Supplementary Table 1.   Sensitivity analysis of logistic regression for combining amylase at entry [E] and annual change rate of amylase [R] regarding the odds ratio (OR) for type 2 diabetes mellitus according to baseline age, HbA1c, and BMI

A : Age (year)			≦48			≥49
	n	event	OR(95%CI)	n	event	OR(95%CI)
E ≤57 and R ≤-2.0	138	54	**4.18(2.68-6.5)**	81	34	**3.84(2.28-6.46)**
E ≤57 and R ≥-1.9	717	104	**1.41(1.06-1.9)**	550	78	0.97(0.72-1.32)
E ≥58 and R ≤-2.0	603	164	**3.48(2.66-4.55)**	637	176	**3.34(2.61-4.27)**
E ≥58 and R ≥-1.9	1859	168	1.00(ref.)	2332	243	1.00(ref.)

B : HbA1c (%)			≦5.5			≥5.6
	n	event	OR(95%CI)	n	event	OR(95%CI)
E ≤57 and R ≤-2.0	140	46	**4.19(2.7-6.5)**	79	42	**3.57(2.09-6.1)**
E ≤57 and R ≥-1.9	892	95	**1.35(1.02-1.79)**	375	87	1.02(0.74-1.4)
E ≥58 and R ≤-2.0	913	202	**3.89(3.08-4.9)**	327	138	**2.66(1.97-3.57)**
E ≥58 and R ≥-1.9	3060	200	1.00(ref.)	1131	211	1.00(ref.)

C : BMI (kg/m^2)			≦24.9			≥25.0
	n	event	OR(95%CI)	n	event	OR(95%CI)
E ≤57 and R ≤-2.0	120	37	**3.57(2.26-5.64)**	99	51	**4.85(2.91-8.08)**
E ≤57 and R ≥-1.9	871	114	1.19(0.93-1.54)	396	68	1.19(0.81-1.75)
E ≥58 and R ≤-2.0	997	252	**3.16(2.58-3.89)**	243	88	**4.3(2.91-6.35)**
E ≥58 and R ≥-1.9	3504	327	1.00(ref.)	687	84	1.00(ref.)

ORs were adjusted for age, sex, BMI, SBP, eGFR, fatty liver, current smoking, current physical activity, current drinking habits, diabetes family history, and HbA1c

Supplementary Table 2. Characteristics of participants according to serum amylase at entry and annual change rate of serum amylase

A: Baseline serum amylase (IU/L)	Q1: ≤57	Q2:58-67	Q3:68-78	Q4:79-94	Q5: ≥95	P for trend
n	1486	1285	1389	1439	1318	
T2DM (%)	**270(18.2)**	**190(14.8)**	**203(14.6)**	**213(14.8)**	**145(11)**	**<0.001**
Male sex (%)	**1182(79.5)**	**977(76)**	**1008(72.6)**	**1013(70.4)**	**875(66.4)**	**<0.001**
Age (year)	**48±8**	**48±8**	**49±9**	**50±9**	**53±9**	**<0.001**
Diabetes family history (%)	225(15.1)	204(15.9)	202(14.5)	231(16.1)	212(16.1)	0.494
BMI (kg/m^2)	**24±3.1**	**23.2±2.9**	**22.7±2.7**	**22.4±2.8**	**21.7±2.6**	**<0.001**
<18.5	**29(2)**	**54(4.2)**	**68(4.9)**	**95(6.6)**	**118(9)**	**<0.001**
≥25.0	**495(33.3)**	**310(24.1)**	**251(18.1)**	**240(16.7)**	**129(9.8)**	**<0.001**
Systolic blood pressure (mmHg)	**125±16**	**125±16**	**123±15**	**124±15**	**122±15**	**<0.001**
HbA1c (%)	**5.4±0.3**	**5.3±0.3**	**5.4±0.3**	**5.4±0.3**	**5.3±0.3**	**0.023**
(mmol/mol)	**35±4**	**35±4**	**35±4**	**35±4**	**35±4**	**0.023**
Fasting plasma glucose (mg/dL)	**97±8**	**96±9**	**95±8**	**95±8**	**93±8**	**<0.001**
Fatty liver (%)	**589(39.6)**	**383(29.8)**	**330(23.8)**	**317(22)**	**203(15.4)**	**<0.001**
ALT (IU/L)	**28±21**	**26±16**	**24±15**	**24±26**	**23±16**	**<0.001**
γ-GTP (IU/L)	**57±60**	**51±57**	**47±56**	**44±57**	**38±44**	**<0.001**
non-HDL cholesterol (mg/dL)	**151±33**	**149±33**	**147±33**	**146±32**	**148±33**	**0.002**
eGFR (mL/min/1.73m^2)	**77±15**	**74±15**	**73±15**	**72±15**	**68±14**	**<0.001**
Serum amylase at censor (IU/L)	**52±13**	**65±11**	**75±14**	**86±16**	**111±29**	**<0.001**
Annual change rate of amylase (%)	**1.4±5.9**	**0.6±3.8**	**0.5±4**	**0.0±4.9**	**-0.5±4.6**	**<0.001**
Current smoking (%)	**424(28.5)**	**293(22.8)**	**248(17.9)**	**198(13.8)**	**146(11.1)**	**<0.001**
Current physical activity (%)	**686(46.2)**	**623(48.5)**	**697(50.2)**	**712(49.5)**	**680(51.6)**	**0.005**
Current drinking habits (%)	**1293(87)**	**1064(82.8)**	**1099(79.1)**	**1110(77.1)**	**942(71.5)**	**<0.001**

