DIABETES CONTROL MATTERS

A CLOSER LOOK AT INTENSIVE INSULIN THERAPY – *Patient's Edition*

Results of several studies have proven that intensive diabetes management delays the onset and significantly slows the progression of many diabetes complications. Therefore, greater emphasis is now being placed on intensifying insulin management of both type 1 and type 2 diabetes to maximize blood glucose control.

Intensive insulin therapy utilizes flexible multiple insulin regimens that can be tailored to your metabolic requirements as well as lifestyle. Specific elements of the regimen include multiple daily injections or an insulin pump to maintain near normal blood glucose. In actuality, "intensive insulin therapy" should become more the norm and in the future perhaps not referred to as "intensive."

The critical ingredient of successful intensive insulin therapy is a knowledgeable patient who is motivated to achieve improved diabetes control through adherence to sound, individually determined self-management principles. Intensive insulin therapy is demanding and may not be advisable for some people. Hypoglycemia and fear of a hypoglycemic episode are two major concerns for the individual managing intensive insulin therapy. Patients who are considered for intensive regimens must be assessed for hypoglycemia unawareness.

See the back of this sheet for:

- Your Insulin Regimen for Achieving Glycemic Control
- The Rule of 1500 – individualized insulin adjustment for mealtime insulin or sick-day management
- Adjusting insulin using Carb Counting

AMERICAN DIABETES ASSOCIATION GOALS FOR BLOOD GLUCOSE

	GOALS	ACTION SUGGESTED
Pre meals	**80-120 mg/dl**	**<80 or >140 mg/dl**
Bedtime	**100-140 mg/dl**	**<100 or >160 mg/dl**
Hemoglobin A1c	**<7%**	**>8%**

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Elements of Intensive Insulin Therapy

- Multiple insulin injections (or insulin pump)
- Careful balance of food intake, physical activity, and insulin
- Self blood glucose monitoring (SBGM) several times each day
- Adjustment of food intake, exercise, and insulin dosage
- Individualized target blood glucose levels
- Patient comprehension of and adherence to treatment plan
- Quarterly hemoglobin A_1c
- Frequent contact between patient and health care team

Patient Selection for Intensive Therapy

- Poor diabetes control with conventional therapy
- Motivation to pursue intensive therapy
- Able and willing to perform frequent SBGM
- Sufficient education and technical ability to follow program of intensive therapy
- Psychological stability adequate to manage intensive therapy
- Trained and skilled medical staff available to direct treatment program and provide increased attention

Patient Selection for Pump Therapy

- Patients who have difficulty maintaining optimal control on multiple daily injections
- Those who are concerned about preventing or delaying complications of diabetes, have kidney transplants, gastropathy, or painful neuropathy
- Those with erratic daily eating and exercise schedules or who desire greater lifestyle flexibility
- Pregnancy or considering pregnancy
- All persons with type 1 diabetes should be considered for insulin pump therapy

Diabetes Control Matters!

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Your Insulin Regimen for Achieving Glycemic Control*

Lispro/Humalog (rapid-acting)† **R** = Regular (short-acting) †
N = NPH (Intermediate-acting) **L** = Lente (intermediate acting)
U = UltraLente (long-acting)

Before Breakfast _____**units of** _____
_____**units of** _____

Before Lunch _____**units of** _____
_____**units of** _____

Before Supper _____**units of** _____
_____**units of** _____

Before Bedtime _____**units of** _____
_____**units of** _____

Your Blood Glucose Goal is:

Before Meals _____

Before Bed _____

*For patients with Type 2 diabetes, insulin may be added in combination with oral agents.
† Lispro given 0-15 minutes before eating. Regualr given 30-45 minutes before eating.

Adjusting Insulin (The Rule of 1500)

The 1500 rule is used to help patients know how much their blood glucose will drop with 1 unit of rapid or short-acting insulin. You will add this amount of insulin to your usual dose, adjusting for high blood glucose readings before meals. You can also use this for adjustment of hyperglycemia during illness.

1. Add up ALL the insulin you take in 1 day, rapid, short, intermediate + long-acting. This is your Total Daily Dose (TDD).
2. Divide 1500 by your TDD. The result is the number of blood glucose points covered by adding 1 unit of rapid or short-acting insulin to your usual dose. Some patients will need to use "the rule of 1800" if they are extremely sensitive to their insulin.
3. You must keep records of your insulin adjustment so that success can be evaluated and further refinements implemented.

1500)TDD = ✲

Example:

TDD = 50 units **Your TDD =_____**
1500) 50 = 30 **1500)____ = ____**

If current blood glucose is 180
Minus blood glucose goal 120

Equals points to cover with Extra insulin 60

60) 30 = 2 units rapid-acting insulin needed

60) __ = ___ units rapid–acting insulin needed

Adjusting Insulin Using Carbohydrate Counting

Using the Rule of 1500 you know that 1 unit of rapid or short-acting insulin will lower the blood glucose ✲ points. To determine how many carbs that 1 unit of rapid or short-acting insulin will cover:

✲ points x .33 = grams of CHO covered by 1 unit

__points x .33 = ___ grams of CHO covered by 1 unit

- For most people, a starting dose would be 1 unit of rapid or short-acting insulin for every 10-15 grams of carbohydrate to be eaten.
- Check blood glucose 1-2 hours after eating. If it is >180 mg/dl there was too much carb for the insulin dose taken.
- The long-acting insulin taken remains the same.
- Keeping meticulous records is essential in learning the response to insulin and food.

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