

Supplementary Material 1

Article Title: Effects of meditation practice on body balance training

Supplementary methods 1

Isometric trunk stability exercises

1. Plank with elbows on the ground, focus on keeping the body aligned for 20 seconds.
2. Plank with straight arms, raising alternately one arm for 3 seconds, repeated 3 times.
3. Plank with straight arms, raising alternately one leg for 3 seconds, repeated 3 times.
4. Plank with straight arms, raising one leg and the contralateral arm for 3 seconds, 3 times each side.
5. Plank with straight arms, raising one leg and one arm of the same side for 3 seconds, 3 times each side.
6. Side plank on the elbow, focus on keeping the body aligned for 20 seconds for each side.
7. Side plank on elbow, raising a leg and keeping the position for 3 seconds, 3 times each side.
8. Side plank on elbow, raising the arm and keeping the position for 3 seconds, 3 times each side.
9. Side plank on elbow, raising arm and leg, and keeping the position for 3 seconds, 3 times each side.

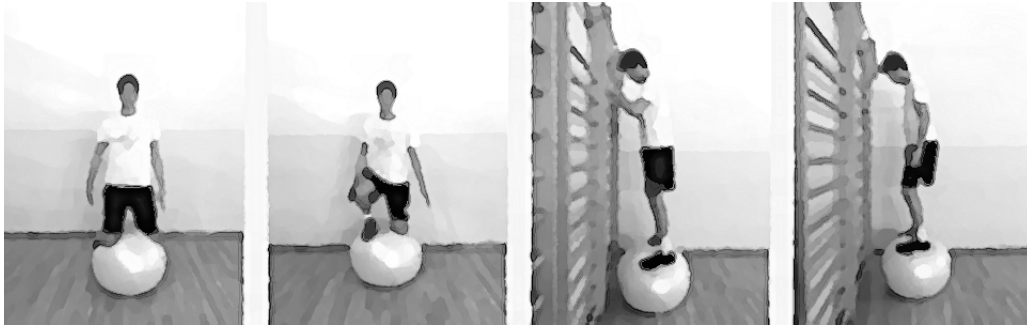
Stability exercises on fit-ball

Balance training on fit-ball followed a progression in four steps (Fig. 1):

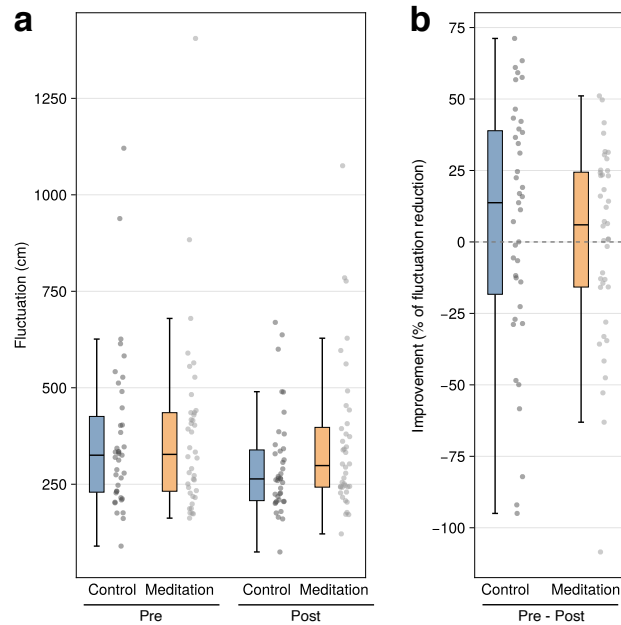
1. Kneeling on the fit-ball, staying balanced for 20 seconds.
2. Kneeling on the fit-ball, raising a leg to set a foot on the ball, balancing for 10 seconds on each leg.
3. Standing on the fit-ball with the hands placed on a support, keeping balance for 20 seconds.
4. Standing on the fit-ball, balancing as long as possible without any support.

Supplementary results: Monopodal center of mass fluctuations

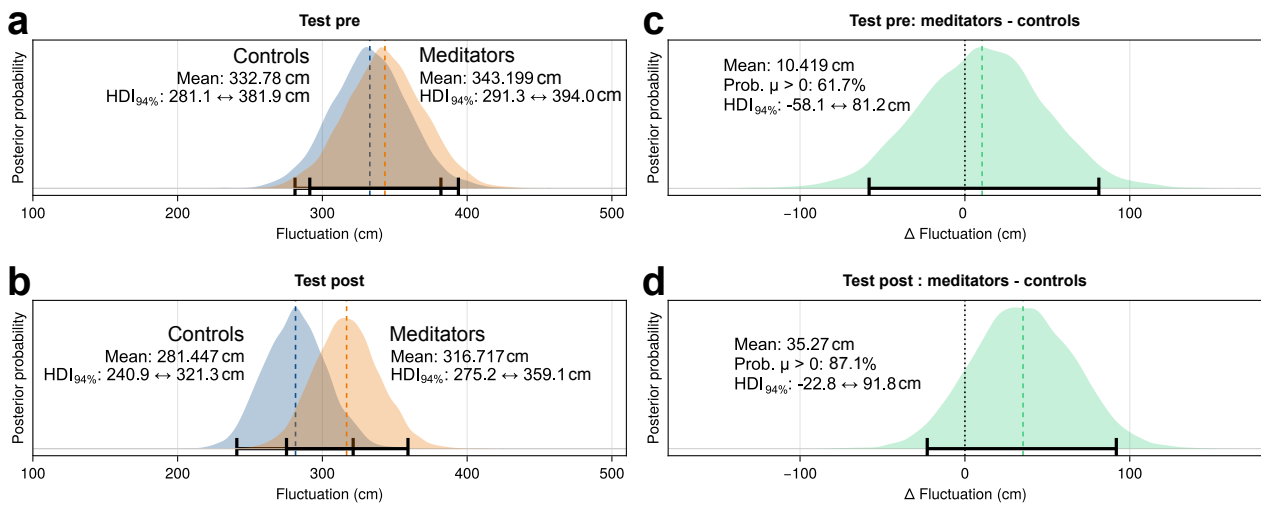
Monopodal center of mass fluctuations with closed eyes on a flat, steady surface, were inconsistently reduced in both groups after training. A summary of data before and after training is shown in Supplementary figure 2. Mean fluctuations in the two groups and comparisons before and after training and between groups was performed through a Bayesian linear model and Monte Carlo Markov chains (see Methods in Main Article and Algorithm 1 in Online Resource 2). The mean fluctuations of the two groups and the mean difference between groups at entrance and after training is shown in Supplementary figure 3. Supplementary figure 4 and supplementary table 1 report the results of the esteem of the improvement (percentage change after training *vs* before training) in the control and meditation group and the between group difference.



