

## Supplementary Material

“Diet quality and physical or comprehensive frailty among older adults”

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Supplementary Table 1. Odds ratios for the Japanese Food Guide Spinning Top adherence scores and prevalence of physical frailty defined by the FP model, calculated using sex and socioeconomic status stratified multivariate logistic regression <sup>a</sup>

	Quartile of the Japanese food guide Spinning Top score				10 points increment	<i>p</i> for trend <sup>b</sup>
	Q1	Q2	Q3	Q4		
<b>Women, n</b>	928	927	927	927		
Mean (SD) score	46.5 (6.2)	54.7 (1.4)	59.5 (1.4)	65.5 (2.8)		
Case [ <i>n</i> (%)]	180 (19.4)	144 (15.5)	136 (14.7)	98 (10.6)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.79 (0.62 to 1.01)	0.75 (0.58 to 0.96)	0.51 (0.39 to 0.67)	0.76 (0.65 to 0.87)	<b>&lt;0.001</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.85 (0.66 to 1.09)	0.83 (0.64 to 1.08)	0.58 (0.44 to 0.76)	0.81 (0.69 to 0.92)	<b>0.001</b>
<b>Men, n</b>	829	828	828	828		
Mean (SD) score	40.9 (5.5)	49.6 (1.6)	54.9 (1.5)	61.8 (3.2)		
Case [ <i>n</i> (%)]	137 (16.5)	121 (14.6)	93 (11.2)	89 (10.8)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.89 (0.68 to 1.17)	0.66 (0.49 to 0.88)	0.63 (0.47 to 0.84)	0.84 (0.72 to 0.96)	<b>0.007</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.98 (0.74 to 1.29)	0.74 (0.55 to 0.99)	0.72 (0.53 to 0.98)	0.90 (0.81 to 0.99)	<b>0.035</b>
<b>HSES, n</b>	599	599	598	598		
Mean (SD) score	44.3 (6.0)	53.5 (1.6)	58.7 (1.5)	64.8 (2.8)		
Case [ <i>n</i> (%)]	76 (12.7)	63 (10.5)	55 (9.2)	54 (9.0)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.83 (0.58 to 1.20)	0.70 (0.48 to 1.02)	0.65 (0.44 to 0.96)	0.79 (0.63 to 0.95)	<b>0.009</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.94 (0.65 to 1.36)	0.76 (0.51 to 1.13)	0.71 (0.48 to 1.06)	0.81 (0.65 to 0.97)	<b>0.025</b>
<b>LSES, n</b>	1,157	1,157	1,157	1,157		
Mean (SD) score	42.7 (5.9)	51.8 (1.5)	56.9 (1.5)	63.7 (3.2)		
Case [ <i>n</i> (%)]	226 (19.5)	186 (16.1)	193 (16.7)	145 (12.5)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.76 (0.61 to 0.95)	0.79 (0.64 to 0.99)	0.55 (0.43 to 0.69)	0.83 (0.73 to 0.92)	<b>&lt;0.001</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.80 (0.64 to 1.00)	0.86 (0.68 to 1.08)	0.59 (0.46 to 0.76)	0.86 (0.76 to 0.96)	<b>0.006</b>

<sup>a</sup> All values are means (SDs), numbers (%), or relative ORs (95% CI). All estimates were derived from a multivariable logistic regression model. Physical frailty was assessed using the validated Fried phenotype model-based Frailty Screening Index. Bold *p* values are statistically significant ( $p < 0.05$ ).

CI, confidence interval; HSES, high socioeconomic status; LSES, low socioeconomic status; OR, odds ratio; Ref, reference; SD, standard deviation. Q1 through Q4 included the Japanese Food Guide Spinning Top scores of <52.1, 52.1–57.0, 57.1–61.8, and  $\geq 61.9$  in women; and <46.6, 46.6–52.2, 52.3–57.5, and  $\geq 57.6$  in men; and <50.4, 50.4–56.0, 56.1–61.3, and  $\geq 61.4$  in participants with HSES; <48.8, 48.8–54.3, 54.4–59.6, and  $\geq 59.7$  in participants with LSES.

