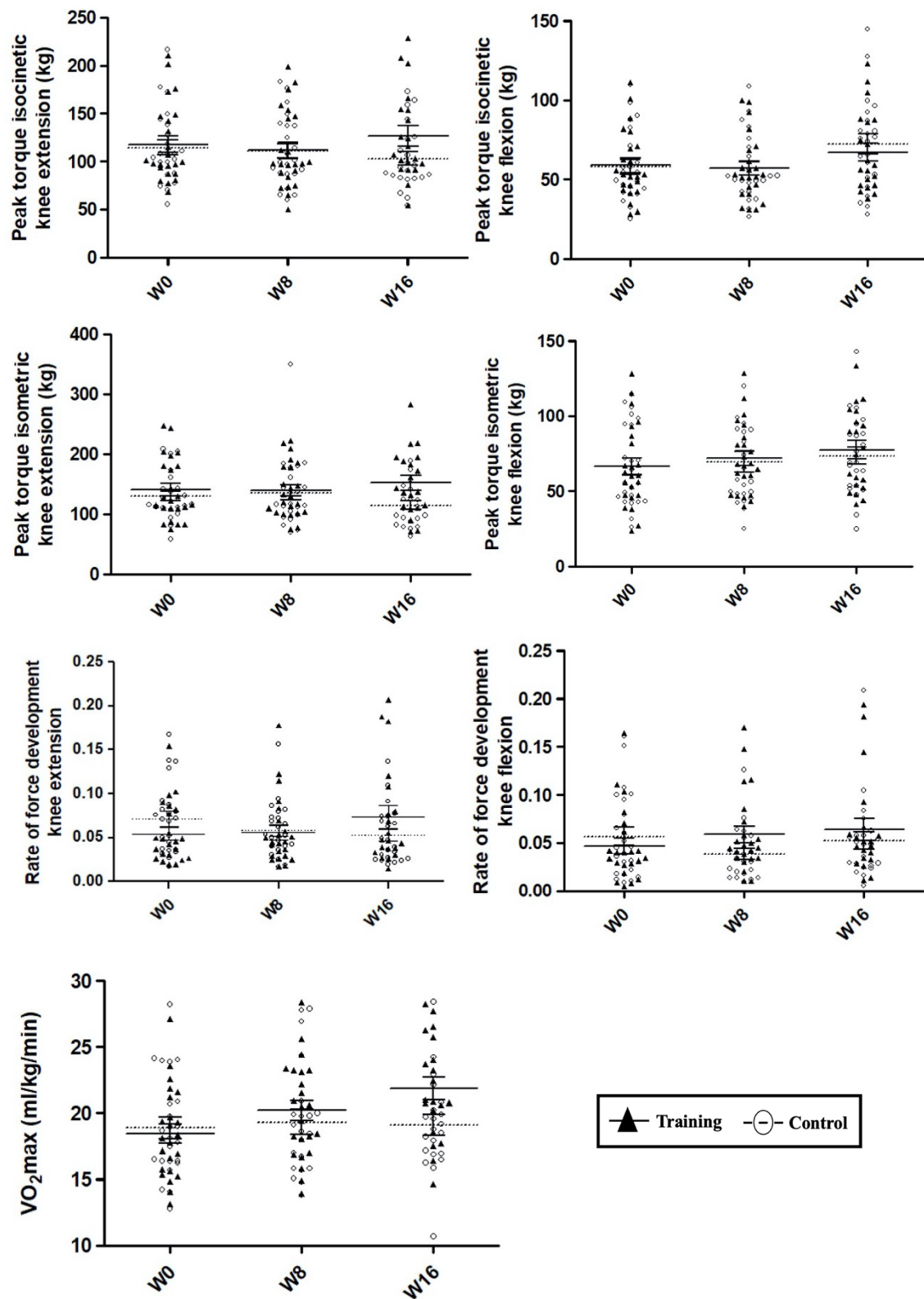
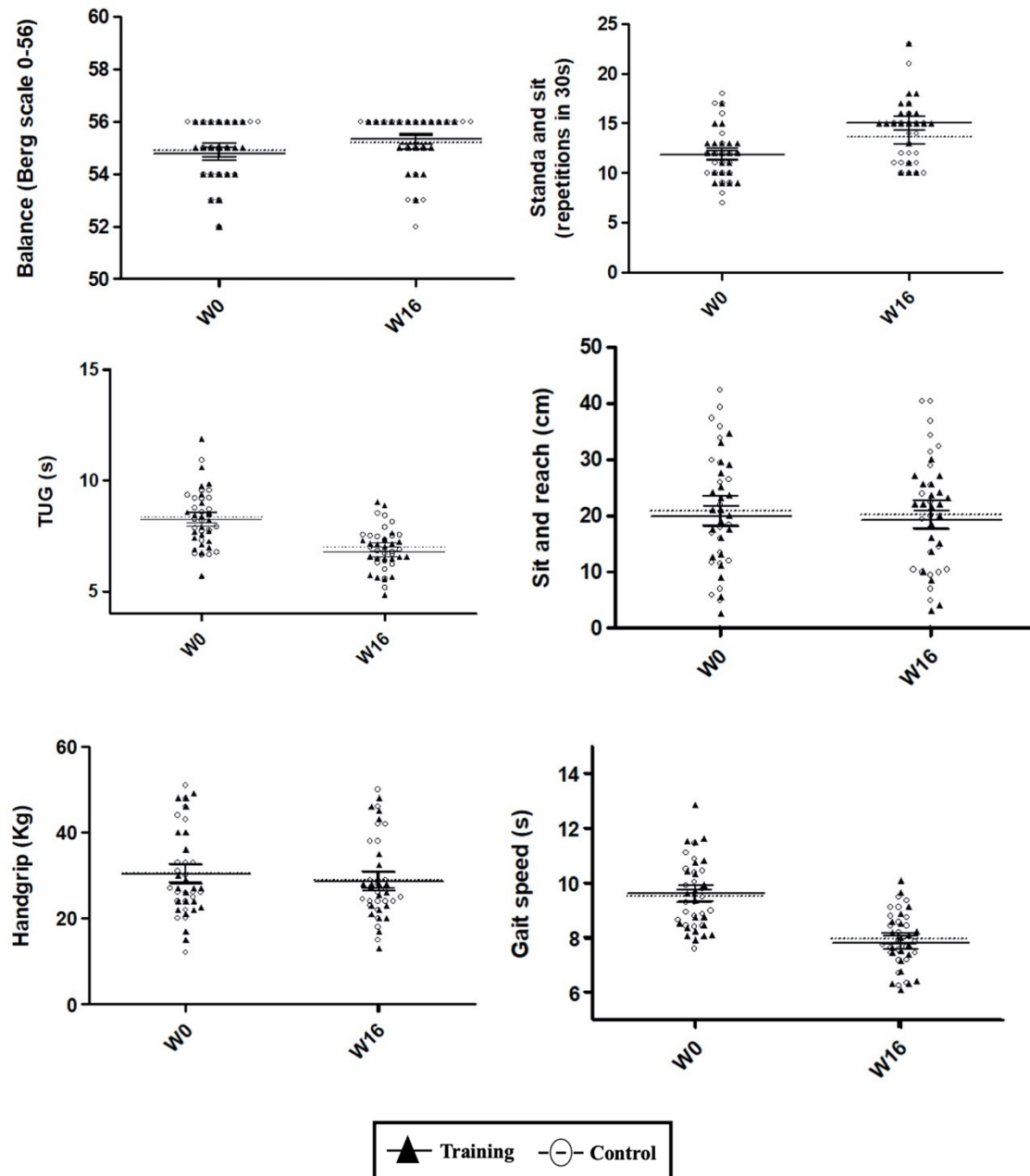


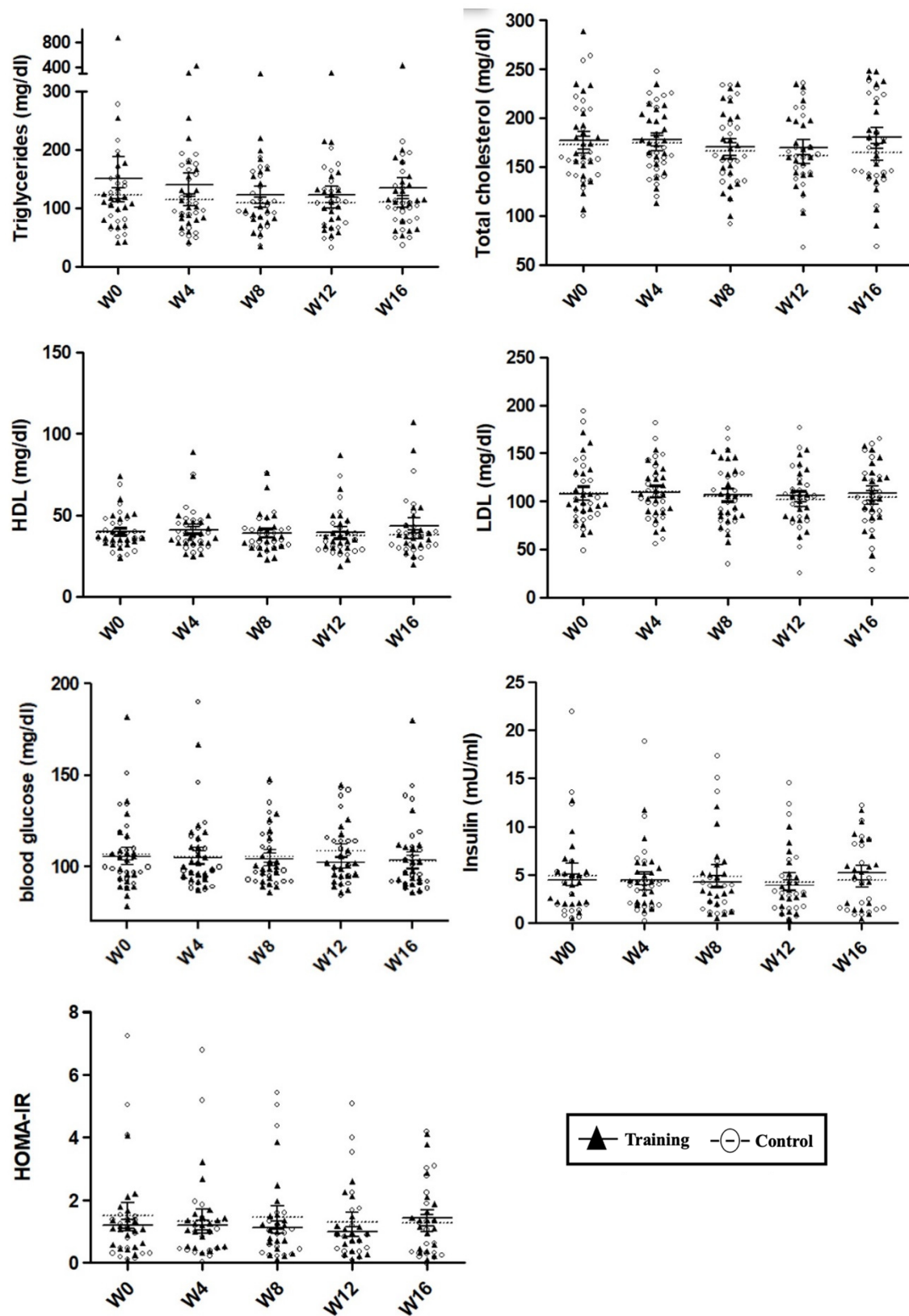
