



Strength Training for Running

Part Two - Planning the S&C Programme

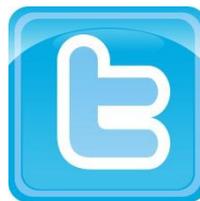
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Planning the S&C Programme

In the first part of this series we highlighted the key determinants of endurance running performance and some of the common injuries which may occur. Today we'll show how the strength and conditioning (S&C) programme will address these considerations.

Performance Goals

We outlined three key performance determinants in the last instalment. Naturally, we will see the greatest improvements in these qualities through high-intensity interval training, but that is not to say that we can't make some substantial leaps in the gym too. Here's how we plan to do it:

Performance Determinant	How Will We Improve This In The S&C Programme?	Example Exercises
VO_{2max}	Strength training has little impact on VO _{2max} values in trained athletes, however, improvements in the two factors below will increase the speed at which VO _{2max} is attained at.	
Lactate Threshold	↑ lower body strength ↑ lower body power ↑ reactive strength	Squat & deadlift variations Jumps & Olympic lifting variations Plyometric exercises
Running Economy	↑ lower body strength ↑ lower body power ↑ reactive strength	Squat & deadlift variations Jumps & Olympic lifting variations Plyometric exercises

Hopefully the table highlights just how important lower body strength, power and reactive strength are to improving running performance. These factors should be

prioritised in this order too; strength should come first, then power, then reactive strength.

Injury Prevention

Part one outlined the most common running injuries and some of the reasons why these may occur. As some risk factors are common to almost all of these conditions, improving the physical qualities listed in the table below will greatly reduce the risk of suffering an injury during your training.

Physical Qualities To Improve In The S&C Programme	Example Exercises
↑ movement control (at slow speeds & under load)	Y-Balance, split squats, single leg squats
↑ movement control (at fast speeds)	Jumping/landing exercises, plyometric exercises, jogging and running
↑ lower body strength	Squat and deadlift variations
↑ single leg strength	Split squats, single leg squats
↑ glute strength	Weighted glute bridge, monster walks
↑ hamstring strength	Romanian deadlifts, Nordic hamstring curls
↑ shin & calf strength	Toe raises, single leg calf raises
↑ ankle flexibility	Single leg calf raises, calf stretching

As well as improving the above qualities you must also be smart with your programming. Keep in mind the following when planning your training, both in the gym and out on the road:

- Avoid sudden increases in volume and/or intensity of training
- Ensure adequate recovery in-between training sessions
- Avoid sudden increases body mass (both body fat and lean muscle)

Summary

The planning and preparation of your training programme will make or break not only your performance, but your body as well. A well designed S&C programme for endurance running will improve performance and reduce the risk of injury by targeting the physical qualities highlighted in this article.

