

Supplementary

Supplementary Table 1. Demographics and body composition data of the participants by gender

	Control (N=15)				Curcumin (N=13)			
	Female (N=2)		Male (N=13)		Female (N=5)		Male (N=8)	
	Mean $\pm$ SD		Mean $\pm$ SD		Mean $\pm$ SD		Mean $\pm$ SD	
Age (years)	17 $\pm$ 1		17 $\pm$ 1		16 $\pm$ 0		17 $\pm$ 1	
Height (cm)	159 $\pm$ 2		169 $\pm$ 5 ‡		159 $\pm$ 6		169 $\pm$ 5 ‡	
W: S: ST	1:1:0		2:8:3		0:5:0		2:4:2	
	Baseline	12 weeks follow up	Baseline	12 weeks follow up	Baseline	12 weeks follow up	Baseline	12 weeks follow up
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Weight (kg)	53 $\pm$ 6	55 $\pm$ 6	62 $\pm$ 9	62 $\pm$ 7	58 $\pm$ 6	58 $\pm$ 5	64 $\pm$ 7	65 $\pm$ 7
BMI (kg/m ²)	21 $\pm$ 2	22 $\pm$ 3	22 $\pm$ 2	22 $\pm$ 3	23 $\pm$ 3	22 $\pm$ 3	23 $\pm$ 2	23 $\pm$ 2
Body fat mass (kg)	13 $\pm$ 1	17 $\pm$ 6	9 $\pm$ 6	8 $\pm$ 4	16 $\pm$ 6 ‡	15 $\pm$ 4 ‡	10 $\pm$ 5	10 $\pm$ 3
Fat free mass (kg)	40 $\pm$ 5 ‡	38 $\pm$ 0 ‡	53 $\pm$ 5	54 $\pm$ 5	42 $\pm$ 2 ‡	43 $\pm$ 3 ‡	54 $\pm$ 5	55 $\pm$ 5 †
BMR (kcal)	1237 $\pm$ 86 ‡	1196 $\pm$ 11 ‡	1515 $\pm$ 109	1529 $\pm$ 107	1276 $\pm$ 48 ‡	1303 $\pm$ 58 ‡†	1532 $\pm$ 100	1564 $\pm$ 111 †

† $p < 0.05$ between baseline and 12 weeks. ‡ $p < 0.05$ between female and male.

Abbreviation: BMI, body mass index; BMR, basal metabolic rate; F, female; M, male; S, soccer; ST, soft tennis; W, wrestling

Supplementary Table 2. Inflammatory markers, fitness, and muscle fatigue at baseline and the end of study by gender (12 week).

	Control (N=15)				Curcumin (N=13)			
	Female (N=2)		Male (N=13)		Female (N=5)		Male (N=8)	
	Baseline Mean $\pm$ SD	12 weeks follow up Mean $\pm$ SD	Baseline Mean $\pm$ SD	12 weeks follow up Mean $\pm$ SD	Baseline Mean $\pm$ SD	12 weeks follow up Mean $\pm$ SD	Baseline Mean $\pm$ SD	12 weeks follow up Mean $\pm$ SD
Inflammatory markers								
CK (U/L)	364 $\pm$ 75	552 $\pm$ 581	459 $\pm$ 402	533 $\pm$ 703	279 $\pm$ 126	209 $\pm$ 105	275 $\pm$ 114	340 $\pm$ 180
MDA (μ mol/g CRE)	1.80 $\pm$ 0.48	2.20 $\pm$ 0.52	1.42 $\pm$ 0.58	1.70 $\pm$ 0.82	1.46 $\pm$ 0.96	1.17 $\pm$ 1.59	1.69 $\pm$ 1.86	1.27 $\pm$ 0.55
8-OHdG (ng/mg CRE)	2.55 $\pm$ 0.21 ‡	2.80 $\pm$ 0.08	4.34 $\pm$ 1.14	4.43 $\pm$ 1.56	4.51 $\pm$ 2.05	3.26 $\pm$ 0.76	4.96 $\pm$ 1.50	4.24 $\pm$ 1.18
TNF- α (pg/ml)	5.27 $\pm$ 0.71	7.33 $\pm$ 0.8	7.53 $\pm$ 1.74	6.65 $\pm$ 1.73	6.14 $\pm$ 0.93	6.63 $\pm$ 1.05	7.12 $\pm$ 1.50	7.12 $\pm$ 1.02
Fitness								
Sit up (times)	20 $\pm$ 3	14 $\pm$ 6	25 $\pm$ 5	24 $\pm$ 4	19 $\pm$ 2	21 $\pm$ 1	22 $\pm$ 2	23 $\pm$ 2
Back strength (kg)	79 $\pm$ 15 ‡	77 $\pm$ 14 ‡	114 $\pm$ 21	126 $\pm$ 24 †	88 $\pm$ 11 ‡	110 $\pm$ 10 ‡	122 $\pm$ 16	131 $\pm$ 25
Grip strength (kg)	29 $\pm$ 3 ‡	31 $\pm$ 4 ‡	40 $\pm$ 7	41 $\pm$ 6	28 $\pm$ 1 ‡	28 $\pm$ 3 ‡	44 $\pm$ 8	43 $\pm$ 6
Vertical jump (cm)	26 $\pm$ 1 ‡	27 $\pm$ 4 ‡	45 $\pm$ 7	48 $\pm$ 6 †	30 $\pm$ 9 ‡	34 $\pm$ 4 ‡	44 $\pm$ 7	46 $\pm$ 6
Side step (times)	31 $\pm$ 3	34 $\pm$ 3	35 $\pm$ 7	36 $\pm$ 8	34 $\pm$ 8	34 $\pm$ 5	39 $\pm$ 8	34 $\pm$ 7
Reaction time (ms)	231 $\pm$ 30	190 $\pm$ 32	265 $\pm$ 61	311 $\pm$ 63	260 $\pm$ 27	272 $\pm$ 39	375 $\pm$ 181	246 $\pm$ 57 *†
Close eyes foot balance (s)	18 $\pm$ 1	22 $\pm$ 2	54 $\pm$ 42	61 $\pm$ 54	57 $\pm$ 40	55 $\pm$ 44	124 $\pm$ 150	82 $\pm$ 62
Sitting trunk flexion (cm)	15 $\pm$ 3	16 $\pm$ 4	17 $\pm$ 6	16 $\pm$ 7	19 $\pm$ 2	20 $\pm$ 3	14 $\pm$ 9	12 $\pm$ 6
Trunk extension (cm)	47 $\pm$ 3	48 $\pm$ 4	46 $\pm$ 5	49 $\pm$ 6	50 $\pm$ 6	49 $\pm$ 2	47 $\pm$ 7	51 $\pm$ 8
Muscle fatigue								
Muscle fatigue score	6 $\pm$ 2	7 $\pm$ 2	7 $\pm$ 1	7 $\pm$ 1	7 $\pm$ 1	4 $\pm$ 3	6 $\pm$ 2*	4 $\pm$ 2*†
Muscle soreness score	6 $\pm$ 2	7 $\pm$ 2	8 $\pm$ 1	7 $\pm$ 2	8 $\pm$ 1 ‡	5 $\pm$ 3 †	6 $\pm$ 2	4 $\pm$ 2*†

