SUPPLEMENTARY DATA

Biochemical methods

Biochemical testing in both phases of the Fremantle Diabetes Study was carried out in the same nationally accredited diagnostic biochemistry laboratory using standard methods. For operational reasons, the laboratory's equipment and reagent suppliers changed periodically and result comparison studies were carried out at these times. To ensure homogeneity of the data between FDS phases the comparison data were used to construct composite regression equations enabling phase I results to be expressed in terms equivalent to phase II results. Where the slope and intercept were close to 1 and 0 respectively, no adjustment was applied. The methods in use and the adjustment equations employed are shown in Table 1. Table 2 illustrates the effect of these equations by showing the expected Phase II-equivalent results for typical Phase I results. Imprecision of the methods used is shown in Table 3.

SUPPLEMENTARY DATA

Supplementary Table 1. Relationships between the biochemical analysers and methods in use in Fremantle Diabetes study phases I and II. The methods were standard colorimetric or enzymatic techniques, unless specified otherwise. y = Phase II result, x = Phase I result.

Test	Analyser, phase I	Analyser, phase II	Composite regression equation
Serum glucose (mmol/L)	Hitachi 911[1].	Architect ci8200[2].	y = 0.97 x -0.18
HbA_{1c} (% IFCC)	HPLC, Mono S cation exchange column[3] (reference)	Cobas Integra[1], turbidimetric inhibition immunoassay.	y = 0.972 x -0.014
Serum creatinine (umol/L)	Hitachi 911.	Architect ci8200.	y = 0.97 x – 2.4
Serum cholesterol (mmol/L)	Hitachi 911.	Architect ci8200.	y = x
Serum triglycerides (mmol/L)	Hitachi 911.	Architect ci8200.	y = 1.14 x + 0.02
Serum HDL cholesterol (mmol/L)	Hitachi 911, phosphotungstic acid / Mg precipitation.	Architect ci8200, homogenous enzymatic.	y = x
Urine albumin (mg/L)	Hitachi 911.	Architect ci8200.	y = 1.00x + 7
Urine Creatinine (mmol/L)	Hitachi 911.	Architect ci8200.	y = 0.85 x + 0.29

[1]Roche Diagnostics; [2]Abbott Diagnostics; [3]Amersham Bioscience.

SUPPLEMENTARY DATA

Supplementary Table 2. Expected FDS Phase II-equivalent results for typical FDS Phase I biochemistry results.

Test	Phase I result	Expected Phase II-equivalent result.
Glucose (mmol/L)	8.2	7.8
HbA1c (%)	7.3	7.1
Serum creatinine (umol/L)	87	81
Serum cholesterol (mmol/L)	5.5	5.5
Serum triglycerides (mmol/L)	1.9	2.2
Serum HDL cholesterol (mmol/L)	1.06	1.06
Urine albumin (mg/L)	13	20
Urine creatinine (mmol/L)	4.5	4.1
Urine albumin-creatinine ratio (mg/mmol)	2.9	4.9

Supplementary Table 3. Between-day imprecision (expressed as coefficient of variation) of the biochemical methods in the Fremantle Diabetes Study phases I and II.

Test	Imprecision Phase I	Imprecision Phase II
Serum glucose	NA	1.5%
HbA1c	…	≤ 2.7%
Serum creatinine	≤ 2.5%	≤ 3.0%
Serum cholesterol	NA	< 2.0%
Serum triglycerides	< 2.0%	< 3.0%
Serum HDL cholesterol	< 2.5%	< 5.0%
Urine albumin	< 3.5%	< 5.0%
Urine Creatinine	NA	-

NA - not available

Reference: Eckerbom S, Bergqvist Y, Jeppsson JO: Improved method for analysis of glycated haemoglobin by ion exchange chromatography. Ann Clin Biochem 1994;31:355-360