

Barbell Rollout

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Introduction

The Barbell Rollout is commonly used in the strength training and conditioning programmes of athletes from a variety of sports. The exercise is included in these programmes primarily to develop "core strength"; however, as with all prescribed exercises, this is only achieved if proper technique is maintained throughout the entire movement.

The aim of this article is to describe sound technical progressions and variations for the barbell rollout; to identify common faults when athletes perform this exercise; and to explain how to correct these faults.

Importance of Core Strength

Detailed description of the muscular physiology of the core is beyond the scope of this article. Willardson⁵ identifies that a core exercise is one which "channels motor patterns to ensure a stable spine through repetition". 'Core' strength is of the utmost importance when training athletes, as the trunk of the body is the connection between the upper and lower extremities. The aim of a trunk strengthening programme is twofold. Firstly, to reduce the injury potential and secondly, to improve the ability of the athlete to transfer forces through the kinetic chain.

The trunk has to brace when under heavy load and as a result of a stronger and more efficient trunk, there is the suggestion that lower back injuries could be prevented.^{1,6} Improved function and coordination of the trunk is an important factor in injury prevention. The muscles of the trunk control the pelvis, and poor control in this area can contribute to lumbar injury. Furthermore, fatigue incurred during repetitive exercise can lead to the break down of trunk kinematics and therefore, further increase the potential for injury.³

In addition, a well conditioned trunk may result in improved muscular power production.⁵ Provided that the athlete has a well conditioned trunk, the dissipation of energy through the core is minimized during movement, allowing for an improved power potential.

Abdominal Musculature

The muscles of the core are generally considered those of the lower back and abdominals.⁴ The table below shows the function of these muscles.

MUSCLE	FUNCTION
Rectus abdominus	Trunk flexion
External oblique	Lateral trunk flexion
Internal oblique	Lateral trunk flexion
Transverse abdominus	Abdomen compression
Erector Spinae	Trunk extension

Exercise Technique

Ready Position

It is recommended that the athlete begin the rollout in a press-up position with the hands slightly wider than shoulder width apart on the barbell (Figure 1A). The head should remain in a neutral position, with the shoulders relaxed and the scapula set (retraction of the shoulder blades). Thoracic extension should be maintained at this point and throughout the entire exercise. It is vitally important that the gluteus maximus is activated, as characterised by a neutral pelvic tilt. There should be a straight line running from the ankle to shoulder (Figure 1B). This is the ready position.

Execution

From the ready position, the athlete should allow the barbell to roll out under control in the sagittal plane (Figure 2A). As the barbell continues to roll, it is important that the athlete maintains thoracic extension. It is also vital that the pelvis maintains a neutral position. As the bar progressively moves away, the athlete will eventually be parallel with the floor.² (Figure 2B). This is the end of the eccentric component of the exercise. The concentric element should mirror the eccentric path. The repetition is complete when the athlete has returned to the ready position.

Common Faults and Corrections

Figure 3A highlights poor thoracic spine and scapula position. This rounding can be corrected through time by increasing the athlete's awareness of their posture, and with scapula and sub scapula exercises. Figure 3B shows hyperextension of the lumbar spine. Tightening the abdominals and contracting the gluteus should ensure neutral alignment.

Learning

The Barbell Rollout is a very difficult exercise. Very few athletes will ever complete a repetition on their first attempt; and most would need to undertake simpler variants initially. The most common method of completing the rollout is from the knee. However, it is the opinion of this author that performing the rollout from the knees should be avoided if possible, as progressions from knees to feet are unlikely. As it is a bodyweight exercise, a more productive method of achieving a full rollout is with the use of resistance bands as an assistance tool (Figure 4A). The band should be placed on the waistband of the athlete and the rollout performed as described earlier. The assistance can be progressively reduced to the point where a bodyweight rollout is executed.

Progression

To progress the bodyweight rollout, weight can be externally applied. This may be done with a weightlifting disc, however, a more comfortable method is the use of a lifting belt and power bag as shown in Figure 4B.



Figure 1A.



Figure 1B.



Figure 2A.



Figure 2B.

Example Programme

Training weeks (1 year)	1-6	7-12	13-18	19-24	25-30	31-36	37-42	43-48	49-52
Resistance Band	Thick	Thick	Thick	Medium	Medium	Medium	Thin	Thin	Thin
Sets x Reps	3 x 6	3 x 8	3 x 10	3 x 6	3 x 8	3 x 10	3 x 6	3 x 8	3 x 10

Application

As has been described, the barbell rollout is commonly integrated into training programmes to develop core strength. Successful execution of the exercise has many benefits including abdominal strengthening whilst in complete extension. This has greater benefits than many conventional abdominal exercises, as most sporting movements require the athlete to possess strength in hip extension (for example, rugby – lineout lift, and swimming – entry into the water). For the strength and conditioning coach, the three basic principles which must be considered in any training programme are variation, overload and specificity. The table above identifies an example programme, which takes these principles into consideration.

Conclusion

This article has given an overview of the barbell rollout. The progressions shown are intended as a guide and should be modified based on the individual strengths or weaknesses of the athlete.

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Figure 3A.



Figure 3B.



Figure 4A.



Figure 4B.