Table S1: Complete set of measurements of HRV parameters (IBI and time-domain) for the three study groups at baseline and after training.

Variables	Land-exercise group (I)				Water-exercise group (II)				Control group (III)				P*
	Before	After	Δ	p	Before	After	Δ	p	Before	After	Δ	p	
IBI (count)	1388 (1196 - 1487)	1423 (1198 - 1553)	-35,0	0.989	1317.5 (1174 - 1557)	1426 (1261 - 1700)	-108,5	0.036	1237 (1092 - 1425)	1156 (1123 - 1385)	81,0	0.186	0,.05
Outliers (count)	14 (9 - 20)	12 (9 - 19)	2,0	0.891	12.5 (9 - 20)	13 (7 - 18)	-0,5	0.322	10 (6 - 18)	11 (7 - 20)	-1,0	0.411	0.475
Max (ms)	1088.2 (175.5)	1085.4 (171.6)	3,2	0.883	1068.8 (153.6)	1007 (158.5)	61,8	0.025	1173,2 (164.6)	1194.8 (150.1)	-21,6	0.389	0.004 (II-III))
Min (ms)	870 (794 - 908)	828 (746 - 906)	42,0	0.619	808 (754 - 884)	768.6 (672 - 870)	39,4	0.019	938 (836 - 1040)	946 (848 - 1056)	-8,0	0.919	0.116
Mean (ms)	979.9 (142,4)	963.9 (137)	16,.	0.341	959.0 (132,2)	898.3 (132,7)	60,7	0.014	1065,1 (136.7)	1079.8 (133,6)	-14,7	0.473	0.002 (II-III)
Median (ms)	981 (142.7)	964.5 (137.5)	16,5	0.328	956.4 (133.6)	900.7 (135.5)	55,7	0.015	1065.7 (135.8)	1081.9 (133.3)	-16,2	0.425	0.002 (II-III)
SDNN (ms)	37,1 (15.6)	35 (16)	2,1	0.504	39 (16.6)	35,7 (18.3)	3,3	0.364	35.4 (13.4)	39.3 (12.3)	-3,9	0.120	0.256
SDANN (ms)	23.8 (19.2 – 31.7)	21 (17 – 32.5)	2,8	0.338	26.5 (19.7 – 31.7)	23.4 (17.4 – 27.5)	3,1	0.354	25.2 (18.9 - 34)	26 (22.7 – 35.9)	-0,8	0.274	0.306
NNx (count)	83.7 (142.9)	49.9 (97)	33,8	0.175	41.6 (59.4)	53.9 (110.9)	-12,3	0.515	65.2 (144.5)	113.7 (184.2)	-49,5	0.080	0.052
pNNx (%)	0.4 (0 – 8.2)	0.8 (0.2 – 2.5)	-0,4	0.029	0.8 (0.5 – 5.6)	0.3 (0.1 – 2.7)	0,5	0.324	1.2 (0.2 – 6.4)	1.1 (0.3 – 17.9)	0,1	0.276	0.080
RMSSD (ms)	15,2 (10.5 – 30.7)	18 (10 - 24)	-2,8	0.126	18.9 (14.7 – 25.1)	14.4 (11.8 – 19.7)	4,5	0.182	17.6 (14.4 - 26)	19.3 (14.8 – 37.5)	-1,7	0.307	0.095
SDNNi (ms)	196.9 (164.8 – 226.8)	185.8 (171.9 – 226.6)	11,1	0.545	199.7 (169.6 – 219.6)	170.4 (150.5 – 209.6)	29,3	0.166	195 (21.9 - 226)	213.6 (163.6 – 240.1)	-18,6	0.212	0.124
meanHR (bpm)	62.6 (9.5)	63.5 (8.8)	-0,9	0.422	64.1 (8.7)	68.3 (9.9)	-4,2	0.012	57.3 (7.5)	56.5 (7.4)	0,8	0.518	0.002 (II-III)
sdHR (bpm)	2.3 (0.7)	2.3 (0.9)	0,0	0.925	2.6 (1)	2.7 (0.9)	-0,1	0.885	1.9 (0.7)	2.1 (0.6)	-0,2	0.121	0.524
HRVti (ms)	10.2 (1,9)	9.6 (2.2)	0,6	0.278	10.9 (1.8)	10.2 (1.7)	0,7	0.137	10.1 (2.3)	10.4 (1.8)	-0,3	0.595	0.380
TINN (ms)	148.9 (64.6)	140.7 (66.7)	8,2	0.583	156.5 (64.9)	136.8 (67.5)	19,7	0.212	141.2 (66.8)	156.5 (59.7)	-15,3	0.224	0.248

