

Glucose Measurement: Time for a Gold Standard

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Abstract

There is no internationally recognized reference method for the measurement of blood glucose. The Centers for Disease Control and Prevention (CDC) highlighted the need for standardization some years ago when a project was started. The project objectives were to (1) investigate whether there are significant differences in calibration levels among currently used glucose monitors for home use and (2) develop a reference method for glucose determination. A first study confirmed the assumption that currently used home-use monitors differ significantly and that standardization is necessary in order to minimize variability and to improve patient care. As a reference method, CDC recommended a method based on isotope dilution gas chromatography–mass spectrometry, an assay that has received support from clinical chemists worldwide. CDC initiated a preliminary study to establish the suitability of this method, but then the project came to a halt. It is hoped that CDC, with support from the industry, as well as academic and professional organizations such as the American Association for Clinical Chemistry and International Federation of Clinical Chemistry and Laboratory Medicine, will be able to finalize the project and develop the long-awaited and much needed “gold standard” for glucose measurement.

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Abbreviations: (CDC) Centers for Disease Control and Prevention, (IDGC-MS) isotope dilution gas chromatography–mass spectrometry, (IFCC) International Federation of Clinical Chemistry and Laboratory Medicine, (ISF) interstitial fluid

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