# A Review of Glycated Albumin as an Intermediate Glycation Index for Controlling Diabetes

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# Abstract

### Introduction:

This article reviews glycated albumin (GA) as a potential intermediate-term glycation index to fill the gap between self-monitoring of blood glucose (SMBG) and hemoglobin A1c testing in diabetes management. The introduction gives an assessment of available short-, medium-, and long-term glycemic indicators.

# Methodologies and Utility:

Methods of GA measurement are summarized, and the variance of normal and diabetic GA values are discussed. Greatest uniformity in GA measurement is generally associated with immunoassay and the newer affinity chromatography methodologies utilized by reference laboratories. Utility of GA measurement includes its value as a marker for glycation, its substantial relationship to diabetes complications such as nephropathy and coronary artery disease, and as an unambiguous indicator of glycemic control in diabetes patients undergoing hemodialysis. Studies support the utility of GA in detecting short-term changes in glycemic control, and GA testing has been strongly recommended for gestational diabetes.

## Results and Discussion:

The results of a survey with mailings to over 3500 diabetes care professionals primarily in the United States are outlined and analyzed (margin of error:  $\pm$ -6.5%, 95% confidence). Respondents strongly supported the need for a test for intermediate glycemic control as well as the utility of a rapid GA test as a monthly glycemic indicator.

### Conclusions:

Such a test, as yet unavailable, could increase compliance and enhance empowerment among diabetes patients. It also has the potential to reduce the number of recommended SMBG tests, which may result in significant health care cost savings.

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Abbreviations: (1,5-AG) 1,5-anhydroglucitol, (A1C) hemoglobin A1c, (BCG) bromcresol green, (CAD) coronary artery disease, (ELBIA) enzymelinked boronate immunoassay, (ELISA) enzyme-linked immunosorbent assay, (FA) fructosamine, (GA) glycated albumin, (HPLC) high-performance liquid chromatography, (LDL) low-density lipoprotein, (OTC) over-the-counter, (SMBG) self-monitoring of blood glucose, (TBA) thiobarbituric acid

Keywords: gestational diabetes, glycated albumin, glycation, glycation index, rapid assay, type 2 diabetes

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