## Supplementary material



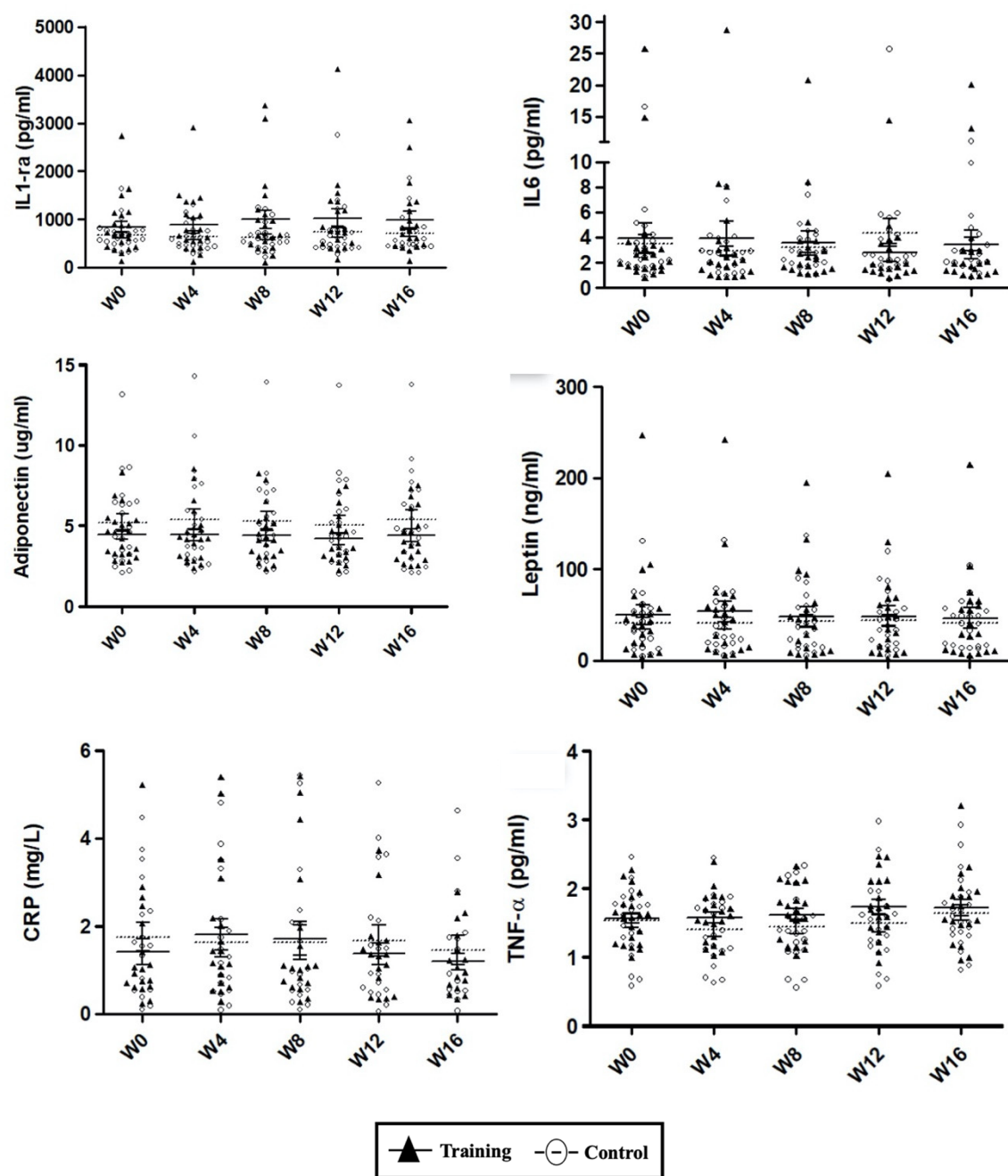
**Figure S1a.** Individual data, median and interquartile range for Physical fitness: Muscle strength and maximum oxygen consumption.



