

Supplemental Material

Table S1. Digit preference of blood pressure (BP) measurements.

End digit	Proportions of end digit %	
	Systolic BP	Diastolic BP
0	17.09	16.46
1	8.88	9.04
2	9.04	8.69
3	9.22	9.10
4	8.71	9.12
5	10.56	11.26
6	9.11	9.18
7	9.35	8.92
8	8.90	9.36
9	9.15	8.88

Table S2. Descriptive data of baseline and follow-up characteristics by incident hypertension at follow-up.

Variable	Total (n=3271)	Normotensives (n=2886)	Hypertensives (n=385)	P-value
Baseline				
Age, yr	28.7 (4.7)	28.8 (4.7)	28.3 (4.3)	0.075
BMI, kg/m ²	22.4 (3.2)	22.2 (3.1)	23.3 (3.3)	<0.001
SBP, mmHg	114.4 (11.1)	113.9 (11.0)	118.1 (11.2)	<0.001
DBP, mmHg	72.0 (8.0)	71.5 (7.9)	75.6 (7.8)	<0.001
Follow-up				
Age, yr	34.3 (4.6)	34.4 (4.6)	33.2 (4.3)	<0.001
BMI, kg/m ²	23.8 (3.4)	23.5 (3.3)	25.6 (3.4)	<0.001
SBP, mmHg	117.3 (14.1)	114.2 (11.2)	140.7 (11.2)	<0.001
DBP, mmHg	71.9 (10.5)	69.6 (8.4)	88.7 (9.5)	<0.001
Follow up years	5.6 (2.2)	5.7 (2.2)	4.9 (1.8)	<0.001
Smoker, n (%)	685 (20.9)	561 (19.4)	124 (32.2)	<0.001
Drinker, n (%)	972 (29.7)	760 (26.3)	212 (55.1)	<0.001

BMI=body mass index; SBP=systolic blood pressure;

DBP=diastolic blood pressure

Table S3. Baseline characteristics of participants included and excluded.

Variable	Excluded	Included	P-value
N	28590	3271	
Age, year	29.86 (5.6)	28.7 (4.7)	<0.001
Males, n (%)	16042 (56.1)	1712 (52.3)	<0.001
BMI, kg/m ²	23.4 (3.8)	22.4 (3.2)	<0.001
SBP, mmHg	117.6 (11.8)	114.4 (11.1)	<0.001
DBP, mmHg	72.0 (8.8)	72.0 (8.0)	0.742
Smoker, n (%)	2229 (7.8)	455 (13.9)	<0.001
Drinker, n (%)	2280 (8.0)	641 (19.6)	<0.001

BMI=body mass index; SBP=systolic blood pressure; DBP=diastolic blood pressure

Table S4. Latent Class Growth Mixture Models (LCGMM) results of model fitting process.

No. Latent class	Polynomial degree	Log-Lik	BIC	% Participants per class	Mean posterior probabilities	% Posterior probabilities > 70%
1	Linear	-34904	69848	100	na	na
	Quadratic	-34772	69600	100	na	na
	Cubic	-34742	69556	100	na	na
2	Linear	-34571	69215	34.52/ 65.48	0.83/ 0.90	75.82/ 87.21
	Quadratic	-34370	68837	34.97/ 65.03	0.84/ 0.90	78.85/ 87.35
	Cubic	-34338	68798	35.43/ 64.57	0.84/ 0.90	78.60/ 87.12
3	Linear	-34299	68703	38.34/ 3.76/ 57.90	0.79/ 0.83/ 0.87	75.52/ 76.42/ 87.12
	Quadratic	-34170	68477	2.20/ 35.22/ 62.58	0.82/ 0.81/ 0.87	79.17/ 76.56/ 86.17
	Cubic	-34131	68433	1.99/ 35.4/ 62.61	0.83/ 0.81/ 0.86	81.54/ 76.25/ 86.82
4	Linear	-34230	68597	6.14/ 2.87/ 48.7/ 42.28	0.79/ 0.83/ 0.87/ 0.79	67.66/ 72.34/ 83.11/ 73.97
	Quadratic	-34059	68297	1.90/ 7.52/ 46.99/ 43.6	0.82/ 0.81/ 0.87/ 0.80	75.81/ 67.89/ 83.28/ 73.84

	Cubic	-34029	68277	45.77/ 43.44/ 8.90/ 1.90	0.86/ 0.79/ 0.81/ 0.83	82.70/ 73.19/ 69.42/ 74.19
5	Linear	-34155	68480	3.33/ 1.86/ 4.49/ 49.43 /40.87	0.80/ 0.78/ 0.73/ 0.90/ 0.82	70.64/ 63.93/ 50.34/ 86.58/ 78.98
	Quadratic	-33981	68180	43.14/ 8.13/ 0.89/ 45.58/ 2.26	0.80/ 0.80/ 0.83/ 0.86/ 0.82	74.63/ 68.80/ 72.41/ 81.96/ 74.32
	Cubic	-34095	68456	7.73/ 46.13/ 42.13/ 2.57/ 1.41	0.79/ 0.77/ 0.83/ 0.83/ 0.79	68.38/ 71.04/ 78.61/ 73.81/ 67.39

No. Latent class: latent class number of the model; Log-Lik: the maximum Log-Likelihood; BIC: the Bayesian information Criterion;

% Participants per class: proportion of participants per class; The best fitting model is highlighted in bold characters. (na: not applicable).

