

Diabetes

Life Lines



August-September, 2012

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The Medical Perspective- Diabetes and Exercise

In addition to a healthy diet, physical activity plays an important role in achieving target blood glucose levels. Physical activity naturally increases insulin sensitivity and lowers blood glucose levels much like medications do. As an added benefit, regular physical activity burns calories and helps to achieve and maintain a healthy weight.

Physical activity is any body movement that works your muscles and requires more energy than resting. This could be taking the stairs, walking your dog, or even housework or gardening. Exercise, on the other hand, is planned and structured with the goal of working specific parts of the body. Walking on the treadmill, attending group fitness classes, or swimming laps are all examples of exercise. Both physical activity and exercise are important components of an overall healthy lifestyle. For

health benefits, experts recommend 150 minutes a week of moderately intense physical activities such as briskly walking or biking.

Before you begin any new exercise plan, consult with your physician. Find out how increasing your activity level might impact any medicines you take for diabetes, blood pressure, and/or heart problems. It is important to closely monitor your blood glucose levels before, after, and during your workout depending on the duration. If you are taking insulin or other medications that may cause hypoglycemia, check your blood glucose 30 minutes before your workout and then again immediately before you begin.

Use the following guidelines to determine whether it is appropriate to continue with your workout:

- **Lower than 100 mg/dL (5.6 mmol/L).** Your blood glucose may be too low to exercise safely. Eat a small carbohydrate-containing snack, such as fruit or crackers, before you begin your workout.
- **100 to 250 mg/dL (5.6 to 13.9 mmol/L).** You're good to go. For most people, this is a safe pre-exercise blood glucose range.

- **250 mg/dL (13.9 mmol/L) or higher.** This is a caution zone. Before exercising, test your urine for ketones — substances made when your body breaks down fat for energy. Excess ketones indicate that your body doesn't have enough insulin to control your blood glucose. If you exercise when you have a high level of ketones, you risk ketoacidosis — a serious complication of diabetes that needs immediate treatment. Instead, wait to exercise until your test kit indicates a low level of ketones in your urine.
- **300 mg/dL (16.7 mmol/L) or higher.** Your blood glucose may be too high to exercise safely, putting you at risk of ketoacidosis. Postpone your workout until your blood sugar drops to a safe pre-exercise range.¹

Check your blood glucose every 30 minutes of exercise as low blood glucose can be a concern. Stop exercising if your blood glucose is **70 mg/dL (3.9 mmol/L)** or lower or if you feel shaky, nervous or confused. If your blood glucose is low, take a break and have something to eat. Keep glucose tablets or juice on hand in your gym bag. Check your blood glucose every 15 minutes to see if it has returned to at least 70 mg/dL (3.9 mmol/L) before continuing your workout.

It is important to check your blood glucose after your workout as well as periodically over the next few hours as your body will draw glucose from its blood to replenish the stores used from the muscles and liver during exercise. If you do have low blood glucose after exercise, eat a small carbohydrate containing snack.

Reference

The Mayo Clinic- Diabetes and Exercise. Accessed on August 24, 2012. Found at <http://www.mayoclinic.com/health/diabetes-and-exercise/DA00105>

Medication Update- Insulin and Needle Length

Research shows that using shorter needles provides the same blood glucose control as longer ones in both normal and overweight adults. Patients using 5/16 in. (8mm) needles reported less pain and increased satisfaction than those using 1/2 in. (12mm) needles to administer insulin. Proper technique is essential to ensure proper absorption and dosing. Regardless of size, needles should be placed in a straight line at a 90° angle to the point of injection, preferably the abdomen. The skin may need to be pinched to avoid the insulin being injected into the muscle.

Recipes to Try

Southwest Casserole

1-½ pound ground beef, 80% lean
1 cup low fat shredded cheddar cheese
½ cup chopped onion
2 cups water
1 (10-ounce) can enchilada sauce
¾ cup skim milk

6 servings

1 teaspoon oregano
2 cups instant potato flakes
1 (11-ounce) can corn with green and red peppers, drained
1 (4.5 ounce) can chopped green chiles

1. Heat oven to 400°. In a skillet, brown ground beef with onion. Drain fat.
2. Add enchilada sauce and oregano. Mix well. Place in ungreased 2-quart casserole. Spread corn evenly over mixture.
3. In a medium saucepan, bring water and milk to boil. Remove from heat. Stir in potato flakes. Add 1/2 cup cheese and chiles.
4. Spread potatoes over corn. Sprinkle with cheese.
5. Bake for about 15 minutes, until cheese is bubbly.

Total time: 45 minutes

Preparation time: 30 minutes

Nutrition Facts Amount Per Serving

Calories: 480

Calories from Fat: 216

Total Fat: 24 g

Cholesterol: 92 mg

Servings per Recipe: 6

Carbohydrate: 25 g

Dietary Fiber: 4 g

Protein: 13 g

Carbohydrate Units: 2

Carrot Cucumber Salad in Dill Dressing 4 servings 1 serving = ½ cup

1 cucumber
2 cups grated carrots
½ cup non-fat plain yogurt

1 teaspoon dill weed
1 teaspoon lemon juice

1. Peel cucumber, leaving stripes of peel on it if more crunchiness is desired. Slice lengthwise in fourths. Gently scrape seeds out. Thinly slice each cucumber fourth.
2. Mix yogurt, dill weed, and lemon juice. Add cucumber and carrots. Gently toss to coat vegetables

Preparation Time: 15 minutes

Nutrition Facts Amount per Serving

Calories: 34

Calories from Fat: 0

Total Fat: 0g

Cholesterol: 0g

Exchange: 1 vegetable

Carbohydrate: 7 g

Sodium: 30 mg

Dietary Fiber: 2g

Protein: 2 g

Carbohydrate Units: 0



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Sample Menu

BREAKFAST	Amount/ Portion
Whole wheat English muffin	1 piece
Low fat cream cheese	2 tablespoons
Small orange or ½ banana	1 piece
Skim or soy milk	1 cup
300 Calories, 50 Carbohydrates, 3.5 Carbohydrate Choices	
SNACK	
Unroasted, unsalted almonds	15 almonds
Grapes	½ cup
135 Calories, 10 Carbohydrates, 1 Carbohydrate Choice	
LUNCH	
Whole Wheat Bread [†]	2 slices
Lean roast beef	3 ounces
Lettuce leaf for sandwich	
Garden salad	Unlimited amount
Fat-free salad dressing	2 tablespoons
Fat free or low fat yogurt	1 small container (6 ounces)
550 calories, 60 Carbohydrates, 4 Carbohydrate Choices	
DINNER	
Southwest Casserole [†]	1 serving
Cucumber salad	Unlimited amount
Skim or soy milk	8 ounces
Reduced fat ice Ccream bar	1 bar
700 Calories, 55 Carbohydrates, 3.5 Carbohydrate Choices	
Total: 1796 Calories, 175 Carbohydrates, 11.5 Carbohydrate choices	