

## **CompassSport - Fitness for Orienteering**

### *Integrated Strength & Core Training: A Different Approach*

In a previous issue of CompassSport magazine (Murgatroyd, 2011), the use of core training for orienteering fitness development was discussed at length. Many individuals use core training as part of their overall programme and often clubs will incorporate some of these exercises within their weekly club night sessions. However, as explained previously, the research supporting the use of core training, particularly for performance development, is sparse and often contradictory and we tend to rely on anecdotal and subjective findings from coaches and athletes to endorse the use of such training methods.

A recent review article by Cissik (2011) outlines the issues with standard core training methods and the author advocates that dedicated core sessions are largely redundant in terms of improving fitness for athletes. The argument is that many strength and resistance exercises, especially the compound ones such as squats, deadlifts and clean and press, utilise the core muscles anyway to stabilise the movements during the performance of the exercise and isolated core training is therefore unnecessary. Whilst the use of dedicated core training is still supported in assisting orienteers to recover from injury or prevent further injuries occurring within an area that has been problematic before, eg. lower back, the growing feeling within the strength and conditioning community is that we should use the limited time available, for most orienteers, to train in a more effective and integrated fashion.

The focus of this article is to suggest training ideas for the orienteer and club coach to incorporate within their sessions, which amalgamate a combination of strength and core work. The exercises are inspired by the recent excellent publication, Running Science (Anderson, 2013) and this is a text that is highly recommended for all those who are looking for a fresh and innovative approach to their fitness training. Anderson states that working in this fashion can result in improvements in 'resistance to fatigue, running economy, maximal running speed and  $v\text{VO}_2\text{max}$ .'

The sample circuit looks to mix exercises which target the three main core areas (upper, middle and lower), alongside running specific exercises that aim to develop the main locomotive musculature, ie. the gluteals, hamstrings, quads and calf. The majority of the exercises are conducted in a dynamic, unstable fashion, which reflects the fact that orienteering is a one-legged sport, mainly performed on rough, uneven surfaces, requiring high levels of balance and agility. The use of static, isometric exercises, such as the plank, are not advocated here, as they do not replicate the specific demands of orienteering. An additional cardio-vascular component can be brought in by having the orienteer complete a short amount of high-intensity running between exercises, eg. one minute, and at club night orienteers can work in pairs, with one performing the strength exercise for a period of time, whilst the other runs around the outside of the area.

Progressions can be applied most commonly through use of increasing weight, once the technique has been mastered and the orienteer is requiring a more demanding workout. Some variations are also suggested to work slightly different muscle groups and to keep the sessions from becoming stale. Often a Swiss ball can be used instead

of a BOSU ball, if this is not available. I would recommend that coaches use their imagination to see how they can develop these exercises to maintain athlete motivation!

The orienteer should look to perform these exercises at least a couple of times a week in order for significant strength gains to be made and can either choose to perform them for a number of repetitions, or for a specific length of time, with total exercise time being in the region of thirty minutes per session.

#### Exercise 1. One legged arm curls



On one leg, perform alternate arm curls for a set number/time and then change legs and repeat.

*Suggested progression* – Increase weight and/or perform on BOSU ball.

*Alternate exercise* – Raise straight arms out to the side (ie. lat raise exercise)

#### Exercise 2. Running mountain climbs with BOSU ball



Create a smooth ‘running action’, alternating legs up towards the BOSU ball, whilst trying to keep the line of the body as straight as possible.

*Suggested progression* – Attempt to pick up the running speed and increase intensity and/or duration of exercise

*Alternate exercise* – Bring legs up and out, to work the adductors as well, but slow the action down to retain control

### Exercise 3. Calf raises on box



With one hand against the wall to assist balance, and dumbbell in one hand, perform calf raises on alternate legs, working through as full a range of motion as possible.

*Suggested progression* – increase the dumbbell weight and/or remove hand from the wall to work on balance

### Exercise 4. One legged shoulder press



On one leg, perform alternate shoulder presses for a set number/time and then change legs and repeat.

*Suggested progression* – Increase weight and/or perform on BOSU ball.

*Alternate exercise* – Raise straight arms out to the front (ie. front raise exercise)

### Exercise 5. Single leg half squat on BOSU ball



On one leg, perform a half squat with a dumbbell in one hand, attempting to keep back straight and head up.

*Suggested progression* – increase the dumbbell weight and/or increase the depth of squat

### Exercise 6. Single leg press ups on BOSU ball



Perform press-ups, whilst supported on one leg, on the BOSU ball, keeping the line of the body as straight as possible

*Suggested progression* – increase speed and/or number of reps

### Exercise 7. One legged squat and hop



With rear leg supported on a box, perform a squat, with weight in one hand and back straight. Then look to drive upwards, extending the rear leg until straight above the box and return smoothly to the start position.

*Suggested progression* – increase the dumbbell weight

*Alternate exercise* – Look to firstly hop slightly to the left hand side, then back to the middle on the next hop, with the third hop over to the right hand side. Repeat action.

Figure 8. One legged overhead pulldown



Holding the dumbbell above the head, with shoulders and neck on the BOSU ball and supported on one leg, lower the weight back over the head before returning to the start position. Keep the line of the body as straight as possible throughout.

*Suggested progression* – increase the dumbbell weight

*Alternate exercise* – with two dumbbells, perform bench press or chest press, whilst in the same position on the ball

## References

- Anderson, O. (2013) *Running Science*. Champaign, Illinois: Human Kinetics.
- Cissik, J.M. (2011) The Role of Core Training in Athletic Performance, Injury Prevention, and Injury Treatment. *Strength Conditioning Journal*, 33, 10–15.
- Murgatroyd, P.M. (2011) Core Training: Does it Work? *CompassSport*, 32 (4), 28–30.