

**Supplementary Table S1. Parameters between males and females**

Variables	Baseline			Exercise			Change rate		
	Males	Females	<i>P</i> value	Males	Females	<i>P</i> value	Males	Females	<i>P</i> value
Age, y	25 (21–30)	23 (21–25)	< 0.001	25 (21-30)	23 (21-25)	< 0.001	25 (21-30)	23 (21-25)	< 0.001
BMI, kg/m <sup>2</sup>	22.85 ± 2.33	20.43 ± 1.99	< 0.001	22.85 ± 2.33	20.43 ± 1.99	< 0.001	22.85 ± 2.33	20.43 ± 1.99	< 0.001
Smokers, <i>n</i> (%)	39 (54.17)	1 (3.13)	< 0.001	39 (54.17)	1 (3.13)	< 0.001	39 (54.17)	1 (3.13)	< 0.001
HR, beats/min	72.37 ± 11.46	75.69 ± 10.73	0.163	100 (95 to 105)	97 (93 to 112)	0.536	41.08 ± 21.36	35.65 ± 20.50	0.277
SpO <sub>2</sub> , %	97 (96 to 98)	98 (97 to 99)	0.017	97 (96 to 98)	98 (97 to 98)	< 0.001	0.00 (-2.03 to 2.06)	0.00 (-1.02 to 1.03)	0.958
SBP, mmHg	120 (108 to 127)	110 (106 to 121)	0.006	125.89 ± 12.00	116.79 ± 11.45	0.001	6.80 ± 12.14	4.22 ± 15.70	0.923
DBP, mmHg	74.01 ± 12.11	73.24 ± 9.07	0.304	74.25 ± 13.01	74.10 ± 9.17	0.725	2.12 ± 19.68	2.78 ± 18.69	0.640
CO, mL/min	3.46 ± 0.70	3.39 ± 0.63	0.513	4.81 ± 0.91	4.37 ± 0.89	0.101	43.41 ± 35.43	32.94 ± 38.92	0.449
SV, mL	48.27 ± 8.92	45.15 ± 7.44	0.055	48.20 ± 9.01	43.47 ± 8.87	0.085	1.04 ± 16.89	-2.96 ± 17.84	0.964
LAP, mmHg	9.84 ± 1.68	10.48 ± 1.53	0.137	9.69 ± 2.36	10.52 ± 1.45	0.100	1.00 (-11.86 to 11.05)	0.54 (-14.42 to 10.64)	0.806
LVEF, %	54.89 ± 4.02	57.10 ± 4.82	0.035	53.97 ± 5.62	56.64 ± 5.01	0.047	-1.25 ± 12.00	0.38 ± 9.70	0.971
MV E/A	1.63 (1.37 to 1.95)	2.22 (1.66 to 2.56)	< 0.001	1.63 ± 0.42	2.04 ± 0.46	< 0.001	-0.92 ± 21.15	-4.31 ± 24.54	0.481
MV E/E'	6.40 ± 1.36	6.92 ± 1.23	0.137	6.28 ± 1.90	6.95 ± 1.17	0.100	0.66 (-14.60 to 13.91)	0.68 (-16.85 to 13.37)	0.846
LVGLS, %	20.42 ± 1.65	21.63 ± 1.38	< 0.001	19.90 ± 2.15	21.48 ± 1.85	< 0.001	-0.55 (-7.54 to 5.20)	-1.37 (-7.82 to 5.87)	0.737
FAC, %	47.45 ± 6.19	46.67 ± 3.48	0.494	44.18 ± 5.79	43.91 ± 4.70	0.980	-6.85 (-13.14 to	-6.16 (-12.45 to	0.431

							1.88)	-2.27)	
TV E/A	1.83 ± 0.57	2.03 ± 0.65	0.086	1.80 ± 0.45	2.10 ± 0.50	0.001	3.09 ± 26.00	9.17 ± 31.81	0.211
TV E/E'	4.86 ± 1.53	4.85 ± 1.11	0.924	4.94 ± 1.14	4.89 ± 1.09	0.611	7.58 ± 36.24	5.01 ± 25.23	0.704
TAPSE, mm	26.17 ± 4.59	24.99 ± 3.76	0.189	25.30 (24.04 to 27.96)	25.37 (22.46 to 27.52)	0.773	2.28 ± 15.68	4.08 ± 18.64	0.337
RVGLS, %	20.82 ± 3.65	23.98 ± 2.74	< 0.001	21.75 (20.07 to 23.15)	24.45 (22.50 to 27.10)	< 0.001	2.52 (-10.49 to 15.39)	2.83 (-4.33 to 8.59)	0.757
mPAP, mmHg	15.65 (12.60 to 19.16)	13.00 (6.17 to 16.25)	0.009	16.99 ± 6.79	13.94 ± 7.15	0.032	16.16 (-9.71 to 43.32)	19.17 (-24.63 to 58.87)	0.534
SPAP, mmHg	16.99 ± 6.52	16.68 ± 5.58	0.481	14.80 (9.67 to 21.48)	16.75 (12.02 to 20.67)	0.277	-2.53 (-14.87 to 12.37)	4.17 (-13.27 to 34.89)	0.343
TRV, m/s	1.65 (1.22 to 2.05)	1.65 (1.32 to 2.11)	0.936	1.57 (1.08 to 2.03)	1.71 (1.33 to 1.98)	0.569	-2.98 (-14.01 to 11.80)	5.51 (-9.11 to 23.68)	0.323
PAAT, ms	139.92 ± 15.84	147.56 ± 14.82	0.016	133.69 (117.57 to 147.97)	147.27 (129.47 to 158.15)	0.013	-4.58 ± 14.02	-2.73 ± 16.26	0.474

**Note.** Continuous data are expressed as mean ± standard deviation or median (25th, 75th percentile), and categorical data are represented as counts and percentages. Abbreviations are presented in Table 1.