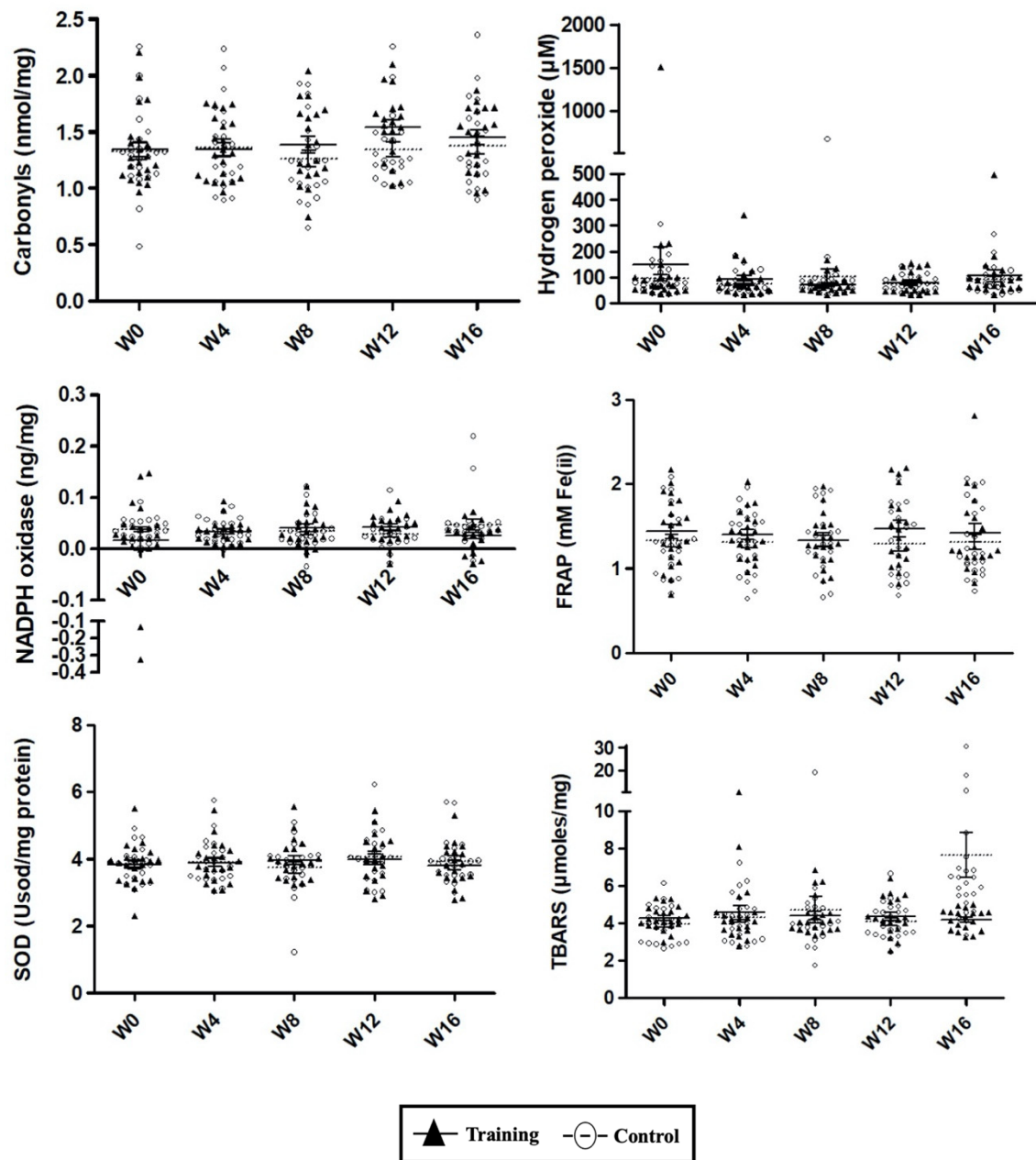
**Figure S1b.** Individual data, median and interquartile range for Physical fitness: Functionality.



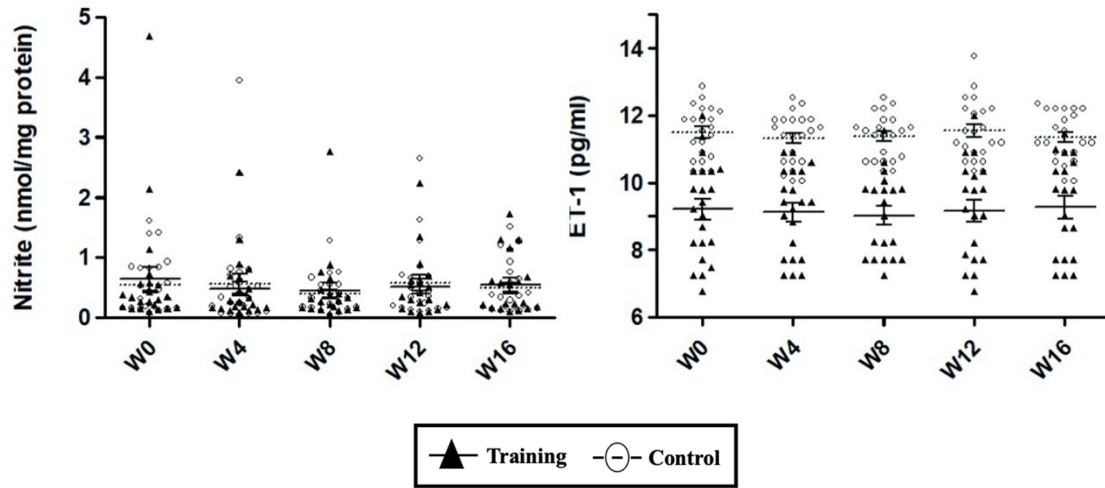
**Figure S2a.** Individual data, median and interquartile range for Blood markers: Glycemic and Lipidic profile.



