

Arguments for and against the Role of Glucose Variability in the Development of Diabetes Complications

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Abstract

There is now unequivocal evidence that improving glycemic control in both type 1 and type 2 diabetes reduces the likelihood of developing the micro- and macrovascular complications of the disease. However, it is still unclear whether a patient with very variable glucose is at any different a risk of these problems than someone who has the same mean glucose but much more stable glycemia. This article reviews the evidence that exists to both support and refute the claim that increased glucose variability should be regarded as an independent risk factor for the development of diabetic vascular disease.

J Diabetes Sci Technol 2009;3(4):649-655

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Abbreviations: (BG) blood glucose, (CV) cardiovascular, (DCCT) Diabetes Control and Complications Trial, (EDIC) Epidemiology of Diabetes Interventions and Complications, (HbA1c) glycosylated hemoglobin A1c, (HEART2D) Hyperglycemia and Its Effect After Acute Myocardial Infarction on Cardiovascular Outcomes in Patients With Type 2 Diabetes, (IFG) impaired fasting glucose, (IGT) impaired glucose tolerance, (8-iso-PGF₂α) 8-iso-prostaglandin F₂, (MAGE) mean amplitude of glycemic excursion, (PPG) postprandial glucose, (SD) standard deviation, (UKPDS) United Kingdom Prospective Diabetes Study

Keywords: complications, diabetes, glucose variability, glycosylated hemoglobin

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