

Online Appendix – Supplemental Material

DETECT-2 Study Group

Writing group

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Co-authors and studies used in these analyses:

Ronald Klein, Barbara EK Klein, Maria Inês Schmidt - *The Atherosclerosis Risk In Communities Study*.

Paul Zimmet, Robyn Tapp and Jonathan Shaw - *Australian Diabetes Obesity and Lifestyle study*.

Paul Mitchell, Jie Jing Wang and Gerald Liew - *Blue Mountains Eye Study*.

V Mohan and M Rema - *Chennai Urban Rural Epidemiology Study*.

Beverley Balkau, Pascale Massin - *Data from an Epidemiological Study on the Insulin Resistance Syndrome*.

Michael Engelgau - *Diabetes in Egypt project*. Chikako Ito - *Hiroshima study*.

Ronald Klein, Barbara EK Klein, Mary Frances Cotch - *Multi-Ethnic Study of Atherosclerosis*.

<http://www.cdc.gov/nchs/about/major/nhanes/nh3data.htm> - *3rd National Health and Nutrition Examination Survey*.

U. Rajala, M. Laakso, Q. Qiao, S. Keinanen-Kiukaanniemi - *Oulu 55 study*.

Helen C. Looker, Robert L. Hanson, Robert G. Nelson, Peter H. Bennett, and William C. Knowler - *Pima Indian study*.

Tien Y Wong, Seang Mei Saw, Tin Aung, E Shyong Tai - *Singapore Malay Eye Study*.

Supplementary Table 1: Characteristic of participants aged 20 to 79 years for each study

Study	Prevalence (%)		Mean (SD)								
	Known diabetes	Diabetes-specific retinopathy	FPG (mmol/L)	2-h PG (mmol/L)	HbA1c (%)	BMI (kg/m ²)	TC (mmol/L)	TG (mmol/L)	SBP (mmHg)	DBP (mmHg)	Diabetes duration (years)
ARIC (10)	10.6	0.6	6.1 (2.3)	-	-	28.5 (5.5)	5.4 (1.0)	1.6 (1.0)	119.5 (17.5)	73.1 (10.7)	8.2 (6.9)
AusDiab (5)	19.6	1.2	6.5 (2.2)	9.1 (3.3)	5.7 (1.2)	28.8 (5.7)	5.6 (1.0)	1.8 (1.3)	136.5 (19.6)	72.3 (12.2)	8.8 (9.3)
BMES (11)	6.0	0.7	5.3 (1.6)	-	-	26.3 (4.5)	6.0 (1.1)	1.8 (1.2)	145.4 (20.7)	83.6 (9.9)	10.3 (13.1)
CURES (12)	6.1	0.2	5.3 (2.0)	7.0 (3.5)	6.0 (1.4)	23.1 (4.0)	4.6 (1.0)	1.4 (0.9)	118.6 (17.9)	74.0 (11.2)	3.9 (5.1)
Hiroshima (4)	15.0	0.5	6.0 (1.4)	9.2 (4.4)	5.4 (1.0)	23.2 (3.3)	5.7 (1.0)	1.4 (0.9)	134.4 (18.6)	77.9 (10.6)	7.3 (6.3)
MESA (14)	10.6	1.6	5.8 (1.7)	-	5.7 (1.0)	28.4 (5.4)	5.0 (0.9)	1.5 (1.0)	125.6 (20.8)	72.0 (10.2)	10.3 (8.2)
NHANES III (15)	7.0	0.5	6.0 (1.9)	7.8 (4.4)	5.7 (1.1)	28.1 (5.6)	5.6 (1.1)	1.7 (1.4)	126.7 (19.6)	74.2 (10.9)	8.9 (8.8)
Pima Indian (17)	49.2	13.5	9.2 (4.4)	14.2 (7.6)	-	33.6 (7.6)	-	-	-	-	10.4 (7.2)
SiMES (18)	20.1	3.9	-	-	6.5 (1.6)	26.4 (5.1)	5.6 (1.2)	1.6 (1.3)	146.9 (23.7)	79.7 (11.2)	9.6 (8.6)
Total	13.8	1.5	6.1 (2.1)	9.2 (4.9)	5.7 (1.2)	26.6 (5.6)	5.5 (1.0)	1.6 (1.1)	129.8 (21.3)	75.7 (11.2)	8.5 (7.5)

