feeding established, wean 50% glucose infusion by 5 ml/h every hour until off.

Initial infusion rate

First blood glucose (mmol/l)	< 6.1	6.1-8	8.1-12	> 12.0
Starting insulin infusion rate (units/h)	0	1	2	3

Insulin-dependent diabetics should always have a minimum insulin infusion rate of ≥ 0.5 u/h.

Subsequent insulin dosing

Blood glucose (mmol/l)	Change rate of insulin infusion (units/h)
< 2.5	STOP INSULIN INFUSION. GIVE 50 ML 50% GLUCOSE; recheck BG every 15 min. After 1 h, recommence insulin according to the table in Section B.
2.5 – 3.9	STOP INSULIN INFUSION. GIVE 25 ML 50% GLUCOSE; recheck BG every 15 min. After 1 h, recommence insulin according to the table in Section B.
4 – 4.3	Reduce dose by 50%; measure BG every 15 min until BG >4.4 mmol/l
4.4 – 6.1 **Target range**	If BG lower than last measurement – reduce by 1 unit/h If BG lower by more than 50% of last measurement – reduce dose by 50% and check BG every 15 min (see section 2) If BG unchanged or higher than last measurement – no change
6.2 – 7.7	If BG lower than last measurement – no change If BG lower by more than 50% of last measurement – reduce dose by 50% and check BG every 15 min (see section 2) If BG unchanged or higher than last test – increase by 0.5 unit/h
7.8 – 11	If BG lower than last measurement – no change If BG lower by more than 50% of last measurement – reduce dose by 50% and check BG every 15 min (see section 2) If BG unchanged or higher than last test – increase by 1 unit/h
11.1 – 14	If BG lower than last measurement – no change If BG lower by more than 50% of last measurement – reduce dose by 50% and check BG every 15 min (see section 2) If BG unchanged or higher than last test – increase by 2 unit/h
≥ 14.1	Increase rate by 2 units/h. If BG > 14.1 for 3 consecutive tests, increase insulin rate by 50%, check BG every 15 min and call Physician.

How should blood glucose (BG) be monitored?

 i. *Only measure BG using a glucometer*

 ii. Check BG hourly until 3 consecutive values within the target range

 iii. Check BG 2 hourly thereafter for 24 h. If BG stable & within the target range, measure 4 hrly, providing no significant clinical change, & no change in nutritional intake

 iv. If any of the following occur, check BG hourly until 3 consecutive values within the target range:
- any change in insulin infusion rate
- significant change in clinical condition
- initiation or cessation of vasopressor or steroid therapy
- initiation or cessation of renal replacement therapy
- initiation, cessation or rate of change of nutritional support

 v. If BG < 4.4 mmol/l, measure every 15 min

When to stop intensive insulin therapy protocol?

❏ **STOP INSULIN** during <u>any interruption to enteral or parenteral feeding</u> (e.g. patient transfer to CT scan, prior to surgery, aspiration during feeding protocol). If restarting the protocol, insulin should commence at the start of the protocol once feeding re-established, or once 50% glucose infusion recommenced

❏ If the patient's treatment and / or condition necessitates frequent interruptions to the protocol, discuss with Consultant or Nurse-in-Charge about protocol discontinuation

❏ Stop protocol 4 hours prior to patient transfer outside ICU, but continue to monitor blood glucose at least hourly

❏ Stop protocol if arterial cannula removed

❏ Stop protocol and revert to conventional insulin therapy (or preadmission diabetic therapy, if any) 24 h prior to discharge from ICU

❏ Do not stop the protocol if patients are extubated, providing they have an arterial cannula *in situ.*
 <u>DOCUMENT ALL REASONS FOR DISCONTINUING THE PROTOCOL IN THE NOTES</u>