

Oral glucose absorption is enhanced in early metabolic dysfunction-associated steatotic liver disease

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ESM Table 1. Characteristics of Study 1 BMI-matched subset.

	MASLD (n=17)	Control (n=19)	<i>p</i> value
Women, n (%)	6 (35)	8 (42)	0.742
Age, year	49 [32, 54]	47 [30, 56]	0.788
BMI, kg/m ²	27.6±3.6	25.9±3.7	0.177
HbA _{1c} , mmol/mol	37.6±5.4	35.6±4.2	0.213
HbA _{1c} , %	5.6±0.5	5.4±0.4	0.190
Fasting blood glucose, mmol/l	5.3±0.9	5.2±0.5	0.771
1h blood glucose, mmol/l	10.1±1.9	8.3±1.6	0.005
2h blood glucose, mmol/l	8.7±2.7	7.9±2.0	0.296
Aspartate aminotransferase (AST), IU/l	20 [18, 27]	17 [15, 24]	0.072
Alanine aminotransferase (ALT), IU/l	30 [17, 34]	16 [15, 24]	0.037
Alkaline phosphatase, IU/l	64 [47, 76]	78 [54, 91]	0.095
γ-Glutamyl transferase, IU/l	30 [16, 63]	14 [11, 24]	0.023
Hepatic steatosis index (HSI)	37 [33, 42]	33 [31, 38]	0.026

Data are number (%), mean±SD, or median [interquartile range]. Group differences were tested by Fisher's exact test, Student t test, or Mann-Whitney test, respectively. Statistically significant p values (<0.05) for are indicated in bold.

ESM Table 2. Multivariable associations between metabolic parameters and prevalent MASLD in Study 1 BMI-matched subset.

	Univariable analysis	Multivariable model 1	Multivariable model 2	Multivariable model 3
RaO AUC ₀₋₆₀	3.00 [1.38, 8.21]	6.52 [1.83, 43.87]	9.94 [2.21, 112.76]	11.59 [2.12, 164.72]
GCI/Ins AUC ₀₋₁₂₀	0.49 [0.13, 1.13]	0.15 [0.01, 1.12]	0.38 [0.02, 1.93]	0.85 [0.02, 14.65]
EGP×ISR AUC ₀₋₁₂₀	0.67 [0.31, 1.31]	0.34 [0.07, 1.16]	0.16 [0.02, 0.75]	0.22 [0.01, 1.42]
Age	1.04 [0.52, 2.09]	0.65 [0.16, 2.27]	0.62 [0.15, 2.21]	0.83 [0.11, 6.11]
Sex [Male]	1.33 [0.35, 5.31]	16.6 [1.57, 381.81]	32.86 [1.25, 866.44]	38.52 [0.99, 1502.8]
HbA _{1c}	1.59 [0.80, 3.41]	0.95 [0.23, 4.26]	0.57 [0.12, 2.67]	0.31 [0.03, 1.82]
BMI	1.84 [0.78, 4.69]	–	5.86 [0.88, 64.79]	7.87 [0.96, 128.71]
Beta cell glucose sensitivity	0.73 [0.35, 1.40]	–	–	0.63 [0.14, 2.21]
Insulin clearance	0.31 [0.09, 0.75]	–	–	0.27 [0.02, 1.91]

Data are odds ratio [95% confidence interval] for MASLD for each 1-SD increase in the independent variable. Statistically significant p values (<0.05) are indicated in bold.

ESM Table 3. Characteristics of Study 1 and Study 2 participants.

	Study 1 (n=42)	Study 2 (n=91)	<i>p</i> value
Women, n (%)	17 (41)	43 (47)	0.574
Age, year	47 [30, 56]	30 [23, 40]	<0.0001
Race/Ethnicity*			<0.0001
Non-Hispanic White	42 (100)	40 (44)	
Asian	0 (0)	44 (48)	
Others	0 (0)	7 (8)	
BMI, kg/m ²	26.7±4.6	24.6±3.4	0.008
HbA _{1c} , mmol/mol	36.7±4.9	34.9±3.1	0.033
HbA _{1c} , %	5.5±0.4	5.3±0.3	0.027
Fasting blood glucose, mmol/l	5.3±0.7	5.2±0.5	0.361
1h blood glucose, mmol/l	9.2±1.8	9.0±2.1	0.595
2h blood glucose, mmol/l	8.4±2.3	6.7±1.4	<0.0001
Aspartate aminotransferase (AST), IU/l	19 [15, 24]	24 [21, 28]	0.0002
Alanine aminotransferase (ALT), IU/l	17 [15, 30]	20 [16, 29]	0.335
Alkaline phosphatase, IU/l	67 [47, 81]	74 [58, 80]	0.119
γ-Glutamyl transferase, IU/l	20 [11, 37]	16 [13, 23]	0.277
Hepatic steatosis index (HSI)	35 [32, 41]	33 [29, 36]	0.015

Data are number (%), mean±SD, or median [interquartile range]. Group differences were tested by Fisher's exact test, Student t test, or Mann-Whitney test, respectively. Statistically significant p values (<0.05) for are indicated in bold.

* Self-reported.

ESM Figure 1. Plasma fractional enrichment of 6,6-[²H₂]glucose infused intravenously during a 75g oral glucose tolerance test.

