

# Diabetes

## Life Lines



June-July, 2016

- **Diabetes - the Medical Perspective**
- **Diabetes and Food**
- **Recipes to Try**
- **Menu Suggestions**

### Diabetes - the Medical Perspective

#### *Exercise and Diabetes*

Regular physical activity is an important health promoting life-style habit and helpful in managing diabetes. Getting your health care providers approval should always be the first step before considering an exercise routine. They will have a good idea about your abilities and limitations concerning exercise.

If you have diabetes and are at risk for hypoglycemia (low blood sugar), exercise requires a little extra care and planning. Physical activity can lower blood glucose. Moderate to intense physical activity may lower blood glucose for up to 24 hours. So, if you are taking a medication that lowers blood glucose, there are checks and balances to ensure your glucose levels stay within a safe range. The goal should be to keep blood glucose levels within a safe range before, during and after physical activity. Discuss your personal glucose target levels with your

diabetes care provider before starting an exercise routine. Once you have the “go ahead” there are a few questions to consider before exercising:

#### *Do I know my blood glucose level?*

Check your blood glucose levels before, during and after different types exercise to understand the impact it has on your glucose levels. Your target glucose levels may differ depending on the type of medication and the risk it carries for causing hypoglycemia. Target glucose levels may also vary whether your exercise is aerobic, like walking or jogging, or resistance training, like weight lifting or using exercise bands. Exercise should be delayed if blood glucose levels are outside the safe target range recommended by your diabetes health provider.

#### *Do I have access to a carbohydrate snack in case of hypoglycemia?*

If you are taking a medication that puts you at risk for hypoglycemia, you shouldn't be without a fast-acting source of carbohydrate.

#### *Do I have access to my glucometer for glucose checks?*

Since exercise can sometimes have unpredictable effects on blood glucose it is wise to have access to fast acting carbohydrates. It is especially important when first starting an exercise program. It may take some trial and error to determine

how different types and durations of exercise affect your glucose levels. Snack and insulin adjustments may be necessary for physical activity over an extended time period. Regular blood glucose checks are necessary before, during and after exercise. Avoid exercising during peak insulin times. Your diabetes care provider will use these glucose checks to make recommendations to help keep your blood glucose stable.

*In case of emergency can I be identified as a person with diabetes?*

A medical alert bracelet, necklace or some way to alert others that you have diabetes can be a lifesaver in case of emergency. Emergency contacts and an indication of whether you take insulin is also helpful.

#### *Other Considerations*

With diabetes there are times when exercise may not be recommended or when certain exercises should be avoided.

*Presence of Ketones* - During exercise your body uses sugar and stored fatty acids for energy. The exercising muscle needs more glucose in the blood stream to use for energy. If there isn't enough insulin present to allow the glucose to enter the muscles the body looks for other sources of fuel. When your body breaks down fat to use for energy ketones are produced. If ketones are present in someone with type 1 diabetes it is a sign of a serious lack of insulin and can result in ketoacidosis which is a medical emergency. Exercising with the presence of ketones is not safe and will increase the

breakdown of fat for fuel and result in more ketone production.

*Diabetic Retinopathy* - Strenuous weight lifting or high impact activities should be avoided with certain types of retinopathy.

*Advanced Kidney Disease* - Avoid strenuous activity.

*Diabetic Peripheral Neuropathy* - Ulcerations and fractures are a risk with neuropathy, so exercise should be limited to non-weight bearing or lower impact activities.

*High Glucose Levels* - Exercising is generally not recommended in type 1 diabetes when blood glucose is 250 mg/dl or higher with the presence of ketones. More frequent monitoring and caution are necessary to exercise if glucose levels are 300 mg/dl or higher without the presence of ketones. In type 2 diabetes exercise isn't recommended when glucose is 400 mg/dl or higher. These are general recommendations and may not be appropriate for you, so always discuss safe exercising blood glucose targets with your health care provider.

*Warm Weather* - Exercise tolerance may not be the same in hot weather. Drink plenty of water to stay hydrated. Sometimes symptoms of hypoglycemia are harder to recognize when the weather heats up because the symptoms are similar to the bodies response to over-heating.

## Diabetes and Food

Well timed meals and snacks can help prevent exercise induced hypoglycemia. If physical activity starts 2 hours or longer after your last meal, a snack may be needed to keep glucose levels stable. If your blood glucose is 70 mg/dl or lower, it should be treated with a fast acting form of carbohydrate and possibly followed up with a small snack before engaging in physical activity. Carbohydrates that contain fat are not the best choice for treating hypoglycemia because fat takes longer to be digested and will slow the entrance of sugar into the bloodstream. Because of fat content, chocolate candy and full fat milk will raise glucose levels, but not as quickly as fat free milk or fruit juice.

