Get Fit For Rugby! ©

Your Roadmap to the Best Rugby Playing Performance of Your Life

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Acknowledgements

I have always loved the game of rugby football ever since I was knee high to a grasshopper. But it is several individuals who have truly nurtured my passion for the game.

My parents James and Jill who followed me from the sports grounds of Tonbridge, UK to the grounds of sunny Leixlip, Ireland always offering encouragement and criticism in equal doses.

My old school coach, Richard Curtis who was way beyond his years in terms of the thinking for the game. If it meant standing on your head to win a line-out ball then it was worth a go! I don't know why he wasn't snapped up for the 2005 Lions Tour even if it was only as a Spin Doctor…

My I also acknowledge the exercises and influence on the prehabilitation and rehabilitation emphasis side of things by Mike Adams BSc, CSCS and owner of Sports Pro International.

Thank You to Barry Smith BSc, MSc, MISCP for providing his proof reading skills to the final piece.

The workouts and other health relate activities described in this book are to be used as an adjunct to improving strengthening, conditioning health and fitness. These programmes, however, may not be for everyone. All individuals, especially those who suffer from any disease or are recovering from any injury should consult their physician regarding the advisability of undertaking any of the activities suggested in these programmes. The author is not responsible or liable for any harm or injury resulting from this programme or the use of the exercises or exercise devices described herein.

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Chapter 1
Introduction

Since the advent of professionalism, the beautiful game of rugby football has taken on a new edge to its warts-n-all battle of 15 vs 15 on a murky Saturday afternoon in the deepest corner of your local town.

Widespread television audiences are captivated by the colour, pageantry excitement, skill level, physiques and presence of this new age of rugby player. They want to see the big hit, the cute off-loads, the pace of a back, the dominance of a big forward, the balance and agility in the small guy (and big guys too!), the skill and vision of the playmaker. It is attractive to many and all shapes and sizes.

This is far from arguing the case that this did not happen before professionalism. Who can forget the great rugby legends that could easily hold their own in the modern game?

What is different today, however, is the level of physical preparation involved in the game. This is where this manual can help.

Rugby Union is a game held by many to be the most physical team sport you can play. It is demanding on the body. There are few sports where for eighty minutes you are out on a limb pushing your body and mind to the maximum, absorbing amazing forces through sensitive areas such as the neck and back, having to execute complex skills in a highly stressed environment and unleashing destructive forces on opposition in contact areas.

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Acute injuries such as ankle sprains, dislocated shoulders, slipped discs, broken bones occur all too frequently. Perhaps it is our body saying maybe we shouldn't expose ourselves to this.

Chronic injuries on the other hand build up over time. They are the injuries that you all compare aged 65 over a drink or two with your fellow rugby playing mates. The dodgy knee, the painful lower back, the shoulder that just doesn't do anything for you! These are all common examples.

This is where this manual can help you:

1) It can condition your bodies so that you can enjoy the game of rugby football for what it is worth. It will allow you to keep up with play and feel comfortable in handling the stresses of the game.
2) It will provide you with the tools to play the modern game –added match capacity aerobically, strength, power, flexibility and speed.
3) It will give your body added strength in joints, tendons and ligaments providing you with the environment to avoid chronic over-use injuries.
4) It will allow you to enjoy training and playing a lot more knowing that you can not only meet the demands of the game but exceed them!

To this end *Get Fit for Rugby!* has been divided into specific sections to help you as either a club player or a club coach. In chapter 2 we examine the need for rugby match fitness for the individual offering methods that allow the individual to get fit for rugby by his/herself in and out of the gym environment.

In chapter 3 we present the unique 5 steps to Rugby Match Fitness. This tool will enable any club coach to take their team towards full match fitness by using a unique tackle system to replicate safely the demands of the game.

In chapter 4 *Get Fit For Rugby!* looks at how to strength train for rugby proposing full and detailed programmes for each individual position on the team over a 12-16 week period.

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Chapter 5 looks at developing blazing speed for the game with methods to use and incorporate within the individual and club setting. The manual closes with a look at how we can tie the components together into one cohesive plan. It is with this in mind that we look at how to condition the team from the early phases in pre-season into the competition phases.

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Chapter 2

Rugby Match Fitness for the Individual

As conditioning professionals, finding a method of galvanizing and strengthening fitness levels of modern day rugby players is no easy task.

Think about the complexity of the task in hand.

This is a sport that requires you from the off-set to absorb the impact of sixteen stone players running at full speed, then you make the tackle, get up, propel yourself into the path of another runner who, at the last minute, has changed direction with remarkable agility and balance. You make the tackle by mirroring his/her movements. You get up and react to a spilt ball by diving on it, gather it up in your arms and make a swift pass before being tackled by the opposition. The whistle blows. You are then involved in the scrum – a strenuous examination of your isometric strength levels in your entire body. The ball is kicked out requiring you to vertically jump to win a line-out.

That is some sequence of play and the clock doesn't even read three minutes yet! Let us also not forget that the fifteen positions are each fulfilling distinct unit/individual responsibilities each requiring their own unique set of physical traits. What a melting pot!

Obviously just charging into your first match after a three month off-season would not be recommended. The risks of injury are huge. Even after a carefully periodised post and off season where muscle imbalances and injury prehabilitiation have been addressed, strength, power and speed are at their maximum and, most importantly, the athlete is back raring to go, the risk is

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still ever present. Indeed it is the contact element of the game that must be conditioned. The athlete's ability to give and take must be gradually phased in during the pre-season phase normally eight - ten weeks in length. It is this aspect of rugby football that can be deemed the most physically demanding and where soft tissue injuries are, in my experience, most prevalent.

Which System gives us the Energy to Play?

The contribution of energy systems during a game of rugby is mixed. Jumping in the line-out, repetitive bouts of tackling and other quick movements all require an immediate source of energy placing a demand for the ATP-CP system to kick in. Do we need an aerobic base for rugby considering the intermittent nature of the game? Well, I believe so considering how our ability to replenish ATP is limited by our aerobic capacity.

The most dominant energy system used is anaerobic with the aerobic system providing a strong foundation of energy to keep the athlete going for the eighty minutes[1].

Consider the positional requirements too. A 'forward' may have to get up run and provide a powerful drive into a ruck, get up, perform another, peel himself up off the floor only to have to make a tackle. A 'back' on the other hand may receive the ball travelling at 100% be tackled, rest for 10-15 seconds, jog back to position and wait in anticipation to receive another pass. The energy demands of the two sets are quite different.

The problems facing the conditioning professional are therefore:

- How do we meet all the demands catered for within the game of rugby union in our training environment?
- How do we cater for the physiological needs of the positions within the training environment?

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- How do we gradually increase the volume and intensity of training to meet the contact demands of rugby football i.e. the tackle, the ruck, the maul?

In Chapter 3 a 5 step programme is designed to address these concerns *within a club setting*.

Give your Match fitness a head start and be essentially ahead of the field in terms of your previous fitness levels for the game and for the up-and-coming rigors of preseason with your team - mates.

4 Weeks to Match Fitness – An Individual Approach

Getting fit or acquiring an ability to perform at a match performance level requires us to position our bodies in a state of stress. The level of stress has to be enough to elicit a positive response enabling us to 'supercompensate' for the stress of the previous training session and grow back stronger. After a progressive and gently modified period of training our resting heart rate may have decreased, our ability to tolerate lactic acid has improved, our number of repetitions have increased, the amount of weight we are lifting has increased, the number of sprints we can perform in 30 seconds has increased[2]. Too much stress and the body will enter a state of over-training leading to increased risk of musculo-skeletal injuries and other more health related concerns such as sleeplessness and poor appetite.

Rugby Football requires us to stress our bodies to the point whereby we can elicit this 'supercompensatory' response. It has to be stressed with care and diligence. **IT IS OFTEN FUTILE TO ASSUME THAT YOU CAN DIVE STRAIGHT INTO PRE-SEASON WITHOUT FIRST PREPARING THE BODY FOR RUGBY SPECIFIC FITNESS.** A short phase of training must be acquainted for to ensure that you do not slip into over-training and run the high risk of being injured during pre-season. Indeed it has been noted that there are a high number of injuries sustained during this period of necessary yet 'force-fed-fitness'.

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As modern day rugby players it is important that we meet and exceed the demands of the game during our training. Our response will effectively mean the ability to meet the rigors of 80 plus minutes of the game. This may mean training above the demands of the game itself.

Meeting these Demands

Addressing the demands of the game of rugby football is no easy feat. Replicating the demands of the game to meet and exceed its demands have its pitfalls when using the individual. There is no fitness like match fitness – the fitness you acquire after a handful of warm-up matches in your pre-season phase.

However, if one performs an analysis of the game of rugby football in terms of what sort of work is performed in any given period of time then we can get close to seeing what type of training is needed to be performed to stimulate this positive response.

Eaves and Hughes in their study of rugby after the onset of post-professionalism reveal that post-professionalism (post 1995) the ball averages in play 32.1 % of the game (about 27 minutes)[3]. MacClean presents similar findings[4]. However, the speed of the game has certainly picked up with more 'phases' and a 'faster ruck dominated game' since 1995. It is not uncommon for matches to consist of multiple sequences of plays lasting between 30 seconds and 3 minutes!

Try it with your team or with your own experience. Gather a videotape of the last game you played and watch your own game for 20 minutes. Record the amount of short sprints you made, the amount of tackles, the number of times you had to gather yourself up off the floor, perform in a scrum or the line-out.
Now multiply each statistic by 4 and you will have an approximate total number for the match. Of course this has its inaccuracies. It certainly doesn't

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take into account the last 20 minutes of a match where your energy levels are certainly at their lowest.

For example our DIY video analysis might look like this:

Prop 20 Minute Phase (Number in Brackets = total for Game)

No of 5 Metre Sprints	3(12)
No of Scrums	6(24)
No. Tackles Made	2(8)
No. of Tackles Missed	1(4)
No. of Runs over 20 metres	5(20)
No. of Carrys over 20 metres	1(4)
No of Line outs	5 (20)

I would argue that these total figures provide us with a good point in which to structure a match specific session for the individual modern day rugby player. Remember our aim is to sustain a level of work rate above what is needed throughout a game. So why not exaggerate, to a limited extent, these figures.

Steps to Match Fitness for Rugby

#1 Set Aside 4-6 Weeks for Maximum Benefit

We must allow ourselves time for this phase of preparation to take effect. I would argue that this has to fall 4 – 6 weeks (depending on level of fitness) prior to team pre-season. The best period of time would be to phase this in accordance with the cycles 3 and 4 of your strength training programme. Any earlier and we will be at the detriment of muscle hypertrophy training: a phase whereby growing muscle and high calorific intake is required to create an energy excess and (lean) weight gain. If we choose to perform any endurance work then we run the risk of creating an energy deficit and weight loss.

#2 Take a 2 Pronged Approach to Guarantee Maximum Carry-Over onto the Pitch

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We can improve our ability to tolerate the demands of the game by following a two pronged approach to match fitness.

1) On the Field with a series of Work: Rest Interval Training
2) In the Gym with Dumbbell / Barbell Conditioning

On the Field

We have already established that rugby is a dynamic, multi-activity sport requiring intense bouts of work lasting from 30 seconds to 3 minutes. What's more the ball is in play for approximately 30 minutes out of the 80-85 minutes. Our sessions must reflect and, to a limited extent, exceed these demands if we are to make improvement in the 4-6 weeks.

In the Gym

This series of work can be replicated with Dumbbell or Barbell work that focuses on movements encompassing a large number of working muscles or 'compound' movement e.g. squats, bench press, cable work. The workout must also involve working for periods of between 2-3 minutes in length whilst shortening the rest period to allow for some degree of recovery. Workouts should last approximately 30 minutes. It also important to appreciate that this workout must incorporate a degree of muti-plane movements to replicate the stresses of the movements (side-stepping, passing, jumping, driving, pulling) witnessed on the pitch. Lateral plane, rotational and the more traditional sagittal plane must all be incorporated.

 # 3 Get Out what You Put In

There is no doubting that this method of training requires a large degree of self-discipline and motivation. Realise that to reach a good level of fitness prior to the more structured team fitness, this phase of the programme has to be gradually increased over the duration of the 4 weeks to avoid over-training syndromes witnessed in a number of competitive athletes. Work hard throughout the sessions yet equally recover well with optimum nutritional intake and with suitable recovery strategies such as massage, stretching and hydrotherapy.

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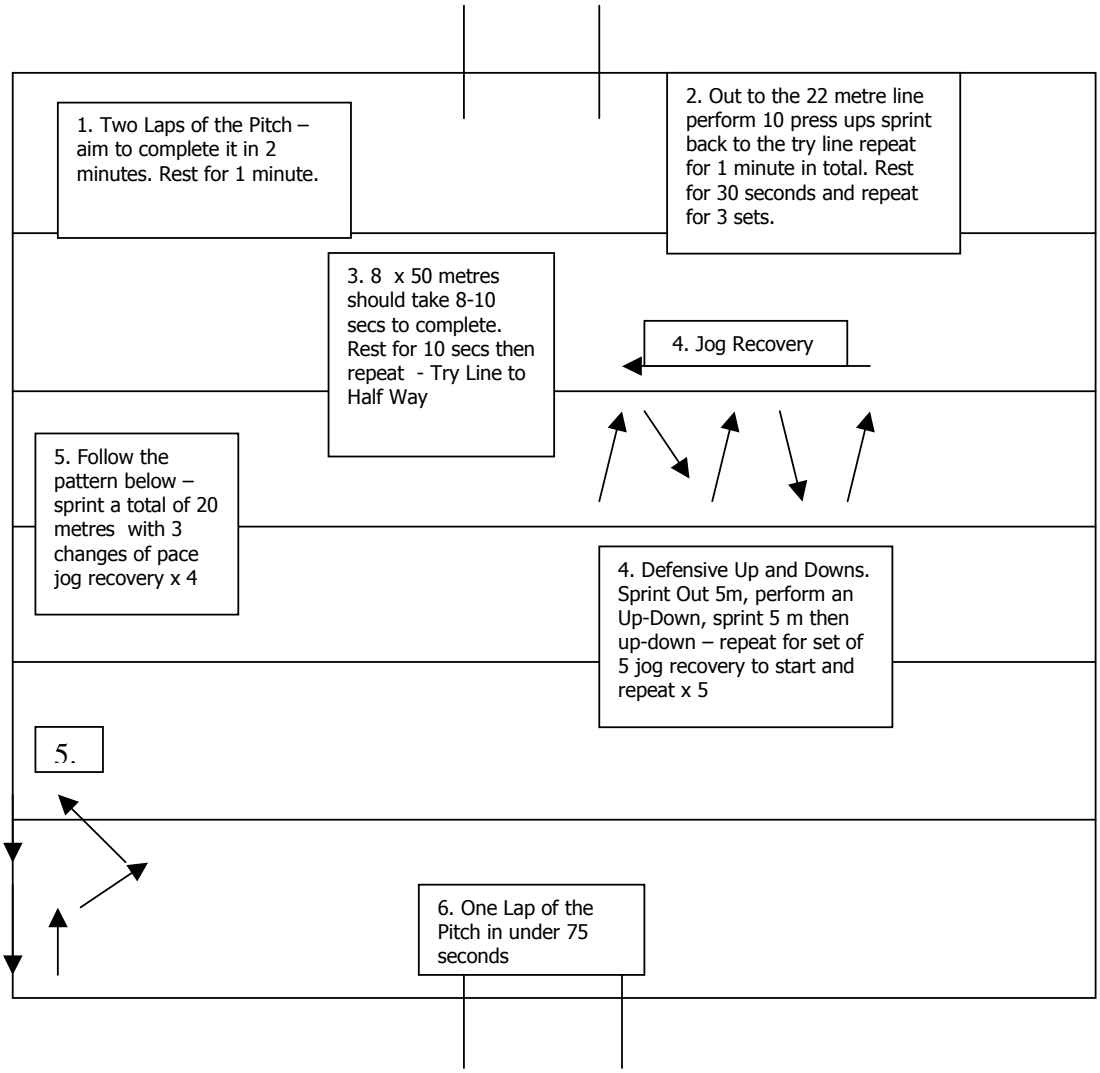
Match Intensity Drills

Duration – 4-6 Weeks to be completed 1-2 x per week preferably on a Tuesday or over the Weekend.

