

patient education program

High Blood Sugars (Hyperglycemia) and Ketones

When you have diabetes there are times your blood sugars may be higher than goal. Another word for this is hyperglycemia. Causes include:

- Not enough insulin given
- Missed dose of insulin
- Illness/infection/stress
- Poor eating/drinking habits

High blood sugar means too much of the sugar is staying in the blood, not getting into the cell where it is burned for energy and can cause the following symptoms:

- Thirst
- Urinating (peeing) more
- Hunger
- Fatigue
- Headache
- Blurry vision
- Weight loss

Since your body needs energy to run, it looks for other ways to get that energy. One way is for the body to burn fat that you have stored. As the body burns fat, ketones are made and put into the blood. Ketones are acids and as they buildup in the blood you can feel sick. ***Ketones require prompt attention.***

If the body keeps making ketones, the blood becomes more acidic leading to diabetic ketoacidosis (DKA). Symptoms of DKA may resemble symptoms of the flu. ***DKA requires hospitalization and is a life-threatening situation.***

Symptoms of DKA

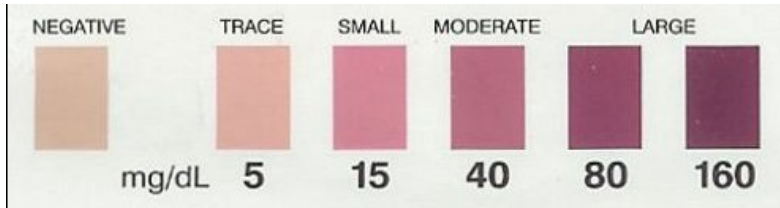
Upset stomach/stomach pain
Nausea and/or vomiting
Drowsiness/confusion
Fruity/sweet breath (like fingernail polish remover)
Deep rapid breathing (like after a hard run)
Unconsciousness

When do I test for ketones?

- When blood sugars are greater than 240
- Anytime you are sick or not feeling well, ***even if blood sugar is less than 240***
- When vomiting

How do I test for ketones?

1. Wet the ketone strip with urine by either
 - Passing it through the stream of urine
 - Collecting urine in a cup then dipping the ketone strip into the urine
2. Once the pad at the end of the strip is wet, remove the strip from the urine
3. **Wait 15 seconds** (delayed reading of the strip can cause false results) and then compare the color of the strip to the colors on the ketone strip bottle



| Ketone Result | Action |
|-------------------|---|
| Negative | <ul style="list-style-type: none"> • Continue to track blood sugar level • Continue with normal activity |
| Trace or small | <ul style="list-style-type: none"> • Drink plenty of sugar-free fluids, like water (1 ounce per year of age per hour) • Give a correction for the high blood sugar using rapid-acting insulin (Humalog or Novolog or Apidra or Fiasp) • Do not give rapid-acting doses any more often than 2 ½ hours • Continue to check ketones hourly until they are negative |
| Moderate or Large | CALL the diabetes team immediately (402-955-3871) |

Facts About Ketone Strips:

- Date the ketone strip bottle when first opened and replace it 6 months after opening
- **DO NOT** store strips in the bathroom, kitchen, or any place with increased moisture and heat

Other Points on Managing Ketones

- ✓ **DRINK** plenty of sugar-free fluids (water, diet soda) anytime your child’s blood sugar is above 240
- ✓ **REST** if ketones are present – **DO NOT EXERCISE**

If your child starts vomiting, **CALL the diabetes team immediately**, any time of the day or night and on weekends or holidays

402-955-3871

More information on illness and vomiting is available on the “Sick Day Management” Teaching Sheet in Tab 7 in the black binder