



Benefits and pitfalls of planning strength and conditioning in amateur rugby

- Part 2 Thomas Wheelock

Following my last article I made several mentions to Anaerobic fitness and how is key to Amateur Rugby, the biggest pitfall in any club is maintain fitness and also how to maintain it for the last 15 minutes of an 80 minute game.

A case in point at International level was the recent Ecuador v Guatemala both Amateur Rugby nations, having reviewed a video of the game, Ecuador lead at 21 to 3 at Halftime after storming out of the blocks and they literally collapsed due to the lack of fitness and a 58 minute try help them on to win 26 – 25.

Guatemala has in my opinion a fitness problem in terms of their late start into game and it seems their warm up or fitness program needs adjusting as it is too slanted towards being too aerobic this is not the first time they have lost by 5 points or less because of their late starts.

Aims and Benefits and what is anaerobic fitness?

Aims and Benefits:

To increase mental alertness, heart rate, blood flow, neuro-muscular system and at the same time to prevent injury and rehearse through the motions of typical sports activity.

What is Anaerobic Fitness?

Anaerobic exercise usually refers to activities which require large bursts of energy over shorter periods of time...

During anaerobic exercise, stored 'fuels' such as glycogen provide energy at a fast rate without the need for oxygen...

A person's anaerobic capacity is determined by the size of available 'fuel stores' and the effect that waste products resultant from the 'energy making' process has on muscular activity...

Effects of Anaerobic Exercise:

As exercise intensity increases towards an individual's maximum aerobic capacity, energy demands can no longer be met by the aerobic system and the body must find other ways of 'making energy'...

Anaerobic Glycolysis is an 'energy making' process but waste products from this process such as lactic acid will quickly reduce the power output of muscles...

A trained individual will have a greater capacity to withstand the build-up of waste substances such as lactic acid and increased ability to remove them from the body...



Exercise should be aerobically based but it is inevitable that an individual will have to work anaerobically at some point. By improving anaerobic fitness, an individual will have a greater ability to withstand the onset of fatigue.

The Anaerobic system will usually come into play within the first 30 seconds of high intensity exercise (such as shuttle running). As fatigue sets in, exercise intensity will decrease and the aerobic system takes over until aerobic capacity is reached. The anaerobic system then takes over again until fatigue makes further exercise very difficult. The body then requires rest in order to 'refuel'.

The other obviously important consideration in training is the position that you play.

- Forwards have to complete more high-intensity activity than backs, with shorter periods of low-intensity between them, which means their anaerobic glycolytic system is of prime importance to them.
- Backs, especially outside backs perform less high intensity activity than forwards, with sufficient rest between efforts for the PCr system to predominate. Running and sprinting are the commonest high-intensity activity for backs.

So how would you measure this? Ideally there should be at least 4 tests during the entire season 2 in Pre- Season, 1 during the regular Season and 1 at the end of the season. It doesn't matter how many are done but is to keep consistency.

Too many clubs only do the Pre-season test but there is no measurement as to how they are keeping conditioning levels.

FITNESS EVALUATION TESTS FOR RUGBY PLAYERS

The following tests have been designed to allow any player to undertake a form of fitness evaluation, without the need for expensive Equipment and a lot of time. THESE TESTS ARE ONLY A GUIDE

Testing is important for all players, as it provides a baseline from which you can assess your progress and measure improved performances that have occurred as a result of the invested training effort.

Proposed Test schedule: End of July, August, and September a further one in January returning from the Christmas break.

Aerobic endurance:

The ability to maintain a moderately high level of effort for sustained periods.



5000 Meter tests:

The 5000m distance is representative of the distances covered during a game of top level rugby union, and is a standard test for International squads.

Alternate TEST:

1800 Meter shuttle run

This is a smaller distance but it also represents change of direction during a game including agility over longer distances.

Anaerobic endurance:

The ability to maintain a high level of effort through repeated or long duration sprints or during successive periods of contact work during the game. This is important if a player is going to make a significant contribution to a successive number of phases in a game with little or no recovery in between.