Session 1

Warm Up with 5-10 Minutes of jogging then a thorough stretch of Upper and Lower Body limbs

Then complete the following:



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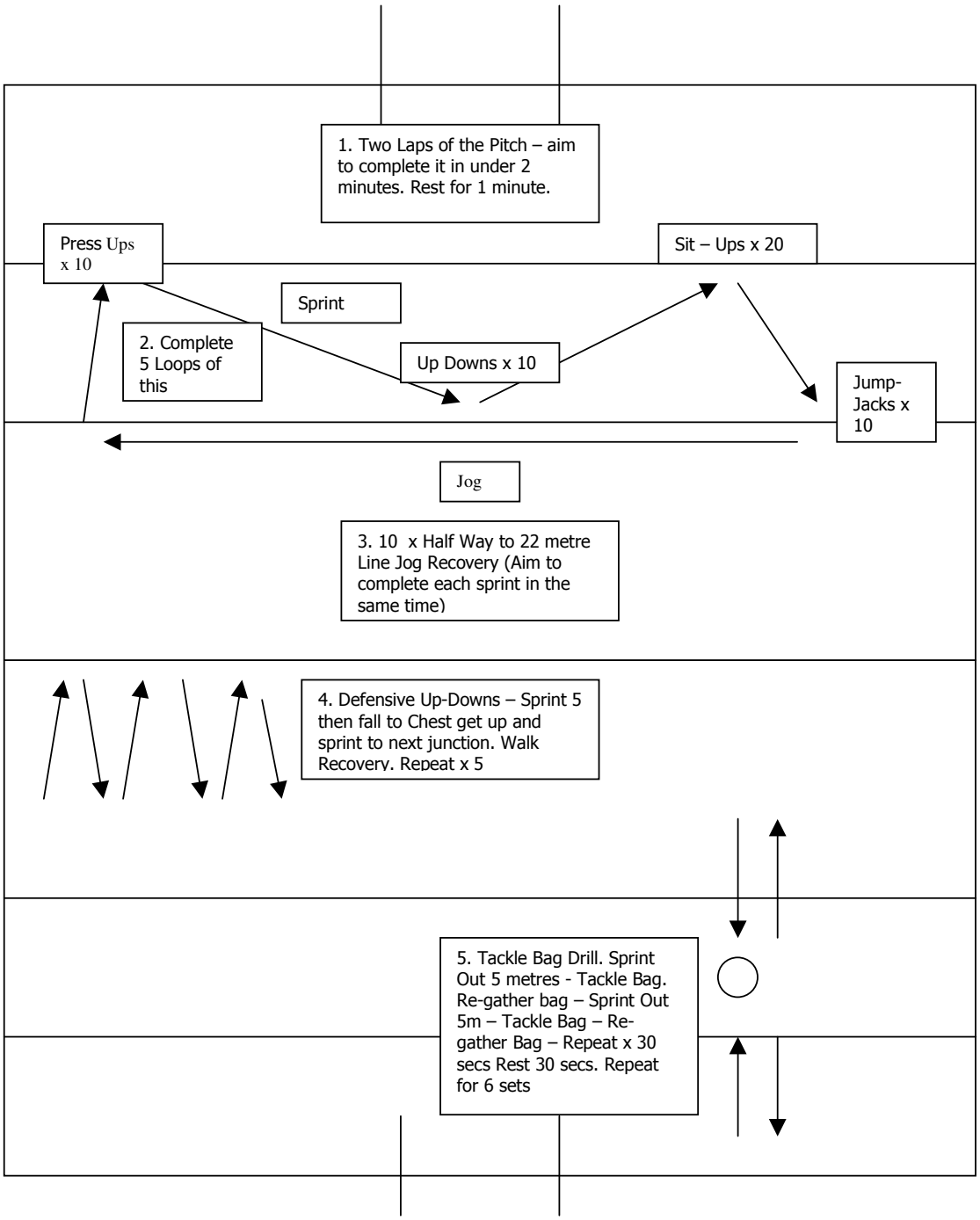
Session 2

Warm Up with 5-10 Minutes of Jogging then a through stretch of Upper and Lower Body

Then complete the following:



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In the Gym

This session also serves as a great top-me-up to match fitness during the cold-murky northern hemisphere winter nights! I have also used this to great effect as an alternative to pitch sessions. It just requires a set of dumbbells and plenty of hard graft!

Goal – To Build Rugby Specific Match Fitness

Duration – 4-6 Weeks 1 session per week

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Dumbbell Lunge and Shoulder Press	Use first set as a Warm-Up	4-5 x 12	2020	-	
Swiss Ball Jacknifes	Use first set as a Warm-Up	4-5 x 10 each side	20X0	-	
SB Bench Press	Use first set as a Warm-Up	4-5 x 12	4010	-	
Dumbbell Deadlifts	Use first set as a Warm-Up	4-5 x 12-15	3020	-	
Med Ball Woodchop	Use first set as a Warm-Up	4-5 x 12	2020	60 secs – 90 seconds	

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Chapter 3

5 Steps to Rugby Match Fitness – A Team Guide

The 5 Steps to Rugby Match Fitness

Small-sided games expose the athletes to the demands and rigors of the modern game. They allow the **ball to be used**, skills to be expressed, techniques to be put under rigorous pressure and most importantly a level of match fitness to be obtained before launching into the competitive arena.

This chapter proposes a **5 step** approach gradually phasing in the contact element thereby raising the intensity in an incremental approach over the **10 weeks**.

Each stage lasts two weeks culminating in full 15-a-side contact.

This approach will provide you with the ability to:

- ✓ Incorporate the ball in to the bulk of your training sessions providing an excellent form of stimulus to your athletes
- ✓ Allow match intensity conditions be replicated in the training environment providing an excellent transfer on to the playing field.
- ✓ Work above and beyond match intensity levels by manipulating work:rest ratios and length of repetitions
- ✓ Allow forwards to work in their positions whilst backs can work in theirs allowing positional demands to be met.
- ✓ Skill levels e.g. decision making, contact, passing can all be put under pressure in a match-based environment
- ✓ Avoid unnecessary injuries
- ✓ Provide the coach with the ability to communicate to players during rest periods allowing tactical development to occur.

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- ✓ Provide the players with an enjoyable training environment – one in which will stimulate full and enthusiastic participation. Ask any player what they love about rugby and it sure isn't repeated 400m sprints.

Precede such drills with a thorough warm-up including jogging and some proprioceptive exercises and stretching.

It is also a good idea to make sure any speed work is done prior to undertaking such fitness based work. Then, technical elements can be introduced including ball work, specific technique work etc whilst the players are still 'fresh'. The tackle and any other intense modes of contact including the ruck and maul should be phased in in conjunction with the *'5 Steps to Match Fitness'* Programme.

After completing this the athletes should be'ready' to perform the following.

STEP 1 – NON CONTACT TIP – WEEKS 1 and 2 (Mon and Thurs)

The first step allows the ball to be used in an informal setting whereby players can ease themselves into the new rugby season looking forward to what challenges lie ahead. Now is the time for the athletes to familiarise themselves back with the ball after the off season.

Aims – reintroduce the players to the rugby ball / reintroduce the athletes to the basic movement patterns e.g. turn, side-step, swerve, sprint, cruise etc involved in rugby

Played across the pitch, on half a pitch allowing a maximum of 7 a-side.

The Tackle

A tackle is performed when a defender is touched anywhere between the head and the ankles. Once tackled the attacker rolls the ball through his legs **from the place of tackle.** The tackler stays with the tackler whilst the defending team **retreat 7 metres**. The tackler is not allowed to follow the ball until the scrum-half has touched the ball. A maximum of three seconds is

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allowed after the ball has been rolled through the legs before the defending team have to play the ball. 5 tackles then a turnover of possession.

Volume	- 40 minutes
Intensity	- 60 %
Sets	- 3
Reps	- 10 minutes
Work: Rest	- 10:3, 3 Min Break

STEP 2 – 'TIP AND WORK' – WEEKS 3 and 4 (Mon and Thurs)

1-2 weeks have passed and now the players have become familiarised with the movement patterns involved and some basic speed and technical drills have become incorporated into the beginning of the session. Now is the time to raise the intensity with step 2. This involves mimicking the demands of the tackle with some non-contact lower/upper body anaerobic drills following the tackle made. Moreover, the work: rest intervals are such that match demands are also met.

Aims – to mimic the demands of the tackle in a match based environment / improve on the motion and endurance demands made in step 1.

Played on half a pitch allowing a maximum of 7-a-side

The Tackle

As above except the tackle is now made with a **two-handed touch** anywhere between the head and the ankles. Once tackled an exercise is performed.

If attacking – 1 x 'up down' (fall to the floor and spring back up without use of the arms) immediately after the tackle and the ball has been rolled.

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If defending – 5 x one of press-ups/ burpees/ squat-thrusts (the coach can make the call at points throughout the session)

5 Tackles then a turnover of possession.

Volume	- 36 minutes
Intensity	- 70 %
Sets	- 6
Reps	- 3 minutes
Work: Rest	- 1:1

STEP 3 – 'DRIFTING DEFENDERS!' – Weeks 5 and 6 (Mon and Thurs)

The athletes now begin exposure to body contact in a ruck and maul based environment. However, the tackle still remains at a low-level of intensity. Now a match based awareness can be developed with the inclusion of rucks and mauls.

Aims – to bring into the match based environment ruck and maul conditioning exposing players to a new stimulus.

Played on a full pitch with two teams 12 vs 12 – one team of defenders, one team of attackers.

Defenders organised into two groups – 5 holding 'hit shields', 5 wearing full body armour protection to minimise injuries.

Attackers organised into one team of ten with a degree of positional awareness i.e. backs and forwards

<u>The Tackle</u>

Two-handed touch is still used or once light contact has been made with either a suit or a bag. Tackled person falls to the ground and ensures

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technique in the fall (knees, hips, shoulders) whilst placing the ball at arms length to sustain the attack.

A mini-ruck is formed by committing **one defender** to the ruck allowing **one attacker** to drive over the defender off the ball. **This must be adhered to. If the attacking side fail to commit one person to the ruck then both the attacking and the defence are penalised with**

a) a physical task e.g. posts and back and resume play
b) Bodyweight circuit of press-ups and sit ups
c) Designate a zone on the field and insist all players must enter that zone before bringing the ball back into play.

After each repetition of 3 minutes a change over occurs with defenders becoming attackers and vice-versa. The emphasis is on **quality of play** and **continuous movement** for the 3 minutes.

There are no stoppages. If a knock-on occurs or a ball is spilt a new ball is thrown into the drill and play is resumed.

Volume	- 36 minutes
Intensity	- 80 %
Sets	- 6
Reps	- 3 minutes
Work: Rest	- 1:1

STEP 4 – 'HEALTHY GRAB' – Weeks 7 and 8 (Mon and Thurs)

Contact is taken up a further level from step 3 in weeks 7 and 8. This time the emphasis is on the tackle with a 'healthy grab' now substituting the two handed touch.

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Aim – to improve the athlete's to meet the demands of tackling and other elements of contact within the game.

Played on a full pitch with 12 vs 12 again without stoppages. If a ball is lost forward then a new ball is introduced into the drill.

One team attacks continuously whilst the other team defends wearing full body suit amour.

The Tackle

A 'healthy grab' now substitutes the two handed tip. By this I mean being in the position to make the tackle then allowing the attacker to fall to ground or stay on his feet on his/her terms. The impact of the tackle should be no more than 80%.

Once the tackle has been made two players from each team then have the opportunity to either ruck or maul the ball depending on the scrum-half's call. However, at least **3 players from each team** must commit to the breakdown. Again failure to adhere to this will mean a physical task (as outlined above) for the attacking team or the defending team is penalised by 10m.

After each repetition a change over occurs with defenders becoming attackers and vice-versa.

The rest periods are ideal for the coach to step in and advise on any technical issues that may be arising from the session.

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Volume	- 36 minutes
Intensity	- 80-90 %
Sets	- 6
Reps	- 3 minutes
Work: Rest	- 1:0.67 -2 mins Recovery

‘

STEP 5 – ‘FULL ON’ – Weeks 9 and 10 (Mon and Thurs)

Time to take a step closer to full-blown match intensity fitness. This time the emphasis shifts towards moving into a full tackle. It is strongly recommended that a thorough warm up is emphasised before participation in the drill is commenced.

Aims of this phase – To ready players for the rigors and demands of the full 15 a-side version of rugby football / improve decision making qualities under match situations / improve player skill level

Players – 15 a-side, played on a full pitch. Defenders wearing full body armour.

The Tackle

Full Tackle is involved. Once the tackle has been made a ruck is formed by committing any number of players to the ruck. Defenders are not allowed to touch the ball for the duration of the repetition. Complete 1 repetition, rest 2 minutes and swap.

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Volume	- 36 minutes
Intensity	- 100 %
Sets	- 6
Reps	- 3 minutes
Work: Rest	- 1:0.67 -2 mins Recovery

The *'5 Step Plan to Rugby Match Fitness'* will provide a working, challenging and rewarding environment to condition your athletes.

Ensure a dynamic warm-up is completed prior to completing the above programme.

The dynamic warm-up is also a great time to introduce some fun elements of dynamic and functional strength. You can incorporate the following ideas:

- ✓ Tyre Flipping –Tractor Tyres make excellent tools to develop strength in a multitude of areas
- ✓ Sandbags – fill a load of sandbags with 20-30 kg of sand and perform squats, deadlifts etc with them.
- ✓ Partner Resistance Training – use each other as resistance as you perform press-ups, sit-ups, sprints etc
- ✓ Use the Tackle Bags – develop explosive power taking it in turns to throw the bags as far as possible as the next player in the team runs, picks it up and repeats. Race over a specific distance e.g 50m
- ✓ Partner Tug-Of-War – grab lengths of rope and develop the isometric strength required for scrummaging
- ✓ Sumo-Wrestling!

Not only do these serve as great warm-ups to the body of the session they also put a few smiles on the face of your team!

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Chapter 3

Strength Conditioning for Rugby – Improving Performance, Minimising Injury

In this chapter we examine the reasons why strength conditioning for rugby is essential. We examine the need to move away from more traditional level of body-building training methods for rugby and take a step towards examining a more functional, integrated approach to conditioning the modern day rugby player. It is this approach that can make serious inroads into:

a) Preventing injury
b) Meeting and Exceeding the demands of the game

Our attention moves to finding an equally realistic approach to conditioning the modern rugby player. What our time demands could prove critical to the successful application of the programme? How much time do you have to train? Are you a full time professional? Or do you wish to get the most out of your game, improve performance and reduce the risk of injury, in turn, increasing the longevity of your playing years? The approach outlined here reflects that need. Programmes cater for the those short of time and those with an equally determined focus in the full-tine professional arena.

Planning the strength conditioning of the modern day rugby player is no easy task. The beauty of the game is that within the true premise of the game is a role for everyone. Your job may be to win a ball in the line-out. It may be to make 20 tackles, push for a sustained 20 second burst, carry a ball into a wall of players or finish off a move involving a 30 metre sprint. The complexity and varying degrees of demands are huge. An effective strength programme must meet these demands[5].

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To this end a 16 week Macrocycle, or time-frame, is outlined as the duration we are looking to build an unparalled level of strength for the game. This is then divided into 4 mini-cycles or microcycles. It is anticipated that this will provide the enthusiastic modern day rugby player with the tools to make every second of training in the off-season the most effective he/she has ever undertaken. An in-season strength training programme is also outlined.

How much time do you really have to train?

The demands for a level of maximum strength to play the game of rugby football are huge. The commitment to build and maintain this level is equally as huge.

