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Reporting HbA1c Results in DCCT (%) and IFCC (mmol/mol) Units

Implementation Date: 20 June 2011

The current HbA1c assay is aligned to the method used in the Diabetes Control and Complications Trial (DCCT) such that an individual's risk of developing diabetic complications can be inferred from the result. General targets for HbA1c of 6.5 - 7.5% could be set for an individual, taking into consideration of the patient's personal risk of hypoglycaemia, cardiovascular status and other co-morbidities.

After DCCT, a new standardised and specific method for measuring HbA1c was developed by the International Federation of Clinical Chemistry and Laboratory Medicine (IFCC). The units for reporting HbA1c will be changed from non-SI to SI unit and expressed as **mmol per mol of haemoglobin** which is traceable to the latest IFCC reference method. A guide to the new values expressed as mmol/mol is:

DCCT- HbA1c (%)	IFCC-HbA1c (mmol/mol)
6.0	42
6.5	48
7.0	53
7.5	59
8.0	64
9.0	75

The equivalent values of the DCCT HbA1c targets of 6.5% and 7.5% are 48 mmol/mol and 59 mmol/mol in IFCC units, respectively, with the nondiabetic reference range of 4.0% to 6.0% being 20 mmol/mol to 42 mmol/mol, respectively.



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International consensus has reached an ultimate goal for worldwide laboratories to report HbA1c results in IFCC unit. However, during the transitional period, HbA1c results will be provided as both DCCT-aligned units (%) and IFCC-standardised units (mmol/mol) until further notice.

For enquiry, please contact our Duty Biochemist at 2632 2685 or through PWH operator at 2632 2211.

Thank you for your kind attention.

Sincerely yours,

Prof YM Dennis LO

References:

Finke A, Kobold U, Hoelzel W, Weycamp C, Jeppsson JO, Miedema K. Preparation of a candidate primary reference material for the international standardisation of HbA1c determinations. Clin Chem Lab Med 1998;36:299-308.

Consensus statement on the worldwide standardisation of the HbA1c measurement. Diabetologia 2007;50:2042-43.

Global standardization of glycosylated hemoglobin measurement: the position of the IFCC Working Group. Clin Chem Lab Med 2007;45(8):1077-80.