Supplemental table 1. Variation sources[*] (%): between- and within-individual variances (as percent of total variance) and their ratios for selected nutrients among male adults aged 20-65 years in the Seoul metropolitan area of Korea

	Men (20-65 years)						Younger men (20-45 years)						Older men (46-65 years)					
Nutrients	S_b^2[†]	day[‡]	seq[§]	season[‖]	S_w^2[¶]	VR[**]	S_b^2	day	seq	season	S_w^2	VR	S_b^2	day	seq	season	S_w^2	VR
Energy	23.11	3.34	1.01	0.37	72.17	3.12	18.09	3.39	2.41	0.00	76.11	4.21	29.12	3.00	1.19	0.55	66.14	2.27
Protein	19.74	1.22	0.87	1.20	76.97	3.90	16.58	1.30	2.30	0.46	79.36	4.79	24.51	0.98	0.67	1.65	72.20	2.95
Fat	18.28	1.29	0.95	1.64	77.84	4.26	12.65	2.00	1.55	0.43	83.37	6.59	17.78	0.55	1.48	2.79	77.39	4.35
Carbohydrate	26.07	1.57	0.48	0.00	71.88	2.76	22.45	1.19	1.05	0.00	75.31	3.35	31.06	1.80	0.56	0.00	66.58	2.14
Calcium	22.68	0.00	0.48	0.29	76.56	3.38	18.49	0.00	2.42	0.00	79.09	4.28	26.12	0.00	0.00	0.51	73.37	2.81
Phosphorus	26.79	0.21	0.82	1.28	70.90	2.65	23.36	0.17	2.85	0.80	72.83	3.12	30.14	0.12	0.54	1.10	68.10	2.26
Iron	25.99	0.00	0.73	0.98	72.29	2.78	20.45	0.00	1.39	1.47	76.68	3.75	27.51	0.08	1.38	1.24	69.79	2.54
Potassium	31.08	0.00	1.09	1.11	66.72	2.15	27.75	0.00	3.39	0.04	68.82	2.48	32.12	0.00	0.98	1.72	65.17	2.03
Sodium	27.62	0.14	0.06	0.25	71.93	2.60	19.87	0.93	0.97	1.16	77.07	3.88	35.14	0.00	1.80	0.19	62.87	1.79
Vitamin A	20.48	0.00	1.19	1.09	77.24	3.77	17.19	0.00	1.71	0.88	80.21	4.67	22.91	0.00	0.46	1.06	75.57	3.30
Thiamin	18.97	3.00	0.41	1.01	76.62	4.04	19.02	4.77	1.45	0.11	74.66	3.93	19.26	1.22	2.36	3.46	73.70	3.83
Riboflavin	19.95	0.61	0.49	0.55	78.40	3.93	17.31	1.06	1.07	0.00	80.57	4.65	23.22	0.10	0.92	2.61	73.15	3.15
Niacin	17.39	0.00	1.08	0.23	81.30	4.68	12.49	0.00	2.96	0.00	84.55	6.77	23.48	0.00	0.52	0.25	75.76	3.23
Vitamin C	27.28	0.10	0.36	0.00	72.26	2.65	27.50	0.01	0.13	0.00	72.35	2.63	22.42	0.01	1.46	0.05	76.06	3.39
Retinol	15.81	0.00	0.00	0.23	83.96	5.31	8.95	0.00	0.00	0.14	90.91	10.16	21.35	0.20	0.00	0.22	78.24	3.67
Carotene	19.79	0.20	0.73	0.68	78.60	3.97	14.70	0.46	1.10	0.71	83.03	5.65	21.43	0.00	0.00	1.27	77.30	3.61

VR, variance ratio

[*]Based on log-transformed data

[†]Percentage of variance attributable to subjects (i.e. between-individual).

‡Percentage of variance attributable to the specific day of the week.

§Percentage of variance attributable to the order of recording.

|Percentage of variance attributable to the specific season of the year.

¶Percentage of variance attributable to within-individual sources.

