

An Inside Look at 'Functional Training' and How it Can Improve Your Sports Performance

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See the TRUTH about functional training as this article dispells all the myths about this hot topic of sports training. Discover all the methods of functional sports training including the 8 methods of 'athleticism' plus 30 specific exercise examples!



Much attention has been given to the concept of functional training over the last several years. It seems however that while many personal trainers market themselves as functional training experts they may often miss the point when it comes to actually applying the concepts effectively.

By definition “functional training” is training with a purpose. In other words it should have a positive effect on the activity or sport one is participating in. Functional training takes a multi-faceted and integrated approach to improving the strength and overall conditioning of those using it. Originally this functional approach was exclusive to the rehabilitation and sports medicine fields. Sports rehabilitation, performed by Certified Athletic Trainers and Physical Therapists, by nature had to not only return the athlete to everyday living but also had to return him or her to the rigors of competitive sports.

Work Hardening is a “modern” approach to rehabilitation sometimes used by Physical Therapists. This is a type of “sport specific” conditioning for everyday life, which teaches the patient to lift boxes, turn wrenches, carry beams, push wheel barrels and anything else that is applicable to their work environment. This is true functional training.

Functional training must integrate all aspects of human movement. To get a better understanding of the approach needed one must first become a student of human movement. Observing children at play, adults at work, and athletes in competition is a good place to start. Since life, like sport, is basically a chaotic, unpredictable event, one’s training should reflect this reality to some extent.

As a general rule most functional training advocates de-emphasize weight machines and most single joint movements. The truth is, however, that almost any exercise can be functional for someone at a specific time in his or her life or training cycle. Often times if one is in the early stages of rehabilitation, or a very new and perhaps a somewhat uncoordinated exerciser, then a “selectorized” machine or a simple exercise movement may be functional. The use of machines in general, goes against the functional training philosophy for many reasons.

Today the functional training movement tends to emphasize wobble boards, dumbbells, medicine balls, stability balls, bands and bodyweight exercises. The important thing is to first understand the needs and abilities of the individual client/athlete before implementing any of these techniques and strategies. Companies sell “functional training equipment” as a way for strength coaches, personal trainers and athletes to enhance performance and add variety to a training program. The use of much of this equipment, especially unstable equipment such as stability

balls, wobble boards, foam rollers and stability discs, has lead many people to believe that the minute someone uses one of these pieces the exercise is “functional”. **Remember that just because an exercise is challenging it does not mean that it is necessarily functional.**

Unstable equipment is only one modality that should be used sparingly at best. Originally this type of equipment was used in the rehabilitation setting to enhance static balance, proprioception, joint stability and core strength with much success. Some research does exist that shows increased muscular recruitment at the core for certain exercises and at the ankle joint during an ankle rehabilitation protocol.

Unstable Surfaces and Performance

The question and the controversy are whether or not training on unstable surfaces, i.e. wobble boards etc. really do improve performance in sport. A recent article in the NSCA Journal of Strength and Conditioning seemed to de-emphasize the importance and effectiveness of this type of training. The fact is that at this time there is no clinical evidence that training on unstable surfaces actually improves sport performance. The important concept to understand is that almost everything boils down to “Specificity”.

If an athlete practices throwing a medicine ball on a foam roller he, or she, will ultimately become very good at throwing a ball on a foam roller. According to the article the transfer effect to throwing a ball with power and accuracy on the playing field may simply not exist. This is because when we learn a new skill we do so slowly and as we practice we are able to do it faster and more efficiently. What results is a specific neuromuscular pattern the author refers to as an engram. When we introduce a new variable like a wobble board two things happen. First, time that could be spent on the needed skill is not used and secondly we may wind up confusing the original neuromuscular movement pattern. The result can actually be a decrease in performance.

Strength gains may also be reduced on an unstable surface. If one wants to get stronger he or she must load the muscle with the right amount of resistance to recruit enough muscle fibers. When we strength train on unstable surfaces we use less weight which decreases the muscular force output, and reduces the overload and specific fiber recruitment necessary to make the appropriate strength gains. If the athlete wants to get big then use unstable training surfaces sparingly. Time may be better spent lifting heavier weight and performing multiple sets.

In addition muscular adaptations are also specific to the resistance and the velocity used. Unstable surfaces usually require the exerciser to use less weight and move at a slower pace to have a real transfer effect on sport performance. The effect on core stabilization is also in question especially for athletes and athletic individuals. While performing exercises on this type of surface may be difficult at first eventually the exercise may become too easy which will lead to accommodation. Prolonged accommodation can actually produce a detraining effect. In addition it is difficult to progressively load an exercise performed on an unstable surface. At some point a heavy load may become unsafe. Performing a heavy shoulder press while standing on a stability ball may be a difficult task to master but has little transfer to most activities and can be highly dangerous.