Glucose tablets are a fast acting source of carbohydrate that are easy to carry and can be purchased in the pharmacy. Generally, three glucose tablets will provide about 15 grams of carbohydrate, but always refer to the package for carb content. Lifesavers are also handy to carry and use to treat hypoglycemia. About seven Lifesavers will supply 15 grams of carbohydrate.

### *Additional 15 Gram Carbohydrate*

#### *Food Sources*

3-4 graham cracker squares  
½ cup fruit juice  
½ cup regular soda  
1 small piece of fresh fruit  
2 Tablespoons raisins

Other more substantial snacks may be necessary depending on meal timing and exercise duration:

Greek yogurt with fresh fruit  
Peanut butter and whole grain crackers or apple  
Turkey sandwich  
Cheerios with skim milk

To reap the benefits of exercise and keep blood glucose levels stable remember to check blood glucose levels before, during, and after exercise. Keeping records of blood glucose and carb intake will help you and your health care provider recognize how your glucose levels respond to different types and durations of exercise and trouble shoot problems. Make sure you have an understanding of what your safe blood glucose target levels are before starting an exercise routine.

## Recipes to Try

### Tarragon Pecan Chicken Salad

4 – ½ cup servings

#### Ingredients

1-pound skinless chicken breast  
½ c celery, chopped  
1 teaspoon honey mustard  
½ cup light mayonnaise  
½ teaspoon dried tarragon  
¼ cup roasted pecans, chopped



#### Directions

1. Place chicken breast in a saucepan and cover with water. Bring water to a boil, cover and reduce to simmer. Simmer about twenty minutes or until internal temperature reaches 165 °Fahrenheit. Set chicken aside to cool.
2. Preheat oven to 350° Fahrenheit. Lightly spray a baking sheet with cooking spray. Roast pecans about 5 minutes. Watch closely to keep from scorching. Set pecans aside to cool.
3. Chop chicken into bite sized pieces. Place chicken in a medium size bowl.
4. Add remaining ingredients and stir well.
5. Serve on a bed of lettuce.

#### *Nutrition Facts per serving*

Calories	272	Fat	17 grams
Protein	27 grams	Calories from fat	152
Carbohydrate	3.5 grams	Cholesterol	85 mg
Fiber	1 gram	Sodium	334 mg

This and other recipes available at  
<http://urbanext.illinois.edu/diabetesrecipes/intro.cfm>

## Banana Bread

14 – 1 slice servings

### Ingredients

1 cup whole wheat flour  
1 cup flour  
½ teaspoon baking soda  
½ teaspoon salt  
1 cup Splenda  
¼ cup butter, softened  
2 large eggs  
1 ½ cup mashed ripe banana (about 3 bananas)  
1/3 cup plain low-fat yogurt  
1 teaspoon vanilla extract



### Directions

1. Preheat oven to 350 °F.
2. Coat loaf pan with cooking spray.
3. Combine flours, baking soda, and salt.
4. Mash 3 bananas. Set aside.
5. Place sugar and butter in a large bowl, and beat with a mixer at medium speed until well blended (about 1 minute).
6. Add the eggs, banana, yogurt, and vanilla; beat until blended.
7. Add flour mixture; beat at low speed just until moist.
8. Spoon batter into loaf pan.
9. Bake 1 hour or until wooden pick inserted in center comes out clean. Cool 10 minutes in pan on a wire rack; remove from pan. Cool completely on wire rack.

### *Nutrition facts per serving*

Calories	135	Fat	4 grams
Protein	4 grams	Calories from fat	39
Carbohydrate	21 grams	Cholesterol	36 mg
Fiber	1 gram	Sodium	188 mg

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## Sample Menu

<b>BREAKFAST</b>	<b>Amount/ Portion</b>
Banana Bread <sup>†</sup>	1 serving
Soft Tub Margarine	2 teaspoons
Scrambled Egg	1
Fresh Strawberries	1 ¼ cup
Vanilla Non-fat Greek Yogurt	6 ounces
Skim Milk	1 cup
646 Calories; 60 Grams Carbohydrate; 4 Carbohydrate Choices	

<b>LUNCH</b>	
Tarragon Chicken Pecan Chicken Salad <sup>†</sup>	½ cup
Whole Wheat Bread	2 slices
Lettuce	2 slices
Watermelon	1 cup
Skim milk	1 cup
667 Calories; 60.5 Grams Carbohydrate; 4 Carbohydrate Choices	

<b>DINNER</b>	
Spicy Chicken, Beans and Tomatoes	1 cup
Tossed Salad	2 cups
Lite Salad Dressing	2 tablespoons
Oatmeal Graham Bars †	1 serving
Skim milk	1 cup
545 Calories; 60 Grams Carbohydrate; 4 Carbohydrate Choices	

Total: 1858 Calories, 180.5 Grams Carbohydrates, 12 Carbohydrate Ch

Recipes from *Recipes for Diabetes* at

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