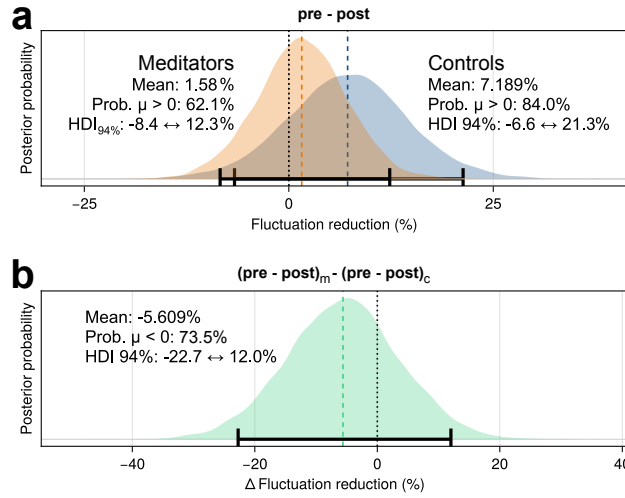
Suppl. Fig. 1 Stability exercises on fit-ball. See text for description



Suppl. Fig. 2 Monopodal center of mass fluctuations with closed eyes before and after training: boxplot and single subjects' outcomes. Control and meditation groups before and after training (a); (b) percentage difference between fluctuations before and after training (improvement) in the two groups, paired by subject. Control group $n = 39$, meditation group $n = 40$



Suppl. Fig. 3 Mean monopodal center of mass fluctuations. Bayesian esteem of the mean of the two groups before training (a), and after training (b); and of the differences between the two groups before training (c), and after training (d). Control group $n = 39$, meditation group $n = 40$



Suppl. Fig. 4 Mean monopodal center of mass fluctuation improvement (percentage difference between fluctuations before and after training). Bayesian esteem (a) of the mean of the two groups paired by subject, and (b) of the mean difference between the two groups. Control group $n = 39$, meditation group $n = 40$

Suppl. Table 1 Mean improvement in monopodal center of mass fluctuations with closed eyes: percentage difference between fluctuations before and after training, paired by subject. Bayesian linear model results. Summary of the Monte Carlo Markov chains for the estimated parameters: *mean*: sample mean of the posterior distribution; *MCSE*: Monte Carlo Standard Error; *S.D.*: sample standard deviation of the posterior distribution; $HDI_{min}^{94\%}$ and $HDI_{max}^{94\%}$: range of the Highest Density Interval including 94 % of the posterior distribution; $prob_{\%} > 0$: percentage of the posterior distribution where the estimated mean is > 0 ; *ESS*: Effective Sample Size; \hat{R} : Potential Scale Reduction Factor, to check for chain convergence. Estimated parameters: μ_{ctrls} and μ_{meds} : mean improvement in the control and in the meditation group; $\Delta\mu_{meds-ctrls}$: mean difference of the improvement between the two groups; σ_{ctrls} and σ_{meds} : standard deviation of the improvement in the control and in the meditation group; v_{ctrls} and v_{meds} : v parameter of the Student's t -distribution in the Bayesian model for the improvement in the control and in the meditation group. Control group $n = 39$, meditation group $n = 40$

parameter	mean	MCSE	S.D.	$HDI_{min}^{94\%}$	$HDI_{max}^{94\%}$	$prob_{\%} > 0$	ESS	\hat{R}
μ_{ctrls}	7.19	0.11	7.33	-6.64	21.31	83.95	4784.55	1.00063
μ_{meds}	1.58	0.06	5.5	-8.4	12.34	62.06	8279.61	1.00058
$\Delta\mu_{meds-ctrls}$	-5.61	0.13	9.22	-22.72	12.02	26.49	4838.5	1.00109
σ_{ctrls}	43.22	0.07	5.83	32.99	54.43	—	6708.71	1.0001
σ_{meds}	32.31	0.06	4.58	23.77	40.98	—	6296.03	1.00023
v_{ctrls}	35.37	0.33	28.79	2.42	88.35	—	7595.98	1.00014
v_{meds}	29.33	0.31	27.21	1.95	78.28	—	7566.57	1.00026