# Subcutaneous Insulin Orders
## Adult: NPO

(see guidelines for use on side 2) Addressograph

**Drug Allergies:**

### 1. ALL PATIENTS REQUIRING CORRECTION SCALE INSULIN S.C. WHILE NPO

☒ **Check blood sugars q4h**
**BLOOD SUGARS LESS THAN 4mmol/L: Follow Hypoglycaemia Protocol**
**Notify MD of hypoglycaemia (see back)**

**Weight:** kg

☒ **Give Aspart (Novorapid®) q4h s.c. as per Correction Scale** (check ONE box below)
*See back for Insulin Sensitivity Factor (ISF) calculation*

| ❑ISF:4 If TDD 30units or less | | ❑ISF: 3 If TDD 31-49units | | ❑ISF: 2 If TDD 50-80units | | ❑ISF: 1 If TDD 81units or more | | ❑CUSTOM | |
|---|---|---|---|---|---|---|---|---|---|
| Blood Sugars | Insulin **GIVE:** | Blood Sugars | Insulin **GIVE:** | Blood Sugars | Insulin | Blood Sugars | Insulin **GIVE:** | Blood Sugars | Insulin **GIVE:** |
| **4.1-9** | **0** Units | **4.1-8** | **0** Units | **4.1-8** | **0** Units | **4.1-8** | **0** Units | | Units |
| **9.1-12** | **1** Units | **8.1-11** | **1** Units | **8.1-10** | **1** Units | **8.1-10** | **2** Units | | Units |
| **12.1-16** | **2** Units | **11.1-14** | **2** Units | **10.1-12** | **2** Units | **10.1-12** | **4** Units | | Units |
| **16.1-20** | **3** Units | **14.1-17** | **3** Units | **12.1-14** | **3** Units | **12.1-14** | **6** Units | | Units |
| **20+** | **Call MD** | **17.1-20** | **4** Units | **14.1-16** | **4** Units | **14.1-16** | **8** Units | | Units |
| | | **20+** | **Call MD** | **16.1-18** | **5** Units | **16.1-18** | **10** Units | | Units |
| | | | | **18.1-20** | **6** Units | **18.1-20** | **12** Units | | Units |
| | | | | **20+** | **Call MD** | **20+** | **Call MD** | | Units |

### 2. PATIENTS REQUIRING BASAL INSULIN (IN ADDITION TO ABOVE CORRECTION SCALE)

See back for calculation if previously on insulin (typically 30-50% reduction of pre-NPO basal insulin)

| Type of Insulin (check ONE) | AM Dose | HS Dose | Comments |
|---|---|---|---|
| **❑NPH** | | | HS only or split AC Breakfast & HS<br>Preferred site = outer thigh |
| **❑Glargine (Lantus®)**<br>**❑Detemir (Levemir®)** | | | AC Breakfast or HS or split AC Breakfast & HS<br>DO NOT MIX with any other insulins |

### 3. PERI-SURGICAL/PROCEDURE PATIENT (IF ON BASAL INSULIN PRIOR TO NPO)

| IF BASAL KNOWN – See Calculation Side 2 | OR | If Basal NOT known – Calculate as below |
|---|---|---|
| **Give Night Prior to Procedure:** | | **Give Night Prior to Procedure:** |
| ❑ NPH Insulin_____units s.c. HS | | ❑ NPH 0.2units/kg = _____units s.c. HS |
| ❑ Glargine (Lantus)_____units s.c. HS | | ❑ Glargine (Lantus) 0.2units/kg = _____units s.c. HS |
| ❑ Detemir (Levemir)_____units s.c. HS | | ❑ Detemir (Levemir) 0.2units/kg = _____units s.c. HS |
| **Day of Surgery/Procedure** | | **Day of Surgery/Procedure** |
| ❑ NPH Insulin_____units s.c. AM | | ❑ NPH 0.1units/kg = _____ units s.c. AM |
| ❑ Glargine (Lantus)_____units s.c. AM | | ❑ Glargine (Lantus) 0.1units/kg = _____units s.c. AM |
| ❑ Detemir (Levemir)_____units s.c. AM | | ❑ Detemir (Levemir) 0.1units/kg = _____units s.c. AM |
| **First Evening Post-Operative** | | **First Evening Post-Operative** |
| ❑ NPH Insulin _____units s.c. HS | | ❑ NPH Insulin 0.1 units/kg = _____units s.c. HS |
| ❑ Glargine (Lantus)_____units s.c. HS | | ❑ Glargine (Lantus) 0.1units/kg = _____units s.c. HS |
| ❑ Detemir (Levimir)_____units s.c. HS | | ❑ Detemir (Levimir) 0.1units/kg = _____units s.c. HS |

