

Table 1

Comparison of baseline characteristics
between sustained-CSC and non-CSC participants

	Overall (n=43)	Sustained CSC (n=25)	Non-CSC (n=8)	p value
Age; yr	27.6 ± 9.5	30.2 ± 10.4	22.5 ± 2.9	0.245
Height; cm	160.2 ± 5.8	160.2 ± 6.4	159.7 ± 5.6	0.845
Weight; kg	54.7 ± 7.7	52.6 ± 7.2	57.0 ± 8.1	0.176
BMI; kg/m ²	21.3 ± 2.9	20.5 ± 2.6	22.3 ± 2.1	0.085
Current smoking; n (%)	1 (2.3)	1 (4.0)	0 (0)	0.758
Drinking; n (%)	5 (11.6)	2 (8.0)	1 (12.5)	0.578
Exercise habit; n (%)	6 (14.0)	6 (24.0)	0 (0)	0.160

CSC, cold-sensitivity constitution; BMI, body mass index

Table 2

Comparison of quantitative variables between sustained-CSC and non-CSC participants during each menstrual phase

	Follicular phase			Luteal phase		
	Sustained CSC (n=25)	Non-CSC (n=8)	p value	Sustained CSC (n=25)	Non-CSC (n=8)	p value
Temperature thumb (°C)	25.4 ± 2.3	33.5 ± 1.2	<0.001	25.1 ± 2.6	32.8 ± 1.3	<0.001
Temperature dorsal hand (°C)	33.2 ± 1.5	34.6 ± 0.5	0.013	32.4 ± 1.8	34.8 ± 0.4	<0.001
Temperature dorsal foot (°C)	29.9 ± 1.6	32.9 ± 1.0	<0.001	30.1 ± 1.8	32.9 ± 0.9	<0.001
Temperature mesosternum (°C)	34.6 ± 0.4	34.6 ± 0.6	0.940	35.1 ± 0.6	34.7 ± 0.6	0.122
Temperature eardrum (°C)	36.2 ± 0.4	36.1 ± 0.4	0.832	36.8 ± 0.4	36.5 ± 0.7	0.116
Heart rate (bpm)	60.5 ± 6.6	61.4 ± 8.5	0.769	61.4 ± 10.7	60.3 ± 5.8	0.774
Systolic blood pressure (mmHg)	102 ± 9	99 ± 9	0.444	101 ± 9	104 ± 10	0.471
Diastolic blood pressure (mmHg)	64 ± 8	64 ± 7	0.807	63 ± 7	63 ± 8	0.951
AI (%)	1.8 ± 14.6	-5.8 ± 8.3	0.173	-0.3 ± 14.4	-6.4 ± 4.2	0.636
AI adjusted to 75 bpm	-6.7 ± 13.9	-14.6 ± 6.8	0.135	-8.0 ± 13.3	-12.9 ± 5.0	0.445
White blood cell (/μL)	4836 ± 1195	6450 ± 2053	0.065	5348 ± 1218	7312.5 ± 2238	0.003
Red blood cell (/μL)	435 ± 28	446 ± 25	0.346	442 ± 29	455 ± 28	0.280
Hemoglobin (g/dL)	14.3 ± 6.1	13.2 ± 0.7	0.951	13.3 ± 1.1	13.4 ± 1.0	0.804
Hematocrit (%)	40 ± 4	41 ± 2	0.885	41 ± 3	42 ± 3	0.391
Platelet (/μL)	29.5 ± 15.1	28.5 ± 6.5	0.696	25.9 ± 5.4	27.1 ± 4.0	0.573
Fasting glucose (mg/dL)	79.5 ± 7.3	80.5 ± 3.6	0.617	79.8 ± 6.6	78.9 ± 5.5	0.735
Hemoglobin A _{1c} (%)	5.2 ± 0.2	5.1 ± 0.2	0.408	5.2 ± 0.3	5.1 ± 0.1	0.334
Triglyceride (mg/dL)	65 ± 31	64 ± 25	0.636	58 ± 24	62 ± 20	0.654
Total-cholesterol (mg/dL)	189 ± 33	174 ± 22	0.232	183 ± 32	177 ± 36	0.637
HDL-cholesterol (mg/dL)	70 ± 11	64 ± 9	0.149	69 ± 13	65 ± 9	0.419
LDL-cholesterol (mg/dL)	105 ± 27	96 ± 21	0.388	101 ± 26	98 ± 30	0.798
hsCRP (mg/dL)	0.06 ± 0.10	0.06 ± 0.10	0.470	0.03 ± 0.05	0.04 ± 0.03	0.098

