



Acute Influence of Assisted Training on Explosive Performance

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Editorial

Traditional resistance training programs are implemented with an emphasis on overload and are designed to increase strength and performance as a chronic adaptation. In contrast, acute adaptations have been examined relative to post activation potentiation (PAP). While the physiological foundations of PAP have not been conclusively defined, prior work has demonstrated possible increased regulatory light chain phosphorylation and higher order motor unit recruitment following these protocols. In contrast, the critical variables of exercise, intensity, volume and rest have been identified [1]. In short, requirements are generally related to subject population (athletes > non-athletes), exercise choice (high specificity), intensity (>85% 1RM), volume (multiple sets and reps) and rest (~7-10 min) which are needed to produce a positive acute effect. However, this is not practical in most applied sport settings. Therefore, recent investigations have focused on examining the acute responses of assisted training which implements elastic cords with an emphasis on over speed. Previous assisted studies have examined optimal levels for sprinting [2] and jumping [3] and found 30-40% of bodyweight to elicit the greatest outcomes. In addition, one set of five with one to two minutes rest produced an acute positive change in vertical jump velocity and power of recreational males [4]. However, another study examining electromyography responses of collegiate volleyball females failed to

demonstrate any acute positive adaptations in neuromuscular or performance aspects [5]. These conflicting results are probably related to the complex interaction between intensity, volume and rest of the protocols with different populations. In conclusion, future research should examine chronic training within an over speed paradigm designed to increase explosive performance.

References

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