

Should You Stretch Before You Sprint?

Recently researchers from the Department of Kinesiology at Louisiana State University examined the effects of a variety of stretching protocols on 20 m sprint times. Eleven males and five females were recruited from the nationally ranked Louisiana State University track and field team to participate in the investigation. Subjects participated in the different stretching protocols in a randomized manner. Prior to each of the stretching protocols all athletes performed a series of warm-up exercises which included 1) an 800 m jog, 2) forward skips 4 x 30 m, 3) side shuffles 4 x 30 m, and 4) backwards skips 4 x 30 m. Four stretching protocols were then tested: 1) no stretching on either leg (NS), 2) both legs stretched (BS), 3) forward leg in the starting position stretched (FS), 4) rear leg in the starting position stretched (RS). Each stretching protocol was performed four times with each stretch being held for 30 s. Overall the data suggested that the NS condition produced the fastest 20-m sprint time (3.17 ± 0.04 s), while BS (3.21 ± 0.04 s), FS (3.21 ± 0.04 s), and RS (3.22 ± 0.04 s) produced the slowest sprint times. There were no statistical differences noted between the BS, FS, and RS groupings. Based upon the findings of this investigation the authors suggest that performing passive stretching exercises before sprinting activities can result in a significant decline in sprinting speed. Therefore, it was recommended that the use of passive stretching techniques be avoided by athletes prior to the performance of sprinting activities.

Nelson AG, Driscoll NM, Landin DK, Young MA, and Scheznayder IC. (2005). Acute effects of passive muscle stretching on sprint performance. *Journal of Sports Sciences*, 23(5):449 – 454.

Does Resisted Sled-Pulling Improve Sprint Performance?

Sprint training which employs load pulling has been widely applied to enhance sprint performance of many athletes. Even though the practice of loaded sled-pulling is very popular, very little scientific data has been collected to support this practice. Researchers from the Department of Physical Education and Sport Science, at Aristotelio University of Thessaloniki in Thessaloniki, Greece recently performed an investigation in order to examine the effects of resisted and un-resisted sprint training on sprint performance. Twenty-two recreationally trained athletes were randomly divided into a resisted (RS) and un-resisted (US) sprint training program. Each group participated in an 8-week sprint training regime. The RS group was required to pull a 5 kg sled while the US group performed the same sprint training regime with out a resistance sled. The sprint training consisted of 4 x 20 and 4 x 50 m maximal runs that were performed three times per week for the duration of the investigation. Three days prior to and three days after the sprint training program, each subject was tested by performing two 50 m sprints. Performance times were measured every 10 meters, while kinematic characteristics were evaluated during the acceleration (0 – 20 m) and at maximum speeds (20 – 50 m). Results of the study suggest that pulling a 5 kg sled significantly improves

running velocity only during the 0 – 10 m portion of the sprint. As a result of this increase, the acceleration phase (0 – 20 m) also exhibited a greater overall sprint velocity. However, resisted sled pulling resulted in no change in running velocity during the 20 – 50 m assessment. Conversely, the US group exhibited no significant improvements in the acceleration phase, and significantly greater improvements in the maximum velocity phase (20 – 50 m) of the tested sprint. The authors speculate that the improvements in the acceleration phase in the RS group were probably caused by increases in muscular strength. Since neither group performed any resistance training, it is likely that the improvements noted by the RS group are a result of increases in muscular strength. Based upon these results it was concluded that weighted sled pulling may offer some benefits when improvements in acceleration are needed, while maximal speed is improved by unloaded sprint training. However, it is unknown at this time if this benefit will still exist if the athlete is participating in a periodized strength training program designed to improve leg and hip strength and power producing capacity.

Zafeiridis A, Saraslanidis P, Manou V, Ioakimidis P, Dipla K, Kellis S. (2005). The effect of resisted sled-pulling sprint training on acceleration and maximum speed performance. *Journal of Sports Medicine and Physical Fitness*, 45(3):284 – 290.