

## Plyometrics versus Sprint Training

Plyometric training is a staple in nearly every athlete's training program, used to improve jumping ability and athleticism. But a relatively recent study in the *Journal of Strength and Conditioning Research* says there may be a more effective form of training. In the study, researchers compared 10 weeks of short sprint training with 10 weeks of plyometric training using a variety of performance tests. A summary of the training program can be found in *Table 1* at the end of the article. The results indicated that sprint training may result in greater strength, power, and jumping adaptations than plyometric training. A summary of the results can be found in *Table 2* at the end of the article.

The researchers speculate that the difference in testing results between sprint training and plyometric training lies in the mechanism of the training adaptations. Sprint training resulted in improved jumping, strength, sprinting, and agility performance primarily through increased leg strength and power. However, there were no associated increases in leg strength or power for the plyometric training group, leading researchers to conclude that plyometric training improves jumping performance by developing muscle coordination.

The author's conclusion, that sprint and plyometric training improve jumping performance through different mechanisms is interesting. It would not be a stretch to say that there may be an added benefit from combined sprint and plyometric training when the goal is improving jumping. Essentially you would perform sprint training to improve leg strength and explosive power and plyometric training to improve nervous system coordination. Look for a future article with combined sprint and plyometrics training program.

	<b>Plyometric Group<sup>1</sup></b>	<b>Sprint Group<sup>2</sup></b>
<b>Week</b>	<b>Exercise x sets x reps</b>	<b>Exercise x sets x reps</b>
1	40-cm hurdle jumps x 5 x 10	10-m sprint x 3 x 3
2	40-cm hurdle jumps x 7 x 10	10-m sprint x 4 x 3
3	40-cm hurdle jumps x 10 x 10	20 -m sprint x 3 x 3
4	60-cm hurdle jumps x 5 x 10	20 -m sprint x 4 x 3
5	60-cm hurdle jumps x 7 x 10	30 -m sprint x 3 x 3
6	Unloading Week (rest)	Unloading Week (rest)
7	60-cm hurdle jumps x 10 x 10	30 -m sprint x 4 x 3
8	40-cm drop jumps x 4 x 10	40 -m sprint x 3 x 3
9	40-cm drop jumps x 4 x 10	40 -m sprint x 4 x 3
10	40-cm drop jumps x 4 x 10	50 -m sprint x 3 x 3
11	40-cm drop jumps x 4 x 10	50 -m sprint x 4 x 3

*Table 1. Adapted from Markovic et al. Training program summary.*

<sup>1</sup>Rest intervals were 3 minutes between repetitions

<sup>2</sup>Rest intervals were 3 minutes between sets and 1 minute between repetitions

<b>Test</b>	<b>Plyometric Group % Improvement</b>	<b>Sprint Group % Improvement</b>
Isometric Squat Strength	Not significant	10
Drop Jump	14.2	15.6
Counter Movement Jump	6.3	7.4
Counter Movement Jump Power	Not significant	7
Squat Jump	6.3	10
Squat Jump Power	Not significant	4
20-m Sprint	Not significant	3.1
20-yd Shuttle Run	Not significant	4.3
Standing Long Jump	2.8	3.2

*Table 2: Adapted from Markovic et al. Results of performance tests.*

### **References**

1. Markovic, G; Jukic, I; Milanovic, D. Effects of Sprint and Plyometric Training on Muscle Function and Athletic Performance. *Journal of Strength and Conditioning Research*. 21(2), 543-549.