<sup>b</sup> Linear trend *p* values were calculated with the likelihood ratio test using continuous variables of adherence scores.

<sup>c</sup> Model 1 was adjusted for age (continuous), sex (female or male), and population density ( $\geq 1000$  or  $< 1000$  people/km<sup>2</sup>).

<sup>d</sup> Variables (sex or socioeconomic status) used for subgroup analysis were excluded from the adjustment of covariate variables in the model.

<sup>e</sup> Model 2 was Model 1 with mutual adjustment for body mass index (continuous), physical activity (yes or no), denture use (yes or no), smoking status (never smoker, past smoker, and current smoker), alcohol intake status (every day, sometimes, seldom, or never), educational attainment (<9, 10–12, or  $\geq 13$  years), medication use (continuous), living alone (yes or no), socioeconomic status (high or low), green tea consumption (frequency), coffee consumption (frequency), and history of disease (hypertension, diabetes, dyslipidaemia, heart disease, and stroke; yes or no).

Supplementary Table 2. Odds ratios for the Japanese Food Guide Spinning Top adherence score and prevalence of comprehensive frailty defined by the Kihon Checklist, calculated using sex and socioeconomic status stratified multivariate logistic regression <sup>a</sup>

	Quartile of the Japanese food guide Spinning Top score				10 points increment	<i>p</i> for trend <sup>b</sup>
	Q1	Q2	Q3	Q4		
<b>Women, n</b>	928	927	927	927		
Mean (SD) score	46.5 (6.2)	54.7 (1.4)	59.5 (1.4)	65.5 (2.8)		
Case [ <i>n</i> (%)]	464 (50.0)	358 (38.6)	319 (34.4)	264 (28.5)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.63 (0.52 to 0.77)	0.53 (0.43 to 0.65)	0.38 (0.31 to 0.47)	0.59 (0.50 to 0.68)	<b>&lt;0.001</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.68 (0.55 to 0.85)	0.62 (0.50 to 0.77)	0.47 (0.38 to 0.59)	0.68 (0.59 to 0.78)	<b>&lt;0.001</b>
<b>Men, n</b>	829	828	828	828		
Mean (SD) score	40.9 (5.5)	49.6 (1.6)	54.9 (1.5)	61.8 (3.2)		
Case [ <i>n</i> (%)]	325 (39.2)	271 (32.7)	275 (33.2)	238 (28.7)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.78 (0.63 to 0.96)	0.80 (0.65 to 0.98)	0.62 (0.50 to 0.77)	0.81 (0.73 to 0.90)	<b>&lt;0.001</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.86 (0.69 to 1.08)	0.93 (0.74 to 1.17)	0.74 (0.59 to 0.94)	0.90 (0.81 to 0.99)	<b>0.044</b>
<b>HSES, n</b>	599	599	598	598		
Mean (SD) score	44.3 (6.0)	53.5 (1.6)	58.7 (1.5)	64.8 (2.8)		
Case [ <i>n</i> (%)]	192 (32.1)	162 (27.1)	151 (25.3)	138 (23.1)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.80 (0.60 to 1.06)	0.70 (0.53 to 0.94)	0.57 (0.42 to 0.76)	0.73 (0.61 to 0.86)	<b>&lt;0.001</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.85 (0.64 to 1.14)	0.76 (0.56 to 1.03)	0.63 (0.46 to 0.86)	0.77 (0.64 to 0.89)	<b>&lt;0.001</b>
<b>LSES, n</b>	1,157	1,157	1,157	1,157		
Mean (SD) score	42.7 (5.9)	51.8 (1.5)	56.9 (1.5)	63.7 (3.2)		
Case [ <i>n</i> (%)]	538 (46.5)	495 (42.8)	449 (38.8)	389 (33.6)		
Model 1 <sup>c,d</sup>	1.00 (Ref)	0.84 (0.71 to 1.00)	0.69 (0.57 to 0.82)	0.51 (0.43 to 0.62)	0.73 (0.66 to 0.81)	<b>&lt;0.001</b>
Model 2 <sup>d,e</sup>	1.00 (Ref)	0.89 (0.74 to 1.07)	0.76 (0.63 to 0.92)	0.58 (0.48 to 0.71)	0.79 (0.71 to 0.87)	<b>&lt;0.001</b>

