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Research article

Training at the Optimum Power Zone Produces Similar Performance Improvements to Traditional Strength Training

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ABSTRACT

The purpose of this study was to test if substituting a regular maximum strength-oriented training regimen by a power-oriented one at the optimal power load in the first phase of a traditional periodization produces similar performance improvements later on into the training period. Forty five soldiers of the Brazilian brigade of special operations with at least one year of army training experience were divided into a control group (CG - n = 15, 20.18 ± 0.72 yrs, 1.74 ± 0.06 m, 66.7 ± 9.8 kg, and 1RM/weight ratio = 1.14 ± 0.12), a traditional periodization group (TG - n = 15, 20.11 ± 0.7 yrs, 1.72 ± 0.045 m, 63.1 ± 3.6 kg, and 1RM/weight ratio = 1.21 ± 0.16); and a maximum-power group (MPG - n = 15, 20.5 ± 0.6 yrs, 1.73 ± 0.049m, 67.3 ± 9.8 kg, 1RM/weight ratio = 1.20 ± 0.14). Maximum strength (26.2% and 24.6%), CMJ height (30.8% and 39.1%) and sprint speed (11.6% and 14.5%) increased significantly ($p < 0.05$) and similarly for the MPG and TG, respectively, from pre- to post-assessments. Our data suggests that a power training regimen may be used in the initial phase of the training cycle without impairing performance later on into the training period.

Key words: Maximum-power zone, maximum strength, mean propulsive power, mean power

Key Points

- Training at the optimal power zone during two mesocycles of a traditional periodization did not hamper strength, speed and power performance

improvements.

- Additional research is required in order to find out if longer periods of training at optimal power zone are capable of producing similar performance improvements to traditional strength training regimen.