Table S5. Parameter estimates for the best fitting 4-class cubic Latent Class Growth Mixture Model.

	Intercept (se)*	Linear (se)	Quadratic (se)	Cubic (se)
Fixed effect				
Low-stable	21.3 (0.443)	0.077 (0.012)	0.002 (0.001)	4.1x10 ⁻⁴ (1.5 x10 ⁻⁴)
Medium-increasing	25.4 (0.472)	0.176 (0.013)	-0.010 (0.001)	4.2 x10 ⁻⁴ (1.9 x10 ⁻⁴)
High-increasing	28.1 (0.519)	0.095 (0.025)	-0.022 (0.003)	1.8 x10 ⁻³ (3.4 x10 ⁻⁴)
Sharp-increasing	25.8 (na [†])	1.905 (0.091)	0.047 (0.015)	-3.7 x10 ⁻³ (1.3 x10 ⁻³)

Random effects: variance-covariance matrix

$$\sigma_{int}^2 = 2.26$$

$$\sigma_{linear\ slope}^2 = 0.016$$

$$\sigma_{quadratic\ slope}^2 < 0.001$$

$$\sigma_{cubic\ slope}^2 < 0.001$$

$$\sigma_{error}^2 = 1.00$$

se=standard error

*: Intercept interpreted as the expected level of BMI in kg/m² at 31 years of age (centering to the mean age of the sample)

†: The se of the intercept of this group was not estimated.

Table S6. Model-estimated levels and linear slopes of BMI in means (SD) by incident hypertension at follow-up.

Age (yr)	BMI Level (kg/m ²)			BMI Slope (kg/m ² /yr)		
	NTN	HTN	<i>P</i> -value	NTN	HTN	<i>P</i> -value
20	21.93 (1.69)	21.53 (2.09)	< 0.001	0.40 (0.34)	0.52 (0.45)	< 0.001
21	22.31 (1.71)	22.04 (2.23)	0.005	0.37 (0.29)	0.49 (0.36)	< 0.001
22	22.66 (1.76)	22.51 (2.36)	0.147	0.33 (0.26)	0.46 (0.28)	< 0.001
23	22.97 (1.83)	22.96 (2.44)	0.891	0.30 (0.23)	0.43 (0.24)	< 0.001
24	23.25 (1.89)	23.37 (2.49)	0.265	0.27 (0.20)	0.40 (0.22)	< 0.001
25	23.51 (1.96)	23.76 (2.49)	0.021	0.24 (0.19)	0.38 (0.24)	< 0.001
26	23.74 (2.02)	24.13 (2.47)	< 0.001	0.22 (0.18)	0.36 (0.28)	< 0.001
27	23.94 (2.07)	24.48 (2.43)	< 0.001	0.20 (0.18)	0.34 (0.32)	< 0.001
28	24.13 (2.13)	24.80 (2.40)	< 0.001	0.18 (0.19)	0.32 (0.36)	< 0.001
29	24.30 (2.18)	25.11 (2.39)	< 0.001	0.16 (0.20)	0.30 (0.40)	< 0.001
30	24.46 (2.23)	25.41 (2.43)	< 0.001	0.15 (0.20)	0.29 (0.44)	< 0.001
31	24.60 (2.29)	25.69 (2.54)	< 0.001	0.14 (0.21)	0.28 (0.47)	< 0.001
32	24.74 (2.36)	25.96 (2.73)	< 0.001	0.13 (0.22)	0.27 (0.50)	< 0.001
33	24.87 (2.44)	26.22 (2.99)	< 0.001	0.13 (0.23)	0.26 (0.52)	< 0.001
34	25.00 (2.53)	26.48 (3.31)	< 0.001	0.13 (0.23)	0.26 (0.53)	< 0.001
35	25.13 (2.62)	26.74 (3.68)	< 0.001	0.13 (0.23)	0.26 (0.53)	< 0.001
36	25.26 (2.73)	27.00 (4.08)	< 0.001	0.13 (0.23)	0.26 (0.53)	< 0.001
37	25.40 (2.85)	27.25 (4.50)	< 0.001	0.14 (0.23)	0.26 (0.52)	< 0.001
38	25.54 (2.98)	27.51 (4.94)	< 0.001	0.15 (0.22)	0.26 (0.51)	< 0.001
39	25.70 (3.11)	27.78 (5.37)	< 0.001	0.17 (0.22)	0.27 (0.49)	< 0.001
40	25.87 (3.24)	28.05 (5.79)	< 0.001	0.18 (0.21)	0.28 (0.46)	< 0.001

NTN = normotension; HTN = hypertension

Figure S1. Trajectories of body mass index by sex.