Data are shown as mean (standard deviation) or median (Q1–Q3). *IBI* – inter-beat interval; *SDNN* – standard deviation of all normal R–R (NN) intervals; *SDANN* – standard deviation of the average NN interval calculated over a short period; *NNx* – number of valid adjacent NN values not separated by data breaks; *pNNx* – proportion of valid adjacent RR values not separated by data breaks; *rMSSD* – root mean square of successive NN interval differences; *SDNNi* – mean of the standard deviations of all the NN intervals for each 5 min segment; *SDHR* – standard deviation of heart rate; *HRVti* – heart rate variability triangular index; *TINN* – triangular interpolation interval histogram; *p** – *p* between groups (ANCOVA).

Table S2: Complete set of measurements of HRV parameters (frequency domain: Welch) for the three study groups at baseline and after training.

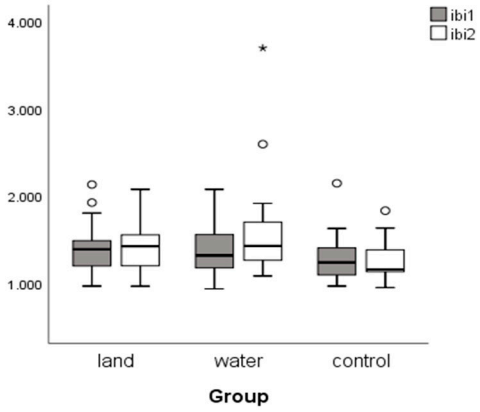
Variables	Land-exercise group (I)				Water-exercise group (II)				Control group (III)				P*
	Before	After	Δ	p	Before	After	Δ	p	Before	After	Δ	p	
aVLF (ms^2)	477 (324.8 – 691.7)	488.3 (298.5 – 832.1)	-11,3	0.946	560.6 (367 – 9239)	506.2 (285.5 – 747.8)	54,4	0.439	532.3 (349.8 – 1074.7)	699 (463 – 1176.5)	-166,7	0.068	0,171
aLF (ms^2)	182.8 (87.6 – 375.4)	114.2 (63 – 320.4)	68,6	0.253	229.5 (114.6 – 442.7)	180 (87.5 - 345)	49,5	0.304	170.9 (104.9 – 380.6)	217.5 (137.5 – 394.1)	-46,6	0.259	0,246
aHF (ms^2)	79.2 (41 – 244.6)	88.9 (35.3 – 160.9)	-9,7	0.025	85 (64.4 – 175.6)	58.7 (32.4 – 114.5)	26,3	0.052	104.3 (44.1 – 272.3)	128.3 (60.7 – 430.8)	-24	0.290	0,033 (I-III, II-III)
aTotal (ms^2)	828.8 (506.2 – 1431.9)	707,5 (430,4 – 1545)	121,3	0.527	900 (674 – 1543.8)	786.9 (445.5 – 1013.3)	113,1	0.228	872.2 (538.3 – 1788.4)	1121.6 (916 – 2036.4)	-249,4	0.107	0,090
pVLF (%)	67.5 (50.7 – 71.9)	70.5 (66.2 – 75.6)	-3	0.020	61,9 (55.6 – 71.8)	68.1 (58.1 – 73.6)	-6,2	0.443	60.4 (51.9 – 75.3)	63.7 (56.2 – 74.6)	-3,3	0.524	0,466