**Ratio of within-individual to between-individual variance (S_w^2 / S_b^2).

Supplemental table 2. Variation sources* (%): between- and within-individual variances (as percent of total variance) and their ratios for selected nutrients among female adults aged 20-65 years in the Seoul metropolitan area of Korea

Nutrients	Women (20-65 years)						Younger women (20-45 years)						Older women (46-65 years)					
	S_b^2†	day‡	seq§	season|	S_w^2¶	VR**	S_b^2	day	seq	season	S_w^2	VR	S_b^2	day	seq	season	S_w^2	VR
Energy	28.50	0.36	0.46	0.29	70.40	2.47	22.16	0.00	0.90	0.36	76.58	3.46	33.81	0.78	0.00	0.36	65.06	1.92
Protein	25.05	0.32	0.03	0.65	73.96	2.95	19.96	0.00	0.21	0.42	79.41	3.98	29.76	0.61	0.00	0.86	68.77	2.31
Fat	22.27	0.57	0.14	1.49	75.53	3.39	18.21	0.00	0.00	0.87	80.92	4.44	21.66	1.30	0.00	1.74	75.31	3.48
Carbohydrate	32.06	0.00	0.92	0.00	67.02	2.09	28.05	0.00	1.81	0.00	70.14	2.50	34.04	0.05	0.00	0.64	65.26	1.92
Calcium	29.05	0.29	0.08	0.57	70.01	2.41	30.11	1.13	0.25	0.00	68.52	2.28	28.16	0.00	0.00	1.41	70.43	2.50
Phosphorus	32.14	0.00	0.20	0.76	66.90	2.08	24.94	0.00	0.63	0.43	74.01	2.97	37.57	0.09	0.00	1.18	61.17	1.63
Iron	26.90	0.00	1.49	0.15	71.46	2.66	18.13	0.15	0.79	0.19	80.74	4.45	31.65	0.28	1.48	0.09	66.51	2.10
Potassium	34.31	0.00	1.29	0.03	64.36	1.88	30.72	0.47	1.70	0.00	67.11	2.18	36.14	0.17	0.55	0.50	62.64	1.73
Sodium	25.73	0.09	0.00	0.12	74.05	2.88	21.97	0.00	0.35	0.00	77.68	3.54	28.83	0.37	0.00	0.25	70.55	2.45
Vitamin A	20.26	0.00	0.83	1.71	77.20	3.81	15.60	0.44	0.00	0.79	83.18	5.33	23.31	0.00	1.06	3.49	72.13	3.09
Thiamin	21.67	1.49	0.00	0.31	76.54	3.53	14.51	0.68	0.00	0.19	84.61	5.83	27.26	2.16	0.00	0.77	69.80	2.56
Riboflavin	23.10	0.00	0.00	0.38	76.52	3.31	20.13	0.00	0.00	0.23	79.64	3.96	25.43	0.05	0.00	0.33	74.19	2.92
Niacin	22.66	0.05	1.27	0.72	75.31	3.32	19.47	0.00	0.87	0.09	79.56	4.09	25.89	0.17	0.32	1.21	72.41	2.80
Vitamin C	25.82	0.00	0.47	3.19	70.52	2.73	21.33	0.10	0.89	2.88	74.81	3.51	26.02	0.04	0.48	3.68	69.77	2.68
Retinol	16.39	0.00	0.00	0.38	83.23	5.08	18.90	0.24	0.00	0.30	80.56	4.26	14.14	0.05	0.00	0.32	85.50	6.05
Carotene	18.81	0.00	1.50	1.31	78.38	4.17	12.04	0.45	0.59	0.23	86.69	7.20	22.52	0.17	1.56	3.79	71.96	3.20

VR, variance ratio

*Based on log-transformed data

†Percentage of variance attributable to subjects (i.e. between-individual).

‡Percentage of variance attributable to the specific day of the week.

§Percentage of variance attributable to the order of recording.

|Percentage of variance attributable to the specific season of the year.

¶Percentage of variance attributable to within-individual sources.

**Ratio of within-individual to between-individual variance (S_w^2 / S_b^2).

Supplemental table 3. Hypothetical correlation coefficients* (r) for each number of days among men and women aged 20-65 years in the Seoul metropolitan area of Korea

