

# UCSF Medical Center

UNIT NUMBER

PT. NAME

BIRTHDATE

DATE

TIME

LOCATION

DATE

**ALLERGIES**

**HT(cm)**

**WT(kg)**

“√” in box indicates additional orders

1.  D/C previous insulin orders
2.  D/C \_\_\_\_\_ (hypoglycemic agents).
3. **Maintenance IV FLUIDS (IV Dextrose infusion must be maintained while the patient is on insulin infusion. Minimum rate of 10mL/hour.)**
  - D5 NS at 100 mL/hour
  - D5 1/2 NS at 100 mL/hour
  - D10 NS at \_\_\_\_\_ mL/hour (for patients with fluid restrictions or renal failure)
  - Additive: KCl \_\_\_\_\_ meq/liter (generally 20 mEq/L)
  - other \_\_\_\_\_ at \_\_\_\_\_ mL/hour
4. **Regular Insulin Infusion IV (1 unit = 1 mL)**
  - A. Flush first 20m through the bag after connecting to patient.
  - B. Before beginning infusion, check Blood Glucose (BG) with glucose meter.
5. **Start Insulin Infusion Rate as follows (when BG ≥100 mg/dL):**
  - 0.5 unit/hour taking <30 units insulin daily
  - 1 unit/hour for patients previously diet controlled, taking oral hypoglycemic agent, or <30 units insulin daily
  - 1.5 units/hour for patients taking >30 units insulin daily
  - other \_\_\_\_\_ units/hour
6. **Adjust Insulin Infusion Rate as follows:**

<ul style="list-style-type: none"> <li><input type="checkbox"/> Standard adjustment</li> <li>BG &lt;80 mg/dL Stop infusion and <b>Call House Officer; see #8 below</b></li> <li style="padding-left: 20px;">*Do not restart insulin infusion until BG ≥ 100 mg/dL*</li> <li>BG 80-120 Decrease drip by 0.5 unit/hour</li> <li>BG 121-180 No change in drip rate</li> <li>BG 181-250 Increase drip by 0.5 unit/hours</li> <li>BG &gt;250 Bolus 5 units regular insulin IV and increase drip by 0.5 unit/hour</li> </ul>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Sensitive adjustment</li> <li>BG &lt;80 mg/dL Stop infusion and <b>Call House Officer; see #8 below</b></li> <li style="padding-left: 20px;">*Do not restart insulin infusion until BG ≥ 100 mg/dL*</li> <li>BG 80-120 Decrease drip by 2 units/hour</li> <li>BG 121-180 No change in drip rate</li> <li>BG 181-250 Increase drip by 2 units/hour</li> <li>BG &gt;250 Bolus 5 units regular insulin IV and increase drip by 2 units/hour</li> </ul>
--	---
7. Check BG every hour with glucose meter until stable (range 100-180 mg/dL) for two consecutive readings and then every 2 hours. If BG has changed more than 100 mg/dL from previous reading, recheck BG before adjusting insulin dose to verify accuracy of glucose meter reading. Resume every hour BG check if BG >180 mg/dL or <100 mg/dL.
8. **For a BG <80 mg/dL or >400 mg/dL, call House Officer.**
  - BG <80 mg/dL but >60 mg/dL, stop insulin infusion. Check BG every 15 minutes.
  - BG ≤60 mg/dL, stop insulin infusion; give 50 mL D50 IV push; check BG every 15 minutes and repeat treatment until BG ≥100 mg/dL. When BG ≥100 mg/dL, call House Officer for new insulin infusion rate.
  - BG >400 mg/dL, call House Officer to reassess insulin infusion rate.
9. **If TPN or tube feeds are interrupted for longer than 30 minutes, start D<sub>10</sub>W at 50 mL/hour. Notify MD about change and future action.**
10. When converting to subcutaneous (SQ) insulin, give prescribed SQ dose 30 minutes prior to discontinuing insulin infusion. Then use Adult SQ Insulin Order Sheet.
11. If patient eating meals give \_\_\_\_\_ units as part SQ after patient eats carbohydrates.

Signature \_\_\_\_\_ M.D. # \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_ Pager # \_\_\_\_\_

FLAG CHART TO INDICATE NEW ORDER

Checked by \_\_\_\_\_ R.N. Time \_\_\_\_\_ Date \_\_\_\_\_

# INDICATIONS AND GUIDELINES FOR INSULIN INFUSION

## RATIONALE

Predictable delivery and short biological effect (about 40 minutes) of intravenous insulin allows for rapid dose adjustment and more stable glucose levels. The risk of hypoglycemia is reduced and glycemic control is maintained even when the operative procedure is delayed.

## INDICATIONS

1. All insulin-taking patients (Type 1 and Type 2) who are undergoing major surgery (general anesthesia, invasion of body cavity, surgical duration > 2 hours, NPO postoperatively).
2. Type 2 DM patients who are not taking insulin but are chronically hyperglycemic (fasting blood glucose > 150 mg/dL & HbA1C > 10%) and undergoing major surgery.
3. To establish insulin requirements for TPN & tube feeding.

## GUIDELINES FOR DETERMINING INITIAL INSULIN DOSAGE

1. Patients on > 30 units/24 hours insulin: use the standard insulin dose algorithm.
2. For patients treated with < 30 units/24 hours: use sensitive adjustment and select an insulin dose of 24 units/24 hours. Thus, for a BG value of 141-180 mg/dL, administer 1.0 unit/hour.
3. Insulin requirements are predictably increased in certain clinical conditions: severe infections, steroid therapy (doubles insulin needs), morbid obesity; and hepatic disease.

## STOPPING INSULIN INFUSION AND INITIATING SUBCUTANEOUS REGIMEN (Patient eating)

1. Calculate the cumulative 24-hour dose ( $x = \text{cumulative 24 hour total dose}$ )
2. Divide the cumulative total dose by 2.5 to determine the Glargine dose ( $x/2.5 = y = \text{Glargine dose}$ ).
3. Divide the cumulative dose to determine the basic Aspart dose before meals ( $x/7 = \text{basic Aspart dose}$ ).
4. Write a high glucose correction premeals; bedtime, 2 am.

Endocrine / Metabolism service is available for advice on all aspects of diabetes care.  
Endocrine Fellow 443-9125; Clinical Nurse Specialist 443-2951.