Safety Skills for Managing Blood Sugars during Exercise and Activity

Your child should be active every day. Check his blood sugar before, during, and after exercise. This will help to determine if he needs to eat extra carbohydrates (carbs) or if changes need to be made to his insulin dose. Discuss these changes with his diabetes healthcare team.

Be Prepared!

- **Always** carry juice, sports drink (Gatorade, Powerade), carbohydrate chews/gels, or glucose tablets to treat a low blood sugar.
- Teach his coaches, gym teachers, and other adults how to recognize, treat, and prevent a low blood sugar.
- Talk with his diabetes healthcare provider for more information about his exercise and insulin routine.

**What does exercise do to blood sugars?**

- Exercise can make a blood sugar level go down 50 to 100 points within 30 minutes of activity.
- Exercise can help the body to use insulin.
- Intense exercise can increase blood sugar levels right away or just after the activity (for example, running a race or swimming).
- However, the blood sugar level may drop several hours after exercise has finished.
- It is very important to test blood sugars during and after exercise.
- The feeling of being “pumped up” during exercise can be confused with the feeling of a low blood sugar. The only way to know is to test the blood sugar.
- **When in doubt, test it out!**

**Can my child exercise if he has ketones?**

- **No.** He should not exercise with ketones in his urine and a high blood sugar.
- It can be dangerous to exercise.
- If your child has ketones or is sick, follow the guidelines for sick day/ketone management.

**Can my child exercise if blood sugars are low before or during exercise?**

To exercise safely, you must treat a low blood sugar first:

- **Have him eat 15 grams of a fast-acting carb:**
  - four glucose tablet
  - 4 ounces of juice
  - three carbohydrate chews
  - 8-ounces sports drink
Wait 15 minutes.
- Recheck the blood sugar.
- If the blood sugar is still low, repeat the steps above.
- Your child should not eat a snack containing fat or protein (chocolate bar or peanut butter crackers) before having a fast-acting carb. This will delay bringing the blood sugar back to target range.

What is a delayed effect of exercise?

- Low blood sugars 4 to 24 hours after exercise or he has a very active day.
- Eating 30-60 grams of carbs within 30 minutes after intense exercise or exercising more than 1 hour can help prevent a delayed low blood sugar.
  - Your child should eat a snack containing carbohydrate and protein to prevent a delayed low blood sugar.
    - glass of chocolate milk
    - peanut butter crackers
    - yogurt
    - fruit
- He may or may not need less insulin coverage for the post-exercise snack.
- Please talk with your diabetes healthcare provider about correct insulin dosing for snacks after exercise.

Important: Check his blood sugar during the night (3am-4 am) after a very active day. This will allow you to see what his response was to the workout.

How can you prevent low blood sugars before and during exercise?

<table>
<thead>
<tr>
<th>Length of Activity</th>
<th>Blood Sugar Level</th>
<th>Carbohydrates (without insulin)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 minutes (example: recess)</td>
<td>Less than 100</td>
<td>15 grams</td>
</tr>
<tr>
<td></td>
<td>More than 100</td>
<td>May not need additional carbs</td>
</tr>
<tr>
<td>More than 30 minutes</td>
<td>Less than 100</td>
<td>30 grams</td>
</tr>
<tr>
<td></td>
<td>100 to 150</td>
<td>15 grams for every 30 minutes of activity</td>
</tr>
<tr>
<td></td>
<td>More than 150</td>
<td>May not need additional carbs</td>
</tr>
</tbody>
</table>

- When starting new activities, you may need to check blood sugars more often to learn his body’s response. We recommend checking his blood sugar every 30 minutes during the activity.
- Consider keeping a blood sugar and activity log:
  - What was the activity?
  - What was the treatment?
  - Did the treatment work?
Remember:

- Low to moderate intensity exercise (walking, jogging, and swimming) longer than 30 minutes may cause a low blood sugar and require carbs every 30 minutes.
- High intensity exercise (hockey, sprinting, and weight lifting) may result in high blood sugars for a short period. Carbs may not be needed during intense exercise. Talk to your diabetes healthcare team to discuss his carbohydrate needs during intense exercise.