

Sprint Training for the 100/200 Meters

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Many coaches believe that athletes are born "God-Given" SPEED and nothing can be done to change it. As a coach with over twenty years experience at the high school, junior college and university levels, I strongly disagree with

This statement, To the contrary, I have found anything is possible with an athlete who has above average talent and who is willing to,

- Train Hard
- Focus on the right things-doing all of the little things before the workout- such as, correct warm-up and cool down procedure, proper nutrition and hydration, applying good sleep habits and additional flexibility work.

One example of this theory is the former National Junior College Record Holder and Champion Tim Montgomery (9.96). In the spring of 1993, I met and persuaded Tim to sign a scholarship to run for my junior college program at Blinn College in Brenham, Texas. At the time Tim was a very thin high school sprinter from Gaffney, South Carolina. As a high school senior with a mere (electronic timed) 100 meter best of 10.61 FAT, Montgomery was not even ranked as one of the nations 'Top 25 High School Sprinters'. Montgomery's high school track team was so small that they could not field a 400 meter relay, so Tim did not have the opportunity to learn 400 Relay exchanges.

When Montgomery arrived at Blinn College in the fall of 1993 he was 5-10" and weighed a mere 128 pounds. He definitely did not fit the definition of a typical high school sprinter or typically what we looked for when we recruit. What Montgomery did have was great family support mechanism and a super positive attitude. Montgomery came to Brenham, Texas with hunger to be the best he could be. Along with his positive Attitude, he brought with him great daily work habits.

Tim had the right attitude; he trained hard and focused on the right things. First he focused and trained to improve his overall body strength, basic flexibility and running technique thru many hours of drills. Early in the spring of 1994 at the Sun angel Classic at Arizona State University, Montgomery ran a 20.1 lead off leg on our 4 x 200 meter Relay that ran 1:21.45. That time beat a number of collegiate powers as LSU, USC and UCLA and several world class track clubs. Later that spring in Odessa Texas he beat Nigerian World Class Sprinter Daniel Effiong of Central Arizona CC in a meet record 9.96 seconds. It was thought to be a "NEW" World Junior Record beating the record of 10.07 by one of my former recruits to Texas A&M University recruits, Andre Cason who I recruited in 1987, but the track had to be measured with a steel tape and came up 2 inches short according to the IAAF guidelines.

PROPER RUNNING MECHANICS-Through the use of proper solid running mechanics, the athlete will become more efficient with regards to his movement of body parts. An athlete who is quick and efficient will be able to improve his own athletic performance. Types of running mechanic drills are as follows:

- Speed Drills
- Hurdle-Rhythm Drills

Leg power is necessary for speed. For an athlete to be able to maximize 100% of his leg power capabilities, the athlete must run “HIPS TALL” over his hips at all times and keep all parts of his body near or under the “center of mass” at all times. I often see many young athletes shrink 3-6 inches while running because they are over-rotating at the hips. This causes a loss of 20%-30% of leg power and a substantial loss in true SPEED performance.

The athlete must also have a tremendous amount of lower leg strength (below the waist) because each time the athlete strikes the ground he is applying three (3) times his body weight to the ground. The coaching cues when working on proper running mechanics that I use with my athletes on a regular daily basis are:

- **Toe-Up**
- **Heel-Up**
- **Knee-Up**
- **Chest-Up**
- **Head-Up**
- **Eyes-Up**

Most importantly the athletes must remain in “Hips-Tall” position at all times for the 6 coaching cues listed above to be effective. The athlete that does not stay in proper body position over his hips will give up 20-30% of their maximum leg power. This is a common fault of young athletes that have not been instructed properly.

Barefoot running is an essential part of a “complete” conditioning program. It is useful in order to strengthen the athlete’s tendons, ligaments and small muscle groups of the feet. Training shoes act as a mere cast and do nothing to strengthen the foot.

When it comes to an athlete’s *SPEED*, it starts from the ground up. First, for any athlete to excel in Speed Development, he or she must learn to use “*Dorsi Flexion*” with his/her foot. Unfortunately, most young athletes use “*Plantar Flexion*” instead. “*Plantar Flexion*” is a BAD habit. Because this downward pointing of the toe causes a braking effect upon contact with the ground it is similar to continually “riding” the brakes in a moving car. “*Plantar Flexion*” keeps the athlete’s foot on the ground too long, maximizing ground time which translates into slower speed performance. In addition the “braking effect” can put a lot of strain on the ankle, shin, and most of all the hamstring muscles. In my opinion, “*Plantar Flexion*” is the number one cause of “Shin Splints” and Hamstring Injuries.

