Supplemental material 1

Doubly labeled water method

An oral dose of 0.1 g $^{2}H_2O$ ($^{2}H_2O$ 99.9 atom %; Taiyo Nippon Sanso, Tokyo, Japan) and 2.0 g $H_2{}^{18}O$ ($H_2{}^{18}O$ 10.0 atom %; Taiyo Nippon Sanso) per kilogram of estimated total body water was given on the mornings of day 0 (Visit 1). Baseline urine (BLU) and blood (BLB) were collected prior to the initial DLW dose. The oral dose of DLW was given at approximately 9:00 AM (0 h). Post-dose urine samples were collected at 2, 3 and 4 h (PD2U, PD3U and PD4U, respectively), while the post-dose blood sample was only collected at 4 h (PD4B). On the morning of day 13 to day 15 (Visit 2), end-of-day samples were collected twice for urine (ED1U and ED2U), with an interval of 1 h between each urine sample, and once for blood (ED1B). Samples were analyzed using an isotope-ratio mass spectrometer (Hydra 20-20 Stable Isotope Mass Spectrometer; Sercon Ltd., Crewe, UK). The $^{2}H/^{1}H$ ratio was analyzed by hydrogen gas equilibration using a platinum catalyst. The $^{18}O/^{16}O$ ratio was analyzed after carbon dioxide equilibration. Isotope analyses were carried out at ESTech Kyoto (Kyoto, Japan). The average standard deviations for the analyses were 1.4 ± 1.7‰ for ^{2}H and 0.13 ± 0.15‰ for ^{18}O. Among the collected samples, the representative value of TEE was calculated using the average TEEs that were obtained from the urine samples (BLU, PD4U and ED2U) and blood samples (BLB, PD4B and ED1B). If the two calculated TEE values obtained for the urine and blood differed by more than 8% or analysis results were suspicious, all samples for the individual were reanalyzed (n=8). Total body water was calculated as the mean of the dilution space estimated by ^{2}H and ^{18}O (Nd and No) that was calculated using the mean value of the isotope pool size of ^{2}H divided by 1.041 and that of ^{18}O divided by 1.007. Nd/No in the present study was 1.025 ± 0.008 (range: 1.014–1.050). The rate of carbon dioxide production was calculated from the difference between the elimination rates of ^{2}H and ^{18}O.

Supplemental material 2

Table S1. Stepwise multiple regression analysis for predicting the difference between EI_{BDHQ} and EI_{DLW} (n=33).

Model		Regression coefficients		Standardized coefficiednts	t	P values	The 95% confidence interval	VIF	R^2	SEE (kcal/day)
		B	SE	Beta						
1	(constant)	-1985	1429		-1.39	0.175	-4903, -933.2			
	Age	46.48	16.32	0.41	2.85	0.008	13.14, 79.82	1.10	0.414	525
	Body weight	-24.99	9.58	-0.38	-2.61	0.014	-44.55, -5.437	1.10		
2	(constant)	-2483	1350		-1.84	0.076	-5243, 277.1			
	Age	47.74	15.23	0.43	3.13	0.004	16.58, 78.90	1.10	0.507	490
	Body weight	-22.91	8.96	-0.35	-2.55	0.016	-41.26, -4.551	1.11		
	HADS-anxiety	87.32	37.28	0.31	2.34	0.026	11.09, 163.6	1.01		

Note: Model1, age and body weight were entered as independent variables; Model 2, mMRC, CAT, HADS-anxiety and HADS-depression were entered in addition to Model 1.

Abbreviations: EI_{BDHQ}, energy intake estimated by brief-type self-administered diet history questionnaire; EI_{DLW}, energy intake calculated by doubly labeled water method; HADS, hospital anxiety and depression scale; mMRC, modified medical research council; CAT, chronic obstructive pulmonary disease assessment test; SE, standard error; SEE, standard error of estimate; VIF, variance inflation factor.