<sup>a</sup> All values are means (SDs), numbers (%), or relative ORs (95% CI). All estimates were derived from a multivariable logistic regression model. Comprehensive frailty was assessed using the validated the Kihon Checklist. Bold *p* values are statistically significant ( $p < 0.05$ ).

CI, confidence interval; HSES, high socioeconomic status; LSES, low socioeconomic status; OR, odds ratio; Ref, reference; SD, standard deviation. Q1 through Q4 include of the Japanese Food Guide Spinning Top scores of <52.1, 52.1–57.0, 57.1–61.8, and  $\geq 61.9$  in women; and <46.6, 46.6–52.2, 52.3–57.5, and  $\geq 57.6$  in men; and <50.4, 50.4–56.0, 56.1–61.3, and  $\geq 61.4$  in participants with HSES; <48.8, 48.8–54.3, 54.4–59.6, and  $\geq 59.7$  in participants with LSES.

<sup>b</sup> Linear trend *p* values were calculated with the likelihood ratio test using continuous variables of adherence scores.

<sup>c</sup> Model 1 was adjusted for age (continuous), sex (female or male), and population density ( $\geq 1000$  or  $< 1000$  people/km<sup>2</sup>).

<sup>d</sup> Variables (sex or socioeconomic status) used for subgroup analysis were excluded from the adjustment in covariate variables in the model.

<sup>e</sup> Model 2 was Model 1 with mutual adjustment for body mass index (continuous), physical activity (yes or no), denture use (yes or no), smoking status (never smoker, past smoker, and current smoker), alcohol intake status (every day, sometimes, seldom, or never), educational attainment (<9, 10–12, or  $\geq 13$  years), medication use (continuous), living alone (yes or no), socioeconomic status (high or low), green tea consumption (frequency), coffee consumption (frequency), and history of disease (hypertension, diabetes, dyslipidaemia, heart disease, and stroke; yes or no).

Supplementary Table 3. Odds ratios for the Japanese Food Guide Spinning Top adherence score and prevalence of the Fried phenotype model subdomains, calculated using multivariate logistic regression <sup>a</sup>