60 Meter test:

Player begins on the dead ball line (or a marked line 10m back from the try-line). On the "go" command (stopwatch started), he sprints to the 5-metre line, and back, to the 22 metre line and back, to the 10 metre line and back and then to the half-way line and back (watch stopped). The player then gets 2 minutes rest, and then repeats, until 3 runs have been completed.

The best time is recorded, and multiplied by 3 to provide the "optimal time". The totals of all 3 runs are added together to give the test score. The difference between the optimal score and the test score indicates the amount of fatigue experienced in the player, from which an inference can be made about his anaerobic fitness levels.

Other speed test

10 Metre and 35 Metre test

Players perform a 10m acceleration sprint (standing start) and 35m sprint with a flying (5m acceleration) start. If hand-timing is to be undertaken, players perform both sprints from a standing start.

Leg Power:

It is measured by a standing vertical jump, from a static 2 footed take-off. The player should chalk his hand (or have some other means available of marking finger placement against a wall), and should stand sideways against a wall. Feet should be together, and the arm closest to the wall stretched above the head as far as possible. The height of the middle finger-tip should be marked at this point.



The player should then perform a maximum vertical jump (bending from the knees and driving upwards) and reach as high as possible up the wall, marking the upper limit of the jump with the finger-tips.

The distance between the start position of the hand and the highest point of the jump is then measured and recorded.

MUSCULAR ENDURANCE:

The following basic exercises measure the strength endurance of the upper body, trunk and lower body musculature.

Press-ups:

Players assumes the "classic" press-up position, with the trunk extended and arms straight (shoulder width apart). The counter (partner player) places his fist (thumb up) on the ground in line with the performer's nipple line. The aim is to complete as many full press-ups (full extension to chest touching fist and return =1) in a minute as possible. Players are encouraged to be honest in the counting. Downward movements not reaching the fist are not to be counted.

Crunches:

Players lie on their backs, with knees flexed to 90o, feet flat on the floor. Partners should kneel next to the players knees, and extend the fore-arm across the players knees. The partner should apply no downward pressure which could assist the player in movement. Upon the "go" command,

Players should extend arms in front of the body, and curl the trunk forward until the palm of the hand touches the partners' fore-arm, and return to the starting position. This counts as "1".

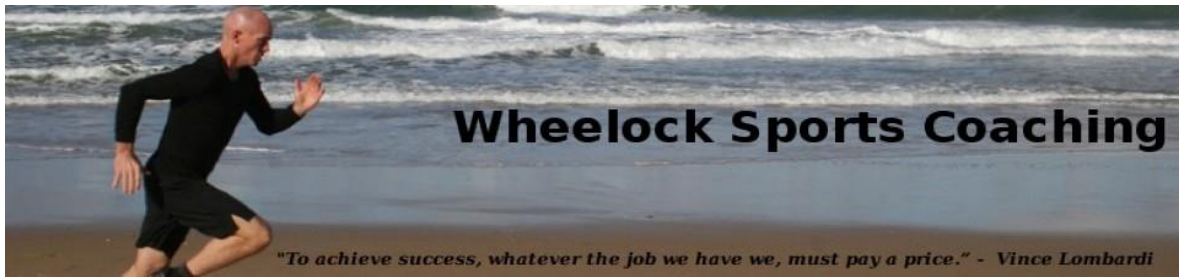
The aim is to achieve the highest score possible in 1 minute. Players should not bounce from the hips or the shoulder. Movements which are not "full-range" should not be counted.

All this training should be done alongside rugby coaches particularly when identifying specific skills.

Identification of specific skills required:

Areas to isolate are mechanics of the legs and the use of exercises such as ankle flicks, Hamstring stretches use of dynamic flexibility and explosion drills this will improve running technique and lessen the chance of injuring hamstrings using position specific drills.

Also practice sudden change in direction while sprinting. Direction of the exercises would be forward and with turns to reflect direction change. Physiological demands would be similarly to game conditions. This includes acceleration and deceleration



Time constraints are a key factor in working with players. Training and working with them is only once to twice a week in the evenings, *Therefore practices are short and sharp* as further training would need to be done with Rugby coaches.

NEXT ARTICLE: CONCLUSION

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