		r between true intake and observed intake										
		2-day	3-day	4-day	5-day	6-day	7-day	8-day	9-day	10-day	11-day	12-day
Energy	men	0.63	0.70	0.75	0.78	0.81	0.83	0.85	0.86	0.87	0.88	0.89
	women	0.67	0.74	0.79	0.82	0.84	0.86	0.87	0.89	0.90	0.90	0.91
Protein	men	0.58	0.66	0.71	0.75	0.78	0.80	0.82	0.84	0.85	0.86	0.87
	women	0.64	0.71	0.76	0.79	0.82	0.84	0.85	0.87	0.88	0.89	0.90
Fat	men	0.57	0.64	0.70	0.73	0.76	0.79	0.81	0.82	0.84	0.85	0.86
	women	0.61	0.69	0.74	0.77	0.80	0.82	0.84	0.85	0.86	0.87	0.88
Carbohydrate	men	0.65	0.72	0.77	0.80	0.83	0.85	0.86	0.87	0.89	0.89	0.90
	women	0.70	0.77	0.81	0.84	0.86	0.88	0.89	0.90	0.91	0.92	0.92
Calcium	men	0.61	0.69	0.74	0.77	0.80	0.82	0.84	0.85	0.86	0.87	0.88
	women	0.67	0.74	0.79	0.82	0.84	0.86	0.88	0.89	0.90	0.91	0.91
Phosphorus	men	0.66	0.73	0.78	0.81	0.83	0.85	0.87	0.88	0.89	0.90	0.91
	women	0.70	0.77	0.81	0.84	0.86	0.88	0.89	0.90	0.91	0.92	0.92
Iron	men	0.65	0.72	0.77	0.80	0.83	0.85	0.86	0.87	0.88	0.89	0.90
	women	0.66	0.73	0.77	0.81	0.83	0.85	0.87	0.88	0.89	0.90	0.90
Potassium	men	0.69	0.76	0.81	0.84	0.86	0.87	0.89	0.90	0.91	0.91	0.92
	women	0.72	0.78	0.82	0.85	0.87	0.89	0.90	0.91	0.92	0.92	0.93
Sodium	men	0.66	0.73	0.78	0.81	0.84	0.85	0.87	0.88	0.89	0.90	0.91
	women	0.64	0.71	0.76	0.80	0.82	0.84	0.86	0.87	0.88	0.89	0.90

		r between true intake and observed intake										
		2-day	3-day	4-day	5-day	6-day	7-day	8-day	9-day	10-day	11-day	12-day
Vitamin A	men	0.59	0.67	0.72	0.76	0.78	0.81	0.82	0.84	0.85	0.86	0.87
	women	0.59	0.66	0.72	0.75	0.78	0.80	0.82	0.84	0.85	0.86	0.87
Thiamin	men	0.58	0.65	0.71	0.74	0.77	0.80	0.82	0.83	0.84	0.86	0.86
	women	0.60	0.68	0.73	0.77	0.79	0.82	0.83	0.85	0.86	0.87	0.88
Riboflavin	men	0.58	0.66	0.71	0.75	0.78	0.80	0.82	0.83	0.85	0.86	0.87
	women	0.61	0.69	0.74	0.78	0.80	0.82	0.84	0.86	0.87	0.88	0.89
Niacin	men	0.55	0.63	0.68	0.72	0.75	0.77	0.79	0.81	0.83	0.84	0.85
	women	0.61	0.69	0.74	0.78	0.80	0.82	0.84	0.85	0.87	0.88	0.89
Vitamin C	men	0.66	0.73	0.78	0.81	0.83	0.85	0.87	0.88	0.89	0.90	0.91
	women	0.65	0.72	0.77	0.80	0.83	0.85	0.86	0.88	0.89	0.90	0.90
Retinol	men	0.52	0.60	0.66	0.70	0.73	0.75	0.78	0.79	0.81	0.82	0.83
	women	0.53	0.61	0.66	0.70	0.74	0.76	0.78	0.80	0.81	0.83	0.84
Carotene	men	0.58	0.66	0.71	0.75	0.78	0.80	0.82	0.83	0.85	0.86	0.87
	women	0.57	0.65	0.70	0.74	0.77	0.79	0.81	0.83	0.84	0.85	0.86

*Estimation of nutrient intake is determined from the correlation between observed and true average intakes of individual in which unobservable correlation coefficients $r=[D/(D+ s^2w /s^2b)]^{1/2}$, where D= the number of Dietary Records

