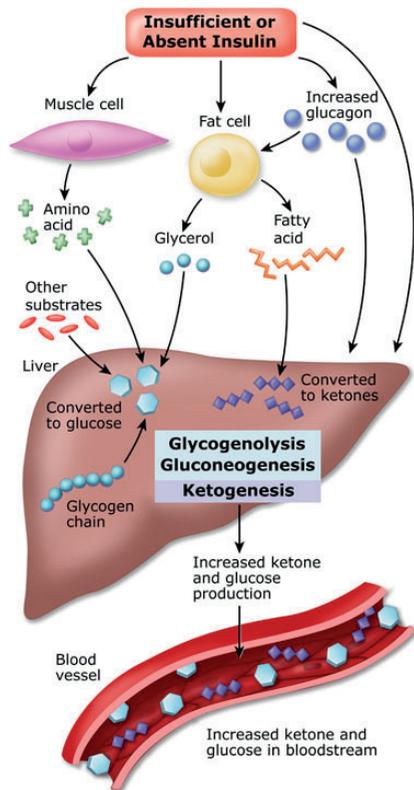


Diabetic Ketoacidosis

Diabetic ketoacidosis (DKA) occurs when the body is unable to use blood glucose because there is not enough insulin.

Instead, it breaks down fat as an alternative source of energy. This causes a build-up of a poisonous by-product called ketones, which will cause the body to become acidic if left untreated.

Diabetic Ketoacidosis



Ketone Reading	Interpretation
Below 0.6 mmol/L	Normal blood ketone level.
Between 0.6 and 1.5 mmol/L	More ketones are being produced than normal; contact your Diabetes healthcare team for advice.
Above 1.5mmol/L	Risk of Diabetic ketoacidosis; call your Diabetes healthcare team immediately.

Reference: adapted from Information provided in The Balance Guide to Meds & Kit, 2011 - 2012, p15

<http://dtc.ucsf.edu/living-with-diabetes/complications/diabetic-ketoacidosis>
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Most cases of DKA occur in type 1 diabetics, although it can also be a complication of type 2 diabetes. The most likely times for DKA to occur are:

- At diagnosis; some people are unaware they have Type 1 diabetes and do not get diagnosed until they are unwell with DKA.
- When you are ill (a 'sick day plan' advises on adjusting your insulin dosage accordingly).
- If you have not taken your insulin for any reason.
- During a growth spurt/puberty.
- DKA usually develops over 24 hours but can develop faster, particularly in young children (under 4s most at risk).
- With pregnancy and underlying problems such as stroke, heart attack, cocaine use.

Recognising DKA

Stage 1:

- High blood glucose - if your levels are consistently above 14mmol/l, you should check for ketones.
- Ketones in the blood/urine. Ketones are easily detected by a simple urine test (using strips available on prescription) or with a ketone measuring meter.
- Dry mouth, thirst, frequent urination
- Nausea, abdominal pain
- Loss of appetite, shortness of breath.

If left untreated, more advanced **second stage symptoms** can develop such as:

- Constantly feeling tired
- Rapid heartbeat and deep breathing
- Being sick, which can lead to dehydration
- Dizziness from low blood pressure
- Noticeable smell (like pear drops) of ketones on your breath
- Mental confusion, swelling of the brain
- Unconsciousness (diabetic coma).

Treatment

If you have any of the above signs of DKA, you must contact your diabetes team immediately. Stage 2 **DKA can be fatal** and require hospital treatment with closely monitored intravenous fluids to rehydrate your body, insulin administration (usually pumped into a vein), extra glucose and replacement of minerals such as potassium which may have been lost through vomiting. As long as there are no complications, you should be able to leave hospital when you are well enough to eat and drink normally and tests show virtually no ketones left in your body.

If DKA is detected early:

- Test your blood glucose frequently (every 2 hours), and ensure you check for ketones if your results exceed 14mmol/l. Do NOT exercise when your urine tests show ketones and your blood glucose is high as your diabetes management is likely to be out of control - check with your health care provider about how to handle this situation.
- You may need to take additional insulin.
- Drink plenty of unsweetened fluid.

If you are unable to eat, replace meals with snacks and drinks containing carbohydrate to provide energy (e.g. sips of sugary drinks, sucking boiled sweets).

DKA prevention

DKA is usually avoidable. Making sure you always take the right amount of insulin for your food and activity patterns, keeping a good check on your blood glucose levels and consulting your healthcare team appropriately will help avoid episodes which can be life-threatening.