

How to Manage Sick Days

While your child is sick, it may be hard to keep their blood glucose under control. The goal is to keep it from being very high or very low, and to prevent or treat ketones.

- Being sick makes the body release stress hormones. This causes high blood glucose numbers.
- Not wanting to eat as much (decreased appetite) or throwing up (vomiting) can happen when your child is sick. This can lead to low blood glucose.
- Being sick can cause ketones to form in the blood and pee (urine). Check for ketones the whole time your child is sick. This means you'll be checking for ketones more often than normal.
- Ketones can form:
 - Any time while your child is sick.
 - No matter what their glucose level is, even if it's normal or lower than 70 milligrams per deciliters (mg/dL).



It is very important to start treating ketones right away.

When Your Child Is Sick

- **Check their blood glucose.** Test every 3 hours using a blood glucose meter or a continuous glucose monitor (CGM). Only bring down (correct) high blood glucose if it's been at least 3 hours since their last dose of fast-acting insulin.
- Test for ketones with each trip to the bathroom or diaper change. Check every 3 hours while they're sick even if the results are negative.

If Your Child Has Ketones

When your child has ketones, use the Ketone Treatment guide that matches their type of therapy. There are 2 different treatment guides for if they:

- Are on injection therapy.
- Are on pump therapy.



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Ketone Treatment

When your child has small, moderate, or large ketones, they will need more insulin. This extra insulin is called a ketone correction bolus dose.

- It can be added to:
 - Insulin given for carbohydrates.
 - Insulin to correct high blood glucose.
- The ketone correction bolus dose is calculated using a percent of your child's basal insulin dose, but is always given using their fast-acting (bolus) insulin, such as Humalog®, NovoLog®, Apidra®, and Fiasp®.
 - **Small ketones:** Give a dose of fast-acting insulin that is equal to 5% or 0.05 of your child's long-acting (basal) insulin dose.
 - **Moderate or large ketones:** Give a dose of fast-acting (bolus) insulin that's equal to 10% or 0.10 of your child's long-acting (basal) insulin dose.

Use the worksheet below and a calculator to find the ketone correction bolus dose:

Calculation for Small Ketones

$$\frac{\text{Total Basal Dose}}{\text{Total Basal Dose}} \times 0.05 = \text{Ketone Correction Bolus}$$

Calculation for Moderate or Large Ketones

$$\frac{\text{Total Basal Dose}}{\text{Total Basal Dose}} \times 0.10 = \text{Ketone Correction Bolus}$$

Example: The child's long-acting (basal) insulin dose is 20 units.

- If they have small ketones: $20 \times 0.05 = 1 \rightarrow$ give 1 unit of fast-acting (bolus) insulin.
- If they have moderate or large ketones: $20 \times 0.10 = 2 \rightarrow$ give 2 units of fast-acting (bolus) insulin.

Diabetic Ketoacidosis (DKA)

Ketones can be treated at home. However, diabetic ketoacidosis (DKA) needs medical treatment. Call the Endocrinology Department, go to the closest emergency room, or call 911 if your child has any of these signs and symptoms of DKA:

- Prolonged vomiting and/or belly pain
- Fruity odor to breath
- Dizzy or confused
- Sluggish or hard to wake up
- Higher heart rate (pulse)
- Rapid deep breathing

When to Call Endocrinology

Call us at (614) 722-4425, Monday through Friday, 8 a.m. to 4:30.p.m., or (614) 722-2000 nights, weekends, holidays if:

- Your child has ketones and you're not sure what to do.
- You have treated moderate or large ketones 2 times in a row and your child isn't getting better.
- Your child is not able to tolerate small sips of fluid.
- Your child has diarrhea or has been vomiting for more than 6 hours.



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