

What is Agility?

The multi dimensional movement demands of our game dictates a reevaluation of the traditional approach to the development of agility. This demands a systematic multi factored approach that results in significant improvement in game speed, albeit over short distances. Possibly we have put the cart before the horse by training agility in isolation without considering the underlying coordinative abilities and player strength. Full development of coordinative abilities provides a repertoire of motor skills that can be adapted to deal with sport specific movement demands.

From one perspective, coordinative abilities are:

- Balance - Maintenance of the center of gravity over the base of support. It has both a static and a dynamic quality
- Kinaesthetic Differentiation - Ability to feel tension in movement to achieve the desired movement
- Spatial Orientation - The control of the body in space
- Reaction to Signals - The ability to respond quickly to auditory, visual and kinaesthetic cues
- Sense of Rhythm - The ability to match movement to time
- Synchronization of movements in time - Unrelated limb movements completed in a synchronized manner
- Movement Adequacy - Ability to choose movements appropriate to the task

It is argued that these coordinative abilities never work in isolation and that they are all closely related. They are the underlying foundation for agility and the prerequisite for technical skills.

Strength is fundamental

Agility, by the nature of its demands in terms of stopping and starting, requires good basic strength. Without adequate leg strength there is a limit to the quality of the movement which will significantly affect the ability to train. Leg strength must be developed in parallel with agility work. The forces involved in multiple planes also demand that we take a less traditional approach to the development of leg strength that will transfer to the movement skills. Begin with body awareness and control in conjunction with strength training. It is not an overnight affair, but part of a longer term systematic development program, based on fundamental movements and the subsequent refinement of those movements.

Once basic strength and agility are progressing, we can then build further into our specific sport skills. This may require some carefully understanding of the movement patterns and their position of those patterns within the sport. For example, is it a middle performing line defence from a static rollball situation, or a link performing a deep "A"?

Is playing the sport enough to develop necessary agility?

There is one school of thought that feels it is unnecessary to do any significant agility work outside the practice of the actual sport. The thought process is that practicing the movements outside the sport are non specific work that will not transfer and that it is impossible to duplicate the intensity of the actual practice or a game. That is not supported here because the outcome of such a policy could be non-development or status quo. It is necessary to carefully design drills that tap into the repertoire of motor skills developed through the development of the coordinative abilities that make up the components of the movements required in any specific sport and in any number of circumstances. In accordance with sound coaching principles, the coaching drills should be graded. The overload should be progressive and based on sound motor learning principles, sound biomechanics and as necessary adapted to each individual athlete in each game-simulated situation.

Developing appropriate exercises

The approach is to design a hierarchy of exercises that lead seamlessly into Touch skills. That hierarchy is as follows:

- First Derivative - The actual movement done at game speed
- Second Derivative - The movements broken into component parts
- Third Derivative - Basic movements (coordinative abilities) that underlie the skill

Understanding the derivatives means understanding the breakdown of each of the movements in the game. And this is one of the aspects that the GPS project is directed towards.

Analyse the moments

Use game analysis to determine the movements and game speed. Game analysis will also determine the volume of work in a sport, which will in turn determine training volumes and intensities. Essentially what we are trying to do is take the guesswork and opinion out of the whole process so as to be as exact and precise as possible in the selection and prescription of exercise in order to produce an adaptive response that will transfer to the game. Many coaches spend far too much time drilling for drill sake. Agility drills with a million cones and sticks look good but what is the benefit? The player gets good at the drill, but the drills do not transfer to the game. This is the key point! The goal with agility drills should be efficient, effortless, flowing movement that transfers directly to the sport. Time the drills whenever possible to provide feedback to the player.

The components of agility training are:

- Body Control & Awareness - The ability to control the body parts and maintain a high level of awareness of those parts in relation to the goal of the movement.
- Recognition and Reaction - Recognition is the domain of the actual sport skills involved. Recognition of patterns and cues keys reaction. Reaction is the ability to respond quickly to the required stimulus. This has several components and they are both mental and physical.
- Starting - The ability to overcome inertia. In multi-direction sports, starts can be stationary or moving or a combination depending on the sport. In our game, it certainly is a combination of each, with good players able to work foot-independent (left or right forward).
- Footwork - The hip to foot relationship. Conceptually agility is built from the ground up therefore footwork is the unifying thread in all agility work. Note the direction of the relationship, "from the foot to the hip" and not vice-versa.
- Change of Direction - Initiated by getting the center of gravity outside the base of support and then regaining control to maintain control and move in the intended direction. Change of direction involving stopping, which is the key to agility, also incorporates the ability to restart when necessary, regardless of the position of the body. (How many coaches teach all players for example, how to pass a ball to either side when either foot is forward, or importantly, when both feet are off the ground?)

All these components can be significantly improved through systematic application of specific drills. The application of speed to sports that require multi-dimensional movements demands an understanding of the concept of game speed. Game speed is not linear track speed. It is the ability to apply all elements of speed to the demands of the game. In fact some of the technical aspects of speed that are rewarded in the sprint events in track and field can be more than counterproductive to game speed. Very little movement in multi-directional sports is straight ahead for any significant distance. Most movement involves angles, curves, starts, stops and direction changes. Agility and game speed are closely related. Agility is defined as the ability to recognize, react, start and move in the required direction, change direction if necessary and stop quickly. This typically occurs in a time frame of no more than five seconds.

How to improve agility

Agility can be significantly improved if we understand and apply some basic principles/concepts:

- Skill - Open skill occurs when the movement goal is unknown. In a closed skill the movement is pre-programmed. The progression in agility training usually proceeds from closed to open skills.
- Reaction versus reflex - Reaction is the response to a stimulus to initiate movement. It is a conscious act that can be improved through training. Reflex, on the other hand, occurs at the sub cortical level and cannot be trained.
- Speed as a motor task - A motor task can be learned; therefore speed can be taught if the motor tasks involved are clearly defined.

Practice

There are basically two types of practice:

- Massed - the skill is practiced until learnt without taking a break. These sessions are good for athletes with high level of fitness and experience and are most suited to fixed practice.
- Distributed - practice is interspersed with breaks which can either be rest or another skill. These sessions are good for athletes with lower levels of fitness and experience and are most suited to variable practice.