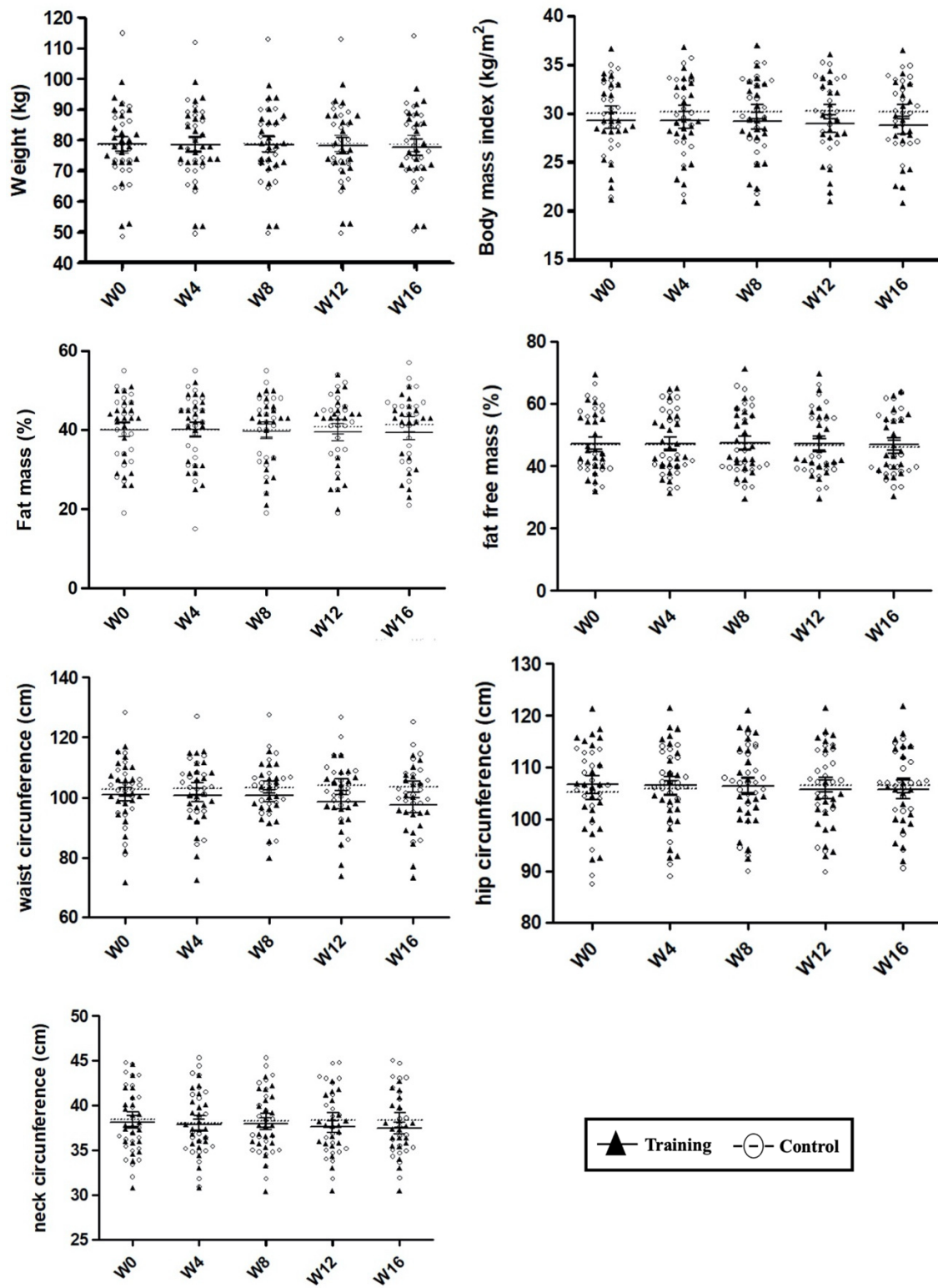
**Figure S2b.** Individual data, median and interquartile range for Blood markers: Inflammatory profile.



**Figure S2c.** Individual data, median and interquartile range for Blood markers: Oxidative stress profile.

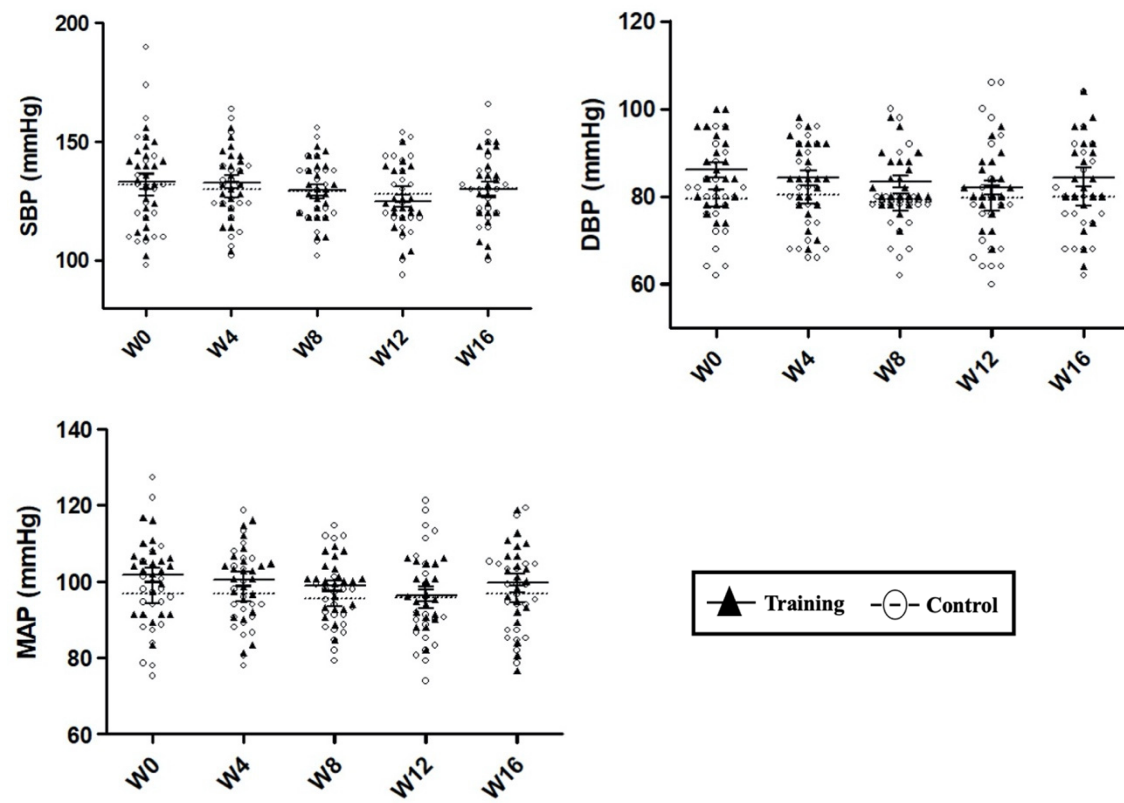


**Figure S2d.** Individual data, median and interquartile range for Blood markers: vasoactive substances.



**Figure S3a.** Individual data, median and interquartile range for Cardiometabolic profile: Body composition.





**Figure S3b.** Individual data, median and interquartile range for Cardiometabolic profile: Cardiovascular function.



