

SUPPLEMENTARY TABLES

Supplementary Table 1 Fasting serum lipids levels among the three groups during the study

Lipids (mmol/L)	PSs & PLs (n=29)		PSs (n=30)		Placebo (n=28)		PSs & PLs vs. PSs vs. Placebo	
	$\bar{x} \pm s$	P^a	$\bar{x} \pm s$	P^b	$\bar{x} \pm s$	P^c	F	P^d
	TG							
Baseline	1.85 ± 1.42	-	2.16 ± 1.49	-	1.76 ± 0.91	-	0.692	0.503
Δ ₃₀	-0.11 ± 0.90	0.506	-0.14 ± 0.83	0.371	0.18 ± 1.40	0.501	0.351	0.705
Δ ₆₀	-0.27 ± 1.02	0.165	-0.17 ± 1.02	0.373	0.28 ± 0.72	0.048	1.745	0.181
TC								
Baseline	6.13 ± 0.96	-	6.16 ± 0.92	-	5.96 ± 1.09	-	0.523	0.595
Δ ₃₀	-0.50 ± 0.59	<0.001	-0.33 ± 0.78	0.027	-0.12 ± 0.73	0.385	0.629	0.536
Δ ₆₀	-0.48 ± 0.67	<0.001	-0.37 ± 0.76	0.013	-0.15 ± 0.63	0.213	0.388	0.679
HDL-C								
Baseline	1.54 ± 0.57	-	1.43 ± 0.37	-	1.42 ± 0.40	-	0.637	0.532
Δ ₃₀	0.00 ± 0.21	0.993	-0.02 ± 0.19	0.488	-0.00 ± 0.14	0.941	0.762	0.470
Δ ₆₀	-0.04 ± 0.20	0.297	-0.07 ± 0.16	0.025	-0.07 ± 0.16	0.826	0.843	0.434
LDL-C								
Baseline	3.62 ± 0.79	-	3.76 ± 0.87	-	3.65 ± 0.88	-	0.499	0.609
Δ ₃₀	-0.28 ± 0.59	0.017	-0.17 ± 0.60	0.127	-0.09 ± 0.45	0.319	1.175	0.314
Δ ₆₀	-0.18 ± 0.64	0.140	-0.13 ± 0.60	0.243	-0.10 ± 0.50	0.308	0.729	0.485
ApoA1								
Baseline	1.52 ± 0.38	-	1.48 ± 0.30	-	1.46 ± 0.29	-	0.224	0.799
Δ ₃₀	-0.00 ± 0.09	0.984	-0.04 ± 0.14	0.101	0.01 ± 0.15	0.719	0.419	0.659
Δ ₆₀	-0.04 ± 0.14	0.182	-0.04 ± 0.14	0.112	0.05 ± 0.14	0.080	0.328	0.721
ApoB								
Baseline	1.09 ± 0.19	-	1.14 ± 0.20	-	1.07 ± 0.21	-	1.395	0.254
Δ ₃₀	-0.11 ± 0.10	<0.001	-0.04 ± 0.14	0.102	-0.03 ± 0.11	0.162	2.644	0.077
Δ ₆₀	-0.07 ± 0.12	0.004	-0.02 ± 0.15	0.414	-0.02 ± 0.11	0.406	2.156	0.122
Lp(a)								
Baseline	215.75 ± 263.67	-	318.44 ± 360.89	-	322.28 ± 397.88	-	0.978	0.380
Δ ₃₀	-5.34 ± 41.86	0.497	7.83 ± 92.61	0.647	10.96 ± 63.64	0.370	1.103	0.337
Δ ₆₀	-0.40 ± 61.16	0.972	-3.81 ± 105.04	0.844	-2.68 ± 52.63	0.790	0.857	0.428

Continuous variables are presented with mean ± SD. Continuous variables were compared within groups using paired t-tests. Continuous variables were compared between groups using one-way ANOVA. Δ₃₀, Difference value between 30 days of intervention and baseline. Δ₆₀, Difference value between 60 days of intervention and baseline. P^a , PSs & PLs group, 30/60 d intervention vs baseline. P^b , PSs group, 30/60 d intervention vs baseline. P^c , Placebo group, 30/60 d intervention vs baseline. P^d , Intergroup comparisons of three groups at baseline, 30/60 d intervention. $P < 0.05$ indicates that the difference is statistically significant. TG, triglyceride; TC, total cholesterol;

LDL-C, low density lipoprotein cholesterol; HDL-C, high density lipoprotein cholesterol; ApoA1, apolipoprotein A1; ApoB, apolipoprotein B; Lp(a), lipoprotein(a).