B: Annual change rate of amylase (%)	Q1: ≤-2.0	Q2:-1.9 ~ -0.6	Q3:-0.5 ~ 0.8	Q4:0.9 ~ 2.6	Q5: ≥2.7	P for trend
n	1459	1357	1434	1347	1320	
T2DM (%)	**428(29.3)**	**136(10)**	**103(7.2)**	**108(8)**	**246(18.6)**	**<0.001**
Male sex (%)	**1035(70.9)**	**986(72.7)**	**1038(72.4)**	**1014(75.3)**	**982(74.4)**	**0.011**
Age (year)	**49±9**	**50±9**	**49±9**	**50±9**	**50±9**	**0.003**
Diabetes family history (%)	**325(22.3)**	**211(15.5)**	**214(14.9)**	**165(12.2)**	**159(12)**	**<0.001**
BMI (kg/m^2)	23±3.1	22.8±2.9	22.8±2.8	22.8±2.8	22.8±3	0.166
<18.5	68(4.7)	80(5.9)	72(5)	73(5.4)	71(5.4)	0.590
≥25.0	**342(23.4)**	**260(19.2)**	**300(20.9)**	**269(20)**	**254(19.2)**	**0.023**

Systolic blood pressure (mmHg)	124±15	124±16	124±16	123±15	124±16	0.854
HbA1c (%)	**5.4±0.4**	**5.3±0.3**	**5.3±0.3**	**5.3±0.3**	**5.4±0.3**	**<0.001**
(mmol/mol)	**35±4**	**35±4**	**35±4**	**35±4**	**36±4**	**<0.001**
Fasting plasma glucose (mg/dL)	**95±9**	**95±8**	**95±8**	**95±8**	**97±9**	**<0.001**
Fatty liver (%)	**439(30.1)**	**348(25.6)**	**337(23.5)**	**350(26)**	**348(26.4)**	**0.044**
ALT (IU/L)	**26±26**	**25±15**	**25±16**	**24±16**	**25±21**	**0.019**
γ-GTP (IU/L)	49±63	46±46	46±46	47±52	52±67	0.923
non-HDL cholesterol (mg/dL)	**149±33**	**150±32**	**148±32**	**148±33**	**146±33**	**0.001**
eGFR (mL/min/1.73m^2)	75±15	72±15	72±15	72±15	74±15	0.408
Serum amylase at entry (IU/L)	**83±26**	**79±24**	**75±23**	**73±22**	**71±22**	**<0.001**
Serum amylase at censor (IU/L)	**69±21**	**73±22**	**76±23**	**81±24**	**90±35**	**<0.001**
Current smoking (%)	295(20.2)	232(17.1)	257(17.9)	257(19.1)	268(20.3)	0.580
Current physical activity (%)	**654(44.8)**	**657(48.4)**	**741(51.7)**	**664(49.3)**	**682(51.7)**	**<0.001**
Current drinking habits (%)	**1126(77.2)**	**1078(79.4)**	**1149(80.1)**	**1093(81.1)**	**1062(80.5)**	**0.014**

Supplementary Table 3. Comparison of characteristics between participants included and excluded in the analysis because of missing data

Characteristics	Participants included in the analysis 6917	n	Excluded from the analysis because of missing data	p value
Incident T2DM (%)	1021(14.8)	237	34(14.3)	0.859
Age (year)	**50±9**	**237**	**54±10**	**<0.001**
Male sex (%)	**5055(73.1)**	**237**	**130(54.9)**	**<0.001**
Diabetes family history (%)	**1074(15.5)**	**237**	**9(3.8)**	**<0.001**
BMI (kg/m^2)	22.8±2.9	237	22.5±2.8	0.082
<18.5	364(5.3)	237	15(6.3)	0.471
≥25.0	1425(20.6)	237	48(20.3)	0.896
Systolic blood pressure (mmHg)	124±16	237	123±15	0.264
HbA1c (%)	**5.4±0.3**	**237**	**5.5±0.3**	**<0.001**
(mmol/mol)	**35±4**	**237**	**36±4**	**<0.001**
Fasting plasma glucose (mg/dL)	95±8	237	95±8	0.837
Fatty liver (%)	1822(26.3)	233	51(21.9)	0.128
ALT (IU/L)	**25±19**	**237**	**22±11**	**<0.001**
γ-GTP (IU/L)	**48±55**	**237**	**37±35**	**<0.001**
Non-HDL cholesterol (mg/dL)	**148±33**	**237**	**153±33**	**0.026**
eGFR (mL/min/1.73m^2)	**73±15**	**237**	**75±15**	**0.048**
Serum amylase level at entry (IU/L)	76±24	237	74±24	0.136
Serum amylase level at censor (IU/L)*	77±27	237	77±24	0.727
Annual change rate of amylase (%)	**0.4±4.8**	**236**	**1.3±4.2**	**0.004**
Current smoking (%)	**1309(18.9)**	**30**	**1(3.3)**	**0.029**
Current physical activity (%)	**3398(49.1)**	**41**	**31(75.6)**	**0.001**
Current drinking habits (%)	5508(79.6)	58	41(70.7)	0.093

*"at censor" means serum amylase level at the end of the study period in non-T2DM controls or when T2DM was ascertained in T2DM cases.

Supplemental figure 1.   The receiver operating characteristic curve to determine the cut-off value for the annual change in amylase, a predictor of T2DM.