	Quartile of the Japanese food guide Spinning Top score								10 points increment	<i>p</i> for trend <sup>b</sup>	
	Q1 ( <i>n</i> = 1756)		Q2 ( <i>n</i> = 1756)		Q3 ( <i>n</i> = 1755)		Q4 ( <i>n</i> = 1755)				
Mean (SD) score	43.2	(5.9)	52.3	(51.6)	57.5	(1.5)	64.1	(3.0)			
<b>Weight loss</b>											
Case [ <i>n</i> (%)]	270	(15.4)	248	(14.1)	226	(12.9)	218	(12.4)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.94	(0.77 to 1.13)	0.85	(0.70 to 1.04)	0.82	(0.67 to 1.00)	0.97	(0.88 to 1.05)	0.416
Model 2 <sup>d</sup>	1.00	(Ref)	0.98	(0.80 to 1.18)	0.91	(0.75 to 1.12)	0.87	(0.71 to 1.07)	0.99	(0.90 to 1.08)	0.838
<b>Slow gait speed</b>											
Case [ <i>n</i> (%)]	1169	(66.6)	1158	(66.0)	1096	(62.5)	1081	(61.6)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.96	(0.83 to 1.12)	0.80	(0.69 to 0.93)	0.71	(0.61 to 0.82)	0.82	(0.75 to 0.88)	<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00	(Ref)	1.01	(0.86 to 1.18)	0.86	(0.74 to 1.01)	0.79	(0.67 to 0.92)	0.86	(0.79 to 0.93)	<b>&lt;0.001</b>
<b>Cognition</b>											
Case [ <i>n</i> (%)]	179	(10.2)	155	(8.8)	141	(8.0)	116	(6.6)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.90	(0.72 to 1.14)	0.84	(0.66 to 1.07)	0.70	(0.54 to 0.90)	0.82	(0.72 to 0.92)	<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00	(Ref)	0.92	(0.73 to 1.16)	0.90	(0.70 to 1.14)	0.76	(0.59 to 0.99)	0.85	(0.75 to 0.95)	<b>0.004</b>
<b>Exhaustion</b>											
Case [ <i>n</i> (%)]	599	(34.1)	549	(31.3)	544	(31.0)	511	(29.1)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.84	(0.72 to 0.97)	0.80	(0.69 to 0.93)	0.69	(0.59 to 0.80)	0.85	(0.79 to 0.91)	<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00	(Ref)	0.89	(0.76 to 1.04)	0.89	(0.76 to 1.04)	0.78	(0.67 to 0.92)	0.90	(0.83 to 0.97)	<b>0.003</b>
<b>Low activity</b>											
Case [ <i>n</i> (%)]	367	(20.9)	330	(18.8)	331	(18.9)	278	(15.8)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.85	(0.72 to 1.00)	0.84	(0.71 to 0.99)	0.66	(0.55 to 0.79)	0.85	(0.77 to 0.92)	<b>&lt;0.001</b>
Model 2 <sup>d,e</sup>	1.00	(Ref)	0.90	(0.75 to 1.06)	0.91	(0.76 to 1.09)	0.72	(0.59 to 0.86)	0.88	(0.80 to 0.95)	<b>0.002</b>

<sup>a</sup> All values are means (SDs), numbers (%), or relative ORs (95% CI). All estimates were derived from a multivariable logistic regression model. Bold *p* values are statistically significant (*p* < 0.05). Q1 through Q4 include of the Japanese Food Guide Spinning Top score of <49.5, 49.5–54.8, 54.9–60.1, and ≥60.2 scores.

CI, confidence interval; OR, odds ratio; Ref, reference; SD, standard deviation.

<sup>b</sup> Linear trend *p* values were calculated with the likelihood ratio test using continuous variables of adherence scores.

<sup>c</sup> Model 1 was adjusted for age (continuous), sex (female or male), and population density (≥1000 or <1000 people/km<sup>2</sup>).

<sup>d</sup> Model 2 was Model 1 with mutual adjustment for body mass index (continuous), physical activity (yes or no), denture use (yes or no), smoking status (never smoker, past smoker, and current smoker), alcohol intake status (every day, sometimes, seldom, or never), educational attainment (<9, 10–12, or ≥13 years), medication use (continuous), living alone (yes or no), socioeconomic status (high or low), green tea consumption (frequency), coffee consumption (frequency), and history of disease (hypertension, diabetes, dyslipidaemia, heart disease, and stroke; yes or no).

<sup>e</sup> Physical activity was excluded from the adjustment of covariate variables in the model.

Supplementary Table 4. Odds ratios for the Japanese Food Guide Spinning Top adherence score and the prevalence of the Kihon Checklist subdomains, calculated using multivariate logistic regression <sup>a</sup>