The vast majority of modern day rugby players are amateurs. Some may have the psyche of a full-blown professional. Some may be semi-professional. Some may just enjoy the amateur status but realise that they can gain the added health benefits from putting the work into their conditioning. It is two birds with one stone: some use it to sustain the longevity of their playing careers, some to prevent injury, some to rehabilitate from injury.

Whatever your outlook on the game there are benefits for everyone from following a periodised strength and conditioning programme. But let's face it what are your time commitments towards this game?

During the off-season it becomes easier to sustain a 2-3 day a week strength programme. This allows for adequate musculo-skeletal, nervous and peripheral nervous system recovery ensuring quality at all times. Some of us do not have time to work on every facet of the 'conditioning puzzle'. Combine our need for speed and match fitness and the hours quickly add up.

I ask you to think about your time commitment. Can you commit to 1, 2 or 3 sessions a week? Will this fit alongside your speed and endurance development? Or will one be sacrificed. Remember balance is key. Do not

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bite off more than you can chew. There are programmes within this chapter designed for maximum impact in the shortest possible time.

Let's be Sensible with our Training

If someone said to you 'Would you like to get to A in the shortest and easiest time possible?' then I am sure most of you would jump at the opportunity. Reaching an excellent level of strength for rugby means training for rugby not training for what has commonly been cited as body-building methods.

Body Building vs Rugby Strength & Conditioning

I remember performing isolation movements such as Seated Bicep Curls and Machine Pushdowns for development of strength for rugby – 3 x 10 on all. Of course I went hell for leather trying to replicate such movements.

Bodybuilding methods have come to dominate the way we immediately think about conditioning the modern day rugby player. 3 sets of 10 have come to dominate the relationship between sets and repetitions. Where did that come from? Most of us would be up in arms if I told you it came from a SINGLE STUDY in the 1950s by sports scientist called De Lorme[6]. It has extraordinarily stuck since

Cosmetically you can see why bodybuilding methods would feature so strongly in the programmes of rugby players. The modern day rugby player is certainly larger than his amateur predecessor. We are now witnessing athletes knock each other into next week rather than the jug and pie athlete of the pre-professional era. That is not to discredit the fantastic athleticism of some of the amateur rugby players. Gareth Edwards, the Welsh scrum half of the 1970s, was a fantastic gymnast. Strength wise the likes of the great Pine Tree Colin Meads, the All Blacks legend, were hard to match who used to train for the game by carrying sheep underneath his arm and running up the side of hills! There is also the cosmetic reason that can not be ignored.

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Yet it is foolish to think like a bodybuilder when it comes to developing strength for rugby. How far are the two schools apart? A considerable distance, I would argue.

Firstly, let us make certain that every second spent in the gym has a direct carryover onto the field. If it doesn't then we are essentially wasting our time. Think about the demands of the game. How many times would the rugby player be seated or even lying? Answer – none. We are moving constantly, standing, crouching to make a tackle, leaping to take a ball. Now think of the ways in which bodybuilding type exercises have come to dominate our workouts. 3 x 10 Seated Bicep Curls followed by 3 x 10 Bench Press or Seated Row, Machine Push Down, Seated Hip Extension, Leg Curls, Leg Extensions[7].

Seondly, the exercises listed above are predominately isolationist movements targeting a single or at most a particular area of muscles. The Leg Extension, for example, effectively targets the quadriceps group of muscles. Yet rugby specific movements such as tackling and jumping in the lineout would rarely call upon this muscle group to work in isolation. Instead, it must be seen as working within the confines of our body's ***kinetic chain***. Put simply, to perform a front on tackle requires the complex interaction of hip and knee extension with the added stabilisation from the trunk area and the shoulder. This is not to say that such isolationist movements do not carry any merits. They are effective, to a degree, in prehabilitation and rehabilitation settings. Yet what we are in search of is the most effective exercises to directly enhance rugby performance. Remember A to B in the shortest time possible.

The sheer volume of a bodybuilding workout can also work against us in terms of looking for performance enhancing strength training for rugby. Successful conditioning for rugby requires us to address all the components of fitness including strength, speed, flexibility and match fitness. Too much volume and the player risks *overtraining*. Volume can be established in a whole manner of ways:

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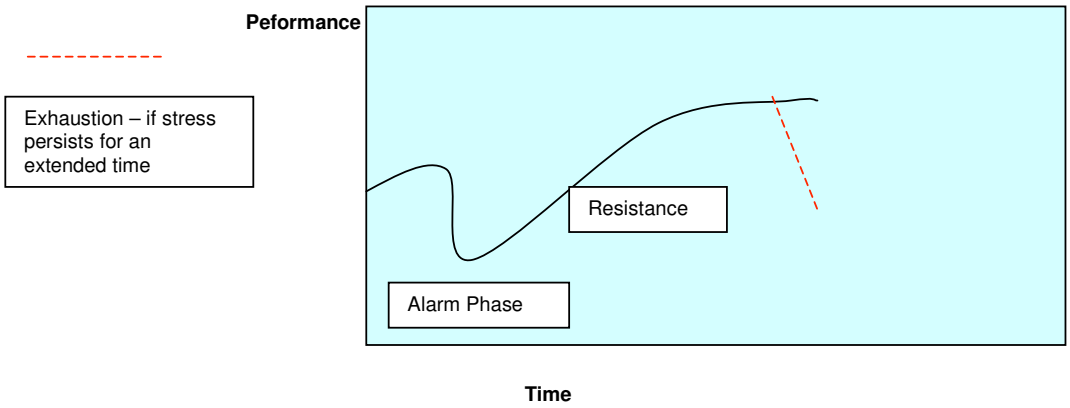
a) Number of Sets in the Workout
b) Number of Sets multiplied by the Number of Repetitions (3x8 = 24)
c) Number of Sets x Number of Repetitions x Load Lifted (kgs) (3x8x100 = 2400)

The last method would allow for a more accurate monitoring of volume, particularly if our modern day rugby player is gradually increasing his/her load in weekly increments. So the key is to tread this fine line between creating enough of an environment to generate a positive stimulus and over training. As Mike Adams CSCS once put to me "Do you want all your energy to lift weights or put a performance in on the pitch?"[8].

The Seyle model serves to illustrate the way the body responds in a positive and negative way to exercise stress. Firstly, when the body reacts to a new or more intense stress its first response is to be alarmed. This alarm phase may last days or weeks. Next the resistance phase involves the body adapts to the stimulus and returns to more normal functioning. It is here where the body makes positive changes by way of 'supercompensation'. This basically involves the body's nervous and musculoskeletal system growing back stronger as to sustain this new load of work[9].



The General Adaptation Syndrome (GAS)

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However there is a limit as to how much stress the body can take. If there is an extended period of time whereby the stress continues then exhaustion sets in. As a result the modern day rugby player slips into a lose-lose situation. He/she can no longer adapt to the situation despite trying to flog a dead horse in the gym.

I had one colleague of mine as devoted as anyone when it came to putting the graft in at the gym. However, it became evident that he was slipping into the exhaustion phase of the model. His performance on match days was slipping. He had no energy to train. He couldn't sleep. Initially he thought it was the inadequacy of his weight training. So he trained harder. How wrong could he be! The training had to be stopped. We sat down and planned a 8 week programme of consisting of two 4 week blocks. The initial volume of training was cut down by ¾ for three weeks allowing his body to recover from the endless cycles of over-training experienced before hand. This was followed by a week of transition training – 1 week of doing as little as 6 sets in a workout, twice a week! The next cycle began again, this time the volume was increased gently with the athlete acknowledging that he had the energy, zip and inner drive to go at it. Needless to say progress was made and within 12 weeks he was setting personal bests in all of the core lifts. So, drop the bodybuilding mass volume / over-training routine and focus on **QUALITY and continuous improvement.**

Planning Periodised Strength Training for Rugby – An Overview

"Fail to Prepare and Prepare to Fail"

Strength Training for Rugby must adhere to a periodised plan or, as Tudor Bompa, describes, "good athletic shape occurs when the degree of training is high and the psychological status enhances a high level of performance. To achieve such a performance, the coach must properly periodize and plan the entire program so that the development of skills, bio-motor abilities and psychological traits follow logically and sequentially"[10]

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Our programme looks at structuring a progressive strength training programme for the modern day rugby player over **16 weeks**. We will label this the '**macrocycle**'. This is then divided into **4** smaller phases of training called '**microcycles**' each with a specific goal and aim. This does fall short of providing an overall annual plan, as layout in Bompa's model below.

Annual Plan													
		May	June	July	August	Sept	October	Nov	Dec	Jan	Feb	March	April
Phases of Training		Preparatory					Competitive					Transition	
Sub Phases		General Preparation			Specific Preparation		Pre-Competitive			Competitive		Transition	
Macro-Cycle													
Microcycles													

Periodisation of a Rugby Team – Northern Hemisphere Season[11]

We are focusing on our attention on the out-of-season area, or the General Preparation (GP), Specific Preparation (SP) and the Pre-Competitive (PC) for the purpose of our strength requirements. It is this area where our most of our strength focus can be placed providing the greatest level of improvement. As we move into the Competitive sub-phase of training or 'in-season' the difficulty to make any significant improvements becomes harder. From my practical experience, skill training, recovery from matches and readiness for match-day take precedence.

Our 4 microcycles within the context of the larger Macrocycle takes a logical progression to ensure a "sequential" and "logical" approach to developing rugby strength. Each cycle has a specific aim and focus. Cycle 1 lasting 4 weeks presents the modern day rugby player with the opportunity to prehabilitate or rehabilitate any injuries that have provided troublesome over the past season. This must be prioritised. It is also the opportunity to develop neuromuscular isolationist movements. These movements, as Chek describes, are "essential to re-establishing good communication between the brain and key postural and stabiliser muscles"[12]. Why is this key to a rugby

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player? Strong communication between the two groups allows for avoidance of injuries to common sites such as the back, shoulders and knees.

Cycle 2 involves the lasts another 4 weeks. Its focus remains on developing our neuromuscular capabilities by taking a step up towards *neuromuscular integration*[13]. More complex movements allow us to develop our communication between our brain and the key joints involved in all rugby specific movements. In the same phase we can begin to develop muscular strength and hypertrophy – a period whereby we are looking to develop muscle mass.

Cycle 3 shifts our attention to whole body maximum strength. This is a period whereby we are looking to improve the modern day rugby player's maximum force output. This will have a direct knock-on to how hard, fast, explosive, controlled and co-ordinated the player can carry out rugby specific movements.

The final cycle looks at developing the players' strength and explosive power crucial to developing the explosive nature of rugby specific movements as tackling and jumping. It is this cycle that will see us into the season.

Table 2 outlines our periodised approach:

Phases of Training	**Preparatory**												**Competitive**			
Sub Phases	General Preparation 1				General Prep 2				Specific Preparation				Pre-Competitive			
Macro-cycle	Neuromuscular Isolation / Prehab / Rehab				Neuromuscular Integration / Strength Hypertrophy				Strength				Power / Strength			
Micro-cycles Week No./ % Intensity	1 80	2 85	3 90-100	4 110	5 80	6 85	7 90-100	8 110	9 80	10 85	11 90-100	12 110	13 80	14 85	15 90-100	16 110

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Dates	June	July	August	September

Why positional requirements must be taken into account

Rugby's contrasting positional requirements requires us to take this into account when designing a strength training programme for the sport. Let us take a closer look at the positional requirements of three groups of players: the front row, back 5 (locks and back row) and the half backs to illustrate this need.

Front Row

This position requires us to take into account their predominance of scrummaging to their role requiring strength in hip and knee extension/flexion, trunk stability and upper body mass and strength. This requires both bouts of static isometric muscle contractions and explosive bouts. Their role also requires to lift a considerable weight above their head to lift a jumper in the lineout. Couple this with their need to make tackles, ruck and maul, all examinations of explosive strength are tested whilst playing in this role.

Back 5

This position's primary focus is more upon a jumping role requiring explosive power from knee and hip flexion/extension to win a ball in the line-out or gather a re-start. They have a similar role to the front row in developing static strength for scrummaging.

Half-Back

Speed and accuracy of the pass requires control and stability of the trunk in rotation and strength in scapular protraction movements. They also require an emphasis on the ability to explode over a distance of 5-10 metres enabling them to make sniping breaks around the fringe of rucks or through opposition defences.

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This simple exercise has highlighted the need to distinguish between the three groups of players. There are a large degree of similarities however, that will be addressed in all programmes. These include:

a) **The need to work in all three planes of motion – these include the sagital, transverse and frontal plane**. Rugby is a dynamic sport played in all three planes. One minute we are rotating our trunks to give a pass, the next minute we are making a tackle head on or side-stepping across the opposition's defensive line.
b) **All positions have the basic need to be strong in the basic movements of rugby**. Ensuring that our programmes cover all three planes and in addition to a general emphasis of the positional requirements and the modern day rugby player should hit the ground stronger and far more explosive.
c) **Control, balance and dynamic stability are required by all positions**. All movements require us to incorporate a degree of these elements for success. It is like straightening the wheel without first fixing buckled spokes. Address the spokes first i.e. core stability and the wheel will remain strong and stable[14].

For the purpose of our comprehensive conditioning approach we will break the positions up into groups, each possessing similar roles and requirements:

1. Front Row
2. Back 5
3. Half Backs & Centres
4. Back 3

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The Programmes

Programme Notes

Exercise

In this column you will find the exercise to be performed. All exercises are to be performed in the order they are written[15].

Warm Up Sets

Where indicated the player will have to perform a warm-up or practice set of the exercise indicated. This is usually performed at 40-50% of 1 Repetition Max weight (1RM). If your 1 rep max is 100 kg for the squat you would probably be advised to warm up with 40-50 kg[16].The higher your training load the greater the number of warm-up sets needed. As Paul Chek outlines:

"A typical approach to training the squat with sets at 80 percent (an 8-rep set) or 100 Kg. would be to squat 10-12 reps with 50 Kg., followed by 5-8 reps with 70 Kg. and finally 4 reps with 90 Kg. This progression allows for a complete warm-up of the nervous system, muscles, joints and all related tissues in the exact pattern of movement to be trained. This form of warm-up also facilitates an optimal hormonal profile for the activity at hand, while cardiovascular warm-ups do not have the same beneficial effect"[17].

This is crucial in preparing our body's nervous system and musculoskletal system for the more demanding work sets. It also helps to open up the neural pathways associated with muscle contraction aiding the right sequence of muscles being switched on for the heavier sets. Warming up on the treadmill for a heavy leg session may not be the most ideal form of preparation!

Sets x Reps

Sets equate to the number of groups of repetitions allocated in the programme. This could look something like 3 sets of 15 or 3 x 15 for short. In

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this case it would mean performing 15 repetitions of a given exercise before resting and performing another set. Where you see 2-4 x 6-8 look at performing 2 sets in week 1 of the programme and building up to 4 sets by the end of week 4. Similarly with the number of repetitions (6-8) build up from 6 in week 1 to 8 in week 2.

Lifting Speed

This relates to the speed of the movement being executed. Where you see 3010 the first number ('3') relates to the lowering phase of the lift. In a bench press this would mean lowering the bar to your chest for a count of 3 seconds. The second number ('0') equals a pause at the bottom of the lowering phase. The third number ('1') equates to the lifting phase. In our bench press example this equates to moving the bar off your chest. The fourth number ('0') signifies the time taken in the rest period of the lift.

Where 10:5 is indicated the first number indicates the duration that the movement is held in. For our Prone Cobra exercise in cycle 1, we have to hold the movement for 30 seconds whilst resting for 15. This is written as 30:15.

Rest Interval

Rest Intervals are the time taken to rest in between sets. This is usually given in seconds. After your rest repeat the set.

Load

Recording our performances after achieving certain lists enhances player motivation and also serves as a useful way of ensuring sequential progression and improvement in the weight room. So record everything you do. This may be the single most important thing you do! Remember no steps back!

