

Supplementary Material

Association Between Oral Malodor and Dementia: An 11-Year Follow-Up Study in Japan

Supplementary Table 1. Numbers and percentages of missing variables used in multiple imputation (n=1,493)

Variables	Missing numbers and percentages	
	n	%
Age	0	0
Sex	0	0
Oral Malodor	0	0
Gingival redness	0	0
Number of remaining teeth	0	0
Frequency of tooth brushing	1	0.07
BMI	257	17.21
Comorbidities [†]	264	17.68
Smoking status	1	0.07
Frequency of alcohol consumption	257	17.21
Highest educational level	288	19.29
Onset of Dementia	0	0

[†]Comorbidities variable indicated the presence of a history of diabetes, stroke, hypertension, or myocardial infarction.

Supplementary Table 2. The hazard ratios of oral malodor on dementia using the univariable, multivariable-adjusted, and inverse probability weighted Cox proportional hazards models by complete case analysis (n=1,194)

	Univariable model		Multivariable model[†]		Inverse probability weighted[‡]	
	Hazard Ratio	(95% Confidence Interval)	Hazard Ratio	(95% Confidence Interval)	Hazard Ratio	(95% Confidence Interval)
None	1	Reference	1	Reference	1	Reference
Mild	0.80	0.49; 1.29	0.81	0.49; 1.34	0.83	0.51; 1.39
Severe	5.13	2.19; 11.99	5.15	2.05; 12.99	4.38	1.20; 16.02

[†]Multivariable Cox proportional hazards model and [‡]the inverse probability weighted Cox proportional hazards model were estimated using all previously listed potential confounders: sex, age, number of remaining teeth, frequency of tooth brushing, gingival redness, BMI, comorbidities, smoking status, frequency of alcohol consumption, and highest educational level.