

## Additional file 1: Participants characteristics stratified by gender and four weight group (Mean $\pm$ SD).

Variables	Men (n=205)				Women (n=178)			
	UW(n=29)	NWNO(n=97)	NWO(n=28)	OW(n=51)	UW(n=64)	NWNO(n=57)	NWO(n=49)	OW(n=8)
Age (year)	20.1 $\pm$ 1.4	20.2 $\pm$ 1.4	20.9 $\pm$ 1.8	21 $\pm$ 1.6	20.1 $\pm$ 1.7	19.7 $\pm$ 1.6	20.6 $\pm$ 1.5	20 $\pm$ 1.5
BH (cm)	174.6 $\pm$ 6.1	175.8 $\pm$ 6.5	171.5 $\pm$ 6.8	172.8 $\pm$ 6	162.1 $\pm$ 5.5	162.9 $\pm$ 6.1	160 $\pm$ 5.1	162.7 $\pm$ 5.6
BW (Kg)	53.2 $\pm$ 4.5	65.3 $\pm$ 6.6	66.1 $\pm$ 6.2	78.2 $\pm$ 7.6	46.3 $\pm$ 3.7	53.9 $\pm$ 5.5	55.5 $\pm$ 4.6	65.5 $\pm$ 4.6
WC (cm)	67 $\pm$ 3.1	75 $\pm$ 4.4	79.7 $\pm$ 4	87.3 $\pm$ 5.9	63.6 $\pm$ 3.5	68.1 $\pm$ 4.4	73.2 $\pm$ 4.5	81.3 $\pm$ 5.1
VFA (cm <sup>2</sup> )	12.1 $\pm$ 6.5	28.5 $\pm$ 13.7	59.7 $\pm$ 13.3	68.8 $\pm$ 12.2	38.9 $\pm$ 9.6	52.4 $\pm$ 9.1	73.2 $\pm$ 14.3	78.9 $\pm$ 0.2
Fat %	9.6 $\pm$ 2.8	12.3 $\pm$ 3.8	23.1 $\pm$ 3.4	23.6 $\pm$ 5.2	21.7 $\pm$ 4.5	24.4 $\pm$ 2.6	32.1 $\pm$ 2.3	36.2 $\pm$ 3
BMI (kg/m <sup>2</sup> )	17.4 $\pm$ 0.9	21.1 $\pm$ 1.4	22.5 $\pm$ 1.2	26.2 $\pm$ 1.7	17.6 $\pm$ 0.7	20.3 $\pm$ 1.3	21.7 $\pm$ 1.3	25 $\pm$ 0.5
SMM/BH (Kg/m)	15.3 $\pm$ 1.1	18.3 $\pm$ 1.5	16.5 $\pm$ 1.5	19.5 $\pm$ 2	11.9 $\pm$ 1	13.5 $\pm$ 1.1	12.6 $\pm$ 0.9	13.9 $\pm$ 0.9
DBP (mmHg)	70.7 $\pm$ 6.8	69.5 $\pm$ 7.0	71.9 $\pm$ 8.8	72.1 $\pm$ 8.0	68.1 $\pm$ 7.8	66.9 $\pm$ 6.1	72.1 $\pm$ 8.4	71.1 $\pm$ 7.2
SBP (mmHg)	117.2 $\pm$ 10.1	120.4 $\pm$ 9.5	119.6 $\pm$ 10.0	126.1 $\pm$ 9.4	105.9 $\pm$ 8.3	104.9 $\pm$ 8.3	112.3 $\pm$ 10.7	110.2 $\pm$ 5.7
HR	78.3 $\pm$ 12.7	72.7 $\pm$ 9.8	73.7 $\pm$ 12.5	73.1 $\pm$ 10.9	77.7 $\pm$ 11.4	75.5 $\pm$ 9.4	75.8 $\pm$ 9.7	73.8 $\pm$ 8.3
PA (Mets*H/wk)	27.9 $\pm$ 16.3	30.4 $\pm$ 10.4	28 $\pm$ 13	35.1 $\pm$ 14.3	23.5 $\pm$ 14.5	21.7 $\pm$ 8.6	27.5 $\pm$ 15.3	30.1 $\pm$ 10.4
Anderson test (m)	1103 $\pm$ 90.4	1145.8 $\pm$ 70.2	1045.9 $\pm$ 95.4	1049.2 $\pm$ 78.3	923.3 $\pm$ 97.4	967.8 $\pm$ 61.3	906.6 $\pm$ 66.5	866.5 $\pm$ 49.3
CMJ (cm)	53.5 $\pm$ 7.5	55 $\pm$ 7.6	44.9 $\pm$ 7.5	48.6 $\pm$ 7.7	34.9 $\pm$ 8	39.8 $\pm$ 8	33.7 $\pm$ 5.9	31.7 $\pm$ 5.2
5mSR (s)	19.3 $\pm$ 1.4	18.7 $\pm$ 1	20 $\pm$ 0.9	19.6 $\pm$ 1	21.7 $\pm$ 1.4	21.1 $\pm$ 1.1	22.4 $\pm$ 1.3	22.5 $\pm$ 1.3

Abbreviations: UW=Under Weight; NWNO=Normal Weight Non-obese; NWO=Normal Weight Obese; OW=Over-weight.

BH=Body height; BW=Body weight; WC=Waist circumference; VFA=Visceral fat area; Fat%=Body fat percentage; BMI=Body Mass Index; SMM=Skeletal muscle mass; DBP=Diastolic blood pressure; SBP=Systolic blood pressure; HR=Heart rate; PA=Physical activity; CMJ=Countermovement jump; 5mSR=5  $\times$  5-m shuttle run test.