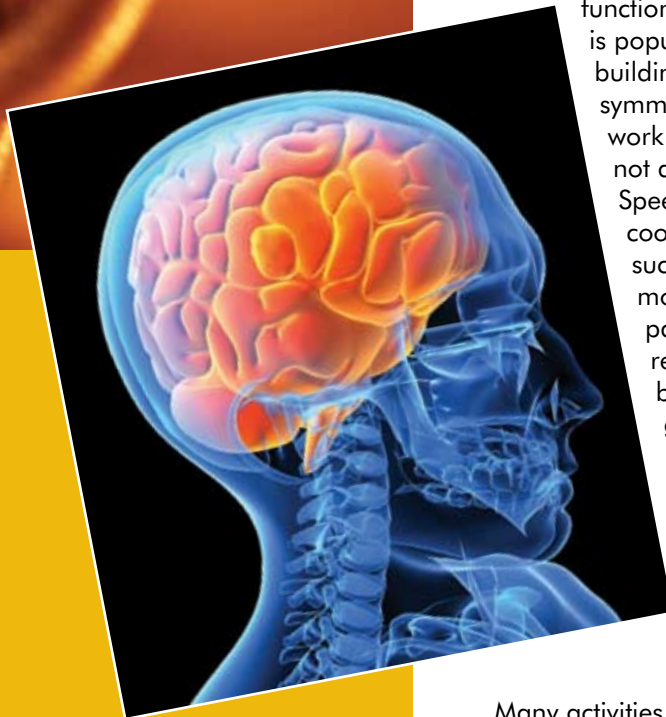


Only as strong as your weakest link

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recognize individual muscle activity, because essentially it doesn't have to. Instead, it looks at movement patterns and creates co-ordination between all the muscles needed to perform tasks. These co-ordinations are referred to as motor patterns. Because of this method of functioning in the brain, isolated muscle development does not play a major role in motor pattern development. Don't confuse form with function. Weight training with muscle isolation is popular in body building because body building is all about form. Muscle size and symmetries are the goals that body builders work towards. But most sports, however, are not about form but rather about movement. Speed, quickness, agility, power, control, coordination and stamina are keys to success, so training should be aimed at movement rather than form and focus on patterns. Training muscles in isolation may result in good individual muscle strength, but will not be directly transferred into good movement patterns as the muscles are not trained to work together in this method. On the other hand, muscles will individually develop naturally as different movement patterns are worked, but the focus is on function; great form is just a by-product of good training.



What defines good athletes? Is it their size? Their conditioning? Their mental edge? Their discipline? Generally, it's many of these things in combination.

Ultimately, it is movement. Now this may sound strange at first but think about it... Some rugby players manage to be very successful despite being smaller than the expectation of the average player and when we look at how this is possible the key to the success is the ability to move efficiently. A player who can side-step, be explosive, react quickly and effectively is of just as much value to the team as the power houses who depend on pure strength and power for their tasks. These players are often compact and quick with a good balance of control – not allowing their physique to define their careers but their unique movement skills.

When we look at the scientific side of things, modern science tells us that the brain doesn't

Many activities in sport, recreation and fitness have the same basic movement patterns. Throwing a ball in cricket and serving a ball in tennis are essentially similar actions, and as such, use the same motor patterns of shifting the weight and rotating the body for speed generation in the hips, which in turn generates shoulder acceleration used to accelerate the arm. Similar patterns can also be seen in the very different sports of baseball and golf. The swings are similar actions. They may differ in the plane in which they take place, but their energy transfer is the same. Because of many skills being similar in this way, the brain doesn't have to remember millions of separate motor patterns because most motor patterns overlap and are interrelated. This conserves memory in the brain and allows for quick access to movement information for learning and refinement.

