

Speed Development

I. Speed can be improved with proper training.

A. Genetic makeup determines an athlete's maximum potential,

**but improvement is possible....
to what degree is largely up to
the athlete and those persons
who direct the training.**

**B. The degree of improvement that
the athlete will make is deter-
mined by his abilities, his choice
of training, and his coach.**

**II. The coach must first identify sprint
candidates**

A. Fast-twitch and slow-twitch fiber

B. Flexibility

C. Reaction Time

D. Body fat (restricts speed of movement)

E. Physical make-up (size)

F. The speed of muscle contraction (can be improved with proper training)

III. Explosive Power

A. Speed in short distance running can be improved through strength/power training

B. The speed of muscle contraction can be improved with proper training.

IV. Running Stride Length

- A. A key element in the speed equation**
- B. If done improperly, it can be a disadvantage to the sprinter.**

V. Stride rate (steps per second)

- A. Can be improved without hurting stride length.**
- B. Just like stride length, if the stride rate is not executed properly, it will be a major disadvantage to the sprinter.**

VI. Relaxation and Technique

- A. This is the third element of the speed equation along with stride length and stride rate.**

- B. Like the other two elements, if The athlete doesn't practice relaxation and proper technique, he will be at a disadvantage.**

VII. Training the Sprinter

- A. Year-round program of training**
- B. Use the pyramid approach to setting up the year's training program.**
- C. Always go from quantity to quality.**
- D. If the athlete takes the time to reload, he will never peak too early.**

VIII. Work to improve the key elements in good sprinting

- A. Overall conditioning and fitness**
- B. Specific conditioning**
- C. Stride Length**
- D. Stride rate**
- E. Foot placement**
- F. Air-time**
- G. Recovery leg.**

IX. Improving Stride Length

- A. Better sprinting form**
- B. Legs and ankles must get stronger**

C. Work to improve both hip and ankle flexibility

X. Improving Stride Rate

A. Proper warm-up can enable sprinter to have faster stride rate.

B. Body fat can hinder stride rate if body-fat ratio is too high.

C. Strength/power training (weight training and plyometrics) are a great benefit to development of stride rate.

D. Sprint-assisted training has some benefit, but the verdict is still out on how much it benefits.

E. Down-hill running

- F. Fast-action drills, such as the h-drill is helpful in developing stride rate.**
- G. Pawing drill is great in developing the recovery leg.**
- H. Ladder-on-the-ground drill requires fast action of the recovery leg.**

XI. Speed-Maker drill

- A. Designed to incorporate all the elements in fast sprinting into one drill.**
- B. This drill allows the coach to be in position to observe the runners as they run repeated short sprints of 60-70-80-90 meters.**

C. During this drill, the athlete is focused on proper sprint technique and can be corrected by the coach as he passes by during his recovery phase.

XII. Train slow/Race fast

A. Run full out in only a few of the training sessions.

B. Starts, relay hand-offs, and drills that cover 60 to 90 meters are the only drills where full effort is required.

C. Cuts down on injury possibilities

D. Slower runs allows the athlete to run more in training, while resting less.

E. Strength and speed are synonymous.

F. Strength is gained not only in the weight room but on the track. Design a training program to develop strength and endurance in sprinters.