

Lifestyle intervention is more effective in high 1-hour post-load glucose than in prediabetes for restoring β -cell function, reducing ectopic fat, and preventing type 2 diabetes

SUPPLEMENTARY CONTENT

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Group definition	NGR	High 1h-PG	IGR	T2D
Without HbA1c	106 (33.4%)	96 (30.3%)	115 (36.3%)	0
With HbA1c	64 (20.2%) ¹	50 (15.8%) ²	196 (61.8%) ³	7 (2.2%) ⁴

Supplementary Table 1:

Group defined with and without HbA1c inclusion.

¹Defined as FPG <100 mg/dL (5.6 mmol/L), 2h OGTT glucose <140 mg/dL (7.8 mmol/L), 1h-PG <155 mg/dL (8.6 mmol/L), and HbA1c <5.7%;

²Defined as meeting all criteria for NGR except for 1h-PG ≥155 mg/dL (8.6 mmol/L);

³Defined as FPG ≥100 mg/dL (5.6 mmol/L) and <126 mg/dL (7.0 mmol/L), 2h-PG ≥140 mg/dL (7.8 mmol/L) and <200 mg/dL (11.1 mmol/L), HbA1c ≥5.7% and <6.5%, or any combination;

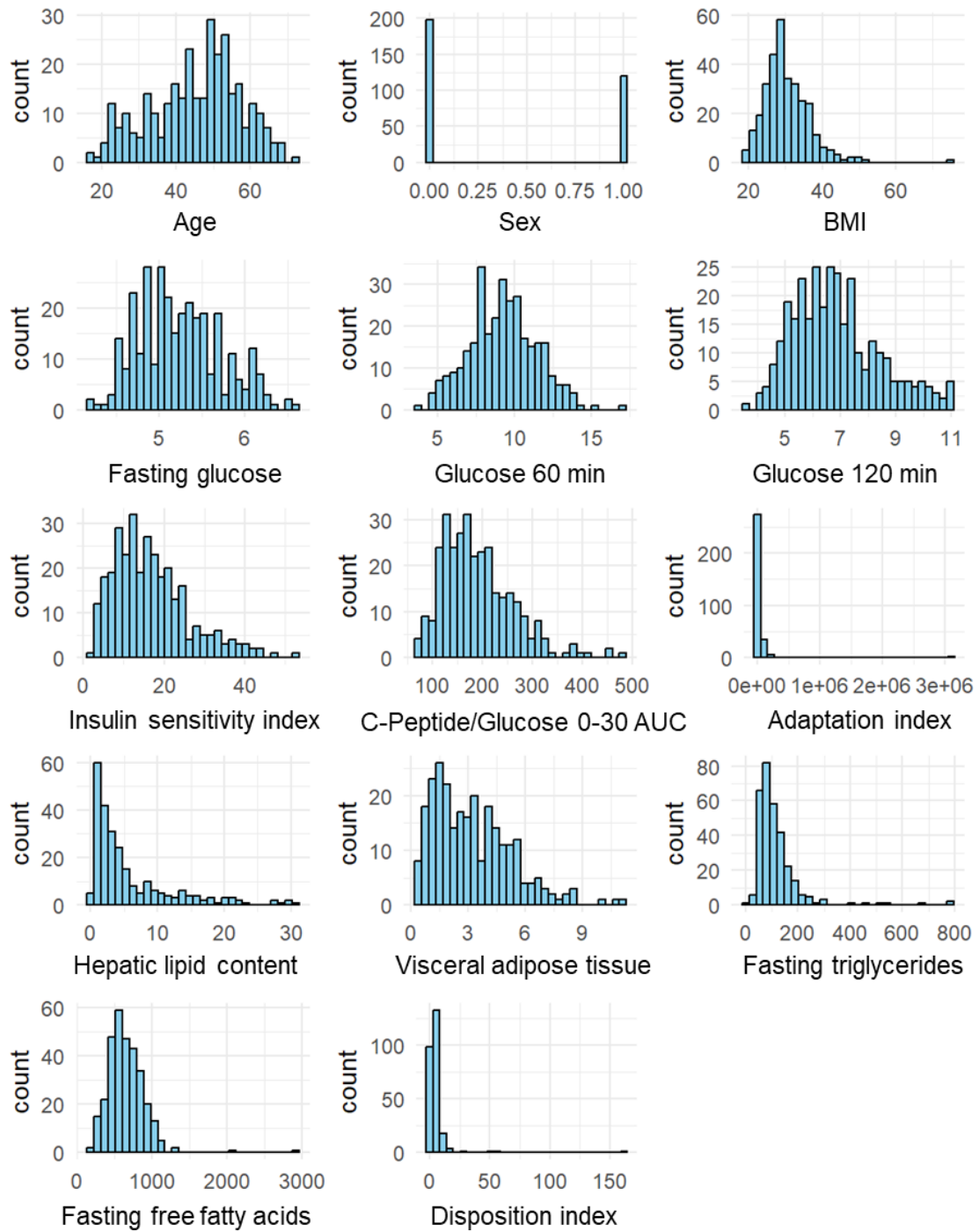
⁴Defined as FPG ≥126 mg/dL (7.0 mmol/L), 2h-PG ≥200 mg/dL (11.1 mmol/L), or HbA1c ≥6.5%.