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Cycle 1 – Neuromuscular Isolation and Injury Prehab/ Rehabilitation Strategies

The goal of this phase is to:

a) Address and resolve any problematic areas to our modern day rugby player with a 4 week rehabilitation / prehabilitation programme
b) Improve the communication between the brain and the key postural and stabilising muscle groups.
c) To offer a gradual transition into the higher work demands of cycles 2, 3 and 4.

Problem areas and programmes

This section will outline a specific rehabilitation and or prehabilitation programme for areas of concern. **THIS WILL BE THE MOST IMPORTANT PART OF THE 16 WEEK PROGRAMME**. Choose an area that may be of concern to you. Perhaps you have suffered from recurring ankle ligament problems or shoulder strains. Maybe you have had time off during the season due to knee complaints. Now is the time to strengthen and condition these problem areas. It is always better to approach these areas from a preventative rather than a reactive point of view.

Simply choose an area that you feel you could benefit from. Perform the programme at the start of your workout for the first cycle. If you have a problem with more than one joint area then perform one area with Workout A and the other on Workout B.

The Power of Perfect Form

Remember all exercises must be completed with perfect form. Stop the exercise if you find your form is dramatically deteriorating. If you persist this will only be at the detriment of the programme. Your brain and nervous

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system will remember the faulty movement pattern increasing your risk of injury[18]. Exactly the opposite of what you are after! If you find that you are falling short of your prescribed number of repetitions then drop the load by 5-10 lbs upper body and more if your focus is on lower body movements.

Problems with your Knees?

Cycle 1 – Knee Rehab Programme

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted	
Warm up with 5-10 minutes of stationary bike Stetches – Quad/Hip Flexor/ ITB Stretch Hold for at least 30-60 seconds on each side. Repeat 3 x						
Peterson Step Up	1 x 5 el	2 x 12-15 each leg	3010	60 seconds		
Box Step Up	1 x 5 el	2 x 12-15 each leg	3010	60 seconds		
Ski Squat	-	1 x 5	3 stops on down / 2 stops on way up	Hold for 10-30 seconds at each stop		
Leg Lifts	-	1 x 10 el	10:10	60 seconds		

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Peterson Step Up

1. Begin by placing one leg on a step approx 6-12 inches off the floor
2. Position foot on bench in line with belly of the calf muscle (muscle of the lower leg) that is slightly flexed and resting on the floor

Peterson Step Up

3. Without any effort from the leg positioned on the floor, push up through the balls of the feet until the leg is raised off the floor and the heel of the step leg is resting on the step.
4. Avoid any help from the resting leg
5. Lower under control and repeat

Box Step Up

1. Remove shoes and stand facing a step approx 12 inches off the ground
2. With minimal effort from the trailing leg step up on to the box. Ensure your knee is kept in line with your second toe.

Box Step Up

3. Fully extend the working leg
4. Lower under control and repeat
5. Ensure good tracking of the knee over the second toe
6. If this becomes too easy and you find you are performing the prescribed number of reps repeatedly then raise the level of the box

Leg Lifts

1. Lay on the floor, with legs fully extended out in front of you
2. Turn the foot so that the toes face outward
3. Keeping the leg as straight as possible, lift the leg off the floor
4. Keep the torso as erect as possible
5. Lower and repeat

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Ski Squat

1. Stand against a wall, feet shoulder width apart with toes angled approximately 20 degrees facing out.
2. Flex the Hips and Knees and Lower and slide down the wall to a position that you can hold

Ski Squat

3. Hold this position for the allocated time
4. Extend up through the Hips and Knees to complete.

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Problems with your Shoulders?

Cycle 1 – Shoulder Rehab/Prehab Programme

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted	
Warm up with 5-10 minutes of Rowing Stretches – Arm circles / Medial Shoulder Rotators / Shoulder Girdle Stretch Hold for at least 30-60 seconds on each side. Repeat 1-2 x each side						
Med Ball Wall Dribble	-	2 x 20-30 secs each arm	Move Ball over wall	Full Recovery	2 lb ball	
Prone Abduction	1 x 5	1 x 4	6:6	60 seconds	5-10lb plate	
Swiss Ball Push Up	1x 5	1 x 6-8	4010	60 – 90 seconds		
External Rotations	-	1 x 12-15	3110	60 seconds		
Internal Rotation	-	1 x 12-15	3110	60 seconds		

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Med Ball Wall Dribbles

1. Find a 2-5kg Medicine Ball
2. Facing a wall, position your arm parallel with your shoulder and hand resting on the ball.
3. For the allocated time make circles with the ball, maintaining even pressure all the time. For added difficulty close your eyes.

Prone Abduction

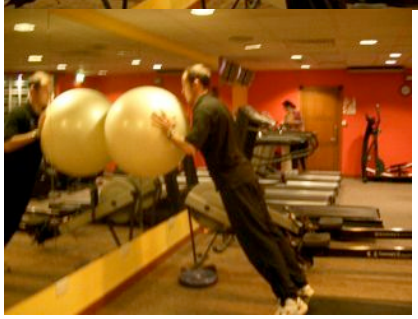
1. Close your eyes laying face down on a bench holding a pair of 1-5kg dumbbells.
2. Palms should be facing each other
3. Maintain good postural alignment

Prone Abduction

4. Keeping the arm as straight as possible, raise the dumbbells up to your side
5. Exhale as you lift the dumbbells up
6. Try and squeeze the shoulder blades together
7. Lower under control and repeat

Med Ball Push Up

1. Position yourself facing a swiss ball
2. Hands should be positioned below the chest
3. Brace the tummy as you lower yourself towards the ball



Med Ball Push Up

4. Maintain good postural alignment
5. Keep the head as still as possible
6. Lower yourself to the ball by raising yourself up onto the balls of your feet and putting your weight onto your hands
7. Press up focusing on your shoulder blades as power zones, exhaling as you push.

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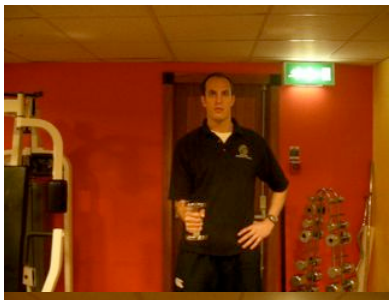
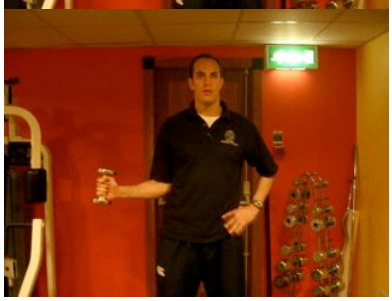
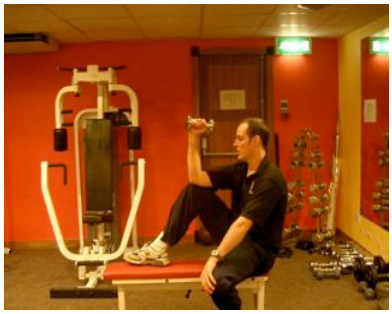


Internal Rotations

1. Stand Dumbbell grasped in one hand other hand stabilising the opposite hip.
2. Keep working arm elbow pinned into the side of the body



3. Take Arm out to the side
4. Only go as far as the shoulder will allow preventing any movement of the elbow away from the upper body
5. Slowly bring the dumbbell back to the start position and repeat.



External Rotations

1. Assume the position in the photograph opposite.
2. Grasp a light dumbbell in one hand and allow the working elbow to rest gently against the inner part of the knee joint

3. Lower the weight slowly to the floor ensuring that minimal pressure is applied against the knee and that the elbow does not come away from the knee.
4. Raise the Elbow back to the start and repeat

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Problems with your Ankles?

Cycle 1 – Ankle Rehab / Prehab Programme

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted	
Warm up with 5-10 minutes of Rowing Stetches – Gastroc & Soleus Stretches Hold for at least 30-60 seconds on each side. Repeat 1-2 x each side						
Stand on One Leg	-	1 x 30-60 secs each leg	Hold	Full Recovery		
Ankle Bounces	-	1 x 50-100	Fast	60-90 seconds		
Unilateral Calf Raises Standing	1 x 5	1 x 12-15 each leg	3110	60 seconds		
Unilateral Calf Raises Seated	1 x 5	1 x 12-15 each leg	3110	60 seconds		
Dorsi Flex Plate Lifts	1 x 5	1 x 12-15 each leg	3110	60 seconds		

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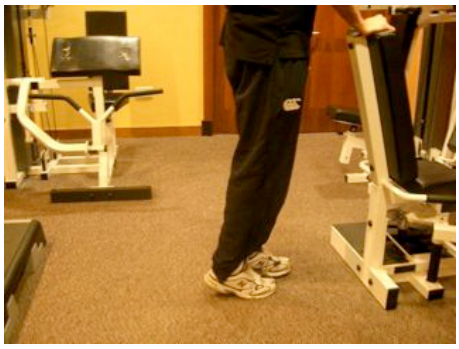

Ankle Bounces

1. Assume the position opposite holding on to a stationary object
2. With one leg raise yourself rhythmically up and down on your toes NOT allowing your heel to touch the floor in each occasion.
3. This should be performed at quite a fast tempo

Toe Lifts

1. Place a weight plate on the front part of your foot
2. Keep the rest of the leg relaxed

3. Lift your toe off the floor

4. Lower the plate back to the floor without the front of the foot touching the floor – repeat

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Front Row

Cycle 1 – Neuromuscular Isolation and Rehabilitation/ Prehabilitation

Duration – 4 weeks 2 x per week Monday and Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Specific Rehab Strategy (See Programme)					
Horse Stance V	-	2-4 x 5-10	10:0 Swap sides	60-90 secs	
Prone Cobra	-	2 – 4 x 6-8	30:15	60-90 secs	

Programme Notes

The key to these exercises is to maintain perfect form and to stop if the performance decreases dramatically from set to set. Make sure you record all repetitions and sets. Notice the rest period – on the horse stance exercise swap from one side to the next, holding each position for 10 seconds. In the prone cobra hold the position for 30 seconds and rest for 15 seconds. Over the course of the 4 weeks build up from 6 repetitions to 8 by week 4 – more if you want!

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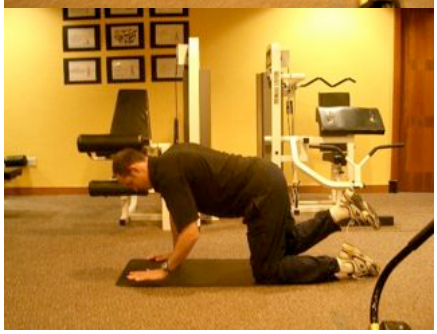
Horse Stance

Start position for all Horse Stance Exercises

1. Begin with the Hands directly underneath the shoulders and the knees beneath the hips.
2. At all times it is essential that a degree of brace is kept in the tummy by pulling in the belly button towards the back . This only has to be a gentle contraction.



Horse Stance A

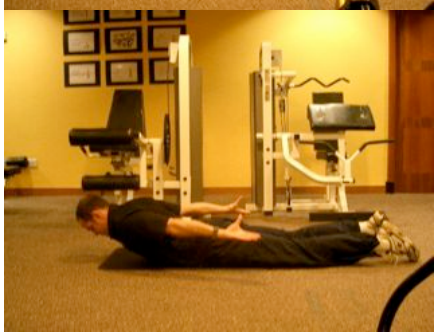
1. Assume start position
2. Lift One hand off the floor allowing approximately 1-2" of space between the hand and the floor.
3. With the opposite leg, lift the knee off the floor again with only a small space between your knee and the floor.
4. Hold this position and repeat with the alternate hand and leg

Horse Stance B

1. Assume start position
2. Extend leg out straight behind you keeping the toe pointing down
3. Lift the opposite arm up at 45 degrees to your head with the thumb raised
4. Try and visualise your shoulder blade sliding down over over your ribs away from your head
5. Hold and repeat with the other side

Prone Cobra

1. Lie Prone on the Floor with arms by your side



Prone Cobra

1. To initiate movement:
2. Inhale and lift your shoulders off the floor
3. As you do this simultaneously pull your shoulder blades together and rotate the arms so that the palms are facing outwards
4. Keep the chin tucked in
5. Hold this position before relaxing into the position and repeating
6. If you have an excessive curve in your lower back squeeze your butt muscles to stabilise the lumbar spine

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Back 5

Cycle 1 – Neuromuscular Isolation and Rehabilitation/ Prehabilitation

Duration – 4 weeks 2 x per week Monday and Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted	
Specific Rehab Strategy (See Above)						
Horse Stance V	-	2-4 x 5-10	10:0 Swap sides	60-90 secs		
Prone Cobra	-	2 – 4 x 6-8	30:15	60-90 secs		

Programme Notes

The key to these exercises is to maintain perfect form and to stop if the performance decreases dramatically from set to set. Make sure you record all repetitions and sets. Notice the rest period – on the horse stance exercise swap from one side to the next, holding each position for 10 seconds. In the prone cobra hold the position for 30 seconds and rest for 15 seconds. Over the course of the 4 weeks build up from 6 repetitions to 8 by week 4 – more if you want!

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Half Backs & Centres

Cycle 1 – Neuromuscular Isolation and Re-habilitation/ Pre-habilitation

Duration – 4 weeks 2 x per week Monday and Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted	
Specific Rehab Strategy (See Above)						
Horse Stance V	-	2-4 x 5-10	10:0 Swap sides	60-90 secs		
Prone Cobra	-	2 – 4 x 6-8	30:15	60-90 secs		

Programme Notes

The key to these exercises is to maintain perfect form and to stop if the performance decreases dramatically from set to set. Make sure you record all repetitions and sets. Notice the rest period – on the horse stance exercise swap from one side to the next, holding each position for 10 seconds. In the prone cobra hold the position for 30 seconds and rest for 15 seconds. Over the course of the 4 weeks build up from 6 repetitions to 8 by week 4 – more if you want!

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Back 3

Cycle 1 – Neuromuscular Isolation and Rehabilitation/ Prehabilitation

Duration – 4 weeks 2 x per week Monday and Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Specific Rehab Strategy					
Horse Stance V	-	2-4 x 5-10	10:0 Swap sides	60-90 secs	
Prone Cobra	-	2 – 4 x 6-8	30:15	60-90 secs	

Programme Notes

The key to these exercises is to maintain perfect form and to stop if the performance decreases dramatically from set to set. Make sure you record all repetitions and sets. Notice the rest period – on the horse stance exercise swap from one side to the next, holding each position for 10 seconds. In the prone cobra hold the position for 30 seconds and rest for 15 seconds. Over the course of the 4 weeks build up from 6 repetitions to 8 by week 4 – more if you want!

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Cycle 2 – Neuromuscular Integration / Muscle Strength and Hypertrophy

The goal of this 4 week phase of training is to

a) Improve on the goals and targets established in cycle 1
b) Building on the neuromuscular patterns established in cycle 1 and integrating these into more rugby-specific complex movements
c) Improve balance, control dynamic strength
d) Increase muscle mass
e) Improve joint stability and strength

For this phase of training look to follow a 4 week phased intensity plan:

Week 1 – Workout at 80 % of your Maximum – get used to the workout!

Week 2 – Complete all sets and repetitions as prescribed with a weight you can handle

Week 3 – Look at Improving on week 2 by upping the intensity to 90-100 % of your intensity

Week 4 – Go Nuts and smash any records you may have in the lifts!

