

Memorial Hospital	DATE	
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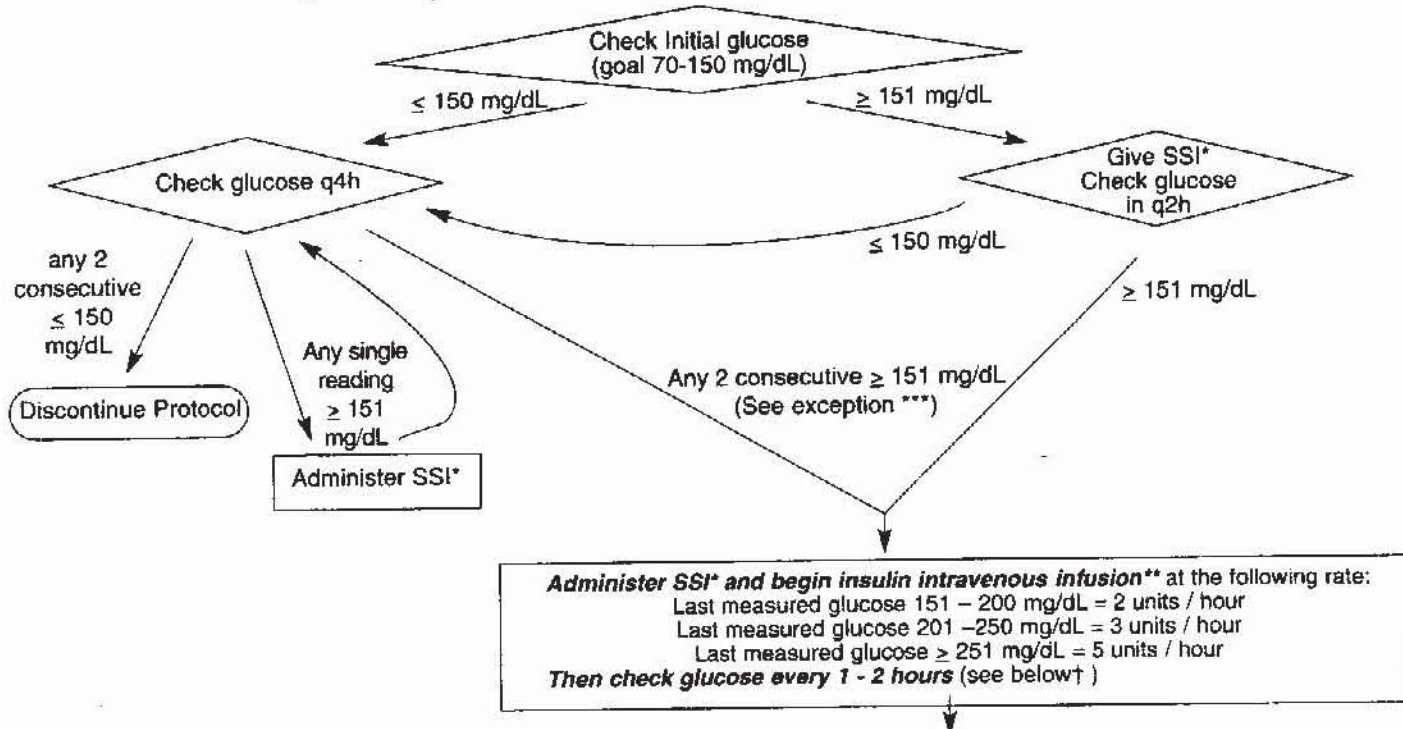
**INSULIN PROTOCOL FOR THE
CRITICAL CARE UNIT AND CVICU**

ALLERGY OR SENSITIVITY: <input type="checkbox"/> No <input type="checkbox"/> Yes, List Below HERBAL/ALTERNATIVE MEDS: <input type="checkbox"/> No <input type="checkbox"/> Yes, List Below	DIAGNOSIS: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; border-bottom: 1px solid black;">HEIGHT</td> <td style="width:50%; border-bottom: 1px solid black;">WEIGHT</td> </tr> <tr> <td></td> <td style="text-align: center;">lb. / kg</td> </tr> </table>	HEIGHT	WEIGHT		lb. / kg	ORDER RECORDED	SPECIAL ORDER COMPLETED	COMPLETED OR DISCONTINUED
HEIGHT	WEIGHT							
	lb. / kg							

