

**Supplementary Table 1.** Composition of oral nutritional supplement per 100ml†

Nutrient	Amounts	Daily value <sup>†</sup>	Nutrient	Amount	Daily value <sup>†</sup>
Energy	100ml	100kcal	Mn	0.2mg	7%
Carbohydrate	14g	4%	Vit A	75ug RE	11%
Sugar	1g	-	Vit B1	0.13mg	11%
Fiber	1g	4%	Vit B2	0.15mg	11%
Protein	4.5g	8%	Vit B6	0.15mg	10%
Fat	3g	6%	Vit B12	0.24mg	10%
Saturated fat	1g	7%	Vit C	14mg	14%
Trans fat	0g	-	Vit D	0.9mg	18%
Cholesterol	0mg	0	Vit E	1.5mg aTE	14%
Na	90mg	5%	Vit K	7.5mg	11%
Ca	75mg	11%	Folic acid	40ug	10%
P	70mg	10%	Niacin	16mg NE	11%
K	150mg	4%	Biotin	3ug	10%
Mg	22g	7%	Pantothenic acid	0.5mg	10%
Fe	1.2g	10%	Cr	6ug	12%
Zn	2.1g	25%	Se	6.5ug	12%
Cl	135mg	6%	Mo	3ug	12%
Gu	0.08mg	10%	Arginine	250mg	
I	15ug	10%	DHA+EPA	35mg	

†Percent Daily Values are based on a 2000 calorie diet.

Supplementary Table 2. Dietary intakes analysis (excluding ONS)

	2015 KDRI range(day) <sup>†††</sup>	Control(n=18)			Experiment(n=22)		
		Week 0	Week 4	Week 8	Week 0	Week 4	Week 8
Energy (kcal)	1700-2100 <sup>†</sup>	1484.64 ± 82.39	1380.86 ± 85.54	1466.88 ± 85.60	1375.80 ± 92.56	1402.04 ± 75.78	1464.40 ± 76.70
Carbohydrate (g)	55-60% for energy	227.30 ± 12.16	221.49 ± 16.84	232.88 ± 12.98	220.00 ± 13.72	217.59 ± 11.61	227.77 ± 11.78
Fat (g)	15-30% for energy	37.91 ± 3.98	29.92 ± 2.06	33.19 ± 3.53	30.31 ± 2.75	32.51 ± 2.50	35.14 ± 2.92
Protein (g)	7-20% for energy	59.96 ± 3.54	59.04 ± 3.70	61.10 ± 4.17	58.46 ± 4.92	62.77 ± 4.11	62.75 ± 3.74
Fiber (g)	25 <sup>‡</sup>	19.50 ± 1.31	18.25 ± 1.86	19.57 ± 1.20	18.08 ± 1.48	17.95 ± 1.54	18.83 ± 1.54
Vitamin D (ug)	10 <sup>‡</sup>	3.85 ± 0.61	4.56 ± 0.88	2.45 ± 0.59	3.46 ± 0.57	3.53 ± 0.54	3.66 ± 0.70
Vitamin E (mg)	12 <sup>‡</sup>	17.50 ± 3.40	13.30 ± 0.92	13.92 ± 1.25	12.83 ± 1.14	13.83 ± 1.14	13.63 ± 1.07
Vitamin K (ug)	75 <sup>‡</sup>	256.15 ± 34.31	246.36 ± 39.20	232.77 ± 42.11	162.27 ± 27.73*	215.26 ± 33.29	199.95 ± 23.40
Vitamin C (mg)	100 <sup>‡</sup>	96.11 ± 8.56	88.12 ± 10.65	91.88 ± 8.78	105.38 ± 11.45	94.37 ± 9.78	77.37 ± 7.29
Vitamin B6(mg)	1.5 <sup>§</sup>	1.37 ± 0.08	1.50 ± 0.14	1.46 ± 0.10	1.40 ± 0.13	1.39 ± 0.09	1.55 ± 0.11
Vitamin B12(ug)	2.4 <sup>§</sup>	6.86 ± 0.81	8.13 ± 0.93	8.70 ± 1.28	6.88 ± 0.87	9.82 ± 1.80	7.68 ± 0.77
Calcium (mg)	750 <sup>§</sup>	423.51 ± 28.59	473.25 ± 36.75	478.51 ± 32.16	453.98 ± 43.73	448.03 ± 42.35	417.12 ± 36.78
Phosphorus (mg)	700 <sup>§</sup>	889.92 ± 53.34	936.71 ± 67.39	930.81 ± 53.91	889.86 ± 76.28	951.68 ± 65.03	945.82 ± 63.62
Magnesium (mg)	370 <sup>‡</sup>	66.06 ± 6.33	74.80 ± 9.15	62.67 ± 6.80	66.57 ± 5.77	67.51 ± 6.74	78.96 ± 9.06
Iron (mg)	10 <sup>§</sup>	13.20 ± 0.84	13.66 ± 0.76	15.20 ± 1.49	14.87 ± 1.00	13.84 ± 1.00	13.49 ± 0.74
Zinc (mg)	9 <sup>§</sup>	8.78 ± 0.48	8.54 ± 0.52	9.23 ± 0.62	8.86 ± 0.69	9.45 ± 0.58	9.33 ± 0.46
Copper (mg)	800 <sup>§</sup>	0.98 ± 0.06	1.08 ± 0.09	1.11 ± 0.08	0.98 ± 0.07	1.02 ± 0.07	1.05 ± 0.06
Selenium (ug)	60 <sup>§</sup>	88.66 ± 5.61	82.47 ± 7.68	82.81 ± 5.75	74.01 ± 5.80	86.46 ± 5.99	85.85 ± 5.75
Cholesterol (mg)	300 <sup>¶</sup>	233.31 ± 23.64	262.79 ± 19.38	253.08 ± 24.30	217.04 ± 25.64	338.23 ± 36.70	281.73 ± 28.32
Arginine (mg)		3639.41 ± 212.17	3589.88 ± 217.45	3727.69 ± 220.97	3463.87 ± 350.57	3836.98 ± 268.16	3586.94 ± 192.82