**Table S1.** ANOVA 2 way for repeated measures at W0 and at W16.

	Within subjects Effects: group*time interaction	Pairwise comparison (P-Value)
<b>Body composition</b>		
Body Mass (kg)	F (1, 42) = 6.2, P = 0.017, $\eta_p^2 = 0.13$	0.231
BMI (kg/m <sup>2</sup> )	F (1, 42) = 6.52, P = 0.014, $\eta_p^2 = 0.13$	0.32
Fat mass (%) [NN]	F (1, 42) = 1.11, P = 0.298, $\eta_p^2 = 0.03$	0.303
Fat free mass (%) [NN]	F (1, 42) = 1.09, P = 0.303, $\eta_p^2 = 0.03$	0.299
VL thickness (cm)	F (1, 40) = 1.17, P = 0.286, $\eta_p^2 = 0.03$	0.091
RF thickness (cm)	F (1, 41) = 3.66, P = 0.063, $\eta_p^2 = 0.08$	0.557
Neck circumference (cm)	F (1, 42) = 3.51, P = 0.068, $\eta_p^2 = 0.08$	0.018
Waist circumference (cm)	F (1, 42) = 24.25, P < 0.001, $\eta_p^2 = 0.37$	0.011
Hip circumference (cm)	F (1, 42) = 8.15, P = 0.007, $\eta_p^2 = 0.16$	0.502
<b>Cardiovascular function</b>		
SBP (mmHg)	F (1, 42) = 0.07, P = 0.797, $\eta_p^2 = 0$	0.364
DBP (mmHg) [Log]	F (1, 42) = 0.51, P = 0.477, $\eta_p^2 = 0.01$	0.676
MAP (mmHg)	F (1, 42) = 0.35, P = 0.56, $\eta_p^2 = 0.01$	0.487
ABI [Log]	F (1, 41) = 3.95, P = 0.054, $\eta_p^2 = 0.09$	0.025
SV (ml) P = 0.90	F (1, 36) = 0.31, P = 0.583, $\eta_p^2 = 0.01$	0.347
CO (L/min) P = 0.90	F (1, 36) = 1.78, P = 0.191, $\eta_p^2 = 0.05$	0.784
TPR (mmHg/min/l) [Log] P = 0.90	F (1, 36) = 3.22, P = 0.081, $\eta_p^2 = 0.08$	0.647
IMT (mm)	F (1, 25) = 1.29, P = 0.267, $\eta_p^2 = 0.05$	0.254
CC (%/10mmHg) [OR NN]	F (1, 18) = 5.14, P = 0.036, $\eta_p^2 = 0.22$	0.665
<b>Physical fitness.</b>		
Isokinetic peak torque of knee extension (Kg) [Log]	F (1, 40) = 12.47, P = 0.001, $\eta_p^2 = 0.24$	0.015
Isokinetic peak torque of knee flexion (Kg) [Log]	F (1, 40) = 2.88, P = 0.097, $\eta_p^2 = 0.07$	P < 0.001
Isometric peak torque of knee extension (Kg) [Log]	F (1, 40) = 12.36, P = 0.001, $\eta_p^2 = 0.24$	0.111
Isometric peak torque of knee flexion (Kg) [SqR]	F (1, 40) = 0.08, P = 0.774, $\eta_p^2 = 0$	0.01
Rate of force development of knee extension [Log]	F (1, 40) = 16.5, P < 0.001, $\eta_p^2 = 0.29$	0.259
Rate of force development of knee flexion [Log]	F (1, 39) = 1.31, P = 0.26, $\eta_p^2 = 0.03$	0.447
VO <sub>2</sub> max (ml/kg/min)	F (1, 39) = 11.23, P = 0.002, $\eta_p^2 = 0.22$	P < 0.001
Maximal speed (km/h)	F (1, 39) = 42.03, P < 0.001, $\eta_p^2 = 0.52$	P < 0.001
Balance (Berg Scale) [NN]	F (1, 40) = 0.48, P = 0.492, $\eta_p^2 = 0.01$	0.072
Sit and reach (cm)	F (1, 40) = 0.29, P = 0.591, $\eta_p^2 = 0.01$	0.876
Stand and sit (repetitions in 30s) [Log]	F (1, 40) = 2.75, P = 0.105, $\eta_p^2 = 0.06$	P < 0.001
Handgrip strength (Kg) [Log]	F (1, 40) = 0.02, P = 0.875, $\eta_p^2 = 0$	0.098
Timed up and go (s)	F (1, 40) = 0.23, P = 0.631, $\eta_p^2 = 0.01$	P < 0.001
Gait speed (s)	F (1, 40) = 0.59, P = 0.447, $\eta_p^2 = 0.01$	P < 0.001
<b>Blood markers.</b>		
<b>Glycemic and Lipidic profile</b>		
Blood glucose (mg/dl) [NN]	F (1, 40) = 0.51, P = 0.478, $\eta_p^2 = 0.01$	0.118
Insulin (um/ml) [Log]	F (1, 36) = 1.86, P = 0.181, $\eta_p^2 = 0.05$	0.73
HOMA-IR [NN]	F (1, 34) = 1.19, P = 0.284, $\eta_p^2 = 0.03$	0.708
Triglycerides (mg/dl) [Log]	F (1, 40) = 2.47, P = 0.124, $\eta_p^2 = 0.06$	0.78
Total cholesterol (mg/dl) [SqR]	F (1, 40) = 1.57, P = 0.218, $\eta_p^2 = 0.04$	0.786

HDL (mg/dl) [Log]	F (1, 41) = 3.84, P = 0.057, $\eta^2$ = 0.09	0.303
LDL (mg/dl)	F (1, 40) = 0.6, P = 0.444, $\eta^2$ = 0.01	0.726
Inflammatory profile		
