

P67. Swimming And Dry-Land Performance After 12 Weeks Of Training In Master Swimmers

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INTRODUCTION

Master competitions are no longer an extension of recreational sports as in the past, although, physiological and muscular changes are underlying reasons that can explain that swimming performance declines with age (Espada et al., 2016). The aim of this study was to analyse the effect of 12 weeks of training in master swimmers and the relationship to swimming performance.

METHODS

Thirteen master swimmers (39.8 ± 5.5 years of age, 174.2 ± 0.10 m in height and 74.5 ± 14.2 kg in body weight), nine males and four females, were evaluated with 12 weeks of difference between pre and post-test. Swimmers trained 3 times a week, mean 7.5 km swim training session with no dry-land specific training. A contact mat (Ergojump Digitime 1000; Digitest, Jyväskylä, Finland) was used to assess the maximum height (Hmax, cm) obtained in countermovement jump (CMJ). For the upper body power measure, the swimmers completed a 3 kg medicine ball throwing test (MBT). Water tests were performed in a 25 m indoor swimming pool. After a 600 m of low intensity warm-up, each subject completed a 50 m maximal front crawl swimming test (T50) from a push off start in the wall on the surface level (to eliminate the influence of the dive). Performance at 15 and 25 m (T15 and T25) was determined by two expert researchers with a chronometer (Seiko S140, Japan). Statistical significance was set at $p < 0.05$. Pearson correlation coefficients were determined.

RESULTS

Improvements in dry-land tests were observed between pre and post-test, no significant statistical differences were verified, namely in CMJ (28.5 ± 3.6 vs 29.5 ± 6.1 cm) and MBT (4.2 ± 0.9 vs 4.5 ± 0.9 m). Contrarily, in T15, T25, and T50 the differences were significant. T15 and T25 (10.8 ± 1.4 vs 9.5 ± 1.4 sec and 19.7 ± 2.7 vs 17.9 ± 2.5 sec; both $p < 0.001$) and T50 (38.4 ± 6.2 vs 36.7 ± 4.9 sec; $p < 0.02$). In the post-test, T15 was correlated to CMJ ($r = -0.71$, $p < 0.01$) and MBT ($r = -0.82$, $p < 0.01$). Also T25 was correlated to CMJ ($r = -0.69$, $p < 0.01$) and MBT ($r = -0.85$, $p < 0.01$) and T50 to CMJ ($r = -0.72$, $p < 0.01$) and MBT ($r = 0.88$, $p < 0.01$).

CONCLUSIONS

In master swimmers, 12 weeks of training improve swimming performance and strength, although the last one was not statistically significant which indicates that a specific dry-land strength training intervention program in master swimmers should be considered once the correlation between swimming performance and dry-land strength variables is evident.

References

Espada, M.C., Costa, M.J., Costa, A.M., Silva, A.J., Barbosa, T.M., Pereira, A.F. (2016). Relationship between performance, dry-land power and kinematics in master swimmers. *Acta of Bioengineering and Biomechanics*, 18(2), 145-51.