Tested mediators of the association between energy-adjusted dairy intake (g/1000 kcal per day) and risk of type 2 diabetes						
Mediator	Total dairy		Milk		Yogurt	
Effect	HR	P value	HR	P value	HR	P value
Direct effect	0.72	< 0.0001	0.75	< 0.0001	0.81	< 0.0001
Indirect effect	0.97	0.51	0.97	0.50	1.00	0.81
Total effect	0.73	-	0.76	-	0.82	-
Proportion of the total effect mediated by the mediator	-4.37%	-	-3.1%	-	-6.53%	-

Supplementary Table 1. The results of mediation analyses testing for a potential mediation by body mass index (n=22,843)

Abbreviations: HR, hazard ratio.

The mediation analyses were conducted when the following covariates were considered as potential confounders: age, sex, total energy intake, physical activity, smoking status, alcohol drinking status, education, employment, monthly household income, family history of diabetes, hypertension, hyperlipidemia, sugar rich dietary pattern score, vegetable rich dietary pattern score, and animal food dietary pattern score.

**Categories of dairy intake** *P* for trend  $^{1}$ Tertile 1 Tertile 2 Tertile 3 Zero-consumers Total dairy intake<sup>2</sup> 0 20.4 (11.8-28.5) 54.4 (45.6-63.9) 105.8 (88.9-136.2) -Number of participants 3,144 6,487 6,505 6,487 Number of cases 124 121 117 153 Person-years 12,106 25,007 25,159 25,423 Incidence per 1000 person-years 10.2 6.12 4.81 4.60 \_  $0.81(0.63, 1.03)^{3}$ 1.00 (reference) 0.64(0.50, 0.83)0.59 (0.46, 0.76) Model 1 < 0.0001 Model 2 1.00 (reference) 0.88 (0.69, 1.12) 0.72 (0.55, 0.94) 0.67 (0.51, 0.87) < 0.001 Model 3 1.00 (reference) 0.87 (0.68, 1.11) 0.73 (0.56, 0.95) 0.70 (0.54, 0.91) < 0.01 Milk intake<sup>2</sup> 0 13.4 (9.18-18.5) 37.1 (30.7-45.2) 79.3 (65.1-103.4) Number of participants 5,817 5,597 5,612 5,597 Number of cases 173 128 110 104 Person-years 22,457 21,577 21,808 21,854 Incidence per 1000 person-years 7.70 5.93 5.04 4.76 Model 1 1.00 (reference)  $0.94(0.75, 1.19)^{3}$ 0.82 (0.64, 1.05) 0.65 (0.51, 0.83) < 0.001 Model 2 1.00 (reference) 0.99 (0.78, 1.25) 0.86 (0.68, 1.11) 0.72 (0.56, 0.93) < 0.01 1.00 (reference) 1.00 (0.79, 1.26) 0.88 (0.68, 1.12) 0.76(0.59, 0.97)Model 3 0.02 Yogurt intake<sup>2</sup> 0 6.84 (5.02-9.23) 21.0 (16.7-25.3) 47.9 (37.5-63.4) Number of participants 5,620 5,635 5,620 5,748 Number of cases 208 113 102 92 Person-years 21,764 22,128 21,825 21,978

Supplementary Table 2. Association between dairy intake and risk of type 2 diabetes, excluding type 2 diabetes cases occurred within the first two years of follow-up (n=22,623)

Incidence per 1000 person-years	9.40	5.19	4.67	4.19	-
Model 1	1.00 (reference)	$0.81 (0.64, 1.02)^3$	0.81 (0.63, 1.03)	0.68 (0.53, 0.88)	< 0.01
Model 2	1.00 (reference)	0.86 (0.67, 1.09)	0.88 (0.68, 1.13)	0.75 (0.58, 0.97)	0.03
Model 3	1.00 (reference)	0.87 (0.68, 1.10)	0.89 (0.69, 1.15)	0.77 (0.59, 0.99)	0.06

<sup>1</sup>Tests for trend were performed by assigning intake categories as an ordinal variable in Cox regression models.

<sup>2</sup> Median (interquartile range) intake, g/1000 kcal per day.

<sup>3</sup>Hazard ratios (95% confidence interval) (all such values).

Model 1: adjusted for age, sex, and total energy intake.

Model 2: further adjusted for physical activity, smoking status, alcohol drinking status, education, employment, monthly household income, family history of diabetes, hypertension, hyperlipidemia, sugar rich dietary pattern score, vegetable rich dietary pattern score, and animal food dietary pattern score.

Model 3: additionally adjusted for body mass index.

