

In-Season Strength Training and Sprinters

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The in-season can be an overwhelming time, especially for a young coach. With all of the demands in terms of time, travel, and competition the sprinter's strength training can become lost in the shuffle. This article is meant to help provide the coach with some tools that can be used in the designing of an in-season strength training program.

When designing an in-season strength training program for a sprinter, several things should be kept in mind:

- time is limited;
- focus on what's important, maintain everything else; and
- link the strength training with the rest of the sprinter's training.

Time is limited:

An in-season sprinter may be competing in a meet every weekend. They must travel to and from each meet, prepare for each meet, hopefully race several times in a meet, recover from each meet, adjust their weekly training based upon their performance, and somehow they are still supposed to fit in strength training. All of this means that the coach must keep strength training in perspective and remember that it is only a tool, only a means to an end.

When the sprinter is in-season, to allow for adequate recovery, the frequency of strength training sessions may drop down to one to two sessions per week. Two sessions is better than one, but sometimes one is the best we can do. In the case of multiple sessions in a week, a day or two should separate those sessions. If we cannot achieve this separation, then each session should focus on different things (for example, one session focuses on power and one on strength).

How do we get the most out of our training time? First, we prioritize to focus on what's truly important. As we'll talk about in the next session, the low frequency of strength training sessions will dictate that we must focus on what is important for the athlete's performance while maintaining everything else. Second, there is an approach to strength training called either combination training or complex training (depends upon your background) which seeks to maximize time. We're going to talk about this in more detail in the next section, but this approach involves combining exercises (so you get more work done in limited time) in the hopes of amplifying their effects. Third, depending upon the exercise we'll use a moderate – to – high intensity on the exercises (generally 80-95%) to help maintain strength levels.

Focus on what's important, maintain everything else:

With limited time and with limited physical reserves for training, the in-season is not a time when we can focus strength training on everything. This means we have to focus on what is important, exerting force quickly. In order to be able to exert force quickly one must train that quality while maintaining maximal strength during the in-season. This is because exerting force quickly won't help if you cannot exert much force!

How is all this accomplished? To answer this, let's first look at exerting force quickly. Several things will influence this during the in-season:

1. The exercises we select
2. Combining those exercises
3. Appropriate volume and intensity

To exert force quickly, we need to be concerned with exercises that are performed quickly and that require the athlete to generate a great deal of force. The most common choices are variations of the Olympic-style lifts, plyometric exercises, and medicine ball exercises.

Combining exercises will allow us to get more work done in less time. There are several ways this can be done. First, we can combine exercises that do similar things. For example, rather than performing the clean and the jerk separately, perform them as the same exercise (i.e. have the athlete clean the bar, then jerk it overhead). This means one exercise is performed instead of two saving time. Second, combine explosive exercises with similar movement patterns. For example, perform snatch pulls followed by a behind the back medicine ball toss. Third, change the resistance during an exercise. For example, perform a snatch at 80% of 1-RM then strip enough weight off the bar to perform one at 60%. Doing this essentially creates two different exercises as the heavier snatch recruits a large number of motor units and the lighter one takes advantage of that recruitment. Finally, combine a maximal strength (but slow) exercise with a fast exercise. For example, performing a heavy bench press and then following it up with a medicine ball toss. Again, the heavy movement recruits a large number of motor units and the fast one capitalizes on that.

One needs to be careful with volume and intensity for explosive exercises. Explosive exercises, just like sprints, should have a low volume – generally sets of one to five repetitions. Too many repetitions and the athlete will fatigue, use bad technique, and perform the movement slowly – all of which are things we do not want to teach the athlete. One also needs to be careful with intensity as well. Other coaches will disagree with this, but I rarely like taking track athletes over 80-85% on explosive exercises (slow exercises like the bench press and squat are a different matter entirely). This is because track athletes will slow down the movements and perform them with bad technique in an attempt to get the heavier weights up; all of which defeats the purpose of the exercises.

Now that we've looked at exerting force quickly, how do we maintain maximal strength in-season? There are a few things we can do. First, we can use exercises that develop maximal strength. These include variations of squats, presses, deadlifts, bend over exercises (good mornings, Romanian deadlifts, etc.), etc. Second, we perform these exercises with a higher intensity during the in-season, 80-95% carefully emphasizing the importance of good technique to our athletes. Finally, to save time and to train multiple qualities we can combine these exercises with explosive ones (for example, squats and vertical jumps).

Link the strength training with the rest of the sprinter's training:

This is the hard area and will take the most work on the part of the coach. None of the tools used in a sprinter's training program exist in isolation; form drills, maximum velocity training, acceleration training, speed endurance, plyometrics, dynamic flexibility

drills, core training, strength training, etc. Each tool that is employed affects the others, effects performance, and effects recovery.

Generally coaches do a great job integrating the tools of training used on the track. However, strength training tends to be executed and planned in isolation. Strength training should complement the training done on the track, not compete or interfere with it. The best way to do this is to focus on training the same qualities in the weight room that one trains on the track. For example, training for acceleration or maximum velocity requires that many motor units be recruited very quickly and will also generally stress the short-term or phosphagen energy system. Training for maximal strength or power in the weight room will also stress those same things. Training for speed endurance will focus more on training the anaerobic glycolytic energy pathways, may cause the formation of large amounts of lactic acid, and may cause delayed onset muscle soreness. This is also true for hypertrophy training or circuit training in the weight room.

Strength training should be linked to what is done on the track. For example, if acceleration or maximum velocity training is being performed then the strength training for that day should focus on something like strength or power. Failing to link the training is as problematic as performing maximum velocity training and aerobic endurance training in the same workout. It could be done, but it will require completely different things of the body's energy systems and nervous system.

Hopefully this article has given the coach some tools to help design an in-season strength training program for a sprinter. Making good use of the available time, focusing on what's important, and linking up the strength training to the track training will go a long way towards will help make strength training programs more effective.