

SUPPLEMENTARY DATA

Supplementary Table 1. The clinical characteristics of normal glucose tolerance at baseline vs. undiagnosed diabetes at baseline for groups of enrolled subjects.

	N = 9,375 without history of diabetes		
	Normal glucose tolerance	Undiagnosed diabetes mellitus	<i>p</i> -value
n	8,740	635	
Sex (men)	4,091 (46.8%)	324 (51.0%)	0.040
Age (years)	51.7 ± 8.8	54.9 ± 8.9	< 0.001
BMI (kg/m ²)	24.5 ± 3.1	25.5 ± 3.5	< 0.001
Waist circumference (cm)	82.2 ± 8.8	86.0 ± 8.7	< 0.001
Systolic blood pressure (mmHg)	116.6 ± 17.8	124.2 ± 19.0	< 0.001
Diastolic blood pressure (mmHg)	74.8 ± 11.5	78.3 ± 11.7	< 0.001
Fasting plasma glucose (mmol/l)	4.7 ± 0.5	6.7 ± 2.2	< 0.001
2 h glucose (mmol/l)	6.6 ± 1.7	13.7 ± 3.6	< 0.001
A1c (%)	5.4 ± 0.4	6.6 ± 1.4	< 0.001
Fasting insulin (pmol/l)	45.3 ± 28.2	51.9 ± 34.3	< 0.001
HOMA-IR	1.6 ± 1.0	2.6 ± 1.9	< 0.001
HOMA-β	153.0 ± 180.7	78.8 ± 96.6	< 0.001
Total cholesterol (mmol/l)	5.0 ± 0.9	5.4 ± 1.1	< 0.001
HDL cholesterol (mmol/l)	1.21 ± 0.28	1.17 ± 0.29	0.004
Triglyceride (mmol/l)	1.7 ± 1.1	2.3 ± 1.6	< 0.001
hsCRP (mg/dl)	0.23 ± 0.53	0.33 ± 0.63	< 0.001
Serum creatinine (mg/dl)	0.8 ± 0.2	0.9 ± 0.2	0.049
Hypertension (%)	986 (11.3%)	163 (25.7%)	< 0.001
Family history of diabetes (%)	910 (10.4%)	110 (17.3%)	< 0.001
Smoker (%)	2,158 (25.1%)	182 (29.1%)	0.027
Living in urban area (Ansan) (%)	4,415 (50.5%)	330 (52.0%)	0.479
Sporting activity (≥ 1/week) (%)	3,033 (34.7%)	231 (36.4%)	0.392
Alcohol intake (≥ 60 kcal/day) (%)	1,932 (22.7%)	191 (30.7%)	< 0.001
Child with birth weight > 4 kg (%), women	215 (9.9%)	13 (8.5%)	0.581

* We divided groups based on the result of initial 75 g oral glucose tolerance test.

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Supplementary Table 2. The relative risk (RR) of incident type 2 diabetes at six-year follow-up in Cox proportional-hazard model based on A1c status at baseline : Stratified analysis by gender and baseline fasting glucose.

	Men		Women	
	Adjusted RR (95% CI)*	P-value	Adjusted RR (95% CI)*	P-value
Entire population				
A1C ≤4.9	1.00		1.00	
A1C 5.0-5.4	1.58 (0.95-2.61)	0.077	1.15 (0.68-1.95)	0.607
A1C 5.5-5.9	2.67 (1.61-4.43)	<0.001	2.69 (1.59-4.53)	<0.001
A1C 6.0-6.4	6.65 (3.87-11.45)	<0.001	5.91 (3.37-10.34)	<0.001
A1C ≥6.5	11.95 (5.92-24.13)	<0.001	12.44 (6.65-23.24)	<0.001
NGT				
A1C ≤4.9	1.00		1.00	
A1C 5.0-5.4	1.46 (0.87-2.47)	0.002	1.10 (0.64-1.87)	0.735
A1C 5.5-5.9	2.28 (1.34-3.86)	<0.001	2.60 (1.54-4.39)	<0.001
A1C 6.0-6.4	6.92 (3.89-12.32)	<0.001	5.56 (3.15-9.82)	<0.001
A1C ≥6.5	11.85 (4.89-28.73)	<0.001	12.09 (6.12-23.89)	<0.001
IFG				
A1C ≤5.4	1.00		1.00	
A1C 5.5-5.9	2.38 (1.44-3.92)	0.001	1.87 (0.69-5.09)	0.219
A1C 6.0-6.4	4.28 (2.41-7.58)	<0.001	4.05 (1.36-12.07)	0.012
A1C ≥6.5	8.19 (3.55-18.92)	<0.001	8.08 (2.77-23.58)	<0.001

*Adjusted for age, waist circumference, family history of diabetes, living in urban area, hypertension, smoking and alcohol intake, triglycerides (log), HDL cholesterol, HOMA-IR (log), HOMA-β (log), hsCRP (log), hsCRP = high-sensitivity C-reactive protein; HOMA-IR and HOMA-β = homeostasis model assessment of insulin resistance and beta cell function.

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Supplementary Table 3—Sensitivity, specificity, and positive and negative predictive value of the A1C for predicting the 6 year incidence of diabetes according to HbA1C cutoff levels: Stratified analysis by baseline fasting glucose.

A1C cutoff (%)	IFG group at baseline				NGT group at baseline			
	Sensitivity	Specificity	Predictive value		Sensitivity	Specificity	Predictive value	
			Positive	Negative			Positive	Negative
5.0 (-1.00 SD above normal mean)	0.994	0.055	0.494	0.909	0.954	0.123	0.140	0.948
5.1 (-0.75 SD above normal mean)	0.994	0.087	0.503	0.941	0.921	0.202	0.147	0.945
5.2 (-0.50 SD above normal mean)	0.947	0.137	0.505	0.735	0.872	0.308	0.158	0.942
5.3 (-0.25 SD above normal mean)	0.888	0.262	0.528	0.716	0.812	0.425	0.174	0.938
5.4 (0.00 SD above normal mean)	0.853	0.372	0.558	0.731	0.748	0.554	0.200	0.936
5.5 (0.25 SD above normal mean)	0.818	0.519	0.612	0.754	0.650	0.670	0.227	0.928
5.6 (0.50 SD above normal mean)	0.747	0.612	0.641	0.723	0.559	0.775	0.270	0.922
5.7 (0.75 SD above normal mean)	0.682	0.727	0.699	0.711	0.468	0.851	0.319	0.915
5.8 (1.00 SD above normal mean)	0.624	0.831	0.774	0.704	0.372	0.911	0.385	0.907
5.9 (1.25 SD above normal mean)	0.524	0.880	0.802	0.665	0.288	0.950	0.460	0.900
6.0 (1.50 SD above normal mean)	0.424	0.934	0.857	0.636	0.225	0.968	0.514	0.893
6.2 (2.00 SD above normal mean)	0.300	0.962	0.879	0.597	0.117	0.988	0.594	0.883
6.6 (3.00 SD above normal mean)	0.124	1.000	1.000	0.551	0.034	0.999	0.806	0.874