

Supplementary appendix

Serum total cholesterol, triacylglycerol and HDL-cholesterol were measured directly using an enzymatic colorimetric method with commercially available kits using an automated biochemistry analyser (Cobas Integra 400 plus; Roche Diagnostics, Mannheim, Germany). LDL-cholesterol was calculated using the Friedewald equation except in participants with serum triacylglycerol level ≥ 4.5 mmol/l, when a direct estimation was made. Serum insulin estimation was performed using an electrochemiluminescent tracer-based immunometric assay using a Cobas e411 auto-analyser (Roche Diagnostics). For plasma glucose, samples were collected in a fluoride vial, centrifuged immediately and transported to the laboratory within one hour of collection in cool boxes. Glucose was analysed using the hexokinase method with the Cobas Integra 400 plus auto-analyser (Roche Diagnostics). Blood for HbA1c was collected in EDTA vials and measured by high performed liquid chromatography (HPLC)-based ion-exchange chromatography (D-10 Hemoglobin A1c Program; Bio-Rad Laboratories, Hercules, CA, USA).

Supplementary Table 1 Adjusted ORs (95% CIs) for the association of HOMAIR with metabolic variables

Variable	Unadjusted	*Adjusted
Dysglycaemia		
Category1	Reference	
Category2	1.70 (1.15,2.53)	1.73 (1.15, 2.59)
P value	0.008	0.008
Category 3	6.83 (4.14,11.27)	7.04 (4.20, 11.79)
P value	< 0.001	< 0.001
Hypertension		
Category 1	Reference	
Category 2	1.46 (0.83, 2.56)	1.48 (0.84, 2.61)
P value	0.189	0.176
Category3	3.52 (1.96, 6.31)	3.56 (1.97, 6.43)
P value	< 0.001	< 0.001
The metabolic syndrome		
Category 1	Reference	
Category 2	4.31 (2.61, 7.12)	4.35 (2.62, 7.24)
P value	< 0.001	< 0.001
Category3	12.25 (7.0,1 21.41)	12.20 (6.91, 21.54)

P value	< 0.001	< 0.001
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*Adjusted for age and family history of diabetes for dysglycemia and metabolic syndrome and age alone for hypertension

Category 1: Lowest quartile (Q1) for HOMA-IR

Category 2: Intermediate quartiles (Q2/Q3) for HOMA-IR

Category 3: Highest quartile (Q4) for HOMA-IR

Supplementary Table 2 Adjusted ORs (95% CIs) for the association of disposition index with metabolic variables

Variable	Unadjusted	*Adjusted
Dysglycaemia		
Category 1	Reference	
Category 2	1.51 (1.02,2.24)	1.43 (0.96,2.14)
P value	0.038	0.078
Category3	7.26 (4.36,12.08)	6.54 (3.90,10.97)
P value	< 0.001	< 0.001
Hypertension		
Category 1	Reference	
Category 2	1.56 (0.89, 2.73)	1.50 (0.85, 2.63)
P value	0.120	0.160
Category3	3.22 (1.79, 5.80)	2.89 (1.60, 5.24)
P value	< 0.001	< 0.001
The metabolic syndrome		
Category 1	Reference	
Category 2	1.62(1.07, 2.47)	1.53(1.002, 2.35)
P value	0.024	0.049
Category3	4.51 (2.80, 7.27)	4.02 (2.48, 6.53)
P value	< 0.001	< 0.001

*Adjusted for age and family history of diabetes for dysglycemia and metabolic syndrome and age alone for hypertension

Category 1: Highest quartile (Q4) for oDI

Category 2: Intermediate quartiles (Q2/Q3) for oDI

Category 3: Lowest quartile (Q1) for oDI

Supplementary Table 3 Adjusted ORs (95% CIs) for the association of insulin resistance/disposition index with metabolic variables

Variable	Unadjusted	*Adjusted
Dysglycaemia		
Phenotype1	Reference	
Phenotype2	1.69 (0.95,3.00)	1.63 (0.91,2.93)
P value	0.074	0.099
Phenotype 3	5.52 (2.94,10.35)	5.34 (2.81, 10.16)
P value	< 0.001	< 0.001
Phenotype 4	22.74 (9.21, 56.10)	21.09 (8.47, 52.53)
P value	< 0.001	< 0.001
Hypertension		
Phenotype1	Reference	
Phenotype2	1.72 (0.70, 4.20)	1.66 (0.68, 4.07)
P value	0.235	0.268
Phenotype 3	3.39 (1.36, 8.45)	3.26 (1.30, 8.16)
P value	0.235	0.012
Phenotype 4	6.22 (2.40,16.16)	5.60 (2.14,14.64)
P value	< 0.001	< 0.001
The metabolic syndrome		
Phenotype1	Reference	
Phenotype2	2.86 (1.36, 5.99)	2.77 (1.31, 5.82)
P value	0.005	0.007
Phenotype 3	9.02 (4.17, 19.50)	8.42 (3.87, 18.34)
P value	< 0.001	< 0.001
Phenotype 4	15.04 (6.43, 35.17)	13.65 (5.80, 32.13)
P value	< 0.001	< 0.001

*Adjusted for age and family history of diabetes for dysglycemia and metabolic syndrome and age alone for hypertension

Phenotype 1: Category 1 for both HOMA-IR and oDI

Phenotype 3: Category 3 for either HOMA-IR or oDI

Phenotype 4: Category 3 for both HOMA-IR and oDI

Phenotype 2: Other than phenotypes 1, 3 and 4