Supplementary Table 2 Baseline nutrient intake levels in different groups during the study

	PSs & PLs (n=29)	PSs (n=29)	Placebo (n=25)	<i>P</i>
Energy (kcal)	1227.02 (1058.53, 1530.26)	1303.97 (943.23, 1553.22)	1224.23 (941.08, 1452.73)	0.928
Protein (g)	60.19 (49.03, 70.71)	63.35 (48.48, 80.61)	62.28 (44.74, 85.76)	0.757
Fat (g)	29.55 (18.14, 37.91)	32.60 (16.08, 46.51)	32.37 (20.66, 40.75)	0.814
Carbohydrates (g)	189.34 (163.92, 247.27)	179.17 (153.04, 223.09)	175.24 (148.14, 216.04)	0.607
Dietary fiber (g)	6.81 (4.55, 9.43)	5.18 (3.44, 8.40)	6.02 (3.81, 7.08)	0.400
Vitamin A (µgRAE)	327.43 (189.25, 435.93)	281.40 (167.95, 472.16)	266.10 (207.62, 440.90)	0.870
Vitamin C (mg)	65.07 (41.33, 89.54)	50.98 (26.97, 77.24)	46.33 (29.42, 67.33)	0.257
Vitamin E (mg)	5.26 (4.51, 8.55)	6.45 (4.22, 9.71)	6.91 (5.57, 10.08)	0.137
Calcium (mg)	353.60 (236.98, 459.61)	314.05 (214.98, 465.24)	319.12 (221.24, 419.32)	0.829
Phosphorus (mg)	791.25 (658.01, 1043.78)	846.00 (655.11, 987.83)	803.60 (644.83, 1077.01)	0.890
Potassium (mg)	1449.85 (1165.89, 1847.06)	1515.02 (1178.93, 1888.48)	1418.65 (1205.38, 1948.93)	0.975
Sodium (mg)	496.99 (353.44, 636.53)	450.46 (285.36, 665.67)	550.27 (414.97, 827.63)	0.252
Magnesium (mg)	248.43 (199.38, 290.11)	249.13 (195.07, 322.33)	246.87 (215.83, 300.07)	0.961
Iron (mg)	12.16 (10.60, 16.19)	11.09 (8.62, 15.15)	12.03 (10.16, 16.89)	0.471
Zinc (mg)	6.09 (5.14, 8.00)	6.10 (4.56, 8.69)	6.67 (5.27, 8.88)	0.644
Selenium (µg)	41.10 (30.55, 53.62)	42.60 (33.73, 61.25)	45.98 (29.69, 58.27)	0.669
Copper (mg)	0.87 (0.77, 1.03)	0.91 (0.66, 1.33)	0.89 (0.70, 1.35)	0.744
Manganese (mg)	2.79 (2.09, 3.26)	2.62 (1.69, 2.99)	2.60 (2.09, 3.53)	0.620
SFA (g)	8.76 (6.55, 14.17)	10.99 (6.15, 17.05)	10.28 (5.86, 14.78)	0.834
MUFA (g)	8.01 (5.49, 11.43)	9.44 (4.63, 15.53)	10.06 (5.94, 13.76)	0.702
PUFA (g)	2.07 (1.29, 3.15)	2.38 (1.11, 3.60)	1.92 (1.47, 3.90)	0.879

All variables are represented using interquartile ranges. Continuous variables are analyzed using Kruskal-Wallis H test. $P < 0.05$ indicates that the difference is statistically significant. SFA, saturated fatty acids; MUFA, Monounsaturated; PUFA, polyunsaturated fatty acid.

Supplementary Table 3 Levels of nutritional intake at 60 days of intervention in different groups during the study