pLF (%)	22.7 (15.7 – 28.9)	18.5 (11.9 – 24.9)	4,2	0.038	24.7 (14.2 – 32.9)	22.8 (16.7 – 32.5)	1,9	0.620	20 (15.7 – 26.1)	20.1 (15 – 24.1)	-0,1	0.665	0,322
pHF (%)	9.8 (6.7 – 18.8)	8.7 (7.1 – 17.6)	1,1	0.300	9.8 (6.1 - 15)	7.3 (5 – 11.4)	2,5	0.089	15.9 (5.7 – 26.5)	13.3 (8.5 – 19.6)	2,6	0.692	0,897
nLF (%)	0.62 (0.55 – 0.76)	0.67 (0.44 – 0.73)	-0,05	0.427	0.72 (0,54 – 0.8)	0.75 (0.68 – 0.85)	-0,03	0.062	0.63 (0.46 – 0.75)	0.61 (0.44 – 0.74)	0,02	0.857	0,163
nHF (%)	0.38 (0.24 – 0.45)	0.34 (0.27 – 0.56)	0,04	0.427	0.28 (0.2 – 0.46)	0.25 (0.15 – 0.32)	0,03	0.062	0.37 (0,25 – 0.54)	0.39 (0.26 – 0.56)	-0,02	0.857	0,163
LF / HF	1.6 (1.2 – 3.2)	2 (0.8 – 2.7)	-0,4	0.510	2.6 (1.2 - 4)	3 (2.1 – 5.5)	-0,4	0.036	1.7 (0.8 - 3)	1.5 (0.8 – 2.8)	0,2	0.981	0,066
peakVLF (Hz)	0 (0 - 0)	0 (0 - 0)	0	0.317	0 (0 – 0.01)	0 (0 - 0)	0	0.046	0 (0 - 0)	0 (0 - 0)	0	0.317	0,065
peakLF (Hz)	0.07 (0.04 – 0.12)	0.09 (004 – 0.13)	-0,02	0.715	0.05 (0.04 – 0.1)	0.07 (0.04 – 0.1)	-0,02	0.970	0.07 (0.05 – 0.11)	0.09 (0.04 – 0.12)	-0,02	0.777	0,949
peakHF (Hz)	0.26 (0.24 – 0.3)	0.27 (0.23 – 0.3)	-0,01	0.914	0,25 (0,18 - 0,31)	0.27 (0.19 – 0.31)	-0,02	0.909	0.24 (0.2 – 0.3)	0.24 (0.2 – 0.29)	0	0.548	0,873

Data are shown as mean (standard deviation) or median (Q1-Q3). aVLF – absolute value in very low frequency; aLF – absolute value in low frequency; aHF -absolute value in high frequency; pVLF – power of the very low frequency band; pLF – power of the low frequency band; pHF – power of the high frequency band; aTotal – total power, variance of all NN intervals; nLF – power in the low-frequency range, normalized; nHF – power in the high-frequency range, normalized; LF/HF -ratio of normalized low-and high-frequency power; peakVLF – peak frequency of the very low-frequency band; peakLF – peak frequency of the low-frequency band; peakHF – peak frequency of the high-frequency band. p – p between groups (ANCOVA).*

Table S3: Complete set of measurements of HRV parameters (Poincaré and nonlinear) for the three study groups at baseline and after training.