DATE	TIME	DOCTOR'S ORDER AND SIGNATURE			DATE	TIME										
		1. Check glucose upon enrollment in protocol. (Protocol is NOT to be used for cases of diabetic ketoacidosis or hyperosmolar nonketotic state. Clinical judgment <i>always</i> takes precedence over protocol.)														
		2. If initial glucose \leq 150 mg/dL, check glucose every 4 hours THEN a) if two consecutive readings \leq 150 mg/dL, discontinue protocol b) if any readings \geq 151 mg/dL, administer sliding scale insulin*, c) if any three consecutive readings are \geq 151 mg/dL or any two consecutive readings \geq 301 mg/dL, administer sliding scale insulin* and start infusion**														
		3. If initial glucose is 151-300 mg/dL, administer sliding scale insulin*, and recheck glucose in 2 hours THEN a) if glucose at 2 hours remains \geq 151 mg/dL, administer sliding scale insulin*, recheck glucose in 2 hours, and if still \geq 151 mg/dL, administer sliding scale insulin* and start infusion** b) if glucose at 2 hours is \leq 150 mg/dL, then check glucose every 4 hours and proceed as per order 2														
		4. If initial glucose is \geq 301 mg/dL, administer sliding scale insulin* and recheck glucose in 2 hours THEN a) if glucose at 2 hours remains \geq 301 mg/dL, administer sliding scale insulin* and start infusion** b) if glucose 151-300 mg/dL, administer sliding scale insulin*, recheck glucose in 2 hours, and if still \geq 151 mg/dL, administer sliding scale insulin* and start infusion** c) if glucose at 2 hours is \leq 150 mg/dL, then check glucose every 4 hours and proceed as per order 2														
		5. *Sliding Scale Insulin (Human Regular Insulin): <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;">$<$50 mg/dL \rightarrow give 50mL D₅₀ (Dextrose 50%), notify M.D., stop insulin (if on infusion) and proceed as below</td> <td style="width:50%; text-align: right;">201-250 mg/dL \rightarrow 4 units S.C.</td> </tr> <tr> <td>50-59 mg/dL \rightarrow give 25mL D₅₀ (Dextrose 50%), stop insulin (if on infusion) and proceed as below</td> <td style="text-align: right;">251-300 mg/dL \rightarrow 6 units S.C.</td> </tr> <tr> <td>60-69 mg/dL \rightarrow stop insulin (if on infusion) and proceed as below</td> <td style="text-align: right;">301-350 mg/dL \rightarrow 8 units S.C.</td> </tr> <tr> <td>70-150 mg/dL \rightarrow zero units</td> <td style="text-align: right;">351-400 mg/dL \rightarrow 10 units S.C.</td> </tr> <tr> <td>151-200 mg/dL \rightarrow 2 units S.C.</td> <td style="text-align: right;">\geq 401 mg/dL \rightarrow 12 units S.C. and notify M.D.</td> </tr> </table>	$<$ 50 mg/dL \rightarrow give 50mL D ₅₀ (Dextrose 50%), notify M.D., stop insulin (if on infusion) and proceed as below	201-250 mg/dL \rightarrow 4 units S.C.	50-59 mg/dL \rightarrow give 25mL D ₅₀ (Dextrose 50%), stop insulin (if on infusion) and proceed as below	251-300 mg/dL \rightarrow 6 units S.C.	60-69 mg/dL \rightarrow stop insulin (if on infusion) and proceed as below	301-350 mg/dL \rightarrow 8 units S.C.	70-150 mg/dL \rightarrow zero units	351-400 mg/dL \rightarrow 10 units S.C.	151-200 mg/dL \rightarrow 2 units S.C.	\geq 401 mg/dL \rightarrow 12 units S.C. and notify M.D.				
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151-200 mg/dL \rightarrow 2 units S.C.	\geq 401 mg/dL \rightarrow 12 units S.C. and notify M.D.															
		6. **Insulin Infusion Begin infusion at 2 units/hour if glucose 151-200 mg/dL or 3 units/hour if glucose 201-250 mg/dL OR 5 units/hour if glucose \geq 251 mg/dL, then check glucose every 1-2 hours (see below 7f.) Titrate insulin infusion rate as follows: If glucose $<$ 50 mg/dL, then stop insulin, give 50 ml D ₅₀ (Dextrose 50%), and recheck glucose hourly. When glucose $>$ 120 mg/dL, restart with a rate at 50% of previous rate. If glucose 50-59 mg/dL, then stop insulin, give 25 ml D ₅₀ (Dextrose 50%), and recheck glucose hourly. When glucose $>$ 120 mg/dL, restart with a rate at 50% of previous rate. If glucose 60-69 mg/dL, then stop insulin and recheck glucose hourly. When glucose $>$ 120 mg/dL, restart with a rate at 50% of previous rate.														