	Quartile of the Japanese food guide Spinning Top score								10 points increment	<i>p</i> for trend <sup>b</sup>
	Q1 ( <i>n</i> = 1756)		Q2 ( <i>n</i> = 1756)		Q3 ( <i>n</i> = 1755)		Q4 ( <i>n</i> = 1755)			
Mean (SD) score	43.2 (5.9)	52.3 (5.6)	57.5 (1.5)	64.1 (3.0)						
<b>IADL disability</b>										
Case [ <i>n</i> (%)]	186 (10.6)	173 (9.9)	142 (8.1)	99 (5.6)						
Model 1 <sup>c</sup>	1.00 (Ref)	0.79 (0.68 to 0.91)	0.66 (0.57 to 0.76)	0.49 (0.42 to 0.57)	0.71 (0.62 to 0.81)					<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00 (Ref)	1.01 (0.80 to 1.29)	0.89 (0.69 to 1.15)	0.59 (0.44 to 0.78)	0.79 (0.69 to 0.90)					<b>&lt;0.001</b>
<b>Physical</b>										
Case [ <i>n</i> (%)]	392 (22.3)	411 (23.4)	372 (21.2)	371 (21.1)						
Model 1 <sup>c</sup>	1.00 (Ref)	0.97 (0.81 to 1.15)	0.79 (0.66 to 0.94)	0.69 (0.58 to 0.83)	0.86 (0.79 to 0.94)					<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00 (Ref)	1.03 (0.87 to 1.23)	0.92 (0.76 to 1.10)	0.86 (0.71 to 1.03)	0.93 (0.86 to 1.01)					0.063
<b>Nutrition</b>										
Case [ <i>n</i> (%)]	36 (2.1)	32 (1.8)	21 (1.2)	37 (2.1)						
Model 1 <sup>c</sup>	1.00 (Ref)	0.85 (0.51 to 1.41)	0.55 (0.31 to 0.98)	0.94 (0.57 to 1.54)	0.93 (0.72 to 1.14)					0.493
Model 2 <sup>d</sup>	1.00 (Ref)	0.89 (0.49 to 1.60)	0.49 (0.25 to 0.96)	1.24 (0.67 to 2.27)	0.94 (0.67 to 1.22)					0.671
<b>Oral</b>										
Case [ <i>n</i> (%)]	462 (26.3)	442 (25.2)	399 (22.7)	350 (19.9)						
Model 1 <sup>c</sup>	1.00 (Ref)	0.97 (0.83 to 1.13)	0.86 (0.73 to 1.01)	0.70 (0.59 to 0.82)	0.88 (0.81 to 0.95)					<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00 (Ref)	1.01 (0.86 to 1.18)	0.96 (0.81 to 1.13)	0.81 (0.68 to 0.97)	0.95 (0.88 to 1.02)					0.136
<b>Social</b>										
Case [ <i>n</i> (%)]	170 (9.7)	143 (8.1)	128 (7.3)	111 (6.3)						
Model 1 <sup>c</sup>	1.00 (Ref)	0.78 (0.61 to 0.99)	0.67 (0.52 to 0.87)	0.55 (0.42 to 0.71)	0.76 (0.66 to 0.86)					<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00 (Ref)	0.85 (0.62 to 1.03)	0.79 (0.56 to 0.95)	0.68 (0.46 to 0.81)	0.83 (0.73 to 0.94)					<b>0.003</b>
<b>Cognitive</b>										
Case [ <i>n</i> (%)]	736 (42.0)	628 (35.8)	616 (35.1)	522 (29.7)						
Model 1 <sup>c</sup>	1.00 (Ref)	0.81 (0.70 to 0.93)	0.80 (0.69 to 0.92)	0.63 (0.54 to 0.72)	0.83 (0.77 to 0.89)					<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00 (Ref)	0.85 (0.66 to 1.09)	0.90 (0.61 to 1.02)	0.73 (0.51 to 0.89)	0.89 (0.82 to 0.95)					<b>&lt;0.001</b>
<b>Depression</b>										
Case [ <i>n</i> (%)]	608 (34.6)	558 (31.8)	506 (28.8)	465 (26.5)						
Model 1 <sup>c</sup>	1.00 (Ref)	0.83 (0.72 to 0.97)	0.71 (0.61 to 0.82)	0.60 (0.51 to 0.70)	0.80 (0.74 to 0.86)					<b>&lt;0.001</b>
Model 2 <sup>d</sup>	1.00 (Ref)	0.93 (0.80 to 1.08)	0.83 (0.71 to 0.97)	0.73 (0.62 to 0.86)	0.87 (0.80 to 0.93)					<b>&lt;0.001</b>

<sup>a</sup> All values are means (SDs), numbers (%), or relative ORs (95% CI). All estimates were derived from a multivariable logistic regression model. Bold *p* values are statistically significant (*p* < 0.05). Q1 through Q4 include Japanese Food Guide Spinning Top scores of <49.5, 49.5–54.8, 54.9–60.1, and ≥60.2. CI, confidence interval; OR, odds ratio; Ref, reference; SD, standard deviation.