<sup>†</sup> Estimated Energy Requirements, EER

<sup>‡</sup> Adequate Intake

<sup>§</sup> Recommended Nutrient Intake

<sup>¶</sup> Target Intake

<sup>††</sup> Daily Value not established

<sup>†††</sup> Dietary Reference Intakes for Koreans 2015, ≥50 Adults

\*Significantly different between control and experimental group by at week 0 (p<0.05, Student's t-test)

Supplementary Table 3. Dietary intakes analysis (including ONS)

	2015 KDRI range(day) <sup>†††</sup>	Control(n=18)			Experiment(n=22)		
		Week 0	Week 4	Week 8	Week 0	Week 4	Week 8
Energy (kcal)	1700-2100 <sup>†</sup>	1484.64 ± 82.39	1380.86 ± 85.54	1466.88 ± 85.60	1375.80 ± 92.56	1673.57 ± 72.97*	1768.95 ± 73.93*
Carbohydrate (g)	55-60% for energy	227.30 ± 12.16	221.49 ± 16.84	232.88 ± 12.98	220.00 ± 13.72	256.80 ± 11.11	270.40 ± 11.43*
Fat (g)	15-30% for energy	37.91 ± 3.98	29.92 ± 2.06	33.19 ± 3.53	30.31 ± 2.75	40.40 ± 2.61*	44.27 ± 2.85*
Protein (g)	7-20% for energy	59.96 ± 3.54	59.04 ± 3.70	61.10 ± 4.17	58.46 ± 4.92	74.45 ± 4.03*	76.45 ± 3.62*
Fiber (g)	25 <sup>‡</sup>	19.50 ± 1.31	18.25 ± 1.86	19.57 ± 1.20	18.08 ± 1.48	20.39 ± 1.45	21.87 ± 1.51
Vitamin D (ug)	10 <sup>‡</sup>	3.85 ± 0.61	4.56 ± 0.88	2.45 ± 0.59	3.46 ± 0.57	5.88 ± 0.54	6.39 ± 0.68*
Vitamin E (mg)	12 <sup>‡</sup>	17.50 ± 3.40	13.30 ± 0.92	13.92 ± 1.25	12.83 ± 1.14	17.83 ± 1.13*	18.19 ± 1.05*
Vitamin K (ug)	75 <sup>‡</sup>	256.15 ± 34.31	246.36 ± 39.20	232.77 ± 42.11	162.27 ± 27.73*	224.56 ± 30.77	222.79 ± 23.30
Vitamin C (mg)	100 <sup>‡</sup>	96.11 ± 8.56	88.12 ± 10.65	91.88 ± 8.78	105.38 ± 11.45	130.66 ± 9.49*	120.00 ± 7.05*
Vitamin B6 (mg)	1.5 <sup>§</sup>	1.37 ± 0.08	1.50 ± 0.14	1.46 ± 0.10	1.40 ± 0.13	1.78 ± 0.09*	2.00 ± 0.10*
Vitamin B12 (ug)	2.4 <sup>§</sup>	6.86 ± 0.81	8.13 ± 0.93	8.70 ± 1.28	6.88 ± 0.87	10.46 ± 1.79	8.40 ± 0.76
Calcium (mg)	750 <sup>§</sup>	423.51 ± 28.59	473.25 ± 36.75	478.51 ± 32.16	453.98 ± 43.73	670.27 ± 45.72*	645.52 ± 35.55*
Phosphorus (mg)	700 <sup>§</sup>	889.92 ± 53.34	936.71 ± 67.39	930.81 ± 53.91	889.86 ± 76.28	1141.74 ± 63.45*	1159.00 ± 61.98*