CSC: cold-sensitivity constitution, AI: augmentation index, HDL: high-density lipoprotein, LDL: low-density lipoprotein, hsCRP: high-sensitivity C-reactive protein

Table 3

Comparison of biomarkers relevant to vascular endothelial function between sustained-CSC and non-CSC participants during each menstrual phase

	Follicular phase			Luteal phase		
	Sustained CSC (n=25)	Non-CSC (n=8)	P value	Sustained CSC (n=25)	Non-CSC (n=8)	p value
d-ROMs; U.CARR	312 ± 69	325 ± 42	0.496	323 ± 68	354 ± 73	0.284
BAP; µM/L	2800 ± 488	2807 ± 160	0.310	3108 ± 671	2844 ± 556	0.098
IL-6; pg/mL	0.7 ± 0.5	0.8 ± 0.5	0.254	0.8 ± 0.6	0.6 ± 0.2	0.726
IL-8; pg/mL	2.8 ± 2.2	2.7 ± 0.7	0.374	2.5 ± 1.2	2.1 ± 1.0	0.371
ICAM-1; ng/mL	114 ± 20	103 ± 14	0.236	114 ± 22	107 ± 14	0.445
VEGF positive; n (%)	14 (56.0)	5 (62.5)	0.539	14 (56.0)	6 (75.0)	0.299

CSC: cold-sensitivity constitution, d-ROMs: derivative reactive oxygen metabolites, BAP: biological antioxidant potential, IL: interleukin, ICAM: intercellular adhesion molecule, VEGF; vascular endothelial growth factor

Table 4

Comparison of baseline characteristics between sustained-CSC participants aged <40 years and those aged ≥ 40 years

	Aged < 40 (n=15)	Aged ≥ 40 (n=10)	p value
Age; yr	22.7 \pm 4.7	42.0 \pm 2.4	<0.001
Height; (cm)	161.1 \pm 7.4	158.9 \pm 4.5	0.413
Weight; (kg)	52.5 \pm 7.1	52.6 \pm 7.8	0.966
BMI; (kg/m ²)	20.2 \pm 2.0	20.9 \pm 3.4	0.527
Current smoking; n (%)	1 (6.7)	0 (0)	0.600
Drinking; n (%)	1 (6.7)	2 (20.0)	0.346
Exercise habit; n (%)	4 (26.7)	2 (20.0)	0.545

CSC: cold-sensitivity constitution, BMI: body mass index

Table 5

Comparison of biomarkers relevant to vascular endothelial function between sustained-CSC participants aged <40 years and those aged ≥ 40 years

	Follicular phase			Luteal phase		
	<40 y (n=15)	≥ 40 y (n=10)	p value	<40 y (n=15)	≥ 40 y (n=10)	p value
d-ROMs; U.CARR	310 \pm 71	315 \pm 70	0.807	310 \pm 27	343 \pm 101	0.341
BAP; μ M/L	2843 \pm 436	2737 \pm 576	0.338	3364 \pm 744	2724 \pm 262	0.007
IL-6; pg/mL	0.8 \pm 0.6	0.6 \pm 0.3	0.892	0.8 \pm 0.6	0.8 \pm 0.6	0.935
IL-8; pg/mL	2.5 \pm 0.9	3.3 \pm 3.4	0.849	2.0 \pm 0.8	3.2 \pm 1.3	0.021
ICAM-1; ng/mL	114 \pm 17	114 \pm 25	0.935	117 \pm 11	110 \pm 33	0.495
VEGF positive; n (%)	9 (60.0)	5 (50.0)	0.466	6 (40.0)	8 (80.0)	0.058

CSC: cold-sensitivity constitution, d-ROMs: derivative reactive oxygen metabolites, BAP: biological anti-oxidant potential, IL: interleukin, ICAM: intercellular adhesion molecule, VEGF; vascular endothelial growth factor