

Sled training; For strength and rehab

One of the many challenges as an athletic trainer or rehab professional is to offer athletes appropriate training variety within their programming. I am a firm believer that all programming should be individual to each athlete and all sessions are part of a larger training plan i.e. periodised training cycle.

In an attempt to offer variety and a different training approach we have seen the development of different training exercises. Sled training is one such variation.

Sled training is not a new concept although I believe that such a method of training is not used to its advantages. Mainly such training is used for speed based training or overspeed training. Such a modality is rarely used for strengthening exercise in isolation.

One major feature of sled based training is that such training is almost exclusively concentric in nature. i.e. the working muscles are predominately active during the shortening phase. With the majority of sled exercises very little eccentric muscle activity occurs. For example, with a forward facing sled pull the muscles of the quadriceps are responsible for unilateral knee extension when “pushing off” from the ground producing a concentric contraction. This action is responsible for generating force to propel the sled across the ground surface. It is essential to understand that while this phase of knee extension is occurring for one leg, the opposite leg may experience minimal eccentric loading. However, this loading seems to be insignificant because body weight is always unilaterally supported and there is no flight phase during this exercise.

We know from the evidence that eccentric based exercise is more taxing on the musculoskeletal and neurological systems than concentric based exercises. So what?

We can use the above information to help program in concentric based training into an individual’s schedule. In a rehab setting such training can be a great avenue to help gain strength gains without excessive muscle fatigue. This may mean that athletes can be trained on consecutive days, which can be advantageous if gains in strength are desired within a reduced time period i.e. an athlete injured during the playing season. In addition, such training can be done pitch side, so athletes are seen and seemingly feel they are part of the team despite them not being able to train with the team because of injury.

Furthermore, such training could be implemented when resistance training occurs within 24–48 hours of competition. This would therefore potentially limit the effects of excessive training fatigue which could carry over into game day. Such training would therefore be used as a complement and to decrease training stress is needed to ensure optimal performance in ensuing competition.

Despite this it is essential that sled based exercise does not make up the bulk of an individual's training. This is more so especially when improvements in sports performance is the primary goal. This is largely because eccentric muscle actions are critical to athletic success, the prevention of injury, and explosive/power performance. All sports performance based programming should include both eccentric and concentric muscle actions.

The applications of the sled are seemingly unending with the variety of ways in which they may be employed only limited by the prescriber's imagination.

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