Magnesium (mg)	370 <sup>‡</sup>	66.06 ± 6.33	74.80 ± 9.15	62.67 ± 6.80	66.57 ± 5.77	131.32 ± 6.97*	145.95 ± 8.89*
Iron (mg)	10 <sup>§</sup>	13.20 ± 0.84	13.66 ± 0.76	15.20 ± 1.49	14.87 ± 1.00	17.11 ± 0.93*	17.14 ± 0.71
Zinc (mg)	9 <sup>§</sup>	8.78 ± 0.48	8.54 ± 0.52	9.23 ± 0.62	8.86 ± 0.69	15.30 ± 0.57*	15.72 ± 0.41
Copper (mg)	800 <sup>§</sup>	0.98 ± 0.06	1.08 ± 0.09	1.11 ± 0.08	0.98 ± 0.07	1.23 ± 0.06	1.29 ± 0.06*
Selenium (ug)	60 <sup>§</sup>	88.66 ± 5.61	82.47 ± 7.68	82.81 ± 5.75	74.01 ± 5.80	103.64 ± 6.00*	105.64 ± 5.63*
Cholesterol (mg)	300 <sup>¶</sup>	233.31 ± 23.64	262.79 ± 19.38	253.08 ± 24.30	217.04 ± 25.64	334.55 ± 36.95	281.73 ± 28.32
Arginine (mg)	-	3639.41 ± 212.17	3589.88 ± 217.45	3727.69 ± 220.97	3463.87 ± 350.57	4469.66 ± 254.95*	4348.30 ± 187.04*

<sup>†</sup> Estimated Energy Requirements, EER

<sup>‡</sup> Adequate Intake

<sup>§</sup> Recommended Nutrient Intake

<sup>¶</sup> Target Intake

<sup>††</sup> Daily Value not established

<sup>†††</sup> Dietary Reference Intakes for Koreans 2015, ≥50 Adult

\* Significantly different between control and experimental groups at each week (p<0.05, Student's t-test)

Comment [S1]: 유리야 통계 표시 십자가 4개 말고 별로 좀 바꾸어주길

◦ **ABBREVIATIONS**

- ٦ ANOVA (analysis of variance)  
٧ ATP (adenosine triphosphate)  
٨ BMI (body mass index)  
٩ CRF (cancer-related fatigue)  
١٠ CASCO (cachexia score)  
١١ CVD (cardiovascular diseases)  
١٢ DHA (docosahexaenoic acid)  
١٣ DRIs (dietary reference intakes)  
١٤ ELISA (enzyme-linked immunosorbent assay)  
١٥ EORTC-QLQ C30 (version 3, European Organization for Research and Treatment of Cancer)  
١٦ EPA (eicosapentaenoic acid)  
١٧ GI (gastrointestinal)  
١٨ HERN (home enteral nutrition)  
١٩ HRQOL (health-related quality of life)  
٢٠ LPS (Lipopolysaccharides)  
٢١ ONS (oral nutrition supplement)  
٢٢ PBMC (peripheral blood mononuclear cells)  
٢٣ PG-SGA (patient-generated subjective global assessment)  
٢٤ QOL (quality of life)  
٢٥ SPSS (statistical package for the social sciences)