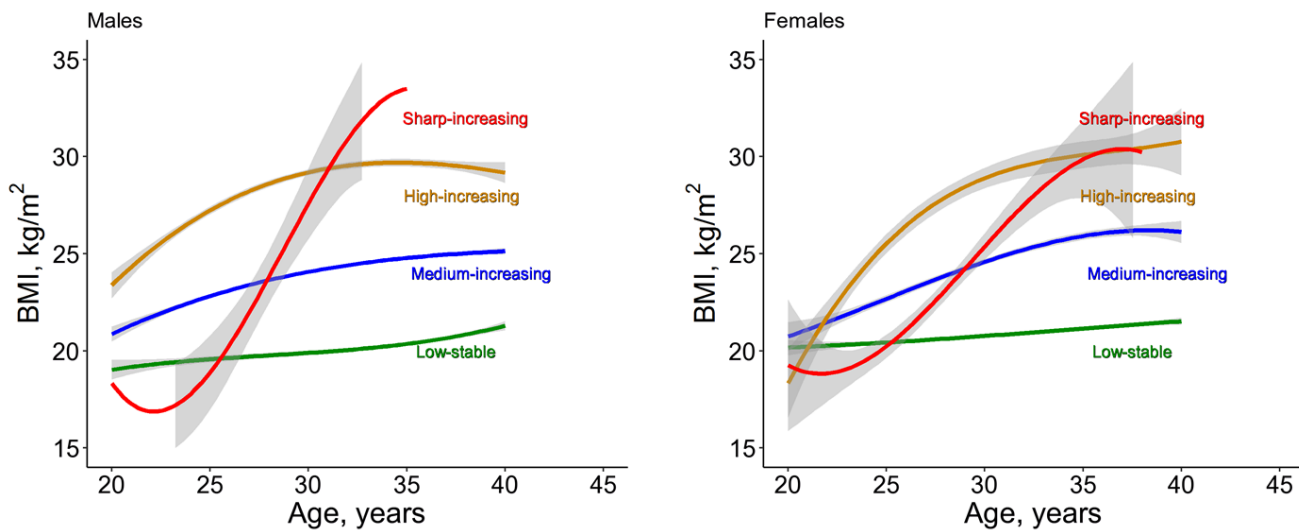


Figure S2. Standardized odds ratio (OR) and 95% confidence interval (CI) of observed BMI levels for incident hypertension by age, adjusting for sex, smoking, alcohol drinking and baseline SBP.

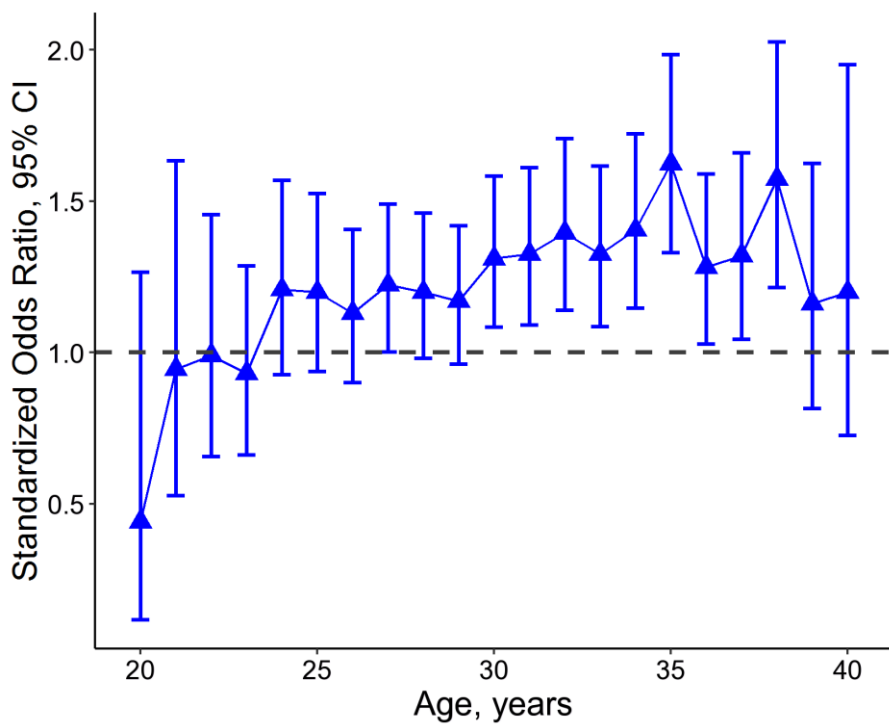


Figure S3. Standardized odds ratio (OR) and 95% confidence interval (CI) of model-estimated levels and level-adjusted linear slopes of BMI from a four-group quadratic model by age for incident hypertension, adjusting for sex, smoking, alcohol drinking and baseline SBP.