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Cycle 2 – Neuromuscular Integration / Muscle Strength and Hypertrophy

Front Row

Duration – 4 weeks complete 2 x per week

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 seconds	
SB Supine Hip Raises	1 x 5	2 x 12	3020	60 Seconds	
Prone Unilateral Reverse Hyperextensions	-	1 x 12-15 each leg	2120	60 Seconds	
Deadlifts	1 x 5	2 x 6	6040	60 Seconds	
King Deadlift	-	2 x amrap	2010	60 Seconds	
Swiss Ball Dumbbell Bench Press	1 x 5	2 x 10	3030	60 Seconds	
Dumbbell Shoulder Press	1 x 5	2 x 12	3020	60 Seconds	
Dips	-	1 x amrap	3020	60 Seconds	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 seconds	
SB Squat	1 x 5	2 x 12	3020	60 seconds	
Prone Hyperextensions	-	1 x 12-15 each leg	2120	60 Seconds	
Front Squat	1 x 5	2 x 6	6040	60 Seconds	
Single Leg Squat off Block	-	2 x amrap	2010	60 seconds	
Single Arm Swiss Ball Row	1 x 5	2 x 10	3030	60 Seconds	
Pull Ups	1 x 5	2 x 12	3020	60 seconds	
Dumbbell Bent Over Row	1 x 5	1 x 12	3020	60 Seconds	

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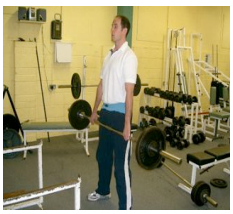
Swiss Ball Supine Hip Raises

1. Lie flat on the floor with feet on swiss ball
2. Draw your belly button in gently
3. Exhale and push through the soles of your feet raising your hips off the floor
4. Lower yourself to the floor without your backside touching the floor and repeat

Prone Unilateral Reverse Hyperextensions

1. Lie face down over the Swiss ball using your hands as support and with your toes just off the floor
2. Contract your glutes and lift your leg off the floor maintaining a straight leg
3. Keep with the same leg and lower your leg to a point whereby your toe is just off the floor



Deadlift

1. Assume the start position opposite with both hands over the bar and the feet shoulder width apart. The arms should be outside the legs
2. Before beginning lift draw the belly button in and pull the shoulder blades together. Ensure your eye level is horizontal
3. Begin the exercise by extending the hips and knees at the same rate. The elbows should be fully extended.
4. The Back should remain flat or slightly arched with the head in line with the spine
5. In the downward movement keep the bar close to the legs whilst maintaining a flat back allowing the hip and knee to flex

King Deadlift

1. Being exercise by flexing the non-working leg to 90 degrees with the shin parallel to the floor
2. Keeping a flat back or slightly arched lower yourself to the floor keeping the working knee in line with the big toe
3. Aim to get the shin as close to the floor as possible
4. In the upward phase extend up through the hip and knee and repeat

Swiss Ball Dumbbell Bench Press

1. Begin seated on a Swiss Ball grasping two dumbbells with a closed grip
2. With the two dumbbells move your feet out and away from the ball whilst simultaneously falling back onto the ball
3. Press the dumbbells over head
4. Begin the movement by lowering the dumbbells to the prescribed tempo keeping the wrists rigid and the hands in line with the forearms
5. Guide the dumbbells down to a point just off the chest
6. Exhale and lift the dumbbells off your chest

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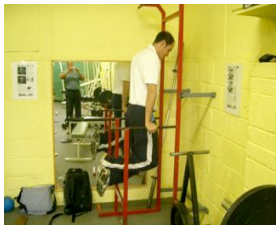
Dumbbell Shoulder Press

1. Standing feet shoulder width apart grasping two dumbbells
2. Move dumbbells into start position by quickly flexing the hips one at a time to move the dumbbells above your shoulder
3. Prior to the movement gently squeeze and pull your belly button in.
4. Begin the movement by pressing the dumbbells overhead allowing full elbow extension
5. Lower the weight under control to a point just off the top of the shoulders.



Dips

1. Begin exercise by supporting yourself from two parallel bars with your torso hanging down from the bar
2. Inhale and bend your elbows to allow your body to sink as far down as possible
3. Exhale pushing up thereby reversing the movement

Prone Hyperextensions

1. Lie face down over a swiss ball with the ball placed at the upper third of the thigh
2. Place your arms by your side
3. Drop down over the ball
4. Lift yourself up keeping your head in line with the shoulder, torso and hip

Front Squat

1. With the bar in the squat rack, place the hands evenly on the bar rotating the arms around the bar to place it on the front of your shouders
2. Raise your elbows to lift the upper arms parallel to the floor. Allow the wrists to be hyperextended.
3. At all times keep the elbows lifted up and forward
4. Lift the bar off the rack by extending the knees and hips
5. Place the feet shoulder width apart and gently pull the belly button in prior to descent
6. Stand with an erect torso keeping the chest high and the head tilted slightly up
7. Move down by flexing the hips and knees keeping the eyes focused ahead.
8. Move down to a point whereby the trunk begins to round or the thighs are parallel to the floor
9. Lift the bar forcefully but under control extending the hips and knees and exhaling.

Single Leg Squat off Block

1. Place one leg on a block 6-12" off the floor
2. Allow the other leg to be left off the block
3. With the working leg flex the hips and knees lowering yourself to a squat position
4. Your knee of the supporting leg should remain in line with your toe
5. Lift yourself back to the start position by extending the hips and knees.

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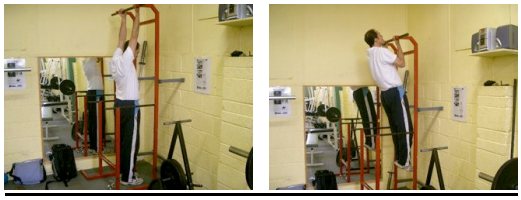

Pull Ups

1. Hang from a wide arm position with an overhand grip
2. Keep the arms long and pull yourself up until your eyes are above the level of the bar
3. Lower yourself under control and repeat

Dumbbell Bent Over Row

1. Keeping your knees straight gently flex forward from the hips allowing your back to remain flat. You will feel a slight stretch on your hamstrings at the top of the back of your thighs
2. When you find this point soften your knees
3. Hold the dumbbells out in front of you and draw the weights up to your side
4. Avoid shrugging the shoulders
5. Lower and repeat

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Cycle 2 – Neuromuscular Integration / Muscle Strength and Hypertrophy
Back 5

Duration – 4 weeks complete 2 x per week

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 seconds	
Prone Swiss Ball Reverse Hyperextension	1 x 5	1 x 12 each side	3020	60 Seconds	
Prone Swiss Ball Hyperextensions	1 x 5	1 x 12	3110	60 Seconds	
Deadlifts	1 x 5	2 x 6	6040	60 Seconds	
King Deadlifts	-	1-2 x amrap	2110	60 Seconds	
Dumbbell Bench Press	1 x 5	2 x 10	3030	60 Seconds	
Dumb-bell Bent Over Row	1 x 5	2 x 10	3120	60 Seconds	
Pull Ups	1 x 5	2 x amrap	3110	60 seconds	
Dumb-bell Shoulder Press	1 x 5	2 x 10	3030	60 Seconds	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 seconds	
Russian Twist	-	1 x 10	3030	60 seconds	
Front Squats	1 x 5	2 x 6	6040	60 secs	
Single Leg Squat off Block	-	1-2 x amrap	2110	60 secs	
Dips	1 x 5	2 x 10	3030	60 secs	
Chin Ups	1 x 5	2 x 10	3020	60 secs	
Weighted Push Ups	1 x 5	1 x 12	3020	60 secs	
Swiss Ball Weighted Tummy Crunches	1 x 5	1 x 15-20	2010	60 secs	

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Prone Unilateral Reverse Hyperextensions

4. Lie face down over the Swiss ball using your hands as support and with your toes just off the floor
5. Contract your glutes and lift your leg off the floor maintaining a straight leg
6. Keep with the same leg and lower your leg to a point whereby your toe is just off the floor

Dumbbell Bench Press

1. Grasping two dumbbells with a closed grip
2. With the two dumbbells move your feet out and away from the ball whilst simultaneously falling back onto the ball
3. Press the dumbbells over head
4. Begin the movement by lowering the dumbbells to the prescribed tempo keeping the wrists rigid and the hands in line with the forearms
5. Guide the dumbbells down to a point just off the chest
6. Exhale and lift the dumbbells off your chest

Weighted Push Up

1. Assume the push up position face down with hands flat on the floor and your hands shoulder width apart
2. Allow a partner to place a weight plate across the shoulder blade area
3. Inhale and draw your belly button in
4. Bend your elbows allowing your torso to drop near the floor avoiding the hips dropping
5. Push yourself back up extending the elbows and exhaling

Swiss Ball Weighted Tummy Crunches

1. Lie face up on a Swiss Ball grasping a weight plate across your chest
2. Keep the chin tucked in and the nelly button drawn in prior to flexing forward
3. Lift the trunk off the ball exhaling on flexion
4. Lower yourself under control

Russian Twists

1. Start position for this exercise requires you to place your tummy under contraction by sitting up fully extending your legs out in front of you and balancing on your heels
2. Lower the back to the floor by 6-12”
3. With your hands grasped rotate side to side allowing your head to follow the path of your hands

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Cycle 2 – Neuromuscular Integration / Muscle Strength and Hypertrophy
Half Backs & Centres

Duration – 4 Weeks

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 secs	
Russian Twists	1 x 5	1 x 10	3030	60 secs	
Deadlift	1 x 5	2 x 6	6040	60 secs	
King Deadlift	-	1 x amrap	3010	60 secs	
Close Grip Dumbell Bench Press on Swiss Ball	1 x 5	2 x 10	3030	60 secs	
Single Arm Standing Lateral Cable Pulls	1 x 5	2 x 12	3020	60 secs	
Prone Abduction	1 x 5	2 x 12	3020	60 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 seconds	
Lateral Prone Rolls on Swiss Ball	1 x 5	1 x 10 each side	3020	60 secs	
Front Squat	1 x 5	2 x 6	6040	60 secs	
Single Leg Squat off Block	1 x 5	1 x amrap	3010	60 secs	
Dumbell Bent Over Row	1 x 5	2 x 10	3030	60 secs	
Dip	1 x 5	2 x 12	3020	60 secs	
Chin Ups	1 x 5	2 x 12	3020	60 secs	

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Close Grip Dumbbell Bench Press on Swiss Ball

1. Begin seated on a Swiss Ball grasping two dumbbells with a closed grip
2. With the two dumbbells move your feet out and away from the ball whilst simultaneously falling back onto the ball
3. Press the dumbbells over head
4. Begin the movement by lowering the dumbbells to the prescribed tempo keeping the wrists rigid and the hands in line with the forearms
5. Guide the dumbbells down to a point just off the chest
6. Exhale and lift the dumbbells off your chest

Single Arm Standing Cable Pulls

1. Adjust cable machine to that pully is parallel with shoulder
2. Stand with opposite leg in front of the other shoulder width apart
3. Prior to lift draw in your belly button and pull the arm towards you maintaining an upright trunk
4. Lower under control and repeat

Prone Abduction

1. Close your eyes laying face down on a bench holding a pair of 1-5kg dumbbells.
2. Palms should be facing each other
3. Maintain good postural alignment.
4. Keeping the arm as straight as possible, raise the dumbbells up to your side
5. Exhale as you lift the dumbbells up
6. Try and squeeze the shoulder blades together
7. Lower under control and repeat

Lateral Prone Rolls on Swiss Ball

1. Begin the exercise by sitting on the ball. Roll down the ball so that the head, shoulder blades an upper back are supported on the ball.
2. Raise your hips up so that they are level
3. Begin the exercise by shuffling your feet as they slowly roll to the side to the point whereby you feel as if you are going to fall off. Hold the position here
4. Keep your feet in alignment and shuffle back the other side

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Cycle 2 – Neuromuscular Integration / Muscle Strength and Hypertrophy

Back 3

Duration- 4 weeks

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 seconds	
Lateral Prone Rolls on Swiss Ball	1 x 5	1 x 10 each side	3020	60 secs	
Deadlift	1 x 5	2 x 6	6040	60 secs	
King Deadlift	1 x 5	1 x amrap	3010	60 secs	
Dumbbell Bent Over Row	1 x 5	2 x 10	3030	60 secs	
Dip	1 x 5	2 x 12	3020	60 secs	
Chin Ups	1 x 5	2 x 12	3020	60 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance H	1 x 5	1 x 5-10 each side	10:0	60 seconds	
Swiss Ball Jacknife	1 x 5	1 x 12	3020	60 secs	
Front Squat	1 x 5	2 x 6	6040	60 secs	
Single Leg Squat off Block	1 x 5	1 x amrap	3010	60 secs	
Swiss Ball Dumb-bell Bench Press	1 x 5	2 x 10	3030	60 secs	
Dumb-bell Shoulder Press	1 x 5	2 x 12	3020	60 secs	
Prone Unilateral Reverse Hyperextensions	-	1 x 12-15 each leg	2120	60 Seconds	

Swiss Ball Jacknife

1. Begin the exercise with your fee on the swiss ball and your hands on the floor
2. Draw your belly button in
3. Draw your knees into your chest keeping your backside as low as possible but in line with your spine
4. Begin with most of your leg on the ball and move the ball further away with improvement

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Cycle 3 – Max Strength

The goal of this phase is to:

a) Improve on the gains made in cycles 1 and 2
b) Improve maximum strength specific to rugby by
   - ✓ Improving neural recruitment (it is, after-all, our nervous system that drives our muscles)
   - ✓ Gaining muscle mass

c) Reduce our risk of injury by strengthening musculo-skeletal system.

For this phase of training look to follow a 4-week phased intensity plan:

Week 1 – Workout at 80 % of your Maximum – get used to the workout!
Week 2 – Complete all sets and repetitions as prescribed with a weight you can handle
Week 3 – Look at Improving on week 2 by upping the intensity to 90-100 % of your intensity
Week 4 – Go Nuts and smash any records you may have in the lifts!

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Cycle 3 – Max Strength

Front Row

Duration – 4 Weeks

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance Dynamic	1 x 5	1 x 10 each side	3120	60 seconds	
Front Squat	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120 secs	
Single Leg Squat	1 x 5	1 x amrap	2010	90 secs	
Close Grip Bench Press	1 x 5 1 x 5	4 x 5	4010	120 secs	
Dips	1 x 5	1 x amrap	3010	120 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Medicine Ball Overhead crunches on Swiss Ball	1 x 5	1 x 10-12	3120	60 seconds	
Deadlift	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120 secs	
King Deadlift	1 x 5	1 x amrap	2010	90 secs	
Bent Over Row	1 x 5 1 x 5	4 x 5	3110	120-180 secs	
Shoulder Press	1 x 5	2 x 6-8	4010	120-180 secs	

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Horse Stance Dynamic

1. Begin this movement an all fours with your hands beneath your shoulders and your knees beneath your hips
2. Inhale and lift your right arm up and out at 45 degrees to your upper body whilst simultaneously lifting your left leg out behind you
3. Exhale and bring your elbow in to touch your knee and repeat with the same side for the prescribed amount of repetitions.

Close Grip Bench Press

1. Lie face up on a bench and grip the bar allowing the hands to be 12" apart
2. Exhale and lift the weight off the supporting pins
3. Inhale and lower the weight under control keeping the elbows tucked in at the side
4. Exhale and lift the weight back to the start position

Medicine Ball Over-Head Crunches

1. Lie face up on a Swiss Ball grasping a Medicine Ball over your head
2. Keep the chin tucked in and the Belly button drawn in prior to flexing forward
3. Lift the trunk off the ball exhaling on flexion Lower yourself under control

Bent Over Row

1. Keeping your knees straight gently flex forward from the hips allowing your back to remain flat. You will feel a slight stretch on your hamstrings at the top of the back of your thighs
2. When you find this point soften your knees
3. Hold the Barbell out in front of you and draw the weight up to your side keeping your elbows in
4. Avoid shrugging the shoulders
5. Lower and repeat

Shoulder Press

1. Standing feet shoulder width apart grasping the Barbell
2. Move barbell into start position by quickly flexing the hips to move the barbell above your shoulder
3. Prior to the movement gently squeeze and pull your belly button in.
4. Begin the movement by pressing the barbell
5. overhead allowing full elbow extension
6. Lower the weight under control to a point just off the top of the shoulders.