Test type	AUC (95% CI)	Δ AUC	P-value	Sensitivity	Specificity
HbA1c	0.588 (0.526-0.651)	Ref.	Ref.	0.344	0.802
FPG	0.775 (0.723-0.823)	0.184	<0.0001	0.741	0.689
1-h PG	0.964 (0.942-0.983)	0.375	<0.0001	0.925	1.000
2-h PG	0.813 (0.765-0.857)	0.223	<0.0001	0.717	0.792

Supplementary Table 2:

Receiver operating characteristic analysis of HbA1c versus OGTT values in identifying at-risk individuals.

At-risk individuals were defined as the combined group of IGR and high 1h-PG; Δ AUC was calculated as $AUC_{(OGTT \text{ marker})}$ minus $AUC_{(HbA1c)}$.



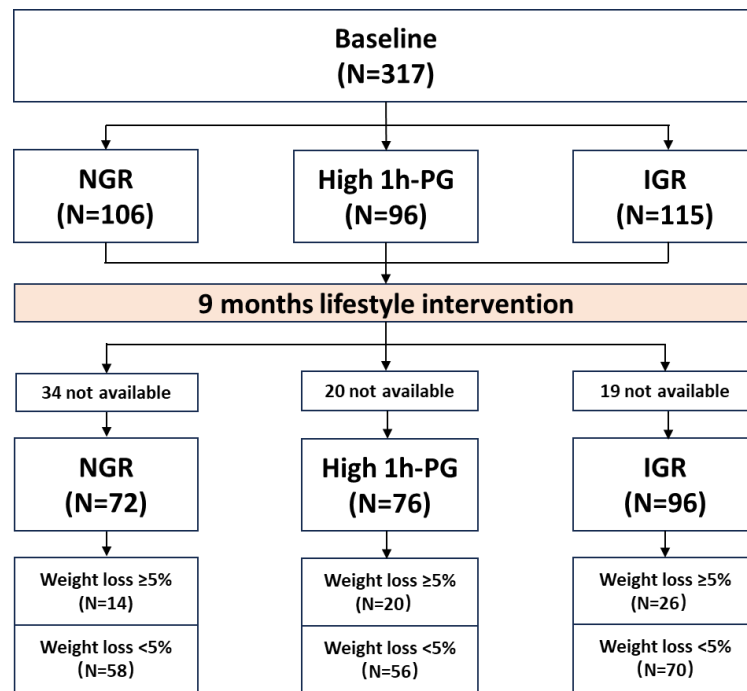
Supplementary Figure 1:

Histograms of the baseline variables.

Characteristic	NGR (N=106)	High 1h-PG (N=96)	IGR (N=115)	P value
Age	41.6 ± 11.8	46.9 ± 11.4	47.7 ± 12.1	<0.001
Sex [male %]	29 (27)	42 (43)	49 (42)	0.026
BMI	29.29 [23.80, 34.78]	29.50 [26.85, 34.04]	29.69 [27.16, 34.23]	0.150
Fasting glucose	4.95 [4.64, 5.26]	5.17 [4.96, 5.39]	5.72 [5.27, 6.00]	<0.001
Glucose 60 min	7.1 ± 1.08	10.1 ± 1.08	10.6 ± 2.11	<0.001
Glucose 120 min	5.78 [4.93, 6.63]	6.64 [5.94, 7.18]	8.25 [6.87, 9.28]	<0.001
Insulin sensitivity index	20.65 [14.03, 27.79]	14.46 [10.81, 19.66]	11.49 [7.58, 16.78]	<0.001
C-Peptide / Glucose 0-30 AUC	198.9 [147.9, 237.3]	169.9 [136.6, 214.6]	173.5 [128.2, 221.6]	0.065
Adaptation index of β -cell function	38313 [26808, 56538]	23760 [18163, 32759]	17718 [12879, 25939]	<0.001
Hepatic lipid content	2.23 [1.23, 4.46]	3.25 [1.63, 6.84]	4.43 [2.12, 13.33]	0.0004
Visceral adipose tissue	1.88 [1.22, 3.36]	3.26 [1.96, 4.66]	3.45 [1.83, 5.01]	<0.001
Fasting triglycerides	80.0 [64.0, 107.5]	100.0 [79.0, 142.0]	112.0 [81.0, 150.8]	<0.001
Fasting free fatty acids	595.9 [389.5, 802.5]	624.0 [502.0, 785.3]	701.5 [568.0, 834.3]	0.0002
Disposition index	5.99 [4.75, 8.81]	3.31 [2.28, 4.06]	2.18 [1.54, 3.57]	<0.001

Supplementary Table 3:

Baseline characteristics based on non-parametric analysis. Data were presented as means (standard deviation) or medians (interquartile ranges) for continuous variables or numbers (proportions) for categorical variables; The differences in continuous and categorical variables across the three groups were determined by one-way ANOVA or Kruskal–Wallis test and chi-square test, respectively.



Supplementary Figure 2:

Flow of participants.