

9. SPRINT TECHNIQUE – Robert Rock

The key elements to technique in any sprint performance are the following:

1. Forward body lean.
2. Active recovery leg.
3. Recovery of foot to below backside during recovery stride.
4. Focus on front side mechanics - NOT BACKSIDE MECHANICS.
5. Dorsi-flexed ankle during leg recovery.
6. Focus on Cadence - NOT STRIDE LENGTH.
7. Relaxed upper body (shoulders and face).

If the above technical elements are addressed, the athlete will have developed an error free sprint technique that should stand up to the rigors of most sports.

1. *Forward Body Lean.*

The function of this body position is to ensure the athlete is not too upright which will negate the acceleration phase of any sprint performance.

Athletes will often focus on knee lift, which causes an athlete to be too upright. Knee lift is important, but only if the athlete can maintain the appropriate upper body position during the sprint.

2. *Active Recovery Leg.*

Another technical fault common in athletes during sprinting is that the recovery leg is not brought back actively enough to the front, ready for the next stride.

The athlete should be attempting to pull the leg off the ground as quickly as possible.

Trying to push off for too long results in prolonged ground contact times and poor backside mechanics whilst sprinting. This leads to a slow recovery during each stride (and thus a slow cadence) and increases the incidence of hamstring and hip flexor injury.

3. *Recovery foot to below backside during recovery stride*

Another common fault is not bringing the leg through an appropriate recovery range of motion prior to the next ground contact. This often occurs as the athlete wants to increase cadence and attempts to do so by shortcutting the stride. In actuality, this decreases cadence and leads to poor running technique.

The emphasis should be for the athlete to bring the foot of their recovery leg up to knee height of the grounded foot. This leads to the best leg mechanics and will allow the athlete to increase cadence due to the shortened lever that has been formed.

4. *Focus on front side mechanics*

NOT BACKSIDE MECHANICS

This point relates to number 3, in that, for the athlete to best recover each leg during the sprinting stride, they should be focused on front side mechanics and not backside mechanics.

As stated above, it is poor technique for the athlete to leave their leg on the ground for too long leading to a poor body position and slow cadence. By having the athlete focus on bringing the foot off the ground as quickly as they can (do not push off, pull off the ground) they can maintain correct front side mechanics for longer).

The first component of sprint technique that gives way is always front side mechanics. The muscle groups involved in this part of sprinting fatigue easily (lower abdominals, hip flexors) and the athlete can do nothing but allow their legs to move to greater backside mechanics which can lead to injury. The more the athlete concentrates on front side mechanics, the better conditioned their musculature will be and the longer they will be able to maintain this position.

5. *Dorsi-flexed ankle during leg recovery*

Dorsiflexing the ankle during the recovery phase activates the gastrocnemius to help act as a knee flexor (along with the hamstrings) and this allows a much faster recovery leg. If the ankle is stiff at the point of ground contact, there is less ground contact time leading to greater cadence, and an overall faster sprint result. Also, it has been shown that by improving ankle stiffness at ground contact, an athlete's agility can also improve as the ankle absorbs the shock of ground contact quicker leading to better change of direction.