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Cycle 3 – Max Strength

Back 5

Duration – 4 Weeks

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance Dynamic	1 x 5	1 x 10 each side	3120	60 seconds	
Front Squat	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120-180 secs	
Single Leg Squats	1 x 5	1 x amrap	3010	60 secs	
**Close Grip Bench Press	1 x 5 1 x 5	4 x 5	4010	-	
**Bent Over Row Superset	1 x 5	3 x 6-8	3010	180-240 secs	
Standing Cable Push Single Arm	1 x 5	1 x 8	3030	120 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance Dynamic	1 x 5	1 x 10 each side	3120	60 seconds	
Deadlift	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120-180 secs	
King Deadlifts	1 x 5	1 x amrap	3010	120 secs	
Shoulder Press	1 x 5	3 x 6-8	4010	120 - 180 secs secs	
Pull Ups	-	1 x 6-8	3010	120 secs	
Standing Cable Pull in Crouch Position	1 x 5	1 x 8	3030	120 secs	

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Single Leg Squat off Block

1. Place one leg on a block 6-12" off the floor
2. Allow the other leg to be left off the block
3. With the working leg flex the hips and knees lowering yourself to a squat position
4. Your knee of the supporting leg should remain in line with your toe
5. Lift yourself back to the start position by extending the hips and knees.

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Cycle 3 – Max Strength

Half Backs and Centres

Duration – 4 Weeks

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance Dynamic	1 x 5	1 x 10 each side	3120	60 seconds	
Front Squat	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120-180 secs	
Single Leg Squats	1 x 5	1 x amrap	3010	60 secs	
**Close Grip Bench Press	1 x 5 1 x 5	4 x 5	4010	-	
**Bent Over Row Superset	1 x 5	3 x 6-8	3010	180-240 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance Dynamic	1 x 5	1 x 10 each side	3120	60 seconds	
Deadlift	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120-180 secs	
King Deadlifts	1 x 5	1 x amrap	3010	120 secs	
**Crouched Cable Pull Single Arm with trunk rotation	1 x 5	2 x 6-8	3110	-	
**Standing Single Arm Push	1 x 5	2 x 6-8	3110	120 secs	

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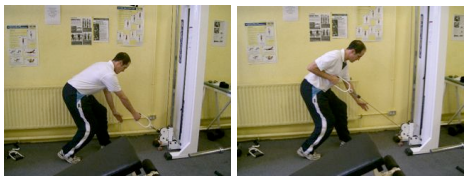

Crouched Cable Pull with Trunk Rotation

1. Stand opposite cable pulley machine with pully set at the lowest height
2. Place hand on pulley and maintain a firm base with opposite leg forward
3. Exhale and pull cable into side maintaining a flat back
4. As you pull allow your elbow to rotate and let your head follow your arm
5. Reverse and repeat

Standing Single Arm Push

1. Stand with pulley machine behind you with cable set at shoulder height
2. Maintain a strong and stable stance throughout by placing the opposite leg forward
3. Exhale and push cable forward
4. Inhale and lower the weight under control until the hand reaches a point just off the chest

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Cycle 3 – Max Strength

Back 3

Duration – 4 Weeks

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance Dynamic	1 x 5	1 x 10 each side	3120	60 seconds	
Triple Jumper Step Up	1 x 5	1 x 6-8 (find height) each leg	3010	120 secs	
Front Squat	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120-180 secs	
Single Leg Squats	1 x 5	1 x amrap	3010	60 secs	
Standing Woodchops	1 x 5	1 x 12 each side	2020	120 secs	
Close Grip Bench Press	1 x 5 1 x 5	2 x 6-8	4010	-	
Bent Over Row	1 x 5 1 x 5	2 x 6-8	3110	120-180 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Horse Stance Dynamic	1 x 5	1 x 10 each side	3120	60 seconds	
Deadlift	1 x 10 1 x 8 1 x 6	1 x 6 1 x 1 1 x 6 1 x 1	4010	120-180 secs	
King Deadlifts	1 x 5	1 x amrap	3010	120 secs	
Weighted Tummy Cruches	1 x 5	1 x 12-15	2010	60-90 secs	
**Pull – Ups	1 x 5	2 x 6-8	3110	-	
**Shoulder Press	1 x 5	2 x 6-8	3110	120 –180 secs	

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Woodchops

1. Stand feet shoulder width apart holding a medicine ball over your shoulder
2. Exhale and lower the ball across your body to the opposite knee whilst simultaneously flexing your knees and hips
3. Ensure your knees stay in line over your toe.
4. Inhale as you lift the weight back to the start position.

Triple Jumper Step Up

1. Stand opposite a bench
2. Place one leg on the bench and leave the other on the floor with heel rasied 2 " off the floor
3. Without pushing from the floor lift, step up placing your force through the foot on the bench.
4. Lower yourself under control
5. If you find this tough to begin with lower the weight and use a graded step and gradually increase the height.

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Cycle 4 – Max Strength and Power for Rugby

The goal of this phase of training is to:

a) Build on the gains made in cycles 1,2 and 3 by phasing in a period of explosive power work.
b) Preparing the modern day rugby player with a view of developing explosive power for bursting through tackles, sprints, carrying ball over short distances, jumping for the ball and other rugby specific movements

Having developed a strong base through sticking to cycles 1, 2 and 3 we can safely move into the explosive demands of cycle 4. Be warned, however, that jumping straight to this cycle could prove dangerous. Power training requires a basic level of strength and gross dynamic stability before jumping in at the deep-end.

For this phase of training look to follow a 4 week phased intensity plan:

Week 1 – Workout at 80 % of your Maximum – get used to the workout!
Week 2 – Complete all sets and repetitions as prescribed with a weight you can handle
Week 3 – Look at Improving on week 2 by upping the intensity to 90-100 % of your intensity
Week 4 – Go Nuts and smash any records you may have in the lifts!

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Cycle 4 – Max Strength and Power for Rugby

Front Row

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Hang Clean	1 x 5	1-2 x 6	20*	240 secs	
Power Snatch	1 x 5	1 x 6	20*	240 secs	
Explosive Squat to Toes	1 x 5	1-2 x 4-6	20*	240 secs	
Overhead Squat	1 x 5	1 x 6	2010	240 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Close Grip Bench Press	1 x 5 1 x 5	1-2 x 6	20*	240 secs	
Explosive Cable Pull (single arm)	1 x 5	1 x 6 each arm	30*	240 secs	
Medicine Ball Throws against wall	-	1 x 8-10	Explosive	240 secs	
Sit up with overhead throw	1 x 5	1 x 8-10	20*	240 secs	

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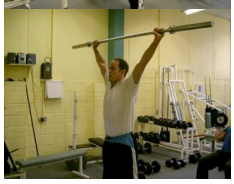
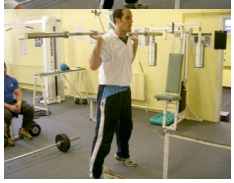
Hang Clean

1. Grasp a barbell with an overhand grip
2. Lean forward allowing the bar to rest just above the knees. The back should remain flat with the head slightly hyper extended and eyes looking ahead
3. Begin the movement by forcefully extending the hips and knees
4. At the same time shrug the shoulders and forcefully flex the elbows allowing the body to come under the bar
5. Catch the bar by rotating the arms and hands around under the bar and re-bend the hips to ¼ squat depth
6. After gaining balance and control stand into a fully erect position
7. Lower the weight under control and repeat



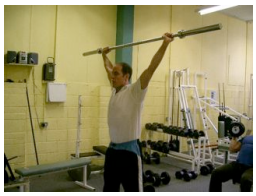
Power Snatch

1. Assume the start position witnessed in a Deadlift
2. Widen your grip except perform this simple exercise to find the optimal grip – measure the distance from a closed fist outstretched arm to the edge of the opposite shoulder blade
3. Begin the movement by scooping your hips and thighs under the bar and keeping the elbows fully extended
4. As the bar crosses the thighs rapidly shrug the shoulders upward flex the elbows and allow the body to travel under the bar. Pull the arms as high as long as possible.
5. As the lower body is fully extended the body is pulled under the bar by rotating the arms and hands around under the bar
6. Catch the bar by rotating the arms and hands around under the bar and re-bend the hips to ¼ squat depth
7. After gaining balance and control stand into a fully erect position



Explosive Squat to Toes

1. Position the bar behind the head, with it resting across the upper part of your back
2. Lift the bar from the rack
3. Exhale and lower the weight under control by flexing the hips and knees. Keep the eye level horizontal and the back in a flat position
4. Lower the weight until the thighs are parallel to the floor or until the hips begin to fall forward
5. At the bottom point, explosively extend your hips and knees forcing yourself back to the start position – allow yourself to go up onto your toes
6. Rebalance and repeat.



Over Head Squat

1. Grip the bar with the same width as demonstrated in a power snatch
2. Hold the bar at thigh level and forcefully extend the hips allowing your elbows, body and hands to roll under the bar.
3. Keep the bar held overhead throughout the exercise with arms straight
4. Lower yourself to thighs parallel with arms extended overhead throughout or lower yourself to a comfortable depth without allowing the shoulders or torso to fall forward
5. Keeping the bar held overhead extend the hips and knees to the start position

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Cycle 4 – Max Strength and Power for Rugby

Back 5

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Power Snatch	1 x 5 1 x 5	1-2 x 6	20*	240 secs	
Power Clean	1 x 5	1 x 6	20*	240 secs	
Explosive Squat to toes	1 x 5	1 x 4-6	20*	240 secs	
Intermittent Limited Range Jump Squat	1 x 5	1 x 6-8	20*	240 secs	
Depth Jumps	-	1 x 10	*	240 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Walking Lunge with Twist	1 x 5	1 –2 x 8-10	2110	240 secs	
Close grip Bench Press	1 x 5 1 x 5	1 x 6	20*0	240 secs	
Crouched Cable Pull	1 x 5	1 x 6 each arm	2110	240 secs	
Single Arm Crouched Medicine Ball Throw	-	1 x 6 each arm	20*0	240 secs	
Medicine Ball Woodchops	1 x 5	1 x 8-10 each side	2010	120 secs	

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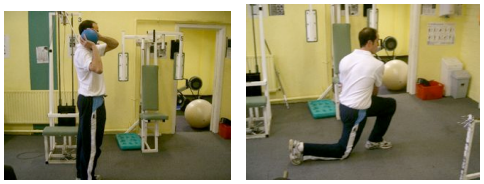
Power Clean

1. This exercise is similar to the 'Hang Clean' except the bar is starting from the floor and therefore requires more of an initial extension of the hips to lift the bar off the floor.
2. Begin the movement by forcefully extending the hips and knees
3. At the same time shrug the shoulders and forcefully flex the elbows allowing the body to come under the bar
4. Catch the bar by rotating the arms and hands around under the bar and re-bend the hips to ¼ squat depth
5. After gaining balance and control stand into a fully erect position
6. Lower the weight under control and repeat

Intermittent Limited Range Jump Squats

1. Rest the bar on the upper part of your back
2. Lift the bar from the support pins / or rack
3. Begin the exercise by slightly sinking into a ¼ squat. As soon as you have begun the squat descent jump with the bar allowing your feet to leave the floor
4. Upon landing allow your knees to flex slightly
5. Balance yourself before commencing the next repetition
6. The intent to perform the exercise is just as important as the form at which it is performed at. There has to be a quick transition from down to up.



Walking Lunge with a Twist

1. Stand feet together holding a medicine ball at chest level
2. Take an exaggerated step forward and allow your rear leg to drop to the floor approximately 2 " off the floor
3. Rotate your trunk with the medicine ball or a dumbbell with the ball finishing at knee height
4. Balance yourself before returning to the start position

Depth Jumps

1. Position 2 boxes 2 ft apart
2. One box should be of 6" in height the second box should be ?? in height
3. Begin the exercise by jumping from the shorter box keeping your feet together
4. Immediately propel yourself onto the higher box – imagine hot coals under your feet!
5. Reset and recommence the exercise from the shorter box

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Cycle 4 – Max Strength and Power for Rugby

Half Backs and Centres

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Power Snatch	1 x 5 1 x 5	1 –2 x 6-8	20*0	240 secs	
Hang Clean	1 x 5	1 x 6	2010	240 secs	
Explosive Squat to Toes	1 x 5	1 x 6-8	20*0	240 secs	
Walking Lunge with Twist	1 x 5	1 x 8-10	2010	180 secs	
Depth Jumps	-	1 x 10	0*0*	240 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Explosive Medicine Ball Passes	1 x 5 1 x 5	1-2 x 8-10 each side	20*0	240 secs	
Crouching Medicine Ball Single Arm Throws against wall	1 x 5	1 x 8-10 each arm	20*0	240 secs	
Explosive Close Grip Bench Press	1 x 5	1 x 6	20*0	240 secs	
Cross Grip Chin Ups	-	1 x 6 each grip	20*0	240 secs	

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Cross Grip Chin Up

1. Grip a bar with one hand with a pronated grip (knuckles up) and the other with a supinated grip (knuckles down)
2. Inhale and pull yourself up
3. Exhale and lower yourself under control

Explosive Medicine Ball Passes

1. Partner up or use a suitable wall!
2. Stand in a passing receiver position with a small medicine ball at chest height
3. Perform at rugby pass as explosively as possible to your partner or against the wall
4. Repeat

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Cycle 4 – Max Strength and Power for Rugby

Back 3

Monday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Power Snatch	1 x 5 1 x 5	1 –2 x 6-8	20*0	240 secs	
Hang Clean	1 x 5	1 x 6	2010	240 secs	
Explosive Squat to Toes	1 x 5	1 x 6-8	20*0	240 secs	
Walking Lunge with Twist	1 x 5	1 x 8-10	2010	180 secs	
Depth Jumps	-	1 x 10	0*0*	240 secs	

Thursday

Exercise	Warm Up Set	Sets x Reps	Lifting Speed	Rest Interval	Load Lifted
Power Clean	1 x 5 1 x 5	1-2 x 6-8	20*0	240 secs	
Dumbell Snatch	1 x 5	1 x 6	20*0	240 secs	
Close Grip Bench Press	1 x 5	1 x 6	20*0	240 secs	
Medicine Ball Wood Chops	1 x 5	1 x 8-10 each side	20*0	180 secs	
Medicine Ball Chest Throws	1 x 5	1 x 8-10	20*0	180 secs	

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Dumbbell Snatch

1. This exercise is similar to the power snatch except that dumbbells now replace the bar.
2. Begin the movement by scooping your hips and thighs under the dumbbells and keeping the elbows fully extended
3. As the bar crosses the thighs rapidly shrug the shoulders upward flex the elbows and allow the body to travel under the dumbbells. Pull the arms as high as long as possible.
4. As the lower body is fully extended the body is pulled under the dumbbells by rotating the arms and hands around under the dumbbells
5. Catch the dumbbells by rotating the arms and hands around under the dumbbells and re-bend the hips to ¼ squat depth
6. After gaining balance and control stand into a fully erect position

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What Now – An Effective In-season Strategy?

The priority will shift during the in-season. Skills sessions and effective recovery from games have to take precedence.

Equally to just maintain strength would be to sell yourself short in the weights room.

Focus on the quality of strength sessions and look for any carry-over onto the training field or onto your game.

It will be important to follow a periodised approach, however, just like the one presented above.

Monitoring volume will be key. Follow the programme outlined above for your position. However, cut the volume down to no more than **6 sets per workout**. Focus on quality rather than quantity of the session. This may mean performing only 1 set for every exercise.

After every 3 weeks take 1 week whereby 1 session is performed preferably on the Monday allowing the body to fully recover from the demands of playing and training.

The best course of action would be to use a training consultant who can meet you at the start of every 4 week cycle and provide you with an individualised programme. This will effectively address any training concerns you may have and write you an individualised programme to get what is best for you!

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Chapter 4

Blazing Speed for Rugby!

Rugby revolves around speed. It is the player who can accelerate onto a pass at pace that is more than likely going to make the more serious impact than the one pace plodder heading around the pitch at a steady rate of knots.