* $p < 0.05$ between the control and curcumin groups. † $p < 0.05$ between baseline and 12 weeks. ‡ $p < 0.05$ between female and male.

Abbreviation: 8-OHdG, 8-hydroxy-2 deoxyguanosine; CK, creatine kinase; CRE, creatinine; MDA, malondialdehyde; TNF- α , tumor necrosis factor- α ; SD, standard deviation.

Supplementary Table 3. Percentage change of body composition, inflammatory markers, fitness, and muscle fatigue between baseline and the end of study by gender (12 weeks)

	Control (N=15)		Curcumin (N=13)	
	Female (N=2)	Male (N=13)	Female (N=5)	Male (N=8)
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD
Weight and body composition				
Weight	3 $\pm$ 1	1 $\pm$ 4	1 $\pm$ 6	2 $\pm$ 3
Body fat mass	25 $\pm$ 35	5 $\pm$ 26	-4 $\pm$ 13	4 $\pm$ 20
Fat-free mass	-4 $\pm$ 12	1 $\pm$ 3	3 $\pm$ 2	3 $\pm$ 2
BMR	-3 $\pm$ 8	1 $\pm$ 2	2 $\pm$ 1	2 $\pm$ 1
Inflammatory markers				
CK	38 $\pm$ 131	16 $\pm$ 106	-22 $\pm$ 29	28 $\pm$ 54
MDA	22 $\pm$ 50	36 $\pm$ 90	7 $\pm$ 168	38 $\pm$ 163
8-OHdG	10 $\pm$ 12	2 $\pm$ 23	-20 $\pm$ 26	-11 $\pm$ 28
TNF- α	27 $\pm$ 22	-9 $\pm$ 25	10 $\pm$ 22	4 $\pm$ 25
Fitness				
Sit up	-36 $\pm$ 17	1 $\pm$ 18	9 $\pm$ 16	5 $\pm$ 16
Back strength	13 $\pm$ 16	12 $\pm$ 15	26 $\pm$ 18	7 $\pm$ 11
Grip strength	13 $\pm$ 17	3 $\pm$ 14	0 $\pm$ 7	1 $\pm$ 16
Vertical jump	31 $\pm$ 28	7 $\pm$ 9	20 $\pm$ 27	5 $\pm$ 8
Side step	17 $\pm$ 16	5 $\pm$ 22	0 $\pm$ 13	-7 $\pm$ 29
Reaction time	-10 $\pm$ 40	23 $\pm$ 39	5 $\pm$ 16 ‡	-26 $\pm$ 23 *
Close eyes foot balance	22 $\pm$ 80	94 $\pm$ 227	21 $\pm$ 122	1 $\pm$ 78
Sitting trunk flexion	-11 $\pm$ 33	-6 $\pm$ 25	4 $\pm$ 18	7 $\pm$ 47
Trunk extension	2 $\pm$ 15	6 $\pm$ 13	-1 $\pm$ 12	10 $\pm$ 14
Muscle fatigue				
Muscle fatigue score	20 $\pm$ 8	-9 $\pm$ 28	-43 $\pm$ 27	-31 $\pm$ 32 *
Muscle soreness score	20 $\pm$ 8	-1 $\pm$ 22	-36 $\pm$ 33	-25 $\pm$ 27

* $p < 0.05$ between the control and curcumin groups. ‡ $p < 0.05$ between female and male