FPG = fasting plasma glucose; 2-h PG = 2 hour post oral glucose load plasma glucose; HbA1c = glycated hemoglobin; BMI = body mass index; TC = total cholesterol; TG = triglyceride; SBP = systolic blood pressure; DBP = diastolic blood pressure; diabetes duration = duration of diabetes in people with previously diagnosed diabetes.

Supplementary Table 2: Sensitivity, specificity, positive predictive and negative predictive values derived from ROC curve analyses for diabetes-specific retinopathy, and calculated prevalence of diabetes for the 16381 participants without known diabetes who had all three glycemic measures.

	Sensitivity (%)	Specificity (%)	Positive predictive value (%)	Negative predictive value (%)	% with newly diagnosed diabetes*
FPG (mmol/L)					
5.5	91.7	52.3	2.4	99.8	46.1
6.0	85.6	72.1	3.7	99.7	24.0
6.1	84.3	74.9	4.1	99.7	22.0
6.2	84.1	76.3	4.3	99.7	19.0
6.3	82.9	79.4	4.8	99.7	16.7
6.4	82.7	80.5	5.1	99.7	14.7
6.5	82.1	81.3	5.3	99.7	13.0
6.6	80.6	82.9	5.6	99.7	11.9
6.7	78.6	84.7	6.1	99.7	10.6
6.8	78.6	84.7	6.1	99.7	9.5
6.9	77.5	85.7	6.4	99.7	8.5
7.0	76.1	86.6	6.7	99.7	7.7
7.5	73.0	90.0	8.5	99.6	5.1
2-h PG (mmol/L)					
10.0	90.6	72.1	4.1	99.8	19.0
10.5	89.6	74.6	4.4	99.8	16.3
11.0	88.5	77.3	4.9	99.8	14.1
11.1	88.1	77.5	4.9	99.8	13.9
11.2	87.4	78.3	5.0	99.8	13.3
11.3	87.1	78.8	5.1	99.8	12.9
11.4	86.7	79.0	5.2	99.8	12.5
11.5	86.0	79.3	5.2	99.8	12.1
11.6	85.3	79.8	5.3	99.8	11.7
11.7	85.3	80.0	5.3	99.8	11.4
11.8	84.9	80.4	5.4	99.8	11.1
11.9	84.2	81.1	5.5	99.7	10.8
12.0	83.8	81.5	5.6	99.7	10.5
12.5	82.7	83.3	6.1	99.7	9.1
13.0	82.4	84.7	6.6	99.7	8.0
13.1	81.7	84.8	6.6	99.7	7.8
13.2	81.7	85.0	6.7	99.7	7.7
13.3	78.8	85.3	6.6	99.7	7.5
13.4	78.4	85.8	6.8	99.7	7.3
13.5	78.4	86.0	6.9	99.7	7.1
HbA1c (%)					
5.5	95.3	53.5	2.1	99.9	32.1
6.0	89.5	80.4	4.7	99.9	12.4
6.1	87.5	82.9	5.2	99.8	10.6
6.2	86.5	83.6	5.3	99.8	8.6
6.3	85.8	85.5	6.0	99.8	7.6
6.4	84.5	87.0	6.5	99.8	6.3
6.5	82.8	88.1	6.9	99.8	5.7
6.6	81.1	89.1	7.4	99.8	5.2
6.7	80.1	89.7	7.7	99.8	4.6
6.8	77.4	90.6	8.1	99.7	4.5
6.9	75.0	91.4	8.5	99.7	3.9
7.0	73.3	91.9	8.8	99.7	3.7
7.5	64.2	94.0	10.3	99.6	2.6

* Participants with known diabetes were excluded. FPG = fasting plasma glucose; 2-h PG = 2 hour post oral glucose load plasma glucose; HbA1c = glycosylated hemoglobin.