

DIAGNOSING DIABETES - Can I use HbA1c as a diagnostic test in this situation?

YES*	NO	Paediatric guidance age <16yrs
<p>Asymptomatic targeted screening based on risk factors:- Established cardiovascular disease History of gestational diabetes BMI>30 (the higher the BMI the greater the risk) Ethnic Asian use BMI >25 Family history DM in a first degree relative Hypertension Polycystic ovarian syndrome Non-alcoholic fatty liver changes</p> <p>The more risk factors any one person has and/or the older they are the greater the possibility of undiagnosed diabetes</p> <p>OR</p> <p><u>Mild</u> symptoms of possible diabetes of longer than 2 months duration</p>	<p>Aged <18yrs (<16yrs follow local paediatric guidance otherwise manage as possible urgent adult)</p> <p>Acutely unwell – suspected Type 1 DM, DKA, hyperosmolar coma</p> <p>Short (<2mths) duration DM symptoms On steroid medications</p> <p>On antipsychotic medications</p> <p>Acute pancreatic disease and/or previous pancreatic surgery or disease</p> <p>During pregnancy and up to 3mths post-partum (see separate gestational DM guidance)</p> <p>Urine ketones 2+ or more detected</p>	<p>DO NOT try to do a venepuncture</p> <p>DO NOT refer for fasting blood glucose sample at the Children’s Centre.</p> <p>DO test a urine sample for glucose and ketones</p> <p>DO refer IMMEDIATELY to HRI if Glycosuria and Ketonuria is present AND contact either the Paediatric Diabetes Team or the Emergency Paediatric Team.</p> <p>Emergency Paediatric Team Paediatric Senior House Officer / Registrar Telephone 01482 328541 (Hospital switchboard) Dr S Gupta Dr V Mathew Tel: 01482 674754 Tel: 01482 675698</p>
Follow NON-URGENT flowchart	Follow Potential URGENT scenario	

***Common situations to consider where an HbA1c test may be misleading either high or low are:-**
Anaemia of any cause, haemoglobinopathies, rheumatoid arthritis, CKD 5. In CKD 4 the impact is unpredictable but it is likely that HbA1c will be affected in many patients.
Traditional glucose based diagnostic criteria which may include the need for OGTT should be used if in doubt.

References on advantages and disadvantages of HbA1c as diagnostic test:

https://www.who.int/diabetes/publications/diagnosis_diabetes2011/en/
<https://www.england.nhs.uk/wp-content/uploads/2016/07/poct-paper.pdf>

Diagnosing Diabetes Guidance – Potential URGENT scenarios

Any clinical suspicion that the patient may require insulin which should include – young person, unwell, short duration symptoms, marked weight loss, steroid or antipsychotic medication, pancreatic disease- either in isolation or combination.

