Harmony Between Food Intake and Insulin Is Essential For The Person With Type 1 Diabetes Mellitus

By Rex Mahnensmith | Submitted On August 01, 2016

Type 1 Diabetes Mellitus features insulin deficiency or insulin lack resulting from immune attack upon the insulin-producing Islet Cells in one's pancreas. Elevated blood glucose results.

Therapy for Type 1 Diabetes Mellitus requires prescription insulin which is typically injected daily as replacement of the missing pancreas supplied insulin.

Prescription insulin comes in various forms and strengths, and one's physician or advanced practice nurse will determine the right form and right dose.

Many individuals with Type 1 Diabetes are receiving prescribed insulin by means of a continuous infusion insulin pump. A small infusion needle is placed securely just beneath the skin in a safe location and insulin is steadily infused into the tissues just beneath the skin where it is steadily absorbed. The amount of insulin infused is determined by the ordering diabetes specialist and this amount is determined to fit one's basal metabolism. This infusion is called a "basal" infusion of insulin and this imitates a normal pancreas. These insulin infusion pumps also provide a "bolus" infusion of the same insulin on command. The diabetic person is taught to "bolus infuse" a determined amount of insulin to match the person's diet content of carbohydrates. This also intends to imitate the
normal pancreas which would secrete a bolus of insulin in response to a glucose surge in the blood stream, derived from a meal or beverage. The "bolus" of insulin delivered by the pump occurs when the diabetic person pushes a button. Hence, one can see the vital importance of harmony and timing: the bolus amount of insulin must match the amount of carbohydrate eaten and must be infused at the same time as the meal or snack is consumed. Insulin infusion pumps do serve very well, and the basal-bolus infusion methods can imitate the normal pancreas, if the pump is programmed in a fitting pattern to the diabetic person's pattern of meals and snacks and body size and activity. A potential benefit is that the pump can be adjusted as the diabetic person alters his or her patterns. However, too much variation hour to hour and day after day will result in poor glucose control. Type 1 Diabetes Mellitus is brittle. Blood glucose can rapidly rise or fall when insulin infusion and carbohydrate ingestion do not harmonize. This can be dangerous.

Many other individuals with Type 1 Diabetes Mellitus are prescribed insulin by single injection into the subcutaneous tissues, typically at the abdominal wall or top of the thigh. Two insulin types are prescribed - long acting basal insulin and short acting bolus insulin - and the intent is to create a pattern that will harmonize with meals, activity, and sleep. The diabetic person will inject the long acting basal insulin once a day, and this insulin will slowly be absorbed from the injection deposit under the skin. Current long acting basal insulin preparations are absorbed steadily over approximately 24 hours and this provides the basal, background, continuous presence of insulin, again imitating a normal pancreas' basal secretion of insulin. Current short acting bolus insulins are absorbed rapidly from the injection site and are thus suitable for covering one's meal provision of glucose. The diabetic person is instructed to inject the short acting bolus insulin immediately prior to a meal and the amount of insulin injected is prescribed to match the carbohydrate content of the meal. Type 1 Diabetes Mellitus is brittle. Blood glucose can rapidly rise or fall when insulin injections and carbohydrate ingestion do not harmonize, and these swings can be harmful. Again, the vital importance of timing and harmony with meal content is real.

So, the vital message here is this: tight yet safe glucose control with either infused or injected insulin is vitally important for health maintenance of the Type 1 Diabetic person. The goal for one's fasting blood glucose is approximately 80-120 mg/dL and the goal for one's pre-meal blood glucose is approximately 100-140 mg/dL. Optimal management of the blood glucose also includes maintaining the blood glucose less than 140 mg/dL during the 1-3 hour time frame after eating as well. Achieving these goals is possible, but achieving these goals commands insulin dosing that is precisely timed with meals, precisely quantified to match the carbohydrate content of the meal or snack, and thus precisely delivered. Consistency is essential. Having a pattern of regularity is essential. Knowing carbohydrate content of foods is essential. And being consistent with quantity and type of food and beverage is essential, so that harmony and synchrony is achieved morning, noon, evening, and night.
Rex Mahnensmith, MD is a practicing physician who serves as a General Internist in the practice of Primary Care. He is especially interested in preventative medicine, wellness, and healthy choices for living. He serves individuals with chronic illnesses as well as those with no illness. He aims to help individuals make healthy choices in all circumstances. The devoted care of individuals with diabetes mellitus, nutritional disorders, hypertension, kidney diseases, asthma, and other chronic illnesses is a special calling for Dr. Mahnensmith. His calling is to serve others in need and to serve well.

Article Source: [http://EzineArticles.com/expert/Rex_Mahnensmith/2250521](http://EzineArticles.com/expert/Rex_Mahnensmith/2250521)