

## **Supplementary materials text 1 and Table S1.**

### **Inclusion – exclusion criteria**

Inclusion criteria at baseline were: age >18 years and obesity defined as: 1) waist circumference  $\geq 80$  cm for women,  $\geq 94$  cm for men; and 2) fat mass percentage >25% in men and >35% in women [6]. Patients receiving pharmacological therapy for cardiovascular risk factors (i.e: hypertension, diabetes, dyslipidemia) were not excluded. Patients with a history of coronary heart disease (documented prior myocardial infarction, coronary revascularization, or myocardial ischemia on myocardial scintigraphy) were excluded.

### **Definition of the metabolic syndrome**

Metabolic syndrome was defined according to National Cholesterol Education Program Adult Treatment Panel III (ATP III) criteria: presence of  $\geq 3$  of the following criteria: abdominal obesity waist circumference  $\geq 80$  cm for women,  $\geq 94$  cm for men. Other criteria used were the following: systolic blood pressure (SBP)  $\geq 130$  mmHg or diastolic blood pressure (DBP)  $\geq 85$  mmHg, fasting glycemia  $\geq 5.6$  mmol.l<sup>-1</sup>, triglycerides  $\geq 1.70$  mmol.l<sup>-1</sup>, HDL-cholesterol level <1.0 mmol.l<sup>-1</sup> in men and <1.3 mmol.l<sup>-1</sup> in women [6].

### **Measurements**

The maximal exercise test was performed using an individualized ramp protocol (Series 2000, Marquette Treadmill and Marquette ECG Case 12; GE Healthcare). Treadmill slope and speed were progressively increased at fixed intervals starting at 0% slope, with the increase in slope and speed calculated on the participant's estimated aerobic power. Electrocardiogram and blood pressure (Welch Allyn-Tycos) were monitored continuously during the test and during the 5-min recovery. Peak oxygen uptake ( $\dot{V}O_2$  peak) was defined as the highest level of metabolic equivalents estimated from maximal treadmill speed and slope [6].

### **High-intensity training and resistance program**

Each high-intensity interval training (HIIT) session was performed on an ergocycle (Precor®, model 846i, USA) and consisted of a 5-min warm-up at 50 Watts (W), followed by 2 sets of 10 min

of repeated intervals of 15 to 30 sec at 80% to 100% of peak power output, interspersed by 15 to 30 sec of passive recovery and a 5-min cool-down at 50 W. The two sets of 10 min were separated by a 4-min of passive recovery [6]. Exercise intensity was adjusted over the course of the training intervention according the rating of perceived exertion for each participant. Moreover, exercise intensity was also adjusted at 9 months, based on the results of the maximal exercise test. Resistance training was composed of different exercises targeting the main muscle groups (biceps, triceps, chest, back and leg muscles). Participants completed 1 set of 15 to 20 repetitions and free weights or elastic bands were adjusted to reach a rating of perceived exertion 15/20 [6].

### **Mediterranean diet nutritional counselling**

Subsequent visits at the 5<sup>th</sup>, 12<sup>th</sup>, 20<sup>th</sup>, 35<sup>th</sup>, 57<sup>th</sup>, 64<sup>th</sup>, 72<sup>th</sup>, and 87<sup>th</sup> weeks were performed to review principles and adherence to the MedD, to report dietary intake and to answer participants' questions. Additionally, participants received two group teaching sessions aiming at providing guidance regarding cardiovascular risk factor control, food labels and tasting Mediterranean-style dishes. Macronutrient composition has been described in our previous study [6].

**Table S1 : Clinical characteristics, cardiometabolic risks factors and cardiorespiratory fitness at baseline in obese women and men.**

<b>Baseline carateristics</b>	<b>Wommen n=99</b>	<b>Men n=35</b>	
	<b>Mean ± SD</b>	<b>Mean ± SD</b>	<b>p value</b>
Age (years)	49.38 ± 7.53	63.17 ± 4.68	p<0.001
Metabolic Syndrome * (%)	42.4%	42.9%	0.964
<b>Anthropometric characteristics</b>			
Height (cm)	161.5 ± 6.17	174.6 ± 6.2	p<0.001
Weight (kg)	91.80 ± 14.25	110.04 ± 18.37	p<0.001
BMI (kg/m <sup>2</sup> )	35.28 ± 5.19	35.95 ± 5.01	0.508
Waist size (cm)	107.71 ± 11.70	120.03 ± 12.31	p<0.001
Fat Mass (%)	45.16 ± 4.92	33.49 ± 4.39	p<0.001
Fat Mass (kg)	41.92 ± 10.82	37.40 ± 10.20	0.035
Fat Free Mass (kg)	49.75 ± 5.39	72.77 ± 10.04	p<0.001
Fat Mass Trunk (%)	42.82 ± 5.20	36.09 ± 3.74	p<0.001
Fat Mass Trunk (kg)	21.05 ± 5.38	22.04 ± 4.87	0.344
<b>Blood pressure</b>			
SAP (mmHg)	130.46 ± 12.63	139.37 ± 12.60	p<0.001
DAP (mmHg)	81.55 ± 7.68	83.14 ± 7.48	0.289

MAP (mmHg)*	97.85 ± 7.97	101.89 ± 7.86	0.011
<b>Lipid and glucose profile</b>			
Total cholesterol (mmol.L)	5.04 ± 0.97	4.98 ± 1.30	0.767
HDL chol. (mmol.L)	1.34 ± 0.32	1.18 ± 0.27	0.010
LDL chol. (mmol.L)	3.07 ± 0.80	3.11 ± 1.21	0.820
Triglycerides (mmol.L)	1.40 ± 0.65	1.52 ± 0.55	0.306
TG/HDL	1.16 ± 0.76	1.38 ± 0.64	0.138
Glycemia (mmol.L)	5.42 ± 0.92	5.63 ± 1.04	0.266
<b>Cardiorespiratory fitness</b>			
METs	8.06 ± 1.37	9.19 ± 1.80	p<0.001
$\dot{V}O_{2\text{ peak}}$ (ml.min.kg FFM)	51.08 ± 7.35	48.35 ± 8.55	0.076