

# Tips for managing sick days: high sugars, low sugars and ketones

## General rules:

- Never omit all insulin even if your child is not eating well. Long acting insulin (Lantus or Levemir) or basal rate (if you are on a pump) is still needed.
- Give lots of fluids.
  - If the blood sugar is 200 or higher, give fluids with no carbs like water or diet soda.
  - If the blood sugar is less than 200, give carb-containing fluids like Gatorade, Pedialyte and regular soda. (The idea is to bring the blood sugar to a safe range so you can safely give insulin to prevent or get rid of ketones.)
- Check blood sugars every 3 hours including at night throughout the illness and write them down. If they are high, look below for what to do next.
- Check for ketones at least 2 times a day. If it is positive, look below for what to do next.
- Sometimes a medication is used to help decrease the vomiting. This can help with keeping the fluids down. You can discuss this with the clinic (or on-call doctor if it is after hours) if you have questions.

## What to do with insulin?

- Do NOT skip the long acting insulin or suspend the insulin pump even if your child is not eating well or vomiting. You may decrease the dose by 10% if sugars are below 100 or if he/she is feeling sick and are unable to eat.
- If he/she is able to eat, cover all carbs as usual with the fast acting insulin (Novolog/Humalog/Apidra).
- If he/she is vomiting, try sips of fluids. Do NOT cover carbs with insulin if you think he/she may throw up.
- If he/she has ketones, follow the ketone protocol below.

## What to do with high blood sugars?

- Check sugars every 3 hours including at night.
- Check for ketones if your child is sick or blood sugar is above 300.
- If there are ketones, see the chart on page 3.
- If there are no ketones, give fast acting insulin (Novolog/Humalog/Apidra) for high blood sugar correction if it has been 3 hours since the last dose.

## What to do with low blood sugars?

- IF YOUR CHILD IS UNCONSCIOUS OR HAVING SEIZURES:
  - ROLL YOUR CHILD TO THE SIDE
  - CALL 911.
  - Give the following glucagon dose:
    - 0.5 mg if your child is 44 pounds or less
    - 1 mg if your child is greater than 44 pounds.
- If your child is awake and is able to eat/drink, you can use the 15-15 rule (see below).

If your child is awake and NOT able to eat/drink, you can use mini-glucagon (see below).

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- The 15-15 rule:
  - If the blood sugar is below 80, give **15 grams** of carbs ( ½ cup of fruit juice, ½ cup regular soda, 4 glucose tabs, 15 skittles, 1 tablespoon honey)
  - Check blood sugar again in **15 minutes**. If it is still below 80, give another 15 grams of carbs.
  - Keep repeating until blood sugar is above 80.
  - If the blood sugar is above 80, give a 15 grams snack with protein or fat (crackers and peanut butter etc.)
  - If it is not working, try mini-glucagon (see below).
- Mini-glucagon: You can use small doses of glucagon if the blood sugar is below 80 and your child can not keep anything down.
  - Mix glucagon as directed.
  - Once mixed, use an INSULIN SYRINGE and NOT the syringe it comes with.
  - Use the following doses:
    - Age less than 2 years: 2 units on the insulin syringe
    - Age 2-15 years: One unit on the insulin syringe for every year of age. For example: 3 year old gets 3 units, 4 year old gets 4 units etc.
    - Age greater than 15 years: 15 units on the insulin syringe
  - Inject into the same places that you would insulin: arms, thighs, abdomen or buttock.
  - Check blood sugar in 30 minutes.
  - If blood sugar does not come up, give another dose.
  - Glucagon helps keep the blood sugar up for 1-2 hours. So have your child eat carbs with protein/fat to keep the blood sugar up.
  - Once mixed, glucagon is good for 24 hours if it is stored in the refrigerator. Then it should be thrown out.
  - If mini-glucagon was used, call the clinic to check in.
  - Get another refill of glucagon from the pharmacy as soon as possible to replace this.

**What to do with ketones?**

- If your child has an insulin pump, change the infusion set/pod.
- Give all insulin via injections and NOT through the pump until ketones are clear.
- Follow the flowchart on page 3 for detailed instructions.

Ketones	If your child is sick, but able to eat/ drink
<u>Urine ketones:</u> Negative, trace (5), or small (15) <u>Blood ketones:</u> <0.5-1.5	<ul style="list-style-type: none"> <li>• Take a high blood sugar correction. No separate ketone treatment dose required.</li> <li>• Have him/her drink lots of fluids.</li> </ul>
<u>Urine ketones:</u> Moderate (40) or Large (80-160) <u>Blood ketones:</u> 1.6-3.0	<ul style="list-style-type: none"> <li>• To fight ketones, multiply your usual high blood correction by <b>2</b>.  <i>For example:</i>  <i>Blood sugar is 304mg/dL and you have mod ketones. Correction dose is 1:50&gt;150</i>  <u>High blood sugar correction dose :</u>  <math>304 - 150 = 154 / 50 = 3 \text{ units}</math>  <math>\text{Multiply } 3 \text{ units} \times 2 = 6 \text{ units}</math>  <b>You need 6 units of Novolog/Humalog/Apidra.</b> </li> </ul>

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