**Once patient is eating, change to Subcutaneous Insulin Orders Adult : Eating**

| | | |
|---|---|---|
| | Physician Signature | Print Name |
| Date Ordered | Processed by: | |

Approved by P&T December 2009 Approved by MAC December 2009 Revised:_____

# Guidelines for Completion of the Subcutaneous Insulin Orders – Adult (NPO)

This is intended to be a guide and should not replace clinical judgment.
Assess blood glucose on a frequent basis and adjust basal and correction doses as necessary.

**Notify Physician:**

- immediately if severe hypoglycemia requiring use of glucagon or IV dextrose.
- within 24 hours if mild hypoglycemia requiring oral treatment.

} Insulin orders may need to be changed

For patients requiring insulin, all attempts should be made for surgeries and procedures to take place as early in the day as possible.

## 1. ADDITIONAL CORRECTION SCALE DOSE

For the NPO patients with elevated sugars, a correction dose will be necessary. This dose will be used for patients not requiring basal insulin and for those mentioned below who need basal insulin. Tick one scale based on the sensitivity to insulin. The greater the pre-admission insulin dose the less sensitive the patient is to insulin.

**Insulin Sensitivity Factor (ISF)** = the drop in mmoL pursuant of insulin.
**Calculation of ISF:** 100 divided by Total Daily Dose (TDD)
For example, if TDD is 50, the ISF = 100/50 = **2**
(1 unit of insulin will decrease blood sugar by 2 mmoLs).

- For the sick NPO patient, there is often more resistance (ISF usually around 2) thus requiring a higher dose of insulin to decrease blood glucose.

## 2. BASAL INSULIN

**Certain patients will require basal insulin even if not eating.** Lack of basal insulin will cause large fluctuations in blood sugars, poor control and a risk of DKA. **Basal insulin is required in Type 1 patients, patients with a history of DKA, patients who have had a pancreatectomy, Type 2 patients who have been on insulin for more than 5 years or who take more than 45 units of insulin per day.**

**Basal Insulin Calculation:** Typically basal insulin is ½ of Total Daily Dose (TDD) = sum of all insulins used in 24 hours. **This may be reduced by another 30% for NPO patients.** Give basal insulin either as an HS dose or split ½ at AM and ½ at HS.

**OR**

**For the patient on AM and HS basal pre-NPO** – if the pre-NPO AM dose is intended to cover lunch meal (ie there was no regular dose of Regular/Aspart insulin at lunch pre-NPO), **reduce** the AM basal dose by 50%. The HS basal dose may be reduced by 10- 30%

## 3. SURGICAL/PROCEDURE PATIENT

**NPO patients previously on insulin** will need a correction scale dose (Section 1) **and** some (as noted above) will also need basal insulin.

- **If basal doses known:** calculate NPO dose as outlined above.

**OR**

- **If basal requirements not known:** Give 0.2 units/kg/24 hours as a split dose at 8AM (0.1 units/kg) and HS (0.1units/kg). Adjust up as necessary. Restart basal insulin the first night **after** surgery.

**NPO patients NOT previously on insulin, not requiring basal insulin**

- Follow correction scale insulin orders if required
- Evening before surgery/procedure: give regular PO diabetes medications
- Day of surgery/procedure: HOLD PO diabetes medications
- Consider avoiding use of D5W in IV therapy