Speed, reaction, agility, and out and out pace is everywhere on the pitch. Take the prop who is forced into accelerating from a standing start to take a pass from his team-mate. Or what about the back-row forward who receives the ball at a standstill only to evade a tackle with a side-step and a shimmy of the hips. The flying winger requires flat speed to put the finishing touches to his team's move. The centre requires the ability to change his angle of running requiring sound movement mechanics and agility. Speed is everywhere on the field. It needs conditioning.

In this chapter we will be looking at how the needs of the rugby player must be exceeded by the manner in which he/she trains. In essence we must train for speed at an intensity higher than what is experienced in a game. Remember our speed, reactions and agility are all hindered by fatigue. Let us get the body used to functioning at top speed. This brings us onto the need to develop speed *before* endurance. The logic must be called into question about the need to perform a base level of aerobic training in the off-season. The way in which this is traditionally executed can actually hinder the progress made in speed work. Get quick must be the 1st priority, being able to repeat this level of speed (speed-endurance) next. We then examine the individual needs of the players involved and propose a model training structured geared towards developing blazing speed for our rugby player!

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I feel the Need for Speed!

Train slow – be slow! Train fast – be fast! There certainly is a lot of mileage in these comments. Preparing the body for bouts of explosive work, rapid changes in direction, super-fast reaction times and lightening quick sprints mean exposing our bodies to such stimulus. Long drawn out road work, pounding the pavements night after night, even laps of the field serve no purpose for the modern day rugby player. With the exception of movement mechanics the majority of our speed work has to be performed at a level greater than experienced in competition yet lower in volume. This can be referred to as 'supramaximal training'[19]. It allows us to meet and exceed the demands of the game. In the early stages of developing speed sprints have to be performed at 110 %, agility drills at the same level of intensity, even reaction drills at the same manner of focus and determination. Movement mechanic drills involving a subtle breakdown of how we move require concentration in abundance.

The recovery for speed is substantial (up to 5 minutes between sets) ensuring the extreme demands made on the neuromuscular system are allowed *to fully recover between bouts.* Fatigue will interfere with the muscle's ability to shorten quickly which means as our rugby player gets more tired the more he/she will slow down teaching them to run at sub-maximal speed[20]. Remember, we want to encourage our rugby player to run at top-speed.

How to Develop Blazing Speed for Rugby

Speed development requires us to look at:

1) Technique of Movement
2) Speed Methods using methods such as Flat Sprints, Resisted Sprinting, Assisted Sprinting, Speed Ladders, Reaction Drills

It is these two methods that will unlock the key to our speed.

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Individual Speed Requirements – From 1-15

Understandably each position on a rugby team requires us to look at what type of speed is most important for that position.

Our training for speed will focus around:

1. Efficient Movement Mechanics
2. Acceleration over 5-10m
3. Flat Speed over 20-30m
4. Agility or the ability to change direction at pace

The following table outlines priorities for each position. This is based on the common movements employed by each position with regards to maximum efforts of speed:

	Efficient Movement Mechanics	**Acceleration over 5-10m**	**Flat Speed over 20-30m**	**Agility**
Forwards	**	***	*	**
Half Backs	**	***	**	**
Centres	**	**	**	**
Back 3	**	*	***	**

Table 1. Positional Analysis for Speed

Key

*** - High Priority

** - Medium Priority

* - Low Priority

This approach does have its inherent weaknesses. It does not take into account the tactical approach a team might take in a game. A kicking team will predominately focus on the line-out as a way of competing with the opposition limiting the input from the centres and back 3. Truly replicating the metabolic demands of the sport in each position, however is an impossible

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task[21]. To this end, the approach established in table 1 outlines a way of developing speed for each position that will go a long way to meeting the majority of these demands.

What to Do to Develop Blazing Speed for Rugby

Develop Your Movement Mechanics First

The aim of this area of training is to ensure execution of sound technique. You can only run as fast as your technique will allow[22]. What does this involve for our rugby player? Well the best way to develop this is to have someone video you run. Alternatively have a conditioning professional watch you. Lastly, consciously make a note of the following technical details:

A) Arms travel from hip to height of shoulder, driving back forcefully, avoiding rotation across the mid-line of the body (Seated Arm Swings, Standing Arm Swings[23].
B) Quick ground contact time with the emphasis on rapid stride rate (Ladder Drills
C) Foot planted directly beneath the centre of gravity – Claws, straight leg toe ups, quick steps

Drills to Develop Movement Mechanics for Rugby

I suppose the sight of an army of rugby players performing slow arm drives would be enough to make anyone take a second look! These are however, the foundation for our blazing speed programme. Poor movement mechanics means poor speed. It is analogous to the racing car with the chassis off alignment. Sure – the car will move, but not very fast.

The speed in which these movement mechanic drills should be executed are slow. Walking pace is ideal. Please take into account that nothing substitutes pure sprinting. Indeed these drills would be best served as a warm-up before launching into more speed specific work.

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Top 5 Drills to Develop Movement Mechanics for Blazing Speed

Seated Arm Swings (A)

Standing Arm Swing (A)

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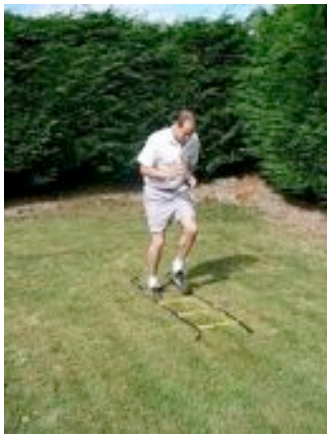
Ladder Drills (B)



Ankling with straight leg drive(C

Foot Placement drills (walking high knees) (c)

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Acceleration – Let's Start Bursting through Tackles!

Accelerating into space, into a tackle, through a gap in the opposition's defence are crucial components to a modern day rugby player's arsenal. But how can we condition our bodies to respond at that crucial point in a match? How can we turn our cart-horse prop into a power-house ball carrying machine?

The overriding difference between the average Joe Bloggs and Carl Lewis lies in their ability to extend the acceleration phase of the sprint over a far greater distance than the man on the street. For example, the Olympic sprinter will reach top speed after 45-55m, whilst on the other hand the average Joe Bloggs finds top speed after 20-30m[24]. Our aim if we are developing blazing speed is to extend the acceleration phase of our sprint for as long as possible

Remember, the key to developing speed is to ensure optimum recovery between sets. You may think this is unnecessary – a time waste! Far from it! We are optimising our potential for speed by giving our bodies the chance to work at 110 per cent. For this to happen our nervous system must be fully recovered in time (sometimes as long as 5 minutes between sets). You may feel your muscles have recovered fully. Yet rest assured sprint training is demanding on your nervous system too. Think about what drives these muscles – our nerves! Follow the correct rest periods at all times.

What are we looking for in optimal acceleration?

Lead arm and opposite leg driven up in the beginning
45 degree body angle to the ground
The foot touches down in front of the line of the centre of gravity
Focus ahead
Drive the elbows back and down
Hands loose
Elbows at 90 degrees

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Drive the foot into the ground
Look to come up into the more up-right sprinting stance naturally[25]

In essence we want our rugby player to take those first couple of steps explosively with minimal ground contact time and sound upper body technique.

Top 5 Acceleration Drills for Rugby Players

1) 2 sets of 4 x 20m Sprint @ 100 % effort from Lying Start with 4-5 mins rest between sets

2) 2 sets of 4 x 20m Sprint @ 100 % effort from Press Up Position 4-5 mins rest in between sets

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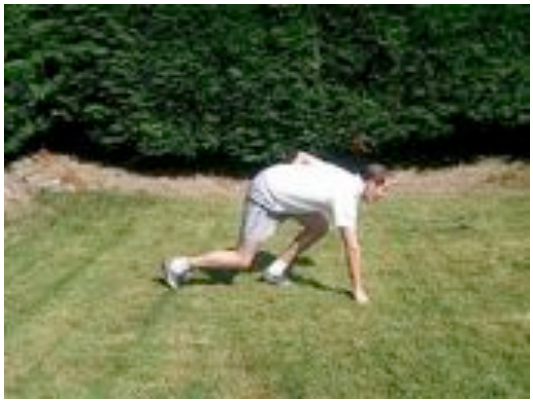
3) 2 sets of 4 x 20 m sprints @ 100 % effort from 3 Point Position 4-5 mins rest in between sets



4) 2 sets of 4 x 20 m sprints @ 100% effort from standing position 4-5 mins rest in-between sets.

5) 2 sets of 4 x 20 m sprint @ 100 % effort from all 4 starting positions (lying – press-up – 3 point – standing) with 4-5 mins rest in between sets[26]

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Developing Your Flat Speed for Rugby

Imagine your winger or even your team's prop making a break through the opposition's defence. He has conquered the first line of defence with an explosive burst of acceleration until gradually he becomes more vertical in his posture. He continues in a straight line to the opposition try line. It becomes a foot race. The defence rush back to catch him. The attacker looks relaxed confident in his running technique and flat speed to finish the job off and score and he does just that. In this respect the flat speed was there to continue on from the initial acceleration phase and score.

Moreover, what about an entire team who improved their flat speed by 5-10%. They were, quite simply, capable of running faster. Following a period of match fitness conditioning whereby the players are trained to able to repeat bouts of such flat speed, it becomes clear that as a whole the team are now able to play the game at a much higher pace than before. This can not be emphasised enough:

Develop speed first – then the ability to reproduce this speed

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How to develop Blazing Flat Speed for Rugby

Hollow Sprints

Resisted Sprint Drills

Downhill Sprints

Developing Your Agility for Rugby

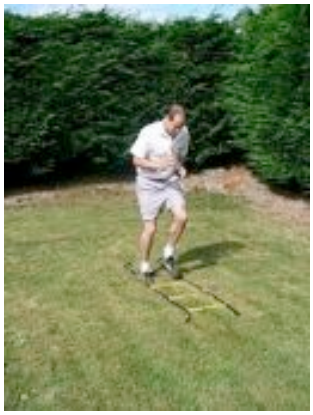
The modern rugby player certainly needs to take into account the need to be able to change direction at speed. They need to be light enough on their feet to be able to avoid tackles, jump in the line-out, provide the most force in the acceleration phase of a sprint. They need to be able to change a line of running, at speed, to unlock a well-organised defence. From the lightest player to the heaviest , being 'light on your feet' certainly has its merits.

Agility can be developed using a variety of implements – the simplest being a ladder and some space. These can purchased through the FHS website at www.fitnesshealthservices.com or call 00 353 86 1920821,

Top 5 Drills to Develop Agility for Rugby Players

Ladder Drills x 3

Running Through the Ladder



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Runner Through the Ladder at 2 x speed

Ickey Shuffle

Lateral Shuffle

Partner Drills all with ball x 3

Partner Sidesteps

Partner Hit and Spin

Partner Step Lateral and Hit Up

Tennis Ball Drops

All of these drills would serve a useful purpose in conditioning the team all year round. They can be easily incorporated into the warm-up. Again, the emphasis must be on quality of execution. The body is very good at remembering how the specific movement is performed. So, if you repeatedly perform a sloppy sidestep at 50 % effort guess how you will perform it in a match? The coach must carefully monitor rest periods; allowing sufficient time

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for rest and recovery. If you find this difficult to manage in terms of a short session then always remember that **something done well is better than nothing.** Cut the drills short and progress.

Your Personalised Blazing Speed Programme

Constructing your own speed programme will require a certain degree of ruthlessness in terms of your ability to cover every area of speed training. You would need all week to really hone your acceleration, mechanics, agility and flat speed. Couple this with our strength-training programme and we really are running short on time!

Prioritise Your Speed Concerns

Table 1 outlined above a positional analysis of the demand that each playing position requires for rugby. A front row player would find more benefit in training for acceleration rather than flat speed. That is not to say that it should be ignored altogether. Equally the back 3 would be better off preparing themselves for the flat speed and acceleration demands of their position rather than the agility and reactive footwork emphasis. Think – "what is my priority today?" and address it with the correct drills.

Your Speed Session

To achieve optimal blazing speed for rugby, sessions should be performed 2 per week. The bulk of the training should be completed in the off-season. As the season draws closer speed work has to be a necessary component of the team training sessions (2 + sessions per week) leaving you to develop your maximal power and strength in the remainder of your week.

Each session should follow this framework:

1) **Warm Up – 5 – 10 Minutes light jogging**

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2) **Movement Mechanic Drills x 2**

3) **YOUR PRIORITY – Acceleration, Flat Speed, Agility – 2-3 drills from each section. Ensure your drill is separated with 5 minutes rest.**

4) **Cool Down – 5 Minutes Jogging**

Sessions should last no longer than 30 minutes.

Planning Your Speed Training

Like all facets all training, careful planning is required to ensure the body is gradually progressing towards that ultimate goal of blazing speed for rugby. This will ensure the body continuously adapts to the demands of the training changing a positive way and reflecting itself with performances on the field.

To this end plan your speed training around your season

Phase of Training				
Transition	**Off Season**	**Pre-Season**	**In-Season**	**Transition**
Nothing Specific	Movement Mechanics / Concern Areas e.g. Acceleration etc	Speed and Speed endurance in training sessions	Rugby Specific movement perfomed **at speed - maintain**	Nothing Specific
Nothing Specific	2 x per week – days in between weights or on the same day	2 x per week – training nights or sessions	2 x per week – training nights	Nothing Specific

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Chapter 5

Putting It All Together – The Complete Rugby Conditioning Programme

By now you will have grasped the complexity of bringing all the pieces of the conditioning puzzle into together to conjure up an overall programme designed to get the most out of your training. Strength, speed, flexibility and rugby fitness have all been taken into consideration. Now is the time to tie the pieces together.

The best method of illustrating the commitment needed to gain an holistic and balanced programme is via a periodised table, as established by Tudor Bompa in his publication, Periodisation[27]

Following this structure ensures no stone is left unturned. We are maximising our time during our training sessions. We are ensuring adequate rest as catered for to ensure maximum recovery from sessions. We are ensuring the intensity of our 16 week and in-season programme is raised gradually minimising the risk from injury. We are ensuring the stimulus from each training session is such that we are witnessing growing improvement. It is this approach that guarantees results.

