

## Within-Individual Hematocrit Variations and Self-Monitoring of Blood Glucose

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### Abstract

Many self-monitoring of blood glucose (SMBG) systems have generated artefactually increased glucose results in low-hematocrit patients (e.g., intensive care unit and renal failure patients); conversely, these devices could produce artefactually decreased glucose results in high-hematocrit patients (e.g., neonates). The introduction of hematocrit-independent SMBG systems permits more accurate testing in anemic or polycythemic individuals. In this issue of *Journal of Diabetes Science and Technology*, Ramljak and coauthors have created glucose bias graphs for 19 common SMBG devices and declared certain systems to be optimally accurate because of insensitivity to hematocrit variation over a broad hematocrit range. Luckily, the average within-individual variation of hematocrit is low (between 2.9 and 3.3%). As such, a larger spectrum of SMBG devices can be regarded as optimally hematocrit independent.

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**Abbreviations:** (CVw) within-subject coefficient of variation, (HIF) hematocrit interference factor, (SMBG) self-monitoring of blood glucose

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**Keywords:** biologic variation, glucose, hemoglobin, intraindividual variation, self-monitoring of blood glucose, SMBG

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