by Dr. Greg Shepard

part

Look at the front leg. This is why we parallel squat. Now, look at the back leg. This is why we power clean and/or power snatch.

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## Learn the secrets of valuable strength-speed exercises and the BFS 10 components for developing speed

Quick review: In our last issue I discussed three basic rules of speed: You can improve speed significantly. You must use a variety of speed improvement components. Everything you do in your strength and conditioning program should be related to speed improvement.

I also introduced Speed Component #1: Strength, and gave a detailed account of why the parallel squat can improve speed and jumping power. In this issue I will present the BFS 10 Speed Components and discuss additional strength exercises to improve speed.

#### **BFS 10 Speed Components**

Over the past three decades of coaching I have developed a topten list of components for developing speed. You have my personal guarantee that by applying these components you will take your speed development to the next level.

**Strength.** The parallel squat, power clean and straight-leg deadlift must be performed consistently with great technique to maximize speed improvement. Other strength-speed enhancers include the glute-ham raise and the lunge.

**The Start.** Practicing and perfecting the BFS Start will improve your 40-yard-dash time by as much as 0.2 seconds.

**Flexibility.** Performing the BFS 1-2-3-4 Flexibility Program daily will dramatically improve speed.

**Plyometrics.** Using the BFS Plyometric Program, which includes plyometric box jumping, will make your start more explosive, increase your stride length and improve your sprinting technique.

**Technique.** Follow and practice the BFS 8 Speed Technique Guidelines to maximize your speed potential.

**Stopwatch Time.** Twice per month, athletes should be timed to optimize sprint times.

**Sprint Practice.** Twice per week, athletes should perform 10-minute sprint practice sessions using a variety of short distances.

Video Analysis. All athletes can realize speed benefits by watching themselves on videotape and analyzing their technique. **Speed Drills.** Twice per week, athletes should include 10-minute speed drill sessions that emphasize speed technique.

**Sprint Aids.** Parachutes, toe-up devices, Tanita scale, whey protein and sprint sleds can be of great value for developing straight-ahead speed and game speed.

**Speed Component #1: Strength** There are three core strength lifts needed for speed: the parallel squat, the power clean and the straight-leg deadlift. Two auxiliary exercises that help develop speed are the glute-ham raise and the lunge.

The parallel squat was thoroughly discussed last issue. On a scale of 1 to 10, the parallel squat



John Rowbotham shows a perfect parallel squat – the key to speed improvement

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gets an 11 in importance for helping you become really fast. The power clean, or power snatch, gets a 10 on the speed improvement scale; and the straight-leg deadlift gets an 8. The power clean and the straight-leg deadlift will be discussed in this issue along with two other strength-speed enhancers, the glute-ham raise and the lunge. All other lifts would score less than 8.

### **Power Clean**

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To get really fast, an athlete must have tremendous explosive power that creates maximum extension force from three vital areas: the hips, the knees and the ankles/feet.

Take a look at the photos above, figures 1-3. Focus on the back leg of each athlete. You will see the full extension of the hips, knees and ankles/feet. The power clean allows you to practice and

### Figure #2 Angela Williams World's fastest start

train for these extensions in the most powerful way.

You must jump straight up during a power clean (or power snatch) to maximize the positive effects on speed or jumping. We use the three BFS power clean drills to teach the principle of jumping straight up. These drills should be used by the beginning seventh grader on the BFS Readiness Program all the way up to the advanced college or pro athlete. To illustrate the three BFS power clean drills, I have chosen two young people on their first day of training on the BFS Readiness Program. The first is Kylie, who is 4-feet-11 and weighs 80 pounds. The second is Alex, who is 5-feet-7 and weighs 110 pounds.

You first perform these drills without a bar. Kylie, in Figure 6, gets into a ready position. She imagines she has a bar just above her knees. The first drill (Figure 7)



### Figures #3 At a bodyweight of 270 lbs., Stefan Fernholm ran a legitimate 4.23 forty. He also had a power clean of 473 lbs.

is to just jump straight up as high as possible while pretending to hold an imaginary bar. She is experiencing a full extension of the hips, knees and ankles/feet. The second drill (Figure 8) is to jump high again but this time bring the elbows to the ceiling as shown. The third drill (Figure 9) is

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Figure #6

Figure #7

Figure #8

Figure #9









Figure #10

## Figure #11

Figure #12

Figure #13

to jump high again, elbows to the ceiling, but now you land in a solid athletic position as shown, with the imaginary bar racked correctly on the shoulders.

Now you are ready to perform these drills with a regular Olympic bar or a BFS Aluma-lite bar and lighter training or bumper plates. Alex does Drill 1 in Figure 10, Drill 2 in Figure 11, and Drill 3 in Figure 12. Alex experienced the feeling of complete extension from the hips down. Both of these young athletes did very well for their first day, and so can any athlete.