Let us look at our training year in a nutshell incorporating the off-season and in-season:

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Name of Player Season #					
Season #					
Cycle#	**Cycle 1 Wks 1-4**	**Cycle 2 5-9**	**Cycle 3 10-14**	**Cycle 4 14-18**	**In-Season 18-52**
Overall Goals					
Fitness Goals					
Strength Goals					
Speed Goals					
Approach to Goals					
Fitness Methods					
Strength Methods					
Speed Methods					
Duration	**Weeks 1-3**	**Weeks 4-7**	**Weeks 7-10**	**Weeks 10-12**	**Weeks 13**
Flexibility					
Nutritional Demands					

Table 1: Modern Day Rugby Player's Periodised Programme

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Name of Player Joe Bloggs

Season # 2005-6

Season #

Cycle#	Cycle 1 Wks 1-4 General Prep	Cycle 2 5-9 Specific Prep	Cycle 3 10-14 Sport Specific Prep	Cycle 4 14-18 Pre-Comp	In-Season 18-52 Competition
Overall Goals	To improve speed off the mark for the first 5-10 metres, improve upper body strength by 20 % in the off – season and stay injury free for the entire season! Make a starting position for all 30 games and enjoy my rugby!				
Fitness Goals	None at Present	None at Present	None at Present	Phase in Match Fitness for pre-season	Team Specific Fitness and Maintain
Strength Goals	Neuromuscular Isolation / Injury Prehabilitation Re-habilitation	Neuromscular Integration and Muscle Hypertrophy/Strength – gain 4 lbs of lean muscle mass	Muscle Strength – looking to make bulk of strength gains Bench 120 1RM, Squat 180 1RM Deadlift 150 1RM	Get Explosive for the Game! Power Clean 3RM 60kg	Maintain with QUALITY Strength sessions
Speed Goals	Improve Flat Speed	Continue making improvements in flat speed – look at developing change of running line speed	Develop functional speed with Ball in Hand – Improve acceleration over 5-10m	Speed Endurance – develop ability to maintain speed over repetitive efforts	Keep focusing on movement mechanics – develop multi-direction speed
Approach to Goals					
Fitness Methods	N/A	N/A	N/A	Match Fitness Session 1 x per week	Match Fitness – play games!
Strength Methods	Neuromuscular Isolation Exercises with specific knee and ankle rehab/prehab 2 x per week	See Cycle 2 Phase of Strength Programme – Sets 12 – Reps – 12-15 TUT – 60 Secs with 60-90 secs Rest Intervals 2 x per week	Cycle 3 of Strength Programme – Sets 12 Reps 5-8 TUT 30-50 secs with 120-180 secs RI 2 x per week	Cycle 4of Programme – Explosive power sets 6 reps 2-4 with 180-240 RI 2 x per week	Look at maintenance programme 2 x per week
Speed Methods	Improve Movement Mechanics / Flat Speed over 20-30m 2 x per week	Improve Movement Mechanics with an emphasis now on multi-planar changes in direction 2 x per week	Improve Movement Mechanics with an emphasis now on Acceleration over 5-10m Resisted Sprints 2 x per week	Repeated sprints 8 x 50 , 10 x 22 at 100% effort 2 x per week	Repeat from cycle 1 again – cycle 2 – cycle 3 – cycle 4
Duration	**Weeks 1-3 4 Sessions in Total**	**Weeks 4-7 4 Sessions in Total**	**Weeks 7-10 4 Sessions in Total**	**Weeks 10-12**	**Weeks 13**
Flexibility	Use as a form of active recovery	Use as a form of active recovery	Use as a form of active recovery	Use as a form of active recovery	Use as a form of active recovery

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Nutritional Demands	Eat wholesome produce – eat as much as possible for 5-6 meals a day	Eat wholesome produce – eat as much as possible for 5-6 meals a day	Eat wholesome produce – eat as much as possible for 5-6 meals a day	Eat wholesome produce – eat as much as possible for 5-6 meals a day	Eat wholesome produce – eat as much as possible for 5-6 meals a day

Table 2: Example Approach of a Centre for Rugby

Here are some practical examples of applying this approach. Pick which one best suits you:

Case Study 1 – The Classic Amateur: Works during the day, family, stress levels high, looking to improve performance.

Cycles 1 and 2

The key in this cycle is **quality** of training. Stress levels will be high with existing pressures and commitments from elsewhere. Therefore, it is vital to keep a training diary with a log of performance. Note any drop off in intensity from the training. Are you stuck at the same weight? Are you sleeping poorly? Poor appetite? Elevated heart rate in the morning? All of these may be a sign of over-training. If this happens cut back the volume (half the number of sets you perform on strength exercises) and most importantly pay attention to the quality of nutrition you are taking in which will assist in rest and recovery.

Day / Activity	**AM Activity**	**PM Activity**
Monday		Strength and Prehab/ Rehab
Tuesday		REST
Wednesday		Strength or Speed Mechanics
Thursday	REST – Flexibility	
Friday		Strength
Saturday	REST - Flexibility	
Sunday	Speed Mechanics – 30 Mins	

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Cycles 3 and 4

Here is where the bulk of your specific rugby fitness will be obtained. Cycles 1 and 2 will hold you in good stead for these more intense cycles of training. Ensure strength sessions are completed 2 per week alongside speed development sessions twice per week (pick your area of weakness and perform the drills outlined in the 'Developing Blazing Speed' Chapter). 4 weeks to pre-season perform the Match Fitness Drills incorporating some speed mechanics at the start of the session. Rest means rest.

Day / Activity	**AM Activity**	**PM Activity**
Monday		Strength
Tuesday		Speed Development – 30 mins / or part of club Training
Wednesday	REST	
Thursday		Club Training or Flexibility
Friday		Strength
Saturday	Speed Development– Form the Basis of the Warm-Up Additional Fitness Work can be Performed Here in the Run Up to Pre-Season	
Sunday	REST	

In Season

Recover, Recover, Recover – no one ever got picked on a team through performances in the gym.

Day / Activity	**AM Activity**	**PM Activity**
Monday		Strength and Speed
Tuesday		Club Training (Speed Development)
Wednesday	REST	
Thursday		Club Training (Speed Development)
Friday	FULL REST – NO ACTIVITY	
Saturday	Match	
Sunday	REST AND RECOVERY	

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Case Study 2 – The Semi-Professional – More time to train, good nutritional habits, moderate levels of stress

Cycles 1 and 2

The key in this cycle is quality of training. Stress levels will be high with exsiting pressures and commitments from elsewhere. Therefore, it is vital to keep a training diary with a log of performance. Note any drop off in intensity from the training. Are you stuck at the same weight? Are you sleeping poorly? Poor appetite? Elevated heart rate in the morning? All of these may be a sign of over-training. If this happens cut back the volume (half the number of sets you perform on strength exercises) and most importantly pay attention to the quality of nutrition you are taking in which will assist in rest and recovery.

Day / Activity	**AM Activity**	**PM Activity**
Monday		Strength and Prehab/Rehab
Tuesday		Speed Mechanics
Wednesday	REST	
Thursday		Strength and Prehab/Rehab
Friday		Speed Mechanics
Saturday	REST	
Sunday	Speed Mechanics / Additional Strength	

Cycles 3 and 4

Here is where the bulk of your specific rugby fitness will be obtained. Cycles 1 and 2 will hold you in good stead for these more intense cycles of training. Ensure strength sessions are completed at least 2 per week alongside speed development sessions twice per week (pick your area of weakness and perform the drills outlined in the 'Developing Blazing Speed' Chapter). Note Additional Strength work can be performed but ensure that volume is modified to prevent over-training. Use the same programme Monday and Thursday. Likewise, Tuesday with Friday.

Day / Activity	**AM Activity**	**PM Activity**
Monday		Strength
Tuesday	Speed Development / or Rugby Specific Conditioning Work	Strength

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Wednesday	REST	
Thursday	Speed Development / or Rugby Specific Conditioning Work	Strength
Friday		Strength
Saturday	Speed Development– Form the Basis of the Warm-Up Additional Fitness Work can be Performed Here in the Run Up to Pre-Season	
Sunday	REST	

In Season

Recover, Recover, Recover – no one ever got picked on a team through performances in the gym.

Day / Activity	**AM Activity**	**PM Activity**
Monday		Strength and Speed
Tuesday		Club Training (Speed Development)
Wednesday	REST	
Thursday		Club Training (Speed Development)
Friday	FULL REST – NO ACTIVITY	
Saturday	Match	
Sunday	REST AND RECOVERY	

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Case Study #3 The Full Time Professional

Cycles 1 and 2

The key in this cycle is quality of training. There will be an emphasis on filling the player's time with preparation for the coming season. Therefore, it is vital to keep a training diary with a log of performance. Note any drop off in intensity from the training. Are you stuck at the same weight? Are you sleeping poorly? Poor appetite? Elevated heart rate in the morning? All of these may be a sign of over-training. If this happens cut back the volume (half the number of sets you perform on strength exercises) and most importantly pay attention to the quality of nutrition you are taking in which will assist in rest and recovery.

Day / Activity	**AM Activity**	**PM Activity**
Monday	Strength and Prehab/Rehab	Speed Mechanics
Tuesday	Recovery Techniques	Strength and Prehab/Rehab
Wednesday	REST – Recovery Techniques	
Thursday	Strength and Prehab/Rehab	Speed Conditioning
Friday	Non – Specific Ball Conditioning 5 a-side football	Recovery Techniques
Saturday	REST	
Sunday	Recovery Techniques – Massage/ Nutrition	

Cycles 3 and 4

Here is where the bulk of your specific rugby fitness will be obtained. Cycles 1 and 2 will hold you in good stead for these more intense cycles of training. Ensure strength sessions are completed at least 2 per week alongside speed development sessions twice per week (pick your area of weakness and perform the drills outlined in the 'Developing Blazing Speed' Chapter). Note Additional Strength work can be performed but ensure that volume is modified to prevent over-training. Use the same programme Monday and Thursday. Likewise, Tuesday with Friday.

Day / Activity	**AM Activity**	**PM Activity**
Monday	Strength Development	Club Session – Rugby Fitness and Ball Conditioning
Tuesday	Speed Development –Light Ball Skills	Strength
Wednesday	REST	

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Thursday	Club Session – Rugby Fitness and Ball Conditioning	Strength
Friday	Speed Development	Strength
Saturday	REST	
Sunday	Speed Development– Form the Basis of the Warm-Up Additional Fitness Work can be Performed Here in the Run Up to Pre-Season	

In Season

Recover, Recover, Recover – no one ever got picked on a team through performances in the gym.

Day / Activity	**AM Activity**	**PM Activity**
Monday	Strength	Team Session (+ Speed Development)
Tuesday	Club Training (Speed Development + Weights)	Club Training (Speed Development)
Wednesday	Light Club Run Through	
Thursday	FULL REST	
Friday	MATCH	
Saturday	Recovery Techniques	
Sunday	REST	

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How to plan a conditioning session for your team – off-season and in season examples

Without any conditioning knowledge, planning a training session to develop your team's fitness and maintain it throughout the in-season is a mind-numbing tyranny.

The coach, with regards to rugby specific conditioning, must address several problems:

1) Off-Season – training stimulus must be enough to elicit a positive response for all players
2) Training stimulus must have a direct transfer into the demands of rugby football.
3) Training must focus on addressing weaknesses of the team.
4) Training must allow sufficient recovery to elicit a positive response and prevent over-training
5) In-Season – training stimulus must be enough to maintain and even build upon the foundation laid by previous training cycles
6) Training must be fun!

As you can imagine there is a lot more than just running the lungs out of your team.
Failure to plan will seriously risk:

a) Increasing the incidence of injury and re-occurrence of injury if the body is over-stressed
b) Pre-fatiguing your players for when it actually counts i.e. match day. Hard training sessions have to be carefully planned and worked into the fabric of the training week allowing sufficient time for recovery and regeneration. What's the point of carrying Wednesday's night session into the match on Saturday?
c) Sacrificing the quality of training to facilitate quantity of training.

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Off Season Demands and How to Get Your Team Fitter

As stated above it is crucial that all players undertake a pre-season, periodised programme of strength and conditioning work specific to rugby. All players should follow the principles outlined in the chapter titled 'Strength for Rugby'.

Early pre-season training sessions should carry an element of demand. The skilled coach will couple a work ethic and sense of competition with a carefully periodised approach to training to ensure optimum response to the training and a full recovery. Injuries should be avoided at all costs.

A certain element of individual player responsibility will be highlighted. It is the player's responsibility to get informed and to put the work in through the programmes outlined above. For the full-time professional this will be easier than the enthusiastic semi-professional or amateur player. The bottom line is, however, this needs to be done.

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How to Structure Your Training Session for Maximum Effect

Warm-Up

Your warm-up should consist of some light jogging preferably with the ball in hand. This is the time to raise the body's core temperature and prepare the body for the demands of what follows. Time Taken: 5-10 minutes.

Dynamic Flexibility

Dynamic flexibility will follow your body warm-up. Walking squats, lunges, various versions of press-ups, shoulder rolls, high knee lifts.

NB There is so much debate concerning stretching prior to competition. Yes or no? The 'Yes' camp explain that pre-event stretching will make the muscle more compliant thus avoiding strains and other soft tissue injuries. If you are inflexible then stretching prior to competition will make movements feel easier[28]

On the contrary the 'no' camp point to evidence that suggests stretching does not prevent muscle injuries[29]. In fact it even reduces force output i.e, your ability to jump, run and perform other movements[30].

I believe stretching should be encouraged as part of your conditioning routine and not necessarily have to constitute part of the warm-up. Some like the feel-good factor of stretching. Some use it as a time to mentally prepare for the event – quiet time as such – a time to relax and focus. Stretching depends on the individual's requirements.

What's more stretching an already weakened and lengthened 'phasic' muscle (those muscles associated with movement) will only serve to exaggerate its condition[31],[32]. Think of it as stretching a rubber band. This will certainly affect force production and joint stability.

It is far better to focus on those muscles that respond to stress by become short and tight or whose primary role in the human body is to execute a

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postural role. These are called 'tonic' muscles. A certified fitness professional or any therapist can identify your individual tonic muscles and prescribe you an individualised stretching programme. It is well worth the investment, will save you endless amounts of time stretching the WRONG muscles, and ensure any postural imbalances are not made worse by a one size fits all warm up.

The bottom line – allow 3-4 minutes for individuals to stretch any tight areas that may be of concern. A team 'dynamic' warm up will better serve your team. Allow 5 minutes for completing this phase.

Speed Mechanics and Development

Use this time to develop a thorough working of speed mechanics and focus on developing acceleration for all players. All the drills above can be incorporated into a team format. Ensure at least 50 per cent of the drills are performed with a ball in hand.

Time taken: 5 – 10 minutes

Coach Corner – Team Specific Work

This is the area allowing the coach to work on any team specific work.

5 Steps to Match Fitness

Use the above format for your pre-season fitness schedule. Time Taken 30-40 minutes

Recovery Techniques

It is important that all players are made aware of recovery methods. As Bompa states "athletes are fatigues after training and the greater the fatigue the greater the after effects such as low recovery rate, poor coordination and decreased speed and power of muscle contractions"[33]. You may be shouting at your players for dropping a pass or missing the ball during a warm-up drill

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without you fully being aware that you may be the main cause of it coach! Arm your players with the tools to recover and be fresh for each of your training sessions. Of course there will be a multitude of factors that affect recovery. Age, gender, sex, muscle fibre type, environmental concerns, for example will all play a part. Here are some that all of your players should be including in there routine:

- Sleep! Athletes require 9-10 hours of sleep[34]In keeping with your natural circadian rhythms, allowing sufficient time to recover and regenerate, it is best you are in bed by 10.30pm[35]
- Active Rest – 10-20 minutes of jogging after exercise has been found to remove 88% of lactic acid accumulated in the blood[36]
- Massage – hook up with a Massage in your community!
- Hot – Cold – Saunas and Cold Showers alternating 5 minutes in the sauna with 1-2 minutes under a cold shower. You can spend anywhere between 5-20 minutes performing this.
- Contrast Baths – hop into a cold bath 10-15 degrees Celsius for 2 minutes and then under a hot shower for 6-8 minutes. The treatment should last at least 20-30 minutes[37]
- Diet – ensure adequate water and macro-nutrient intake.

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How to Condition Your Players during Competition Time

Warm Up including an element of small sided games

As above but throw some conditioned small sided games. These can include touch rugby or tag rugby interspersing the warm up with time to perform dynamic and, if individuals require, static stretching.

Time Taken: 10 minutes

Speed Development

Mix up your training week with development of flat speed and acceleration for all players

Time Taken: 10 minutes

Coach Corner

Team and or individual based skill development

Bulk of Session – 50 minutes

Recovery Techniques

As above

Time Taken: 5-10 minutes

Conclusion

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How to Condition Your Players In-Season (Non-Game Weeks)

Warm Up including an element of small sided games

As above but throw some conditioned small sided games. These can include touch rugby or tag rugby interspersing the warm up with time to perform dynamic and, if individuals require, static stretching.

Time Taken : 10 minutes

Dynamic Flexibility + Speed Development

Mix up your training week with development of flat speed and acceleration for all players

Time Taken: 10 minutes

Small – Sided Games (manipulate work:rest periods)

Use the final phase of the '5 Steps to Match Fitness' as suitable guideline to maintaining as close to match fitness as possible in-between week of in-season competition.

Time Taken: 30 minutes

Match Fitness Drills

An excellent approach to take would be to use the sessions as outlined in 'Rugby Match Fitness for the Individual' either sessions 1 or 2. These can be performed on a rugby pitch with all players situated at stations to ensure an element of competition and fun!

Time Taken: 20 minutes

Recovery Techniques

Ensure a degree of recovery techniques are deployed by all players. Use the weeks off to your advantage and come back feeling recharged and refreshed.

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