

(DEMP) Insulin Pump Initiation Protocol Orders

Criteria for Initiation:

1. Patient who is actively engaged in diabetes self management and willing to monitor blood glucoses a minimum of 4-6 times a day.
2. Patient must demonstrate competence in basic and advanced carbohydrate counting by attendance at group classes or individual sessions.
3. Patient is willing to keep consistent communication with the diabetes educator for pump management.
4. Attendance at introduction to pump class (optional).

Physician Orders:

Treatment Goals

Blood glucose targets:

Fasting and pre-meal: 80-120 mg/dl 2 hr pp: 90- 160 HS: 100-140 3:00 am: 100-140

Other: _____

1) Instruct patient on:

Insulin pump therapy, insulin pump mechanics, carbohydrate to insulin dosing adjustment, basal rate adjustment.

2) Blood glucose measurement:

For the first week of pump therapy, minimum of 5 times per day: Fasting, preprandial, bedtime, midnight and 3:00 am. Blood glucose monitoring at least four times a day for the remainder of insulin pump therapy.

3) Activity level:

No exercise during the first week of insulin pump therapy. Unlimited exercise regimen, unless restricted per written physician order, thereafter.

4) Insulin dose for day preceding pump start:

Long or intermediate acting (NPH, Ultralente, Lente or Lantus): Take ½ normal dose the evening before pump training, omit morning dose the day of training.

Short or rapid acting (Regular, Humalog or Novolog): dose according to usual guidelines.

5) The diabetes educator may calculate initial basal and bolus rates and notify MD in writing.

Initial basal rates are calculated by taking 40% of the patient's total daily dose (all insulins) and dividing by 24. Unless the patient's blood sugar records show marked evidence of dawn phenomenon, only one basal rate is used initially. Additional basal rates are added as basal rate testing reveals patterns of insulin need.

6) The diabetes educator may adjust bolus rates according to protocol and notify MD

Initial carbohydrate to insulin ratio (bolus calculation) is calculated by dividing the patient's total daily dose into 450. The result is rounded up to the next 5 and tested prior to pump initiation. Carbohydrate to insulin ratio may be adjusted if patterns reveal inaccurate response to mealtime bolusing. Insulin sensitivity factor (used to adjust bolus amount in relation to pre-meal blood sugar reading) is calculated by dividing the total daily dose of insulin into 1500 (for Regular insulin) or 1800 (for Humalog or Novolog).

7) The diabetes educator may adjust basal rates according to protocol and notify MD

When blood glucose results exceed blood glucose target ranges, upward adjustments are made to the basal rates in 0.1 unit increments for the hours preceding the high reading.

When blood glucose results are lower than the targeted range (<70 mg/dl) basal rates are adjusted down in 0.1 unit increments for the hours preceding the high reading.

8) Basal Rate Testing Instructions

The basal testing process is reviewed with the patient at the time of insulin pump initiation. Overnight basal rates are determined first. (See "Instructions for Testing Initial Insulin Pump Basal Rates"). After overnight basal rates are established, the patient is requested to test basal rates by fasting through each meal and monitoring blood glucoses during the fast. The patient agrees to fax, call or email blood glucose testing to clinician following the fast and blood glucose testing to determine the appropriate adjustment to the basal rates. Additional basal rate testing may be requested by the diabetes educator reviewing the blood glucose records if blood glucoses deviate from the target range and it is unclear whether the meal time bolus or basal rate is the cause of the deviation.

9) Insulin On Board Instructions:

The insulin on board feature will be set by the pump trainer at 4 hours. The goal of this feature is to prevent stacking of boluses to achieve optimal blood glucose control and to give the patient confidence to administer a correction bolus with less fear of hypoglycemia. The pump trainer will consult with the referring physician regarding a longer duration of time if the patient has decreased renal function or a history of longer duration of either the Humalog or Novolog insulin.

10) Additional instructions:

1. Type 1 patients are instructed to troubleshoot blood glucoses > 250 mg/dl by reviewing last bolus dose, rebolusing to correct blood sugar and rechecking blood sugar in 2 hours. If blood sugar has not decreased, they are instructed to test urine for ketones and change the infusion set.
2. Daily telephone contact between the diabetes educator and patient for first week of therapy. If the diabetes educator is unavailable, the patient is instructed to contact the endocrine physician or endocrine fellow on call.
3. Blood glucose records are to be faxed, mailed or telephoned to the diabetes educator a minimum of every 2 weeks for the first month of insulin pump therapy.
4. The patient is instructed to contact the diabetes educator if they experience any of the following: 2 blood glucose readings <50 mg/dl or moderate to large ketones in the urine.
5. Patient is instructed to change the infusion set at least every 72 hours. Patients are advised to change infusion sets in the morning hours.
6. A two to four week Diabetes Education & Management Program follow up visit is scheduled after pump initiation. Patients should be scheduled for physician follow-up within the next 3 months.
7. Diabetes educator contact with physician is based on the patient's individual needs and plan of care, but will occur at a minimum: 1) After the pump training session and 2) At the follow up visit. Blood glucose records received by the Diabetes Education & Management Program in the first month will be forwarded to the Endocrinologist for review.

Note: Any patient specific deviation from these protocols should be provided to the diabetes educator in writing and signed by the ordering physician for inclusion in the patient's chart.

Physician Name (please print): Anthony L. McCall MD

Physician Signature:  Date: 11-8-05

For Office Use Only:

Practice Name Approved for: _____

Physician approving protocol (Please print): _____

Physician signature: _____

Title: _____

Original: 5/01/00

Revised: 9/6/00, 10/12/05, 11/08/05

Reviewed: 8/00, 10/05, 6.07