IL-6 (pg/ml) [NN]	F (1, 39) = 0.54, P = 0.469, $\eta^2$ = 0.01	0.841
IL-1ra (pg/ml) [Log]	F (1, 39) = 0.07, P = 0.797, $\eta^2$ = 0	0.297
TNF- $\alpha$ (pg/ml)	F (1, 39) = 0, P = 0.975, $\eta^2$ = 0	0.498
PCR (mg/L) [Log]	F (1, 27) = 0.1, P = 0.755, $\eta^2$ = 0	0.772
Adiponectin (ug/ml) [Log]	F (1, 39) = 0.78, P = 0.383, $\eta^2$ = 0.02	0.791
Leptin (ng/ml) [Log]	F (1, 39) = 0.32, P = 0.574, $\eta^2$ = 0.01	0.986
Oxidative stress profile		
Carbonils (nmol/mg) [Log]	F (1, 40) = 0.49, P = 0.488, $\eta^2$ = 0.01	0.062
Hydrogen peroxide ( $\mu$ M) [NN]	F (1, 40) = 0.73, P = 0.398, $\eta^2$ = 0.02	0.315
NADPH oxidase (ng/mg) [SqR]	F (1, 33) = 1.06, P = 0.31, $\eta^2$ = 0.03	0.981
FRAP (mM Fe(ii) [Log]	F (1, 40) = 0.16, P = 0.689, $\eta^2$ = 0	0.411
SOD (Uso/dmg protein)	F (1, 40) = 0.22, P = 0.64, $\eta^2$ = 0.01	0.575
Vasoactive substances		
ET-1 (pg/ml) [SqR]	F (1, 39) = 0.27, P = 0.608, $\eta^2$ = 0.01	0.142
Nitrite (nmol/mg protein) [Log]	F (1, 40) = 0.15, P = 0.696, $\eta^2$ = 0	0.802
Heart rate variability indexes: Time domain.		
FC (bpm)	F (1, 40) = 0.71, P = 0.406, $\eta^2$ = 0.02	0.969
RRi (ms) [Log]	F (1, 40) = 0.62, P = 0.436, $\eta^2$ = 0.02	0.956
SDNN (ms) [NN]	F (1, 40) = 0.33, P = 0.572, $\eta^2$ = 0.01	0.658
RMSSD (ms) [Log]	F (1, 40) = 0.12, P = 0.733, $\eta^2$ = 0	0.721
pNN50 (%) [Log]	F (1, 29) = 0.21, P = 0.65, $\eta^2$ = 0.01	0.364
Heart rate variability indexes: Frequency domain		
HF (ms <sup>2</sup> ) [Log]	F (1, 40) = 0, P = 0.983, $\eta^2$ = 0	0.67
LF (ms <sup>2</sup> ) [Log]	F (1, 40) = 0, P = 0.968, $\eta^2$ = 0	0.927
TP [NN]	F (1, 40) = 0.18, P = 0.671, $\eta^2$ = 0	0.954
LF/HF [Log]	F (1, 40) = 0.52, P = 0.475, $\eta^2$ = 0.01	0.429
HF (nu)	F (1, 40) = 0.17, P = 0.683, $\eta^2$ = 0	0.785
LF (nu)	F (1, 40) = 0.33, P = 0.571, $\eta^2$ = 0.01	0.686
Heart rate variability indexes: Non-linear analysis.		
SD1 [Log]	F (1, 40) = 0.43, P = 0.516, $\eta^2$ = 0.01	0.508
SD2 [NN]	F (1, 40) = 1.13, P = 0.294, $\eta^2$ = 0.03	0.894

**Legend:** BMI: body mass index VL: vastus lateralis; RF: rectus femoris; SBP: systolic blood pressure; DBP: diastolic blood pressure; MAP: mean blood pressure; ABI: ankle-brachial index; SV: stroke volume; CO: cardiac output; TPR: total peripheral resistance; IMT: intima media thickness; CC: carotid compliance. [Log]: [SqR]: Analysis of square root transformed data; Analysis of log transformed data; [NN] Analysis of non-normally distributed data; [OR]: analysis with outliers removed; HDL: High density lipoprotein; LDL: Low density lipoprotein; IL-1ra: interleukin 1 receptor antagonist; IL-6: interleukin 6; TNF- $\alpha$ : Tumor necrosis factor alpha; CRP: C-reactive protein; TBARS: Thiobarbituric acid reactive substances; NASDH: nicotinamide adenine dinucleotide phosphate oxidase; FRAP: Ferric Reduction Ability Power; SOD: superoxide dismutase; ET-1: endothelin-1; HR: heart rate; RRi: R–R interval; SDNN: standard deviation of all normal R–R intervals; RMSSD: square root of the mean squared differences of successive R–R intervals; pNN50: Percentage of successive RR intervals that differ by more than 50 ms; HF: high frequency; LF: low frequency; VLF: very low frequency; TP: total power; LF/HF: ratio between the bands of low and high frequencies; SD1: Poincaré plot standard deviation perpendicular the line of identity; SD2: Poincaré plot standard deviation along the line of identity.