Variables	Land-exercise group (I)				Water-exercise group (II)				Control group (III)				P*
	Before	After	Δ	p	Before	After	Δ	p	Before	After	Δ	p	
SD1 (ms)	10.8 (7.4 – 21.7)	12.7 (7.1 - 17)	-1,9	0.130	13.3 (10.4 – 17.8)	10.2 (8.4 – 13.9)	3,1	0.187	12.4 (10.2 – 18.4)	13.6 (10.5 – 26.6)	1,9	0.307	0,093
SD2 (ms)	44.4 (34.7 – 56.6)	40.9 (33.9 - 56)	3,5	0.642	46.8 (37 – 73.8)	42.6 (31.7 - 51)	4,2	0.372	42.5 (32.7 – 60.6)	48.9 (42.9 – 62.1)	-6,4	0.138	0,383
SampEn	2.1 (1.7 – 2.2)	1.9 (1.7 – 2.1)	0,2	0.776	2 (1.7 – 2.2)	1.8 (1.6 - 2)	0,2	0.096	2.1 (1.7 – 2.5)	2.1 (1.9 – 2.4)	0	0.789	0,090
Alpha	1 (0.9 – 1.1)	1.1 (1.1 – 1.1)	-0,1	0.017	1 (1 – 1.1)	1.1 (1 – 1.1)	-0,1	0.525	1 (1 – 1.1)	1 (1 – 1.1)	0	0.962	0,104
Alpha1	1.1 (0.9 – 1.4)	1.1 (0.9 – 1.3)	0	0.545	1.2 (1.1 – 1.4)	1.3 (1.2- 1.5)	-0,1	0.043	1.1 (0.8 – 1.3)	1.1 (0.9 – 1.3)	0	0.764	0,205
Alpha2	1 (0.9 - 1)	1.1 (0.9 – 1.1)	-0,1	0.003	1 (0.9 – 1.1)	1 (0.9 - 1)	0	0.970	1 (0.9 – 1.1)	1 (0.9 - 1)	0	0.764	0,029 (I-II; I-III)

