

CONDITIONING THE ACADEMY ATHLETE BY MATT SANDERS AND PATRICK HOGBEN.

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Academies are faced with the challenge of guiding the physical development of young academy athletes to maximise the chance of producing a player with the physical capacities to play in the Premiership. It is necessary for those undertaking this challenge to have a clear picture of what they are trying to achieve. Downsizing senior programs is inappropriate and ineffective. We are not trying to train a sixteen year old player as we would train an established international. We aim, instead, to train a sixteen year old so that he develops the capacity to train as hard and as professionally as a senior international in the future.

We feel the following objectives must be met when developing the academy athlete.

- Increased physical presence.
- Increased power in contact.
- Increased strength.
- Increased speed.
- Increased athleticism.
- Improved rugby-specific fitness.
- Decreased risk of injury.
- Development of appropriate character and lifestyle behaviours.

Whilst this list is not exhaustive it is worth bearing in mind that weaknesses in any of these areas can render other attributes largely useless. The message is, therefore, that a holistic view must be taken when conditioning the academy athlete. The integration of these components requires the use of the correct conditioning tools and their matching to the athlete in a fun, safe and creative manner.

To detail specifically the day-to-day existence of the academy athlete is beyond the scope of this article. We would like to highlight common tools and methodologies used in an athlete's development and express our humble opinions which are, like the players themselves, evolving daily.



FREE WEIGHTS.

Free weights exercises represent an essential tool in the conditioning process to develop increased levels of specific and usable strength and power. Specificity is afforded by the way in which good form with free weight exercises requires stabilisation and promotes appropriate muscle recruitment patterns. Within free weight exercises, the use of compound exercises should be highlighted. These are multi-joint exercises which recruit a large muscle mass. As such, the potential of exercises such as the squat, for promoting muscle growth as well as pelvic, knee and lumbar stabilisation, should not be underestimated. Mastery of the techniques of these exercises and then progressive loading of them (with excellent form) holds the key to gaining greatest benefit from them. Learning, then mastering and then progressing a supposedly simple exercise such as the squat, requires months and years, rather than days and weeks. We suggest, therefore, that academy athletes are given continuity in terms of the main lifts they perform. While we recognise it is important that the athletes must be exposed to a range of exercises, consistent use of the same exercises across a given phase in the year allows full benefits to be gained.

INJURY.

Postural correction and injury prevention exercises are essential to the development of academy athletes. Physiotherapy screening allows for each individual to be best catered for, but if parts of the regime are poorly executed or managed they can create more problems than they solve. The common injuries experienced by rugby players are well known to us all, such as shoulder dislocations and resulting degenerative shoulders, ruptured discs and ACL reconstructions. The wear and tear of the modern game on the bodies of players is well documented. Whatever can be done to minimise the susceptibility of future players to such injuries cannot be ignored. A conditioning program, therefore, needs to promote:

- Neck stability (particularly for front row forwards).
- Scapula control and shoulder joint integrity.
- Core strength.
- Hip stability.
- Knee stability.
- Ankle stability/ proprioception.



A potential problem with postural and injury prevention exercises is a lack of enthusiasm from athletes, who fail to see their importance or feel that time would be better spent on exercises with a greater potential to alter the physique. One effective method of countering this is to make such exercises part of a group warm-up. It has also been suggested that injury prevention exercises are limited if the changes in movement patterns they encourage are not transferred to on-pitch skills. Whilst some athletes will automatically transfer postural changes such as increased lower trap activation, other athletes need to be given the greatest chance to by progressing gym exercises to be as specific as possible e.g. scrummage position and TVA activations (being able to activate the transverses abdominus, the deep muscle of the abdominal wall). Positive transfer of postural correction is also aided by ensuring that rugby coaching sessions incorporate appropriate cues and use focus on activations in refining techniques.

Rugby Specific Speed and Acceleration Training.

Speed training is another key tool to be used in the development of the academy player. One key issue involved with speed training is the appropriate use of principles from track sprint training to rugby. The key differences between rugby sprinting and track sprinting are highlighted by the former's shorter distances and acceleration rates rather than the maximum speed bias of the elite sprinter and the slightly bent-over running position of the rugby player to allow for rapid changes in direction. It is recommended that the focus is on fast feet drills as opposed to stride length drills and that, whilst acceleration training should be dominant in rugby sprint training, some maximum speed work is required. It should be considered that, whilst sprint training and development of better running mechanics have their place, faster players are more likely to demonstrate improvements in speed through improvements in power that are driven by strength training. The use of plyometrics is a widespread staple of the athletics world. The use of such methods requires careful consideration, especially in regard to the risk of injury. But the development of these skills and of the appropriate players at specific phases of play must be acknowledged as the icing on a fully baked cake.

When performing sprint training, competition is an essential and obvious means of ensuring intensity. In sprint and agility training, the competitive and social nature of the players should be harnessed and agility and quickness can be developed using tailored playground and physical education games such as bulldogs, handball and kabadi, which develop athleticism as well as requiring acceleration, rapid changes in direction, strategy and inventiveness.

SPEED ENDURANCE.

Speed endurance, or anaerobic endurance, refers to the player's ability to carry out repeated high intensity efforts. Given that England's game is said to be based on a high work-rate (Morris), players need to develop this capacity. Whilst working with academy players, it is important that the volume of anaerobic work is controlled to assist muscular gains, prevent over-use injuries and allow sufficient recovery. As many academy athletes will be restricted in terms of time, it is often practical to perform



speed endurance sessions as an adjunct to skills sessions. Sessions should be designed and delivered so that the natural aggression and competitive nature of players is used to ensure a high quality work-out. With such sessions, variety and fun is the key providing that specificity and transfer are considered.

