

## PHYSICAL ACTIVITY AND DIABETES

### *Exercise Recommendations*

Adults (>18 years old): At least 30 minutes of moderate intensity exercise 5 days a week, or 15 minutes of vigorous intensity 5 days a week. Exercise should include aerobic and muscle-strengthening activities.

Children and Adolescents (2-17 years old): At least 60 minutes or more of moderate to vigorous physical activity daily. Make sure 3 days include vigorous intensity activities and 3 days include muscle and bone strengthening activities.

Pregnancy: 30 minutes of moderate intensity physical activity daily.

### *Types of Exercise*

<p><b>MODERATE – INTENSITY AEROBIC</b></p>	<ul style="list-style-type: none"> <li>• Active recreation, such as canoeing, hiking, cross-country skiing, skateboarding, rollerblading</li> <li>• Brisk walking, try walking to school or work.</li> <li>• Bicycle riding (stationary or road bike)</li> <li>• House and yard work such as sweeping or pushing a lawn mower</li> <li>• Playing games that require catching and throwing, such as baseball, softball, basketball and volleyball</li> </ul>
<p><b>VIGOROUS-INTENSITY AEROBIC</b></p>	<ul style="list-style-type: none"> <li>• Active games involving running and chasing, such as flag football, soccer</li> <li>• Bicycle riding</li> <li>• Jumping rope</li> <li>• Martial arts such as karate</li> <li>• Running</li> <li>• Sports such as tennis, ice or field hockey, basketball, swimming</li> <li>• High intensity dancing</li> <li>• Aerobics</li> <li>• Cheerleading or gymnastics</li> </ul>

<b>MUSCLE-STRENGTHENING</b>	<ul style="list-style-type: none"> <li>• Games such as tug of war</li> <li>• Push-ups. Kids can do modified push-ups (with knees on the floor)</li> <li>• Resistance exercises. Kids can use their own body weight and resistance bands. Teens and adult can use. exercise bands, hand-held weights, and weight machines</li> <li>• Rope or tree climbing</li> <li>• Rock climbing</li> <li>• Sit-ups</li> <li>• Swinging on playground equipment/bars</li> <li>Cheerleading or Gymnastics</li> </ul>
<b>BONE-STRENGTHENING</b>	<ul style="list-style-type: none"> <li>• Hopping, skipping, jumping</li> <li>• Jumping rope</li> <li>• Running</li> <li>Sports such as gymnastics, basketball, volleyball, tennis</li> </ul>

Adapted from [http://www.cdc.gov/physicalactivity/basics/children/what\\_counts.htm](http://www.cdc.gov/physicalactivity/basics/children/what_counts.htm)

## *Exercise and Impact on Glucose Levels*

Exercise can positively affect glucose levels. Exercise can also be proactive. Exercise helps glucose management for 6-12 hours, so planned exercise can help prevent hyperglycemia. However, if a person with diabetes is taking anti-hyperglycemic medications (insulin, glyburide, etc.), exercise can cause hypoglycemia, or low glucose levels. Here are some steps to take to avoid hypoglycemia caused by exercise:

- Check glucose before you exercise. If your blood glucose is less than 100 mg/dL and you are on diabetes medication, you should eat a 15 gram carbohydrate snack to prevent hypoglycemia. If your glucose is greater than 300 mg/dL (>200 mg/dL if pregnant or >250 mg/dL if non-pregnant and on insulin pump) check for ketones. If ketones are present DO NOT EXERCISE and refer to DKA handout. If ketones are not present, you may continue with physical activity.
- Assess when you are going to exercise and how it relates to your medication regimen. If exercise is occurring within 2 hours from your last rapid acting insulin (Humalog or Novolog) injection, you may want to consider exercising at another time. Another option is to decrease the amount of rapid acting insulin at the previous meal. Thirty to 90 minutes is the peak action time for rapid acting insulin and therefore exercising during this time period increases risk your risk for hypoglycemia.
- Assess your intensity level. The more intense the exercise the more likely you will have hypoglycemia.
- Assess the length or duration of the activity. The longer you are active, the more likely you are to have a low blood glucose. For example: races or marathons, basketball, soccer, football, swimming, etc. can be high risk activities for low blood glucose.
- Assess any changes that were made to your medication regimen. Recent changes or increases in your medication may put you at a higher risk for low glucose when combined with exercise.

Finally, be prepared. Talk with your diabetes provider about ways to adjust your insulin regimen to decrease your risk for hypoglycemia with exercise. Have planned snacks, electrolyte beverages, and glucose tablets readily available to help reduce and/or treat hypoglycemia. Please refer to Sample Snacks for Physical Activity handout for snack ideas.