	Categories of dairy intake				D fan tron d 1
	Zero-consumers	Tertile 1	Tertile 2	Tertile 3	$_{-}$ P for trend <sup>1</sup>
Total dairy intake <sup>2</sup>	0	41.4 (25.7-64.3)	128.5 (100.0-150.0)	251.4 (207.1-351.4)	-
Number of participants	3,196	6,628	6,284	6,735	-
Number of cases	176	190	187	182	-
Person-years	12,158	25,351	24,137	26,266	-
Incidence per 1000 person-years	14.5	7.49	7.75	6.93	-
Model 1	1.00 (reference)	0.73 (0.60, 0.90) <sup>3</sup>	0.75 (0.61, 0.92)	0.61 (0.49, 0.75)	< 0.0001
Model 2	1.00 (reference)	0.79 (0.64, 0.97)	0.83 (0.67, 1.03)	0.68 (0.54, 0.85)	< 0.01
Model 3	1.00 (reference)	0.79 (0.64, 0.97)	0.87 (0.70, 1.07)	0.71 (0.57, 0.89)	0.01
Milk intake <sup>2</sup>	0	28.4 (25.6-38.5)	77.0 (71.4-128.5)	192.8 (157.0-257.0)	-
Number of participants	5,897	5,688	5,544	5,714	-
Number of cases	253	168	139	175	-
Person-years	22,535	21,754	21,374	22,249	-
Incidence per 1000 person-years	11.2	7.72	6.50	7.87	-
Model 1	1.00 (reference)	0.87 (0.71, 1.06) <sup>3</sup>	0.82 (0.67, 1.01)	0.67 (0.55, 0.82)	0.0001
Model 2	1.00 (reference)	0.89 (0.73, 1.09)	0.88 (0.71, 1.09)	0.72 (0.59, 0.88)	< 0.01
Model 3	1.00 (reference)	0.91 (0.75, 1.11)	0.90 (0.73, 1.12)	0.76 (0.62, 0.93)	0.01
Yogurt intake <sup>2</sup>	0	12.8 (12.8-25.7)	53.6 (53.6-53.6)	107.1 (64.3-150)	-
Number of participants	5,837	6,849	3,109	7,048	-
Number of cases	297	182	51	205	-
Person-years	22,216	26,332	12,056	27,308	-
Incidence per 1000 person-years	13.4	6.91	4.23	7.51	-

Supplementary Table 3. Association between absolute dairy intake and risk of type 2 diabetes (n=22,843)

Model 1	1.00 (reference)	$0.77 (0.64, 0.93)^3$	0.79 (0.57, 1.11)	0.77 (0.64, 0.93)	0.01
Model 2	1.00 (reference)	0.82 (0.67, 0.99)	0.88 (0.63, 1.23)	0.82 (0.68, 0.99)	0.07
Model 3	1.00 (reference)	0.84 (0.69, 1.01)	0.93 (0.67, 1.31)	0.84 (0.69, 1.01)	0.10

<sup>1</sup>Tests for trend were performed by assigning intake categories as an ordinal variable in Cox regression models.

<sup>2</sup>Median (interquartile range) intake, g/day.

<sup>3</sup>Hazard ratios (95% confidence interval) (all such values).

Model 1: adjusted for age, sex, and total energy intake.

Model 2: further adjusted for physical activity, smoking status, alcohol drinking status, education, employment, monthly household income, family history of diabetes, hypertension, hyperlipidemia, sugar rich dietary pattern score, vegetable rich dietary pattern score, and animal food dietary pattern score.

Model 3: additionally adjusted for body mass index.

	Categories of dairy intake				D for trond 1
	Zero-consumers	Tertile 1	Tertile 2	Tertile 3	- <i>P</i> for trend <sup>1</sup>
Total dairy intake <sup>2</sup>	0	20.2 (11.8-28.1)	54.2 (45.3-63.8)	106.6 (89.0-137.2)	-
Number of participants	3,025	5,930	5,946	5,930	-
Number of cases	165	192	154	158	-
Person-years	11,482	22,622	22,796	23,036	-
Incidence per 1000 person-years	14.4	8.49	6.76	6.86	-
Model 1	1.00 (reference)	0.82 (0.66, 1.01) <sup>3</sup>	0.68 (0.54, 0.84)	0.66 (0.53, 0.83)	< 0.0001
Model 2	1.00 (reference)	0.90 (0.72, 1.11)	0.76 (0.60, 0.95)	0.76 (0.61, 0.96)	< 0.01
Model 3	1.00 (reference)	0.90 (0.73, 1.12)	0.79 (0.62, 0.99)	0.81 (0.64, 1.02)	0.04
Milk intake <sup>2</sup>	0	13.3 (9.34-18.3)	36.9 (30.1-45.1)	80.0 (65.5-103.9)	-
Number of participants	5,585	5,077	5,092	5,077	-
Number of cases	237	158	141	133	-
Person-years	21,297	19,425	19,520	19,694	-
Incidence per 1000 person-years	7.70	5.93	5.04	4.76	-
Model 1	1.00 (reference)	0.91 (0.74, 1.12) <sup>3</sup>	0.85 (0.69, 1.05)	0.66 (0.54, 0.82)	< 0.001
Model 2	1.00 (reference)	0.96 (0.78, 1.18)	0.90 (0.72, 1.11)	0.75 (0.60, 0.93)	< 0.01
Model 3	1.00 (reference)	0.98 (0.80, 1.20)	0.93 (0.75, 1.16)	0.79 (0.64, 0.98)	0.04
Yogurt intake <sup>2</sup>	0	6.99 (5.18-9.21)	21.2 (17.1-25.3)	49.0 (38.3-64.4)	-
Number of participants	5,500	5,106	5,119	5,106	-
Number of cases	281	136	124	128	-
Person-years	20,895	19,565	19,653	19,822	-