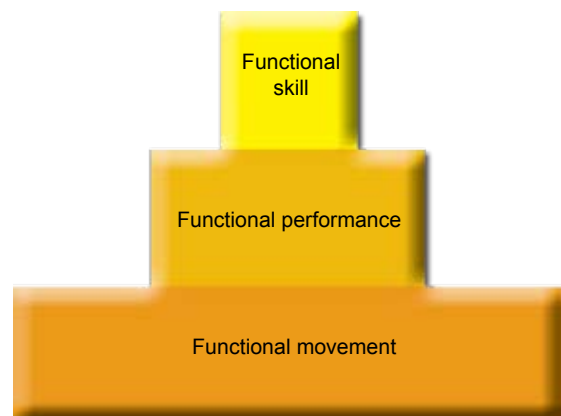
In order to provide a mental image and understanding of human movement, we can use the simple diagrammatic representation of the performance pyramid. This diagram is made up of three blocks of diminishing size to demonstrate how one type of

“To be ignorant of motion,
is to be ignorant of nature”
- Aristotle

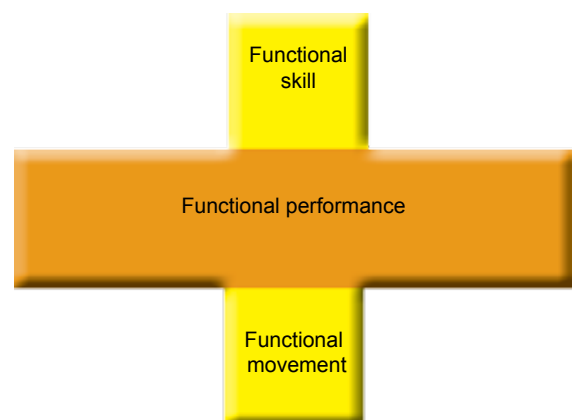
movement builds on another. Each block represents a certain type of movement and should always be constructed from the bottom up with a tapering appearance (broad base with narrow top). The first level is the foundation and represents general mobility and stability within the body i.e. the ability to move through functional patterns. The second level represents non-specific performance, efficiency of movement and general power transfer (often referred to as gross athleticism). From a training standpoint, it is very important to compare individuals from different sports in a general format and these two levels allow for that comparison as nothing involved in testing or evaluation is sport-specific or based on skill levels learned in specific sports. The third tier is where the skills come in and the ability to complete specific tasks needed in relevant sports, in specific positions and with a certain level of intensity is represented. This level also brings competition statistics into account as well as specific testing.

Basically the performance pyramid can be constructed in 4 basic profiles, depending on an athlete's strengths and weaknesses and the shape they result in when placed in the format of the performance pyramid. These profiles are: the optimal pyramid, the overpowered pyramid, the underpowered pyramid and the under skilled pyramid.

The optimal pyramid has a good broad base with optimal functional movement and general efficiency. Above this good foundation, is an ability to explore full range of motion in joints with good body control and movement awareness throughout various positions. There is also a requisite amount of power. Compared to average athletic performance norms, these athletes usually display an average or above average power generation with well co-ordinated kinetic links, upon which the “block” of average to optimum sport-specific skill is based. Without this stable pyramid structure, there will always be a potential

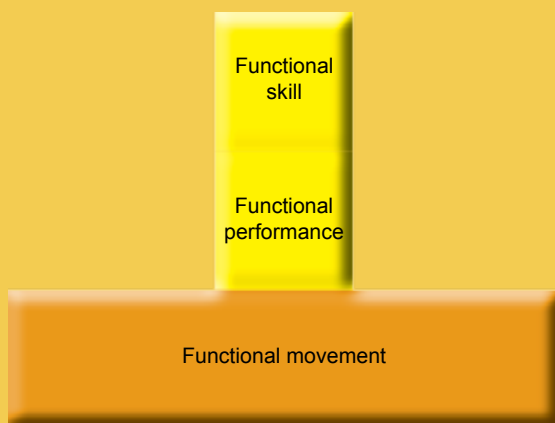


for injury and compromise for power and efficiency. This optimum performance pyramid is the pyramid in which movement patterns, movement efficiency, and sport skill are balanced and adequate. But a balanced pyramid does not mean that there is no room for improvement – on the contrary, there will be more room for improvement on all levels, with less risk involved and more potential reward, as long as the general pyramid structure is not disturbed.



