

Guidance for the prescribing of Ketone Test Strips

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Guidelines providing information relating to diabetic ketoacidosis (DKA), prevention of DKA and ketone testing have been produced by the East Lancashire Health Economy Medicines Management Board. Please see link [diagnostic-and-monitoring-devices-for-diabetes-mellitus](#) and then access the link 'ketone testing and sick day guidance'

Ketone testing

Testing for ketones is indicated to differentiate ketoacidosis from simple hyperglycaemia or in monitoring response to treatment of DKA.

Patients in the at-risk group for DKA who become unwell will need to test both capillary glucose and blood ketone levels every two hours, depending on levels, until blood ketones return to a satisfactory level.

Blood ketone strips are more effective at detecting ketonaemia than urine ketone strips since they provide 'real time' results and test for the main types of ketones. Urine strips should only be used if there is no option of blood ketone testing e.g. type 1 diabetes patient is unable to use a blood ketone machine.

Type 1 diabetes: Blood Ketone Monitoring

When and how to test for ketones along with how to interpret and respond to results should be discussed with all patients with type 1 diabetes. If appropriate a formulary choice meter should be made available to support self-management of hyperglycaemia and to monitor ketones as part of 'sick day rules'

Type 2 diabetes (T2DM): Blood Ketone Monitoring

Specialist care teams will be able to identify groups of patients through admissions and out-patient appointments who may benefit from monitoring ketones. The guideline also lists the higher risk categories of patients with type 2 diabetes for whom ketone monitoring should be considered. Test strips should only be prescribed once patients have been counselled about the role of ketone testing and know how to interpret and act on the results.

Glucose and Ketone Meters

If a single meter is required for patients to monitor blood glucose and ketones, then the blood ketone test strips costing <£10 for 10 and blood glucose strips <£10 for 50 are considered as a first line option. The following meters are formulary first line choices as they provide both ketone and glucose testing:

- GlucoMen Areo 2K (GlucoMen Areo Ketone Sensor)
- CareSens Dual meter (KetoSens test strips)

FreeStyle Optium strips (compatible with the Freestyle Libre meter) should not be offered as these strips are expensive and offer no clinical or technological advantage. If a patient requires a new meter that is compatible with the recommended test strips, then primary and specialist care prescribers can contact the manufacturer to provide a meter free of charge.

Ketone Test Results- The following table shows how to interpret blood ketone levels:

Less than 0.6mmol/L	Normal
0.6 to 1.5mmol/L	Risk of developing DKA. Retest in 2 hours.
1.6 to 2.9mmol/L	High risk of developing DKA. Increase in insulin required.
3mmol/L or higher	Very high risk of DKA. Needs urgent medical attention and may need admission to accident and emergency department.

For further information, please contact the Medicines Management Team on 01254 282862 or email lscicb-el.adminmmt@nhs.net