Data are shown as mean (standard deviation) or median (Q1-Q3). *SD1* – poincare plot standard deviation perpendcularthe line of identity; *SD2* – Poincare plot standard deviation along the line of identity; *SampEn* – sample entropy; ⟨*1* – detrended fluctuation analysis which describes short – time fluctuation; ⟨*2* – detrended fluctuation analysis, which describes long-term fluctuations.
*p** – *p* between groups (ANCOVA).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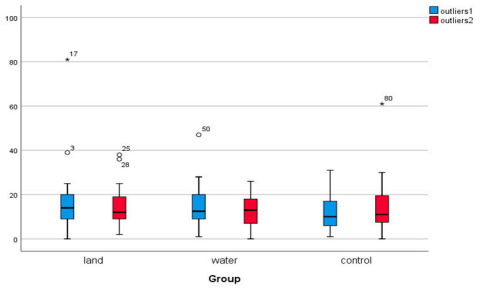
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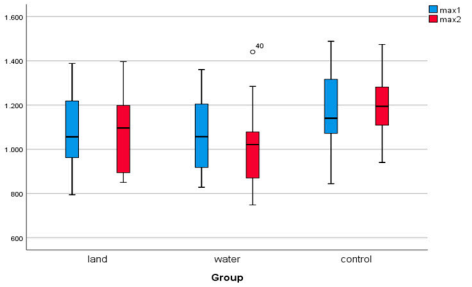
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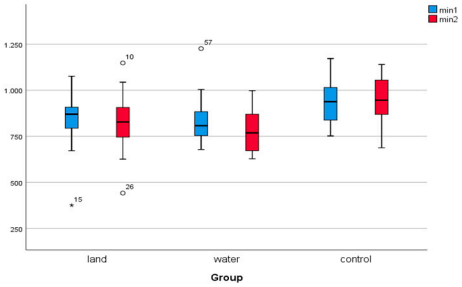
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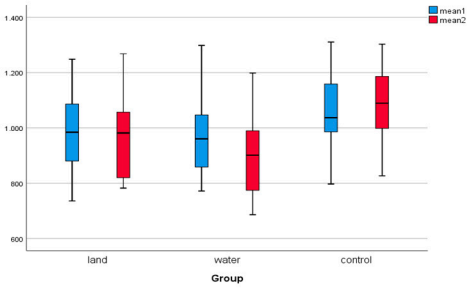
