

Sick Day Management in Type 1 diabetes

Individuals with diabetes know that when they are sick their sugars run higher and that their bodies require more insulin. This means more frequent blood glucose testing, additional insulin if the sugar is > 10 (180 mg/dL) and sometimes salty fluids. Without these precautions diabetic ketoacidosis (DKA), a life-threatening complication, may ensue.

The earliest stage of DKA can be detected by measuring ketones in the blood (BHB = beta-hydroxybutyrate) before the need for hospitalization with a finger-stick personal device and BHB test-strips. BCDiabetes recommends using either the [Freestyle Precision Neo meter](#) (measures BHB & glucose) or for those who use a Freestyle Libre CGM, using the Freestyle Libre Reader (also measures BHB & glucose) .

Any blood ketone value >0.6 is abnormal and requires immediate action - action is “sick day” management.

Sick day management includes

- 1) pushing salty fluids: take 1 cup of beef, chicken or vegetable broth every 30 minutes (or make up your own salt solution by adding $\frac{1}{2}$ teaspoon salt per cup or 2 teaspoons per litre).es) and
- 2) testing sugar & taking extra insulin every hour. If sugar > 10 (180 mg/dL) an hourly bolus of rapid insulin equivalent to 15% of the average total daily dose (TDD) of insulin. Consider this example: if you take insulin glargine U100 34 units once daily and rapid insulin 12@ breakfast, 12@ lunch and 14@ dinner TDD = $34+12+12+14=70$ units. Fifteen percent of 70 = 10.5 units so take 10 or 11 units every hour.
- 3) measuring blood ketones every 2 hours. If ketones remain > 0.6 or sugar > 15 after 6 hours the patient should go to hospital. Any individual unable to keep fluids down with sugar > 15 should go to hospital immediately.

For patients taking SGLT2 inhibitor medication such as dapagliflozin, empagliflozin and canagliflozin who feel unwell, even if sugar is < 10 mM (180 mg/dL) ketones may be elevated. In this case the SGLT2 inhibitor should be stopped, salty fluids, should be consumed and rapid insulin given as noted above until ketones are ≤ 0.6 .

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