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A 10-Min Pre-incubation is Required for Measurement of Fructosamine in Plasma

To the Editor:
Measurement of fructosamine in plasma has been suggested as an alternative to measuring glycated hemoglobin for assessment of diabetic control (1). Protein-based standards were recently proposed as the standardization of choice for the automated determination of fructosamine in serum (2), which is essentially as we have suggested (3).

Several conditions proposed for use with various automated analyses involve a pre-incubation time of less than 10 min (2). However, we want to emphasize that the specificity of reduction of nitro blue tetrazolium by the cis-diol form of glycated protein depends on the pre-incubation time being not less than 10 min.

We measured fructosamine in plasma of patients and controls, using a centrifugal analyzer (3) and the Technicon RA 1000 analyzer (2). Pre-incubation times were 10 min and 7 min in the former, 7 min in the latter. Both instruments were standardized with a protein-based standard, calibrated against 1-deoxy-1-morpholinofructose containing human albumin (3).

Human-source-based liquid control materials were obtained from Beckman Instruments, Brea, CA 92621.

The results (Table 1) show a statistically significant difference (p <0.01) for the mean concentration of fructosamine in patients' plasma samples pre-incubated <10 min. Values for fructosamine in normal and abnormal control materials were not influenced by the pre-incubation time.

Although assay of plasma fructosamine is automatable, these results