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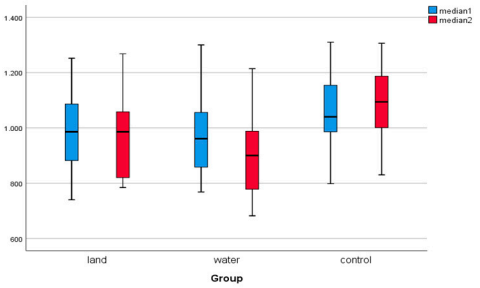
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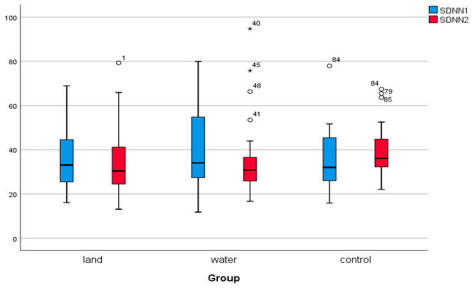
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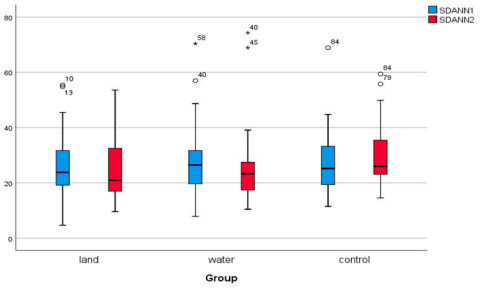
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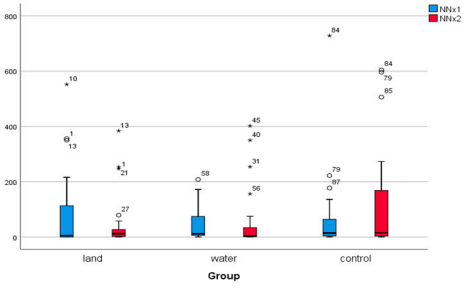
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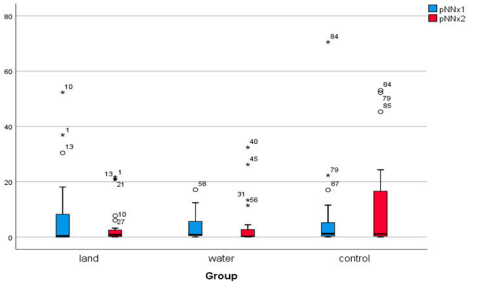
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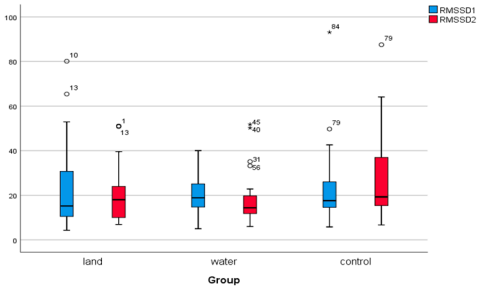
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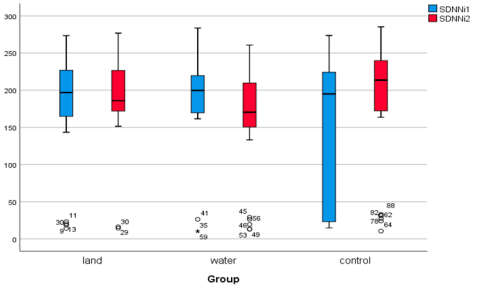
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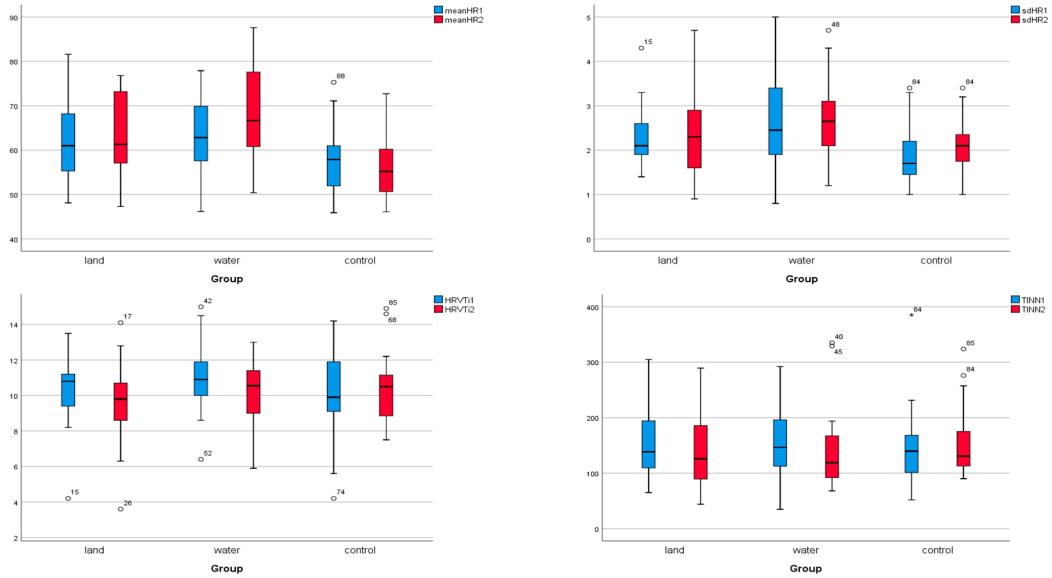
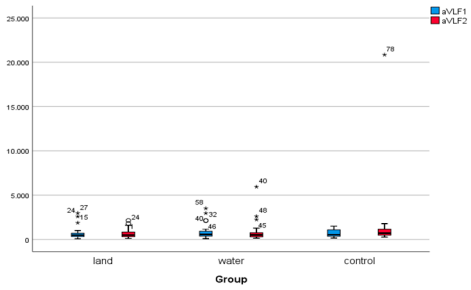