The overpowered pyramid represents athletes who perform poorly in terms of mobility and stability, very high on power production and adequate in sport-specific skills. The ability to move freely only in very simple and basic positions is limited by poor flexibility or poor stability in some movement patterns. This

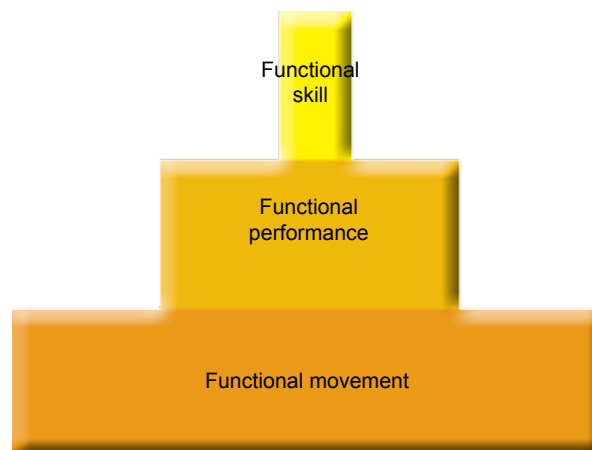
suboptimal functional movement results in a small base to the pyramid. These athletes are not necessarily too strong – but purely have an ability to generate power which exceeds their ability to move freely with control. This results in a predicament where an improvement in functional movement is needed without compromising the natural power generation strengths which exist. Many athletes find themselves here. They have never really experienced injury and may very well be performing well. But training needs to focus on functional movement. There is a possibility that this necessary training will result in no tangible increase in performance – there is actually, more likely, to be a decrease in performance as mobility and stability are improved and added to the functional base. So why do it? Well, the chance of the athlete reaching a plateau in performance beyond which they seem to be limited is highly possible. Injury prevention is also a big motivation to address these problems.



Underpowered pyramids have a broad base and optimal movement patterns with very poor power production in the middle and adequate skill at the peak. These athletes have the requisite movement patterns to perform multiple tasks, activities and skills, but generally lack gross athleticism or the ability to generate power in simple movement patterns. In other words, there is an excellent freedom of movement but efficiency and power are poor. It is important for these athletes not to compromise their good function when improving on their strength, power, endurance, and speed. Consider a baseball pitcher who falls into this category of athletes, with good mobility and stability and good skill levels. To improve, he may work hard on improving his strength, power, and endurance reserves, but this may not be directly transferable to the speed of his pitching. Indirectly, however, his consistency, endurance and recovery may be exponentially improved in this way. Sometimes, these improvements in strength and power can, initially, decrease sport specific performance. If this occurs, it shouldn't be a cause for concern, but rather easily addressed by some sport specific training and refining of movement patterns involved.

“Nothing good comes in life or sport unless a lot of hard work has preceded the effort. Only temporary success is achieved by shortcuts”

– Roger Staubach



The fourth pyramid is the under skilled pyramid which has a broad base of functional movement and an optimal functional performance level in the middle, but a below average skill level perched on top. These athletes, either naturally or through hard work, have good functional movement patterns with good power production but limited mastery of sport skills. This is not an “unstable pyramid” but rather a good shape with a lack of awareness or refined mechanics of skills. Often these under skilled athletes are in better physical shape than many of the people that they compete against, but despite this are generally out-performed on the field or at their relevant tasks. These athletes require constant and methodical practice and need to work on their skill weaknesses on an ongoing basis. Anxiety may also play a role with such athletes. If this is the case, a relaxation routine may assist in overcoming this hurdle. Either way, these weaknesses have to be addressed in order to perform at optimal levels.

For some athletes the pyramids may change during competition or through the season. For others it may remain the same. Some might naturally migrate to a certain pyramid type whereas others will have to work hard to get where they want to be. Basically, to put things in perspective, the performance pyramid demonstrates why simply replicating the programme of another athlete will not consistently yield the desired results 🏆