

“No Coding” of Glucose Test Strips: A Roche Perspective

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Abstract

Introduction:

Glucose test strips vary slightly from batch to batch. These variations are accounted for by a batch-specific “code”: a set of parameters defining the relationship between the signal change induced on the glucose test strip and the blood glucose concentration.

Methods:

We assessed the impact on accuracy of miscoding the ACCU-CHEK® Aviva system across a wide range of glucose test strip batches and glucose levels, throughout the shelf life of the glucose test strips.

Results:

The deviations in coding that we investigated had no effect on clinical action. Additionally, we showed, with mathematical modeling of a worst-case scenario, that the probability of an error altering clinical action is low. The batch-specific code of glucose test strips ensures the accuracy and safety of each blood glucose measurement. In addition to the parameters directly related to the blood glucose measurement, the electronic code chip contains the expiration date of the test strips and can deliver firmware updates for upgrades to the glucose meter.

Conclusions:

We eliminated the handling step of coding and retained all the advantages of coding. In Roche’s newest all-in-one glucose meter, the ACCU-CHEK Compact Plus system, the batch-specific code is integrated into the drum that contains the glucose test strips. As a result, changing the drum containing the glucose test strips automatically changes the glucose test strip code. Patients with diabetes who use the ACCU-CHEK Compact Plus glucose meter do not have to be concerned with coding.

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