Figure S1. Change in time-domain HRV parameters for the each study groups at baseline and after training.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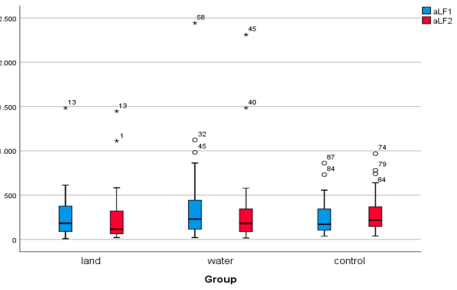
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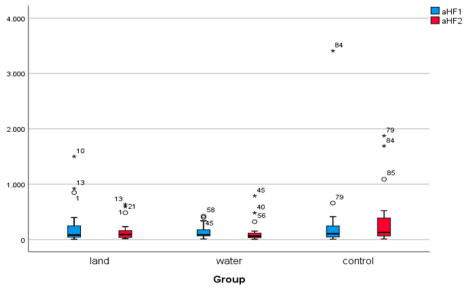
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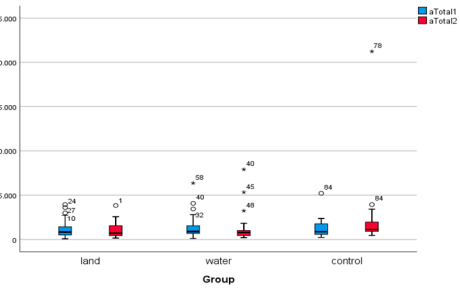
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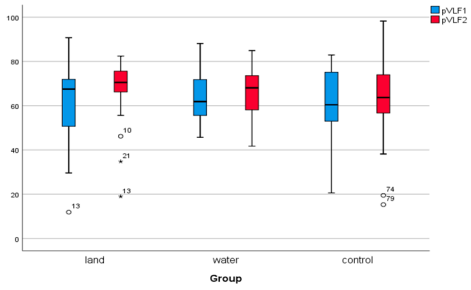
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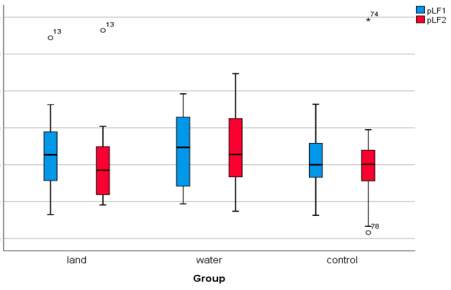
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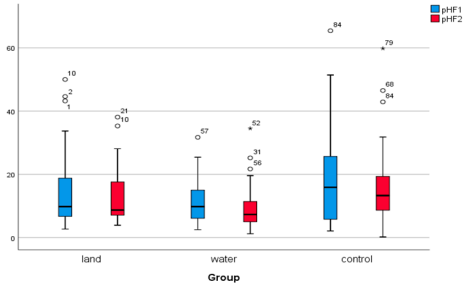
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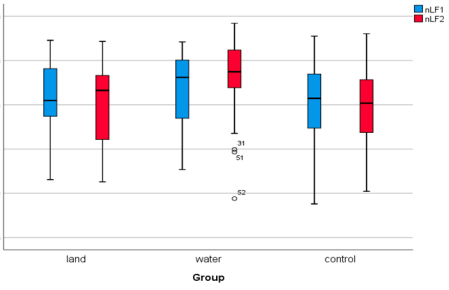
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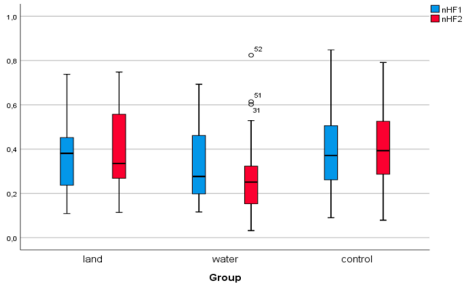
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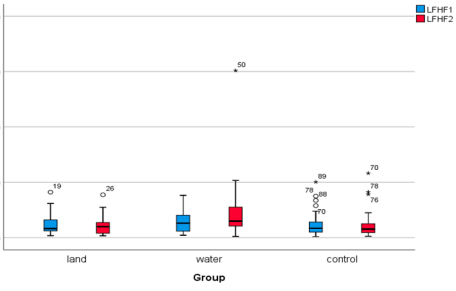
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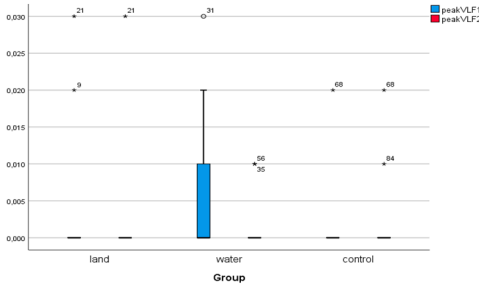
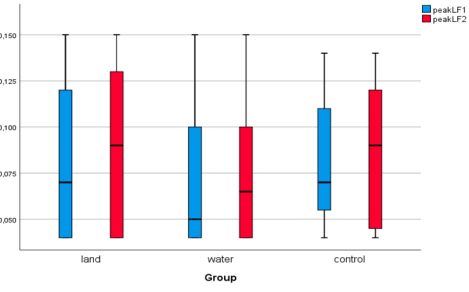
control
Group