RECOVERY AND NUTRITION.

Maximum benefit from training sessions can only be achieved if appropriate recovery strategies are employed. Post-session ingestion of appropriate food as part of the training session should become a natural habit as soon as possible. Appropriate rest and recovery should be encouraged. Monitoring and recording the details of snacks following training and the quality of sleep can be part of a good method of raising awareness.

SUMMARY.

Just as the end results such as increased physicality and increased athleticism should not be considered as separate, the methods by which the results are achieved should not be considered as just serving one purpose. For example, improved flexibility in the hip flexors is key to injury prevention but is also important for effective running and lifting technique, both of which are fundamental to necessary physical development.

Whilst it is vital that the correct tools needed to develop the academy athlete are all employed in an appropriate fashion, the challenge for those of us who are charged with long-term development of the athlete is not simply this. Strength and conditioning coaches must look to establish fun environments and utilise all the athletes' characteristics and personalities to improve the quality of training.



Standard week.

<u>Time</u>	<u>9.30 – 11.30</u>	12 - 1.00	<u>1.30–4.00</u>	<u>4.30 – 6.00</u>	<u>6.30 – 8.30</u>
Mon 28 th	Weigh – in.	Physio available.	Resistance session 1.		
Tues 1 st	Individual video analysis.		Resistance session 2.		U19 training incorporating speed endurance.
Wed 2 nd	Injury prevention.		Speed Work.		
Thurs 3 rd	Rest.		Resistance. session 3.	Physio available.	U19 training incorporating speed endurance.
Fri 4 th	Active Recovery				
Sat 5 th		Travel	Game		

DETAILS OF A SPEED SESSION THAT TOOK PLACE ON 29^{TH} FEBRUARY.

Warm Up

- Ultimate Frisbee.
- Dynamic stretches.

Sprint Drills:

- Straight legged shuffle a foot placement and hip flexor drill that is performed with straight legs.
- High knee butt kick
- Against wall 'A' frame switch leaning against a wall at sixty degrees in an 'A' frame position and maintaining the body position while switching the legs quickly.



• Ankling – a snow shoe type drill, where the hip position is maintained while the ankles are taken through a full range of movement.

• 15m accelerations.

2x falling in – start from upright position with feet shoulder width apart, fall forward, break into running stride at last possible moment to avoid falling on face

2x from squat position – start in a strong, forward facing squat position. 2x telemark – start on one knee with the other one raised, the upper body upright and the leading knee at ninety degrees.

- 30m acceleration- 15m speed -10m drift stop. (Drift stop is a gradual deceleration.)
 - 2-4 focusing on form
- Side step drill.
- King of the track sprint competition with heats that lead to a final.
 4x 10m, 3-point start races.
 2x 40m.

On the final page there is a chart of a weights' schedule for an U19 prop. The actual weights have not been added as this will vary from player to player.

The following abbreviations are used in the chart:

- RDL Romanian deadlift.
- BB barbell.
- Jammer an explosive hip-extension machine, developed in American Football to replace Olympic Lifts for athletes with damaged wrists.
- DB dumbbell bench press.
- S/A single-arm.
- S/L single-leg.
- NG narrow grip.
- WSM Medley world strongman medley, a strongman-style event placed at the end of a program.



U19 Prop								
Date: 03/02/05-01/0	3/05							
Week 1								
Session 1		Session 2			Session 3			
Exercise	Reps	Weight	Exercise	Reps	Weight	Exercise	Reps	Weight
Hang Snatch	3 × 4		Cleans	3 × 4		Jammer	4 × 4	
Deadlift	4 × 4		Squats	4 × 6		DB Bench Press Trinity	3 × 5,5,5	
Bench Press	5,3,5,3		BB Shoulder Press	3 × 6		S/A Rows	4 × 6	
RDL	3×6		NG Rows	4×6		S/L Squats 3 × 8 EL		
WSM Medley	× 2		Pull Ups (60s rest)	4 × 5		Incline Hammer Curls	4 × 10	
Week 2								
Session 1		Session 2			Session 3			
Exercise	Reps	Weight	Exercise	Reps	Weight	Exercise	Reps	Weight
Hang Snatch	3 × 4		Cleans	3 × 4		Jammer	4 × 4	
Deadlift	4 × 4		Squats	4×6		DB Bench Press Trinity	4×6	
Bench Press	5,3,5,3		BB Shoulder Press	4×6		S/A Rows	4×6	
RDL	3×6		NG Rows (2>1)	4×6		S/L Squats	3×8 EL	
WSM Medley	× 2		Weighted Nordics	4×6		Incline Hammer Curls	4 × 10	
Week 3			Towel Grip Pull Ups (60s rest)	4 × 5				
Session 1		Session 2			Session 3			
Exercise	Reps	Weight	Exercise	Reps	Weight	Exercise	Reps	Weight
Hang Snatch	3 × 4		Cleans	3 × 4		Jammer	4 × 4	
Deadlift	4×4		Squats	4 × 6		DB Pause Bench Press	4×6	
Bench Press	5,3,5,3		BB Shoulder Press	4×6		S/A Rows	4×6	
RDL	3 × 5		NG Rows (2>1)	4×6		S/L Squats	3×8 EL	
WSM Medley	×2		Towel Grip Pull Ups (60s rest)	4 × 8		Incline Hammer Curls	4 × 10	