You want the same feeling of jumping when you do heavier power cleans. Shown in Figure 13 is Stefan Fernholm, a discus thrower who ran a legitimate 4.23 forty at a bodyweight of 270 pounds. Stefan is achieving a full extension with 325 pounds. Figure 14 shows Stefan at the peak of his athletic career when he could power clean 473 pounds.

Figure 15 illustrates Stefan's powerful, explosive extension on the vertical jump. The Indianapolis Colts measured his vertical jump, without a step, at 40 inches. Notice how the position of his legs and arms is similar to his power clean position in Figure 13.

You can develop this extension power by performing power snatches. Stefan believed in them and trained so hard that eventually he was able to power snatch 350 pounds. Study Figures 16, 17 and 18. Can't you just see how this extension power would help any athlete create a more powerful, quick sprint start and a faster, longer and more powerful stride?

## **Straight-Leg Deadlift**

Stefan taught me the secret of the straight-leg deadlift. 'Use a very light weight and think of it as a stretching exercise," said Stefan. 'What you want to do is stretch and strengthen the hamstrings and glutes at the same time." (Figure 19) He said that keeping the knees locked is absolutely essential. "You can't bend your knees and stretch your hamstrings. The knees must be locked."

When I asked Stefan about the argument that the straight-leg deadlift can put too much stress on the lower back, he replied, 'Keep the weight very light.' With this advice in mind, we begin training young athletes with only 45 pounds on the bar-even the strongest high school seniors don't go above 135 pounds.









Figure #14

Figure #15

Figure #16

Figure #17





### Figure #18

Stefan felt the straight-leg deadlift was one of the very most important lifts for developing speed. He said, 'The greater your hamstring flexibility, the more fluid a running movement you can achieve. It's like adding a highgrade oil to the pistons of your engine." Stefan had incredible flexibility, as he could stretch, with knees locked, 9.5 inches past his toes on a sit-and-reach test. I believe that partially explains his 4.23 speed and his 40-inch vertical jump from a stand.

The results in speed improvement from performing straight-leg deadlifts have been dramatic with many athletes. P.J. Brown (Figure 20), a pole-vaulter at the University of Arkansas, has consistently performed straight-leg deadlifts since he was a seventh

Figure #19

grader. Even though he weighs only 140 pounds, P.J. is also fast enough to compete nationally in sprints during the indoor track season.

The BFS straight-leg deadlift is a top-priority auxiliary lift because of its effect on speed improvement. It's like magic because you simultaneously stretch and strengthen your glutes and hamstrings.

When planning your workouts I usually suggest performing 2 sets of 10 repetitions with very light weights. I also stress that athletes must take care to complete each rep very slowly and under complete control to get the maximum amount of stretch in the hamstrings. At first athletes should perform this lift only from the floor. As their flexibility improves

they can progress to performing straight-leg deadlifts from a platform, as shown in Figures 21 and 22.

### **Strength-Speed Enhancers**

There are two top-priority exercises that should be mentioned when discussing speed development: the glute-ham raise and the lunge. They are key auxiliary exercises for all athletes.

The glute-ham raise (Figures 23 and 24) is performed on a machine called the glute-ham developer, and better than any other exercise it develops the glutes and hamstrings, developing the muscles from origin to insertion. These muscles are vitally important in running fast. This exercise is a great complement to







Figure #20

Figure #21

Figure #23





### Figure #24

the parallel squat and power clean for the strength development in these areas.

Another reason the glute-ham raise is classified as a strengthspeed enhancer is that it helps prevent injuries. I believe the gluteham raise can be a key factor in preventing hamstring pulls, which often occur when athletes try to sprint as fast as possible. We normally perform 2 sets of 10 reps with just bodyweight, although some athletes do as many as 25 reps per set. This exercise should be performed twice per week.

The lunge can be performed with a barbell or dumbbells. It develops power balance because each leg is forced to work independently of the other. The lunge develops the hamstrings, quadriceps and buttocks. It also wonderfully complements all the other lifts discussed in this article.

P.J. Brown demonstrates a perfect lunge in Figure 25. When you do this lift, you want to look like a sprinter. Does he? Look at his eyes and upper body. The lower body is in a hip-flexor stretch position, and as such, the lunge enhances speed by stretching and strengthening the hip flexors. Your hip flexors are tremendously important in developing a greater stride length, and increasing stride length equates to improving speed. You should perform this exercise twice per week, completing 2 sets of 10 reps with each leg.

Do you want to get fast? Really fast? Then you must perform these key exercises: parallel squat, power clean, straight leg deadlift, glute-ham raise and lunge.

In our next issue Dr. Shepard will discuss how to achieve the best start possible. If you don't want to wait, go to our website, biggerfasterstronger.com, and become a member. You'll gain access to an extensive archive of resources, including BFS articles on speed development.

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