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Research Horizons Day

Will Weight Training Enhance your Running Performance?

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Background

Performing resistance training as part of an exercise program has been shown in previous research to increase running speed. However, it is still unclear whether muscular endurance training or muscular strength training is more beneficial for improvement in running speed. Due to the fact that speed plays such a large role in sports performance, improvements in the type of conditioning that athlete's should perform could alter current strength and conditioning methods.

Purpose

In the field of Kinesiology, it is important to be well informed and constantly strive for improvement. Running may be improved not only through cardiovascular training, but with the addition of resistance training as well. The type of resistance training that may improve running performance will be investigated in this study. Whether it is high weight/low repetition (HWLR) or low weight/high repetitions (LWHR), resistance training is expected to have a measurable impact on running speed. This study will examine if muscular strength or muscular endurance training, in regards to back-squats, results in an increased performance in a half-mile run among active college students.

Methods

Participants include physically active college students between the ages 19 and 25. Current athletes and individuals who are considered high risk by the risk stratification screening questionnaire by the American College of Sports Medicine (ACSM) are being excluded from the study. The order of resistance training trials for each participant is randomized. For HWLR, back squats are performed at 60% of one repetition max (1RM) for 15 reps. For LWHR, back squats are performed at 85% of 1 RM for 3 reps. A half-mile run immediately follows each weight session. Trials are performed on separate days that are at least 48 hours apart. A hand-held stopwatch is being used to record time to completion in the half-mile run.

Preliminary Results

I.D.	BMI (kg/m^2)	Run Time (HWLR)	Run Time (LWHR)
1	25.3	**3:04.86**	3:57.01
2	23.77	3:00.67	2:57.30
3	23.93	**4:11.34**	4:56.42

Anticipated Conclusion

According to the data recorded thus far, an increase in running time was shown in two of the trials that began with the high weight and low repetition condition. Data collection is currently ongoing.