	PSs & PLs (n=29)	PSs (n=29)	Placebo (n=25)	<i>P</i>
Energy (kcal)	1204.27 (1015.46, 1475.72)	1186.67 (1010.80, 1481.89)	1159.90 (972.63, 1379.87)	0.696
Protein (g)	57.64 (48.33, 73.33)	63.66 (48.67, 78.13)	57.87 (46.25, 78.14)	0.766
Fat (g)	24.94 (21.96, 34.78)	29.29 (24.50, 39.22)	26.39 (18.02, 45.82)	0.514
Carbohydrates (g)	188.05 (136.68, 254.30)	162.28 (134.19, 243.87)	146.35 (119.77, 223.44)	0.360
Dietary fiber (g)	6.46 (4.26, 7.76)	5.52 (3.20, 7.18)	5.33 (3.22, 7.15)	0.062
Vitamin A (µgRAE)	346.72 (213.75, 553.88)	301.30 (145.32, 461.87)	287.02 (246.97, 407.43)	0.779
Vitamin C (mg)	65.13 (36.38, 106.43)	40.50 (22.25, 73.59)	44.37 (31.82, 75.54)	0.057
Vitamin E (mg)	7.05 (4.38, 8.43)	6.61 (4.38, 9.46)	6.08 (4.42, 8.39)	0.886
Calcium (mg)	331.20 (208.09, 491.68)	337.40 (214.33, 420.08)	302.65 (230.08, 425.18)	0.806
Phosphorus (mg)	805.18 (658.74, 984.13)	831.20 (717.47, 947.74)	768.85 (653.46, 894.08)	0.692
Potassium (mg)	1465.65 (1197.68, 1825.91)	1403.97 (1121.02, 1813.77)	1393.80 (1122.03, 1795.32)	0.744
Sodium (mg)	467.13 (360.30, 614.86)	495.23 (376.68, 617.23)	436.36 (319.84, 768.71)	0.986
Magnesium (mg)	225.50 (200.67, 290.13)	239.53 (188.46, 298.96)	234.68 (169.60, 285.49)	0.839
Iron (mg)	12.08 (10.34, 16.90)	12.43 (10.27, 14.47)	10.95 (7.83, 14.95)	0.290
Zinc (mg)	6.76 (5.59, 8.95)	6.36 (5.31, 8.59)	6.68 (4.49, 8.15)	0.312
Selenium (µg)	41.20 (29.83, 59.21)	46.17 (34.70, 64.48)	36.24 (25.18, 50.00)	0.147
Copper (mg)	0.93 (0.72, 1.22)	0.89 (0.66, 1.07)	0.79 (0.61, 1.15)	0.497
Manganese (mg)	2.40 (1.94, 3.05)	2.15 (1.52, 2.92)	1.90 (1.32, 2.26)	0.022
SFA (g)	8.98 (6.84, 12.38)	10.44 (8.57, 13.62)	10.30 (6.69, 15.07)	0.577
MUFA (g)	8.06 (6.41, 9.60)	9.35 (7.17, 12.76)	7.60 (4.72, 16.61)	0.581
PUFA (g)	2.05 (1.53, 3.55)	2.26 (1.54, 3.38)	2.17 (1.19, 3.55)	0.886

All variables are represented using interquartile ranges. Continuous variables are analyzed using Kruskal-Wallis H test. *P* < 0.05 indicates that the difference is statistically significant. SFA, saturated fatty acids; MUFA, Monounsaturated; PUFA, polyunsaturated fatty acid.

Supplementary Table 4 Energy consumption in different groups during the study

Energy consumption (MET-min/week)	PSs & PLs (n=29)		PSs (n=29)		Placebo (n=25)		PSs & PLs vs. PSs vs. Placebo
	$\bar{x} \pm s$	P^a	$\bar{x} \pm s$	P^b	$\bar{x} \pm s$	P^c	P^d
	Baseline	2124.00 ± 1387.46	-	2114.38 ± 2087.61	-	1881.32 ± 1710.61	-
Δ_{30}	141.12 ± 1243.78	0.568	218.69 ± 1490.33	0.461	139.76 ± 1754.83	0.694	0.862
Δ_{60}	277.31 ± 1526.60	0.363	437.69 ± 2533.42	0.387	572.17 ± 1670.87	0.115	0.948

Continuous variables are presented with mean \pm SD. Continuous variables were compared within groups using paired student's t-tests. Continuous variables were compared between groups using one-way ANOVA. Δ_{30} , difference value between 30 days of intervention and baseline. Δ_{60} , difference value between 60 days of intervention and baseline. P^a , PSs & PLs group, 30/60 d intervention vs baseline. P^b , PSs group, 30/60 d intervention vs baseline. P^c , Placebo group, 30/60 d intervention vs baseline. P^d , Intergroup comparisons of three groups at baseline, 30/60 d intervention. $P < 0.05$ indicates that the difference is statistically significant.

Supplementary Table 5 Incidence of adverse events in each group

Adverse reactions	PSs & PLs (n=29)	PSs (n=30)	Placebo (n=28)	P
gastrointestinal discomfort	0 (0.0)	1 (3.3)	1 (3.6)	< 0.001
skin rash	0 (0.0)	0 (0.0)	1 (3.6)	
No	29 (100.0)	29 (96.7)	26 (92.9)	

Categorical variables are presented with frequency (percentage). Inter-group comparisons were conducted using the Chi-square test. $P < 0.05$ indicates that the difference is statistically significant.