<sup>b</sup> Linear trend *p* values were calculated with the likelihood ratio test using continuous variables of adherence scores.

<sup>c</sup> Model 1 was adjusted for age (continuous), sex (female or male), and population density ( $\geq 1000$  or  $< 1000$  people/km<sup>2</sup>).

<sup>d</sup> Model 2 was Model 1 with mutual adjustment for body mass index (continuous), physical activity (yes or no), denture use (yes or no), smoking status (never smoker, past smoker, and current smoker), alcohol intake status (every day, sometimes, seldom, or never), educational attainment ( $< 9$ , 10–12, or  $\geq 13$  years), medication use (continuous), living alone (yes or no), socioeconomic status (high or low), green tea consumption (frequency), coffee consumption (frequency), and history of disease (hypertension, diabetes, dyslipidaemia, heart disease, and stroke; yes or no).

Supplementary Table 5. Multivariable adjusted odds ratios and 95% confidence intervals of the prevalence of comprehensive frailty according to the adherence score of each component in the Japanese Food Guide Spinning Top <sup>a</sup>

	Quartile of the Japanese food guide Spinning Top score								1 points increment	<i>p</i> for trend <sup>b</sup>	
	Q1 ( <i>n</i> = 1756)		Q2 ( <i>n</i> = 1756)		Q3 ( <i>n</i> = 1755)		Q4 ( <i>n</i> = 1755)				
<b>Grain dishes</b>											
Case [ <i>n</i> (%)]	627	(35.7)	604	(34.4)	625	(35.6)	658	(37.5)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.91	(0.78 to 1.05)	0.91	(0.79 to 1.05)	0.89	(0.77 to 1.03)	0.98	(0.96 to 1.00)	0.077
Model 2 <sup>d</sup>	1.00	(Ref)	0.91	(0.78 to 1.07)	0.90	(0.77 to 1.05)	0.85	(0.73 to 0.99)	0.98	(0.96 to 1.00)	0.119
<b>Vegetable dishes</b>											
Case [ <i>n</i> (%)]	746	(42.5)	630	(35.9)	576	(32.8)	562	(32.0)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.74	(0.64 to 0.86)	0.59	(0.51 to 0.68)	0.50	(0.43 to 0.58)	0.90	(0.88 to 0.92)	<0.001
Model 2 <sup>d</sup>	1.00	(Ref)	0.80	(0.69 to 0.94)	0.67	(0.57 to 0.79)	0.63	(0.53 to 0.74)	0.94	(0.91 to 0.96)	<0.001
<b>Fish and meat dishes</b>											
Case [ <i>n</i> (%)]	671	(38.2)	640	(36.5)	592	(33.7)	611	(34.8)			
Model 1 <sup>c</sup>	1.00	(Ref)	1.07	(0.93 to 1.24)	1.03	(0.89 to 1.19)	1.10	(0.95 to 1.27)	1.01	(0.99 to 1.03)	0.168
Model 2 <sup>d</sup>	1.00	(Ref)	1.02	(0.87 to 1.19)	0.95	(0.81 to 1.11)	1.05	(0.90 to 1.23)	1.00	(0.99 to 1.02)	0.817
<b>Milk</b>											
Case [ <i>n</i> (%)]	734	(41.8)	657	(37.4)	520	(29.6)	603	(34.4)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.95	(0.82 to 1.09)	0.63	(0.54 to 0.73)	0.75	(0.65 to 0.87)	0.96	(0.95 to 0.97)	<0.001
Model 2 <sup>d</sup>	1.00	(Ref)	1.01	(0.86 to 1.17)	0.71	(0.61 to 0.84)	0.87	(0.75 to 1.02)	0.98	(0.96 to 0.99)	0.006
