

Diabetes

Life Lines



December 2010-January 2011

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Diabetes - the Medical Perspective

The “dawn effect” or “dawn phenomenon” are terms used for early morning high blood glucose levels in people with diabetes. These blood glucose levels are higher than when the person went to bed. This may happen more with those who have type 1 diabetes than with type 2 diabetes. However, other scientists think about half of all people with diabetes have this rise in the morning at some point.

The blood glucose in these cases usually rises between 2 and 8 a.m. A rise is considered significant if it is greater than 10 mg/dl compared to when the person went to bed. Therefore, if your blood glucose was 100 mg/dl at bedtime and 115 mg/dl when you got up, you should talk to your doctor about this.

These high blood glucose levels may be due to a natural overnight release of certain hormones.

Those hormones include growth hormones, epinephrine, cortisol, and glucagon. They increase the release of glucose stored in the liver. They also decrease glucose use by other organs.

Other possible causes for these high blood glucose levels include:

- Not enough insulin the night or day before if you take insulin;
- Eating a carbohydrate-rich snack close to bedtime;
- Eating more carbohydrate at the evening meal than your medication can adjust to.

Your doctor will probably want you to check your bedtime and early morning blood glucose values for a few days. They may try to adjust your evening carbohydrate if your intake is high in the evening. If you take insulin, you may need an adjustment.

These increases in blood glucose may not be very high. If the higher values are still in your target range, nothing may need to be adjusted. However, dawn phenomenon is associated with worse hemoglobin A1C values.

Diabetes and Food

If your hemoglobin A1C value has been increasing, and you think your diet and exercise patterns have not changed, you might check your bedtime and morning blood glucose values. Keep track of what you eat and drink in the evening. Take all this information with you when you next see your health care provider.

Remember, carbohydrate-rich foods include fruit and fruit juices; breads, crackers, rice, noodles, cookies, tortillas, cereal, pretzels and chips; milk, yogurt and most ice cream. Alcoholic beverages like beer or wine also are carbohydrate-rich.

One serving from the starch and starchy vegetables group contains 15 grams of carbohydrate. If you are unsure of how many starch servings a food contains, check the Nutrition Facts label. Look at the total carbohydrates and divide by 15 to find out how many starch servings the product contains. For instance, if the Nutrition Facts label for a package of English muffins says that one English muffin contains 30 grams of carbohydrate, then this would count as two servings from the Starch Group.

Medication Update

Glucagon-like peptide-1 (GLP-1) agonist is a newer classification of medication for those with type 2 diabetes. These include Exenatide (Byetta) and Liraglutide (Victoza). Taspoglutide is another drug that is currently being tested.

The GLP-1 drugs lower both glucagon and glucose. They can slow glucose absorption from the gut. They can also increase insulin secretion from the pancreas when the blood glucose rises. The GLP-1 drugs do not lower the blood glucose level below normal, so hypoglycemia (low blood glucose) is not a problem.

The GLP-1 agonists are injected. When to inject and how much depends on the specific drug. Some drugs are injected just before a meal. Others are injected daily or weekly. The GLP-1 agonists are not insulin. They should not be taken instead of insulin and should not be taken with insulin.

As with any medication for type 2 diabetes, taking medication does not replace eating a healthy diet and getting enough physical activity. Remember that your meal plan and exercise schedule are important parts of your treatment plan.

Recipes to Try

Sloppy Pepper Joe's

1 pound extra lean hamburger
½ cup frozen pepper strips,
chopped
½ cup chopped onion

7 1/3-cup servings

1 tablespoon vinegar
½ cup catsup
2 tablespoons prepared mustard

1. Combine hamburger, peppers and onion in skillet. Cook on medium heat until beef is browned.
2. Add remaining ingredients, mixing well. Simmer 10 minutes.

Nutrition facts per serving

Calories	179	Fat	11 grams
Protein	13 grams	Calories from fat	57%
Carbohydrate	6 grams	Cholesterol `	45 mg
Fiber	1 gram	Sodium	295 mg

Preparation time 20 minutes

Easy Pumpkin Pie

1 can (16 ounces) solid pack pumpkin
(or 2 cups pureed cooked pumpkin)
1 egg
2 egg whites
½ cup biscuit mix

8 servings

1/3 cup plus 2 tablespoons Splenda®
2 teaspoons pumpkin pie spice
2 teaspoons vanilla
non-stick cooking spray

1. Heat oven to 350°F. Lightly grease or spray 9-inch pie pan with vegetable oil spray
2. Blend all ingredients in blender for 1 minute or beat 2 minutes with mixer.
3. Pour into pie pan and bake for 50 minutes or until center is puffed up.

Nutrition facts per serving

Calories	110	Fat	1 grams
Protein	7 grams	Calories from fat	10%
Carbohydrate	19 grams	Cholesterol `	25 mg
Fiber	3 grams	Sodium	280 mg

Preparation & cooking time 60 minutes.

BREAKFAST	Amount/Portion
1 cooked egg or egg substitute	1 egg
English muffin	1
Margarine, whipped	1 tablespoon
Apple juice	1 cup
Skim milk	8 ounces
469 Calories, 67 Carbohydrates, 4.5 Carbohydrate Choices	
SNACK	
Whole wheat low fat crackers	5
Low fat Monterey Jack cheese	1 ounce
Skim milk	8 ounces
224 Calories, 23 Carbohydrates, 1.5 Carbohydrate Choice	
LUNCH	
Sloppy pepper Joes [†]	1 serving
Whole wheat bun	1
Baked potato chips	1 ounce (9 chips)
Baby carrots	8
Pears	½ cup
Gingersnaps	2
Iced tea	8 ounces
580 Calories, 85 Carbohydrates, 6 Carbohydrate Choices	
DINNER	
Chicken stew [†]	1 serving
Hard roll	1
Margarine, whipped	2 teaspoons
Skim milk	8 ounces
Easy pumpkin pie [†]	1 serving
Fat free whipped topping	2 tablespoons
650 Calories, 65 Carbohydrates, 4 Carbohydrate Choices	
Total: 1923 Calories, 240 Carbohydrates, 16 Carbohydrate Choices	

[†] recipes from *Diabetes Lifelines* or *Recipes for Diabetes* at <http://urbanext.illinois.edu/diabetesrecipes/intro.cfm>