With all that has been said against unstable training surfaces it is important to remember that everything has a time and a place in a training cycle. **Balance and stability training are often neglected but essential elements in an athlete’s training program. The art is to recognize when it is appropriate and necessary.** Don’t be afraid to use unstable training equipment as another modality in your expanding toolbox. Remember that new research is always being conducted. Next month researchers may conclude that training on unstable surfaces is without a doubt the most effective way to improve sports performance. Ultimately it comes down to you and I keeping current with the research, learning from other strength coaches and most importantly, learning from our own experiences, both successes and failures.

Other types of equipment can be very helpful as well. Medicine balls, various rubber bands, kettle bells, Indian clubs, dumbbells, sandbags, weight vests and other unconventional pieces of equipment have all resulted in some improvements in muscular strength and power. Ultimately a real understanding of program design and exercise science coupled with a knowledge of the client's/athlete's needs, abilities, and psychology will have the greatest "functional" effect on overall performance.

Athleticism

The principals of athleticism can teach us a lot about functional training. Many of today's top conditioning coaches have already written extensively on this topic. These principals can and should be applied to athletes training for sport as well as mothers, business people and the mature exerciser trying to retain his or her independence. We first need to look at movement that takes place naturally in an unpredictable world as well as on the playing field to understand this approach. The following concepts are universal to most sports and physical activities.

Interestingly enough most characteristics are inter-related in some way. Training can be further specialized when needed depending on where one is in a total training cycle. Characteristics of Athletic Movement

Emphasize the Core - by nature athletic movement emphasizes the core musculature. In fact most movement will be inefficient without a strong core that is integrated into a movement skill. A strong core helps connect the upper and lower extremities and helps prevent force leaks.

Multi-planar - We are not meant to move in only one direction. We have the ability to move straight ahead, go left and right and to rotate. Our training should enhance this ability and emphasize all three planes of motion.

Multi-joint - Pick up something off the floor and notice how many joints are moving. Training should emphasize the use of more than one joint to be functional. A squat will have much more impact on ones ability to pick something up and to walk up stairs than a leg extension machine. Ground-based-Most of us spend a lot of time dealing with the effects of gravity. When we train standing up the transfer to everyday activities is greatest. We have to worry about our core muscles and spinal stabilizers or we will fall down.

Balance dominated - Multidirectional movement requires balance, which in turn requires not only a strong core but also sufficient skill and coordination to execute. Practicing various static and dynamic balance exercises as appropriate will greatly enhance ones overall body control and kinesthetic sense.

Single limb - Most sport skills are performed with one limb at a time. Most of us also perform various tasks throughout the day with only one hand, try brushing your teeth with two hands and see how efficient that is. Training with one limb at a time can be an effective way to build strength and coordination. Single leg squats and push-ups are two challenging examples and great strength builders.

Alternating limbs -Running and walking by nature are performed by moving our feet in an alternating manner. Training in this manner will enhance our natural movement patterns and can improve overall strength, coordination and performance.

Activity specific - As stated previously everything is about specificity to some extent. If you are working a soccer player don't train him or her like a marathon swimmer. Understand the needs of the activity and select the best exercises and resistance levels to meet those needs.

Speed specific - If you want to be fast then it important to train fast. If you are looking for static control then slower speeds may be more appropriate. Many exercise modalities are useful to achieve these needs. Plyometric training, Olympic Weightlifting, sprint and agility training can all help improve different elements of speed.

A Word About “Functional Training” Exercise Modalities

Free Weight Barbell exercises on stable surfaces have been shown to provide the greatest overall functional effects. These exercises recruit many muscle groups including the core stabilizers. They also require intra and inter muscular coordination to perform. While they may not be as exotic as standing on a stability ball while juggling some bowling balls these exercises do work. Keep it simple and you will get results. If you want more stability training try some traditional exercises standing on one foot or lift the bar with one arm.

- Squats
- Cleans
- Deadlifts
- Push Presses
- Overhead Presses

Dumbbells also provide a great training effect because they require great coordination and can be performed with single arm and alternating arm action as well as at various speeds. Any exercise with a barbell can be performed with a dumbbell.

- Chest press
- Rows
- Cleans
- Snatches
- Lunges
- Overhead Presses
- Deadlifts

Bands offer a lot of movement variety and can be taken anywhere. In addition they can be used standing, single limbed, with alternating limbs, and at varying speeds. This will increase the stress on the core and increase the functional transfer to other movements.

- Chest press variations
- Row variations
- Squat and lunge variations
- Abdominal crunches and rotational movements

Bodyweight Exercises - I consider bodyweight training to be the grand daddy of all functional training. If you can't control your own body how functional can your strength truly be? The progression options are relatively broad. For example, try progressing from a regular knee bend to a lunge to a single leg squat. In addition the push-up variations are many and equally as challenging.

- Squats - single leg and two leg versions
- Lunges
- Side Lunges
- Reaching Lunges
- Forward reaches

Push-ups
Twisting push-ups
Single arm push-ups
Partner push-ups
Pull-ups
Partner pull-ups
Hand stands
Cartwheels
Jumping

I hope this article shed some light on a very popular yet sometimes controversial topic. If you are interested in training athletes but may not be sure exactly where to start I invite you to apply this information to your existing repertoire and see where it takes you.

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