<b>Fruits</b>											
Case [ <i>n</i> (%)]	772	(44.0)	653	(37.2)	557	(31.7)	532	(30.3)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.72	(0.63 to 0.83)	0.52	(0.45 to 0.60)	0.45	(0.39 to 0.53)	0.91	(0.89 to 0.93)	<0.001
Model 2 <sup>d</sup>	1.00	(Ref)	0.83	(0.71 to 0.97)	0.62	(0.53 to 0.72)	0.59	(0.50 to 0.70)	0.94	(0.92 to 0.96)	<0.001
<b>Total energy</b>											
Case [ <i>n</i> (%)]	618	(35.2)	586	(33.4)	714	(40.7)	596	(34.0)			
Model 1 <sup>c</sup>	1.00	(Ref)	1.31	(1.11 to 1.55)	1.64	(1.38 to 1.96)	1.05	(0.87 to 1.26)	1.13	(1.05 to 1.22)	0.001
Model 2 <sup>d</sup>	1.00	(Ref)	1.26	(1.16 to 1.51)	1.53	(1.26 to 1.86)	1.14	(0.93 to 1.40)	1.13	(1.04 to 1.23)	0.004
<b>Snacks and alcohol</b>											
Case [ <i>n</i> (%)]	688	(39.2)	699	(39.8)	587	(33.5)	540	(30.8)			
Model 1 <sup>c</sup>	1.00	(Ref)	1.03	(0.89 to 1.19)	0.70	(0.60 to 0.81)	0.58	(0.50 to 0.68)	0.92	(0.90 to 0.94)	<0.001
Model 2 <sup>d</sup>	1.00	(Ref)	0.98	(0.84 to 1.14)	0.71	(0.61 to 0.84)	0.66	(0.56 to 0.78)	0.97	(0.95 to 0.99)	0.048
<b>White to red meat</b>											
Case [ <i>n</i> (%)]	646	(36.8)	575	(32.7)	695	(39.6)	598	(34.1)			
Model 1 <sup>c</sup>	1.00	(Ref)	0.86	(0.74 to 0.99)	1.08	(0.93 to 1.25)	0.78	(0.68 to 0.91)	0.98	(0.96 to 1.00)	0.084
Model 2 <sup>d</sup>	1.00	(Ref)	0.87	(0.75 to 1.02)	1.03	(0.88 to 1.20)	0.85	(0.73 to 0.99)	0.99	(0.97 to 1.01)	0.220

<sup>a</sup> All values are numbers (%), or relative ORs (95% CI). All estimates were derived from a multivariable logistic regression model. Comprehensive frailty was assessed using the Kihon Checklist. Bold *p* values are statistically significant ( $p < 0.05$ ). Q1 through Q4 includes the Japanese Food Guide Spinning Top scores of <49.5, 49.5–54.8, 54.9–60.1, and  $\geq 60.2$ .

CI, confidence interval; OR, odds ratio; Ref, reference.

<sup>b</sup> Linear trend *p* values were calculated with the likelihood ratio test using continuous variables of adherence scores.

<sup>c</sup> Model 1 was adjusted for age (continuous), sex (female or male), and population density ( $\geq 1000$  or  $< 1000$  people/km<sup>2</sup>).

<sup>d</sup> Model 2 was Model 1 with mutual adjustment for body mass index (continuous), physical activity (yes or no), denture use (yes or no), smoking status (never smoker, past smoker, and current smoker), alcohol intake status (every day, sometimes, seldom, or never), educational attainment (<9, 10–12, or  $\geq 13$  years), medication use (continuous), living alone (yes or no), socioeconomic status (high or low), green tea consumption (frequency), coffee consumption (frequency), and history of disease (hypertension, diabetes, dyslipidaemia, heart disease, and stroke; yes or no).