Physician's Signature/Title: _____ Date/Time: _____
 Nurse's Signature: _____ Date/Time: _____

Insulin Protocol for Tight Glycemic Control **Memorial Hospital**
 (Excludes Diabetic Ketoacidosis or Hyperosmolar Nonketotic States)



Administer SSI* and begin insulin intravenous infusion at the following rate:**
 Last measured glucose 151 – 200 mg/dL = 2 units / hour
 Last measured glucose 201 – 250 mg/dL = 3 units / hour
 Last measured glucose \ge 251 mg/dL = 5 units / hour
Then check glucose every 1 - 2 hours (see below†)

Titrate insulin infusion rate as follows:

If glucose < 50 mg/dL, then stop insulin, give 50 ml D₅₀ (Dextrose 50%), and recheck glucose hourly. When glucose > 120 mg/dL, restart with a rate at 50% of previous rate.

If glucose 50 – 59 mg/dL, then stop insulin, give 25ml D₅₀ (Dextrose 50%), and recheck glucose hourly. When glucose > 120 mg/dL, restart with a rate at 50% of previous rate.

If glucose 60 – 69 mg/dL, then stop insulin, and recheck glucose hourly. When glucose > 120 mg/dL, restart with a rate at 50% of previous rate.

If glucose 70 – 150 mg/dL, then continue same rate.

If glucose ≥ 151 mg/dL and the **glucose value has fallen by at least 100 mg/dL** lower compared with the prior reading, then continue the same infusion rate.

If glucose ≥ 151 mg/dL and the **glucose value has not fallen by 100 mg/dL** compared to the prior reading, then raise the infusion rate by 3 units/hour if glucose > 300 mg/dL or by 2 units/hour if glucose 151 – 300 mg/dL.

If glucose ≥ 151 mg/dL and the **glucose value has not fallen by 100 mg/dL during three consecutive hourly readings**, then raise the infusion rate by 5 units/hour if glucose > 300 mg/dL or by 3 units/hour if glucose 151 – 300 mg/dL.

If tube feeds are abruptly discontinued, decrease insulin infusion rate by 50% and check glucose every hour for 4 hours then proceed per protocol.

If insulin infusion at 1 – 2 units per hour and glucose 70 – 150 mg/dL for four consecutive hours (for CVICU patients) or eight consecutive hours (for CCU patients), then administer Lantus® insulin 0.2 units/kg S.C. and discontinue insulin infusion in 2 hours. Starting tomorrow, continue Lantus® insulin 0.2 units/kg S.C. each evening.

*SLIDING SCALE INSULIN	
< 50 mg/dL	→ give 50 mL D ₅₀ (Dextrose 50%), notify M.D., and stop insulin infusion (if on infusion)
50 – 59 mg/dL	→ give 25 mL D ₅₀ (Dextrose 50%), and stop insulin infusion (if on infusion)
60 – 69 mg/dL	→ stop insulin (if on infusion)
70 – 150 mg/dL	→ zero units
151-200 mg/dL	→ 2 units S.C.
201-250 mg/dL	→ 4 units S.C.
251-300 mg/dL	→ 6 units S.C.
301-350 mg/dL	→ 8 units S.C.
351-400 mg/dL	→ 10 units S.C.
> 401 mg/dL	→ 12 units S.C. and notify M.D.

IMPORTANT NOTES

** Insulin infusion concentration = 100 units of regular insulin in 100 ml of 0.9% sodium chloride (1 unit/ml)

*** May cover second consecutive glucose ≥ 150 mg/dL with SSI* without starting insulin infusion and recheck glucose in 2 hours unless both were > 300 mg/dL. If any two consecutive glucose readings are ≥ 300 mg/dL, then insulin infusion should be started after glucose covered with sliding scale

† Frequency of glucose monitoring - Check glucose every one hour until the glucose is ≤ 150 mg/dL for 2 consecutive readings AND no insulin infusion titration has been required AND the patient is not receiving epinephrine infusion then, check every 2 hours. If the patient has not required an insulin infusion adjustment for 6 hours, glucose may be checked every 4 hours.

Notify physician if glucose ≥ 401 mg/dL, glucose < 50 mg/dL, insulin infusion > 20 units/hour or if patient on insulin infusion at time of transfer from CVICU/Critical Care Unit. Send STAT serum glucose if glucose ≥ 401 mg/dL or < 50 . Consider obtaining an Endocrinology consultation.

The target blood glucose is 70 - 150 mg/dL.