**Supplementary Table 4.** Association between dairy intake and risk of type 2 diabetes, excluding those who reported implausible daily total energy intakes defined as <800 kcal/day or >4200 kcal/day for men and <500 kcal/day or >3500 kcal/day for women (n=20,831)

Incidence per 1000 person-years	9.40	5.19	4.67	4.19	-
Model 1	1.00 (reference)	$0.76 (0.62, 0.94)^3$	0.78 (0.63, 0.97)	0.76 (0.62, 0.95)	< 0.01
Model 2	1.00 (reference)	0.82 (0.66, 1.01)	0.86 (0.69, 1.07)	0.83 (0.67, 1.04)	0.10
Model 3	1.00 (reference)	0.83 (0.67, 1.03)	0.88 (0.70, 1.10)	0.86 (0.69, 1.07)	0.06

<sup>1</sup>Tests for trend were performed by assigning intake categories as an ordinal variable in Cox regression models.

<sup>2</sup> Median (interquartile range) intake, g/1000 kcal per day.

<sup>3</sup>Hazard ratios (95% confidence interval) (all such values).

Model 1: adjusted for age, sex, and total energy intake.

Model 2: further adjusted for physical activity, smoking status, alcohol drinking status, education, employment, monthly household income, family history of diabetes, hypertension, hyperlipidemia, sugar rich dietary pattern score, vegetable rich dietary pattern score, and animal food dietary pattern score.

Model 3: additionally adjusted for body mass index.

Categories of dairy intake				P for trend <sup>1</sup>
Zero-consumers	Tertile 1	Tertile 2	Tertile 3	
1.00 (reference)	0.84 (0.68, 1.03) <sup>3</sup>	0.80 (0.64, 0.995)	0.76 (0.61, 0.94)	0.02
1.00 (reference)	0.93 (0.77, 1.14)	0.85 (0.69, 1.05)	0.79 (0.64, 0.97)	0.02
1.00 (reference)	0.86 (0.70, 1.05)	0.85 (0.69, 1.06)	0.84 (0.68, 1.03)	0.09
	Zero-consumers 1.00 (reference) 1.00 (reference) 1.00 (reference)	Zero-consumers       Tertile 1         1.00 (reference)       0.84 (0.68, 1.03) <sup>3</sup> 1.00 (reference)       0.93 (0.77, 1.14)         1.00 (reference)       0.86 (0.70, 1.05)	Zero-consumers         Tertile 1         Tertile 2           1.00 (reference)         0.84 (0.68, 1.03) <sup>3</sup> 0.80 (0.64, 0.995)           1.00 (reference)         0.93 (0.77, 1.14)         0.85 (0.69, 1.05)           1.00 (reference)         0.86 (0.70, 1.05)         0.85 (0.69, 1.06)	Zero-consumers         Tertile 1         Tertile 2         Tertile 3           1.00 (reference)         0.84 (0.68, 1.03) <sup>3</sup> 0.80 (0.64, 0.995)         0.76 (0.61, 0.94)           1.00 (reference)         0.93 (0.77, 1.14)         0.85 (0.69, 1.05)         0.79 (0.64, 0.97)           1.00 (reference)         0.86 (0.70, 1.05)         0.85 (0.69, 1.06)         0.84 (0.68, 1.03)

Supplementary Table 5. Association between dairy intake and risk of type 2 diabetes (n=22,843)

<sup>1</sup>Tests for trend were performed by assigning intake categories as an ordinal variable in Cox regression models.

<sup>2</sup> Median (interquartile range) intake, g/1000 kcal per day.

<sup>3</sup>Hazard ratios (95% confidence interval) (all such values).

Model: adjusted for age, sex, total energy intake, physical activity, smoking status, alcohol drinking status, education, employment, monthly household income, family history of diabetes, hypertension, hyperlipidemia, sugar rich dietary pattern score, vegetable rich dietary pattern score, animal food dietary pattern score, body mass index, and total dietary fiber intake.