Hamstring injuries are very common in sports that involve speed. In my opinion the hamstring muscle is the weakest muscle in the body. “*Plantar Flexion*” increases hamstring weakness. It is important to emphasize strengthening the hamstring muscles one leg at a time as well working on lower back flexibility by spending focused time to strengthen these areas. In addition to the problems caused by “*Plantar Flexion*” I feel that many hamstring injuries are caused by poor lower back flexibility and this is an area that is often neglected by the athlete.

Great Speed Performance starts with **“Dorsi-Flexion”**. “Dorsi-Flexion” is keeping the toe and heel up while running. The runner is literally stretching the calf muscle while running. When running the athlete pulls the heel tight “through to the buttocks” and then places it on the ground under the knee. When the athlete’s foot lands on the track surface or the ground, the foot is then cycled backwards or pulled up to the buttocks. At this point, the foot is then brought back down to the ground with again, the toe up, as it makes contact with the ground underneath the knee. A common mistake made by coaches is to tell their athletes to take “longer strides”. “Over-striding” causes a “braking effect” as the athlete often lands on his heel and the athletes also lose *power*.

How does the use of **“Dorsi-Flexion”** make an athlete faster and why is it better than “Plantar Flexion”? Dorsi-Flexion makes an athlete much more active upon contact with the ground or track and also allows the athlete to “get-off” the ground or track surface quicker. *“Rome was not built in a day”* and don’t expect your athletes to pick up this new technique overnight. The bad habits of athletes took years to develop and it will take him/her weeks to correct it, but once the athlete learns “Dorsi-Flexion”, the he/she will be much more efficient in landing. Efficient landing minimizes both ground time and air time which translates into faster speed performances. Again but not using proper Dorsi-Flexion it creates the following negatives:

- More Strain on the hamstring muscles
- Braking effect at ground contact
- Increased ground contact time
- Hinders Speed performance

To run fast an athlete must run on the balls of his/her feet at all times. This means landing on the “widest part” of the front of their foot each and every time. Athletes must also learn how to strengthen the tendons, ligaments and small muscle groups in the foot, ankle and below the knee if they are to be able to run on their toes. An athlete’s body cannot be supported unless these areas are strong. Good exercises to strengthen the feet are:

1. Bare Foot Running
2. Sand-Pit Plyometrics
3. Weight Training exercises focusing below the knee

If an athlete attempts to land and push off their heel, he/she can never master SPEED. **Remember:** *Unless you plan on running a marathon nothing good ever happens on your heel.*

Proper arm action is important for *speed* as well. The athlete must move the arms in a quick and efficient manner stopping the hand near the chin on the upward motion and at the hips on the downward motion. **Remember!** *A short lever is a quick lever; a long lever is a slow lever.* To run fast the athlete must have a “Piston” type arm motion to maximize their SPEED! Two key points you should take note are:

- A. **The arms never cross the mid-point of the body.** Find the “mid-point” by drawing a line down the middle of your body to separate it into two equal parts. Crossing the mid-point with either the arms or the legs will cause slowing down of SPEED performance because of inefficiency of movement.
 - Hands moving to the center line of the body at shoulder height and back to the hip.

B. The elbows must be kept within 2- 4 inches of the body at all times. If the arms are too far away from the body, this “Chicken Wing” movement will cause the athlete to lose maximum SPEED performance.

- Arms should be at a loose 90 degree at the elbow
- Palms in and thumb up.
- Hands should never go any higher than shoulder height.
- Short levers are quicker and stronger levers.
- Always run with a stiff or locked wrist

It should be noted when the athlete flexes his hands when sprinting, it sends flexor messages as he runs down the football field or track. When he has his hands open but palms down and promotes the hand, it turns off the athletes’ bicep muscles/ Using these flexors are bad and will hurt the athletes speed performance.

Last but certainly not least, is the posture for the upper body:

1. The shoulders should be kept low and relaxed at all times
2. The face and the jaw should remain relaxed.
3. The athlete’s head should remain in its normal position which I refer to as “Neutral Head Position” as if he was merely standing in place.

If the athlete drops his head or eyes slightly when running, it hinders the ability for a nice high knee lift while running. By dropping the head, the athlete now lowers his center of mass causing a domino effect on the rest of his body which in turn causes his performance level to decline. To help the athlete keep his head up, have him raise his eyes and look forward 30-50 yards. Have him focus on an object that is 6-8 feet above the ground that is located past the finish line. Examples of this would be a tree, building or a set of windows. Doing this ensures that the athlete’s head and hips remain tall throughout the entire distance run or the race.

For great track and field training books and “Legal Nutritional Supplements go to my website” I suggest the following books that were written for high school coaches!

- **45 minute Workout-Running Events (Book & DVD)**
- **55 Minute Workout-Field Events (Book)**
- **60 Minute Workout-Cross Country (Book)**
- **World Class “All Sports” Speed Training Program**

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