peakVLF1
peakVLF2
land
water
control
Group


peakLF1
peakLF2
land
water
control
Group

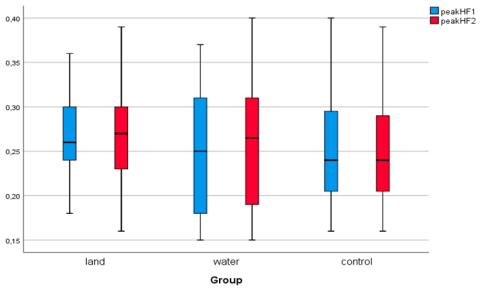


Figure S2. Change in frequency domain: Welch – HRV parameters for the three study groups at baseline and after training.

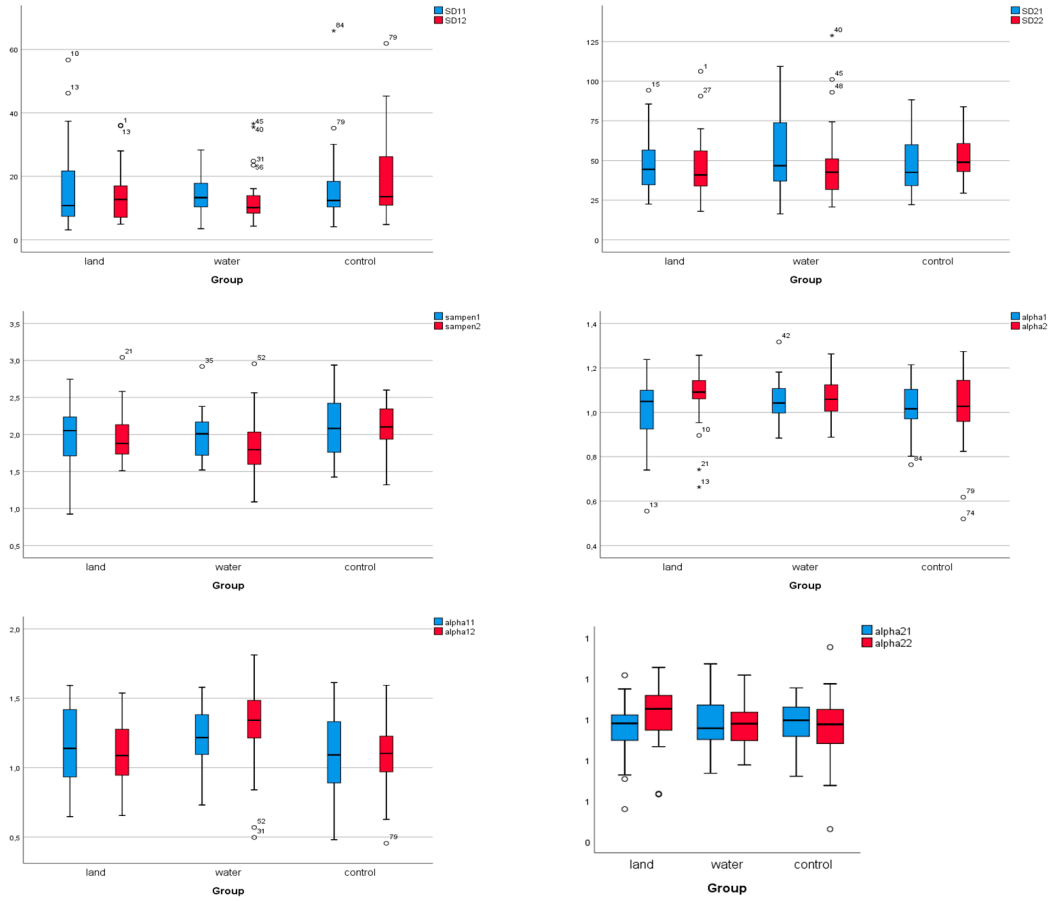


Figure S3. Change in Poincaré and nonlinear HRV parameters for the three study groups at baseline and after training.