

Resistance Training Microcycle Repetition Volume Characteristics For Youth Populations – A recommendation For Physical Development

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BACKGROUND

Stone et al., 2021 defined periodization as a logical sequential, phasic method of manipulating fitness and recovery phases to increase the potential for achieving specific performance goals while minimizing the potential for nonfunctional overreaching, overtraining, and injury.

However, limited information is currently available regarding resistance training periodization approaches at the microcyclic level for youth populations that can be implemented into long-term athletic development systems of training.

PURPOSE

The purpose of the present study was to quantify and compare resistance training periodization characteristics, specifically total repetitions completed within a resistance training program designed for youth populations.

METHODS

- Resistance training program characteristics, specifically total repetitions completed were analyzed by group (i.e., elementary and middle school) and by week.
- The training system emphasized the development of general physical fitness and has built upon the suggestions of the Youth Physical Development model published by Lloyd and Oliver, 2012.
- The microcyclic structure includes two sessions per week for one hour each day and included exercises that contributed to the development of foundational movement skills, muscular strength and power, and linear sprinting speed.

RESULTS

- Average weekly repetitions for both groups ranged between 180 to 475 repetitions.
- Average weekly repetitions for the elementary group ranged between 120 to 380 repetitions.
- Average weekly repetitions for the middle school group ranged between 240 to 570 repetitions.
- For both elementary and middle school groups, the weekly percent change in repetitions ranged from 0.0% to 44.4% at most and -57.9% at least.

Quantifying resistance exercise volume using the repetition method can enhance periodization and program design approaches utilized to develop our youth athletes



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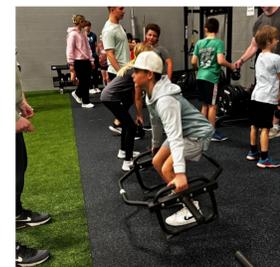
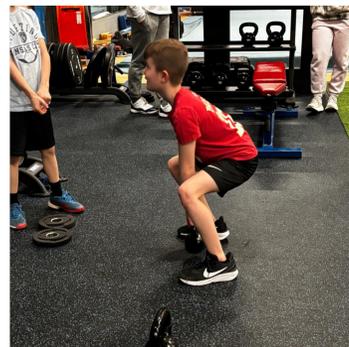
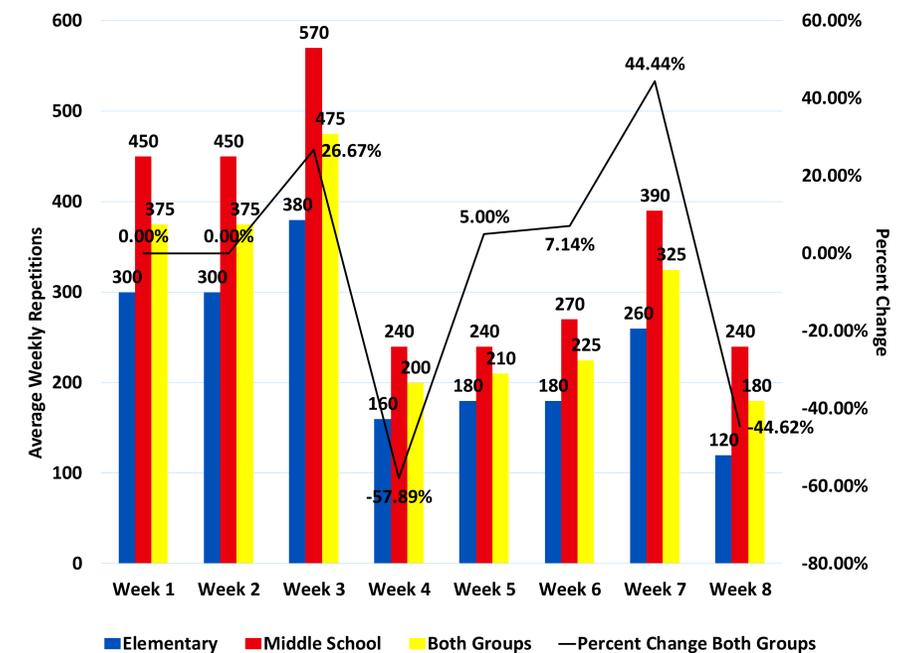


Figure 1. Average Weekly Repetitions by Group and Percent Change of Both Groups



CONCLUSIONS

- The present study's findings provide one such approach for microcyclic repetition volumes for youth participating in resistance exercise.

PRACTICAL APPLICATIONS

- The repetition method of calculating volume allows for an assessment of training volume, ensuring that the proper stimulus is being implemented to achieve the desired goals while mitigating the risk of training related injury
- The findings from this study can be utilized to guide repetition volume for youth participating in resistance training programs.
- Future research should aim to measure immediate and delayed improvements in lower-body neuromuscular performance.

ACKNOWLEDGEMENTS

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