Supplemental table 4. Hypothetical correlation coefficients* (r) for each number of days among adults aged 20-45 years and adults aged 46-65 years in the Seoul metropolitan area of Korea

		r between true intake and observed intake										
		2-day	3-day	4-day	5-day	6-day	7-day	8-day	9-day	10-day	11-day	12-day
Energy	20-45y	0.65	0.72	0.77	0.80	0.83	0.85	0.86	0.88	0.89	0.90	0.90
	46-65y	0.73	0.79	0.83	0.86	0.88	0.89	0.91	0.91	0.92	0.93	0.93
Protein	20-45y	0.62	0.70	0.75	0.78	0.81	0.83	0.85	0.86	0.87	0.88	0.89
	46-65y	0.70	0.77	0.81	0.84	0.86	0.88	0.89	0.90	0.91	0.92	0.92
Fat	20-45y	0.56	0.64	0.69	0.73	0.76	0.78	0.80	0.82	0.83	0.85	0.86
	46-65y	0.61	0.68	0.73	0.77	0.80	0.82	0.84	0.85	0.86	0.87	0.88
Carbohydrate	20-45y	0.67	0.74	0.79	0.82	0.84	0.86	0.87	0.89	0.90	0.90	0.91
	46-65y	0.72	0.78	0.82	0.85	0.87	0.89	0.90	0.91	0.92	0.92	0.93
Calcium	20-45y	0.64	0.71	0.76	0.79	0.82	0.84	0.86	0.87	0.88	0.89	0.90
	46-65y	0.67	0.74	0.79	0.82	0.84	0.86	0.87	0.89	0.90	0.90	0.91
Phosphorus	20-45y	0.66	0.74	0.78	0.81	0.84	0.86	0.87	0.88	0.89	0.90	0.91
	46-65y	0.75	0.81	0.85	0.87	0.89	0.91	0.92	0.92	0.93	0.94	0.94
Iron	20-45y	0.59	0.67	0.72	0.76	0.78	0.81	0.83	0.84	0.85	0.86	0.87
	46-65y	0.70	0.77	0.81	0.84	0.86	0.88	0.89	0.90	0.91	0.92	0.92
Potassium	20-45y	0.69	0.76	0.80	0.83	0.86	0.87	0.89	0.90	0.91	0.91	0.92
	46-65y	0.73	0.80	0.84	0.86	0.88	0.90	0.91	0.92	0.92	0.93	0.94
Sodium	20-45y	0.64	0.71	0.76	0.79	0.82	0.84	0.85	0.87	0.88	0.89	0.90
	46-65y	0.74	0.80	0.84	0.86	0.88	0.90	0.91	0.92	0.92	0.93	0.94

		r between true intake and observed intake										
		2-day	3-day	4-day	5-day	6-day	7-day	8-day	9-day	10-day	11-day	12-day
Vitamin A	20-45y	0.54	0.62	0.67	0.71	0.74	0.77	0.79	0.81	0.82	0.83	0.84
	46-65y	0.63	0.70	0.75	0.79	0.81	0.83	0.85	0.86	0.87	0.88	0.89
Thiamin	20-45y	0.60	0.67	0.72	0.76	0.79	0.81	0.83	0.84	0.86	0.87	0.88
	46-65y	0.66	0.73	0.78	0.81	0.84	0.85	0.87	0.88	0.89	0.90	0.91
Riboflavin	20-45y	0.59	0.67	0.72	0.76	0.79	0.81	0.83	0.84	0.85	0.87	0.87
	46-65y	0.64	0.72	0.77	0.80	0.82	0.84	0.86	0.87	0.88	0.89	0.90
Niacin	20-45y	0.57	0.65	0.70	0.74	0.77	0.79	0.81	0.83	0.84	0.85	0.86
	46-65y	0.67	0.74	0.79	0.82	0.84	0.86	0.87	0.89	0.90	0.90	0.91
Vitamin C	20-45y	0.63	0.70	0.75	0.79	0.81	0.83	0.85	0.86	0.87	0.88	0.89
	46-65y	0.64	0.71	0.76	0.79	0.82	0.84	0.86	0.87	0.88	0.89	0.90
Retinol	20-45y	0.52	0.60	0.65	0.69	0.72	0.75	0.77	0.79	0.80	0.82	0.83
	46-65y	0.53	0.61	0.67	0.71	0.74	0.76	0.78	0.80	0.82	0.83	0.84
Carotene	20-45y	0.49	0.57	0.62	0.67	0.70	0.73	0.75	0.77	0.78	0.80	0.81
	46-65y	0.62	0.70	0.74	0.78	0.81	0.83	0.84	0.86	0.87	0.88	0.89

*Estimation of nutrient intake is determined from the correlation between observed and true average intakes of individual in which unobservable correlation coefficients $r=[D/(D+ s^2w /s^2b)]^{1/2}$, where D= the number of Dietary Records