

Consensus Report: The Current Role of Self-Monitoring of Blood Glucose in Non-Insulin-Treated Type 2 Diabetes

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Abstract

The Coalition for Clinical Research—Self-Monitoring of Blood Glucose Scientific Board convened a meeting in San Francisco, CA, July 20–21, 2011, to discuss the current practice of self-monitoring of blood glucose (SMBG) in non-insulin-treated (NIT) type 2 diabetes mellitus (T2DM). Twelve physician panel members from academia, practice, and government attended this meeting. These experts came from the United States, Brazil, Canada, France, Germany, Italy, and the United Kingdom. In addition, three consultants from Australia, Germany, and the United States contributed to the group's final report. This coalition was organized by Diabetes Technology Society. Self-monitoring of blood glucose was studied from eight perspectives related to patients with NIT T2DM: (1) epidemiological studies; (2) randomized controlled trials (RCT)s and meta-analyses; (3) targets, timing, and frequency of SMBG use; (4) incidence and role of SMBG in preventing hypoglycemia with single-drug regimens and combination regimens consisting of antihyperglycemic agents other than secretagogues and insulin; (5) comparison of SMBG with continuous glucose monitoring; (6) technological capabilities and limitations of SMBG; (7) barriers to appropriate use of SMBG; and (8) methods and end points for appropriate future clinical trials. The panel emphasized recent studies, which reflect the current approach for applying this intervention. Among the participants there was consensus that:

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Abbreviations: (A1C) hemoglobin A1c, (AACE/ACE) American Association of Clinical Endocrinologists/American College of Endocrinology, (ACG) active control group, (ADA) American Diabetes Association, (AGI) alpha glucosidase inhibitor, (BAS) bile acid sequestrant, (BG) blood glucose, (CCR-SMBG) Coalition for Clinical Research—Self-Monitoring of Blood Glucose, (CGM) continuous glucose monitoring, (DA) dopamine agonist, (DDS) diabetes distress scale, (DPP-4) dipeptidyl peptidase-4, (DTSQ) diabetes treatment satisfaction questionnaire, (GLP-1) glucagon-like peptide-1, (GV) glycemic variability, (HCP) health care professional, (IDF) International Diabetes Federation, (NIT) non-insulin-treated, (PPG) postprandial glucose, (QOL) quality of life, (RCT) randomized controlled trial, (SMBG) self-monitoring of blood glucose, (STG) structured testing group, (T1DM) type 1 diabetes mellitus, (T2DM) type 2 diabetes mellitus

Keywords: hemoglobin A1c, non-insulin treated, self-monitored blood glucose, type 2 diabetes

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Abstract cont.

1. SMBG is an established practice for patients with NIT T2DM, and to be most effective, it should be performed in a structured format where information obtained from this measurement is used to guide treatment;
2. New, high-quality efficacy data from RCTs have demonstrated efficacy of SMBG in NIT T2DM in trials reported since 2008;
3. Both patients and health care professionals require education on how to respond to the data for SMBG to be effective; and
4. Additional well-defined studies are needed to assess the benefits and costs of SMBG with end points not limited to hemoglobin A1c.

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