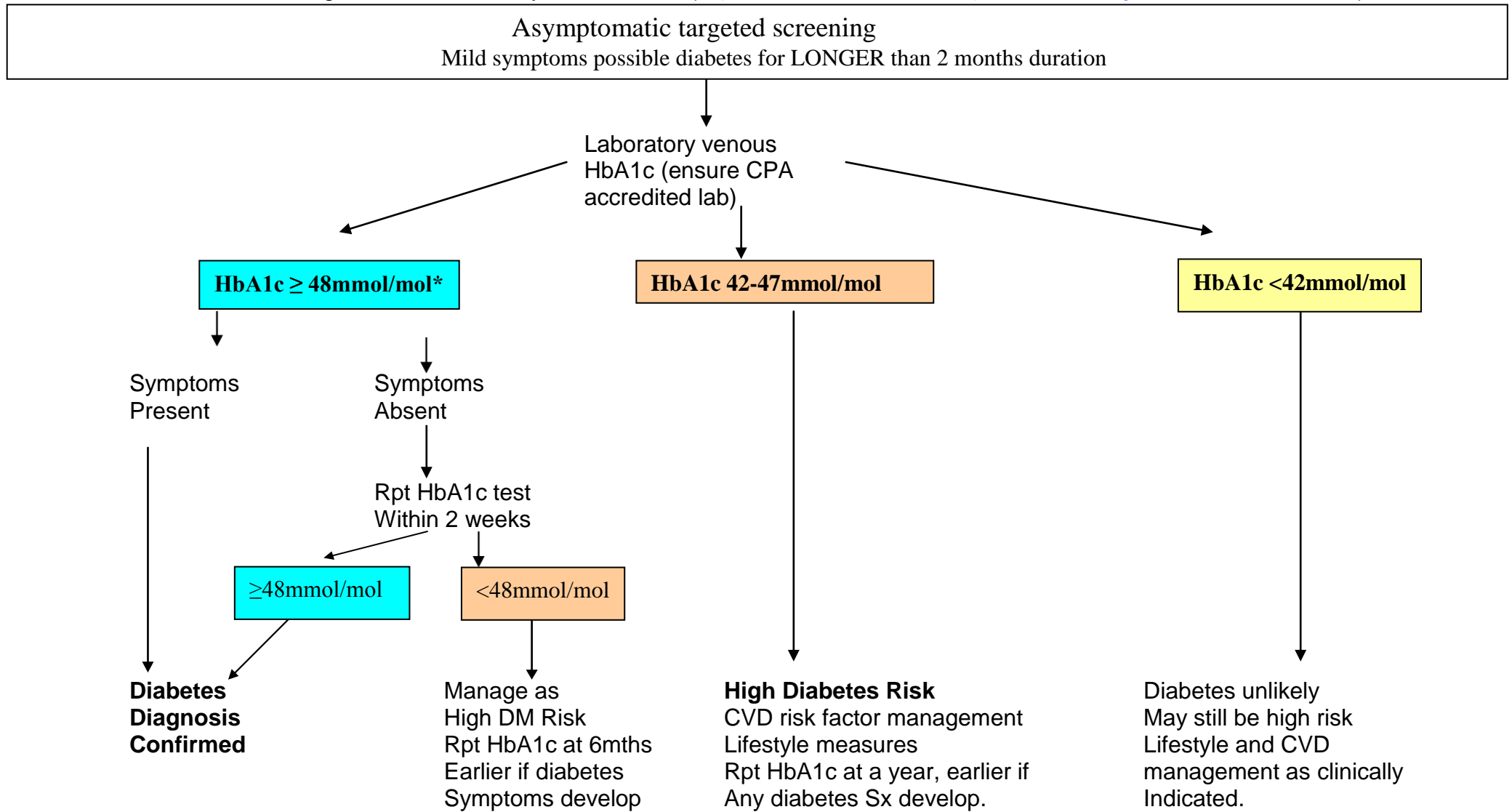
Check random capillary blood glucose and dipstix urine for ketones			
<7.0mmol	7.0-11.0mmol	≥11.1mmol *	
Diabetes very unlikely.	Possible diabetes.	CHECK URINE KETONES without delay	
Send laboratory venous glucose sample to confirm. Re-assess symptoms and consider other potential causes.	Send laboratory venous sample. In presence of Sx Lab glucose is diagnostic if: Fasting ≥7.0mmol/L Random ≥11.1mmol/L Follow traditional diagnostic criteria which may include the need for OGTT.	ketones 2+ or more AND/OR acutely unwell/vomiting Severely unwell – arrange direct admission. Otherwise 1) Contact Diabetes Team (OOH on-call via switch) same day. AND 2) Send urgent lab venous glucose with BCP <u>Do not wait</u> for lab results before contacting diabetes team.	Ketones Neg to 1+ Eating and drinking, well 1) Send lab venous glucose to confirm. 2) Advise avoid sugar containing drinks including fruit juices. 3) Lab result ≥11.1 mmol diagnostic in presence of Sx. 4) If lab result <11.1 arrange fasting glucose and follow traditional diagnostic criteria. Contact Diabetes team if urgent treatment with insulin is likely based on clinical judgement.
If symptoms persist be prepared to retest			

*Any capillary blood glucose reading of >20mmol in previously undiagnosed DM – contact the diabetes team the same day for advice. Unless the person is acutely unwell direct hospital admission is usually avoidable.

NB – This guidance is not designed to replace clinical judgement and does not cover rarer presentations of diabetes. If there is concern about a patient further advice should be sought.

Diagnosing Diabetes - NON-URGENT situations in adults over 18years old

Be aware of confounding conditions that may affect HbA1c (https://www.who.int/diabetes/publications/diagnosis_diabetes2011/en/)



***HbA1c>120mmol/mol should prompt urgent clinical review for severity of symptoms, check for urine ketones and treatment.**