FUNCTIONAL TRAINING

Functional training appears to be the in vogue method of exercise at present. A visit to any gym or fitness class will see participants performing multi planar exercises, utilising unstable surfaces and an array of equipment including cables, tubing, kettle bells and VIPR.

However there appears to be a lack of research supporting these training modalities. One reason could be there is no standard definition of "function". The definition will differ dependent on individual circumstances eg a professional footballer requiring explosive speed and power to an 80 year old wishing to continue living independently, or a person wanting to minimise the risk of injury.

For this article I will define functional training as exercises aimed at improving specific sporting ability OR activities of daily living. I suspect the latter definition will apply to the majority of people.

An essential component to any functional training is sufficient strength to perform the task. A person wanting to improve balance has to have sufficient lower limb strength to counteract gravity. A study by Butler et al (2008) showed a correlation between decreased lower limb strength and postural control. The authors hypothesised this might be due to decreased proprioceptive feedback from the leg muscle in the weaker population Therefore I would suggest ensuring they have sufficient strength to stand from a chair unaided and perform calf raises before adding any form of external resistance or labile surface.

The higher the level of performance the greater the strength required. This can be achieved using "conventional" strength exercises, that include both open and closed chain. Tagesson et al (2009) showed patients rehabilitating from ACL reconstruction had greater quadricep strength when leg extension were included in addition to closed chain exercises.

I hope this highlights the fact that any form of functional training should start with conventional strength exercises before any progressions are implemented.

The next stage of a functional programme would be to examine the relevant functional movement. This will vary from explosive jumps for an athlete to reaching up to a cupboard for independent living. Again research shows conventional exercises can improve the functional movement. Augustsson (2013) showed max vertical jump height correlated with maximal squat strength. The correlation between conventional exercises and improved function is further enhanced if the speed of the movement is replicated in the exercise programme. Hasson et al (2002) noted training at faster velocity might be necessary to significantly improve jumping height.

Likewise the ability to raise the arm to reach a cupboard will be improved with strength training for the deltoids and shoulder girdle muscles.

I think the final stages of functional training should focus on the neuromuscular integration of the complete task and consider the environment in which this is performed. This is probably best achieved by actually performing the movement itself initially IE in the above examples performing vertical jumps or reaching up, opening a cupboard and grasping a can. If the task might involve unstable surfaces or external loads eg a footballer jumping on a lumpy pitch.
with an opponent impeding them, then labile surfaces and external loads whilst performing the actual functional movement should be included in the programme.

To sum up assess the relevant functional movement, ensure adequate strength, replicate the speed of movement then replicate the movement itself.

Multiplanar exercises on unstable surfaces with the latest gadgets are not functional if they are unrelated to the task that has to be performed.

This article has focused on training for specific tasks. However if you define functional training as minimising risk injury then a different protocol is required and this will be the subject of a later article.

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References:


