A Practical Guide to Playing Smart Rugby

Providing coaches, referees, players, and administrators with the knowledge, skills, and leadership abilities to ensure that safety and best practice principles are incorporated into all aspects of contact rugby.
BokSmart

NATIONAL RUGBY SAFETY PROGRAMME

A PRACTICAL GUIDE TO PLAYING SMART RUGBY

Providing coaches, referees, players, and administrators with the knowledge, skills, and leadership abilities to ensure that safety and best practice principles are incorporated into all aspects of contact rugby.

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All the content has been written by people with expertise in the area and has been peer reviewed and edited.

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Introduction

BokSmart has come about as a result of an exciting partnership between the South African Rugby Union and the Chris Burger/Petro Jackson Players’ Fund. Both of these well respected rugby organisations have made a keen investment of time and effort to make rugby safer for all participants.

The primary aim of BokSmart is to provide rugby coaches, referees, players, and administrators with the correct knowledge, skills, and leadership abilities to ensure that safety and best practice principles are incorporated into all aspects of contact rugby in South Africa. The programme not only focuses on these basic principles, but also aims to grow the game at grass roots level, and provide everyone in South Africa with the opportunity of being educated to play rugby the Smart way. BokSmart supports and demonstrates the concept that the safest best practice techniques in the game are also the most effective from a performance perspective.

Ultimately, by instilling this mind set and providing this practical training resource, rugby will evolve in South Africa and become more appealing to everyone.

Prevention is always better than cure and with this in mind the BokSmart programme addresses numerous topical issues around injury prevention, injury management, rugby safety, player health and well being, and player performance. The most important sections which follow will be addressed in the BokSmart workshops, on the DVD and/or on the website.

With BokSmart’s new programme sponsor SuperSport, your World of Champions, on board, and with their continued and valued support, serious head, neck and spine injury numbers will hopefully carry on dropping.
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**Winners play Smart Rugby!**
1. Eating and Drinking Right for Rugby

Nutrition, like training, can go a long way in improving rugby performance and requires dedication and proper focus. Skipping a meal or a snack is like skipping a training session. And, just like training, where the quality of training and not just quantity counts (i.e. training Smart), paying attention to the quality of your diet and the timing of ‘when you eat what’ is equally important. These strategies will allow you to capitalise on your training and make the right gains or improvements. This is Smart nutrition and this is what sets apart excellent players and teams from average players and teams.

What are the principles of Smart nutrition?

- Dietary plans must be targeted and individualised. Each player has specific requirements depending on their position of play, level of play, type/variation of rugby (e.g. Rugby Sevens versus Fifteen-a-side), age, gender, medical history, and so on.
- The dietary plan must be periodised and adjusted according to the specific requirements of a particular training phase, tournament or competition.
- Nothing must be left to chance. You train the way you wish to play. The same applies to your diet! All dietary strategies should be tried and tested during training, and not suddenly be introduced at matches. This will go a long way to building confidence and reducing unnecessary stress during competition.
- Meal plans must be food focused with supplements only integrated according to the prevailing rugby policy or guidelines regarding the use of supplements.
- The meal plan must be practical to implement, taking into account immediate and long-term health, well-being, performance goals, budget and lifestyle.
- The messaging and approach must be consistent, with all role players (player, coach, parent, team physicians and dietitians, fitness trainers) supporting the plan.

Supplements?

There are only a few supplements that have any practical, performance or clinical value, and should only be considered after a player has first undergone a complete dietary and sports medical assessment and intervention by an appropriately qualified medical professional, and if a supplement is deemed necessary that this is integrated into the diet under the guidance of a dietitian.

World Rugby acknowledges that the best way to eliminate the risk of dietary supplements is to avoid taking them. Regardless, in modern times, albeit that the effectiveness and performance benefits of most supplements in the market place have never been proven in the scientific literature, many players still use supplements in an uncontrolled manner. The risk of the player ingesting contaminated products with substances that have been banned or are prohibited by WADA (the World Anti-Doping Agency) is thus high; these substances can either be harmful to the players’ short- and long-term health and well-being, and if there is a competitive edge as a result of their use, this goes directly against the true spirit of participation in sport.

World Rugby is reminding athletes:

YOU ARE RESPONSIBLE – Under anti-doping regulations, the only person responsible for what goes into your body is YOU! Players cannot claim ignorance because of the directions or advice of others.

DO YOU REALLY NEED THEM? - Many supplement companies claim their products have benefits, but some are not clearly supported by scientific research.

DO YOUR RESEARCH - There are no guarantees that what you’re taking in a supplement is totally free from banned substances and contamination is a risk. Check out keeprugbyclean.com for the latest WADA prohibited list.

NO GUARANTEES – products marketed under the same brand in different countries MAY contain different ingredients.

MAINTAIN A BALANCED DIET - Players will benefit from a healthy, well balanced diet which should be put in place by an expert.
What can Smart nutrition do for you?
As a rugby player, following an optimal DIET (preferably compiled by a registered dietitian with experience in sports; in this instance rugby!), which directly complements your training, can help you improve your performance by:

- Helping you achieve and maintain your ideal body size and body composition;
- Supporting optimal growth and development;
- Aiding in recovery post-training or post-match;
- Optimising energy stores prior to training and/or matches;
- Reaping the benefits and adaptations associated with training like muscle reconditioning;
- Optimising your physical skills;
- Enhancing concentration;
- Assisting improvements in speed and/or endurance;
- Minimising gastro-intestinal discomfort;
- Helping you cope with the stress, fatigue and environmental changes associated with travelling and competition;
- Promoting long-term health and well-being.

TAKE HOME MESSAGE:
What makes dietary intervention particularly exciting is that it is a controllable factor and is achievable! With the right knowledge and professional advice, you can implement many practical strategies that may help your performance. In the additional Rugby Nutrition sections that will follow on the BokSmart website (www.BokSmart.com), common ground is discussed with regards to the latest dietary principles for performance. For more info on Rugby Nutrition, go to: http://boksmart.sarugby.co.za/content/eating-and-drinking-right. These sections, as they are added, will provide plenty of examples to show you how you can adapt nutritional guidelines to meet your specific goals – for example, if you need to gain weight, lose weight, play Sevens, and so on.

2. Effective Play and Controlling the Game
First and foremost, it is the hosting Union, club or school’s responsibility to make sure that everything is in place on match day.

The hosting body has a standard duty of care to ensure:

- That all participating coaches and referees are actively BokSmart Certified
- That all required medical support staff and equipment are readily available and at field side on match day
- That the playing enclosure meets the minimum field safety standards which World Rugby and SARU expect to be in place
- That all key rugby safety regulations have been met.

The referee’s role here is simply to confirm that all the safety criteria have indeed been met by the hosting Union, school or club before kick-off. If things are not in place, and the match is called off for some reason, the fault lies either with the hosting body or the specific transgressing party. In these instances, this is not the referee’s fault; they are simply doing what is required of them. Everyone needs to take some level of responsibility here…The core business and role of all match officials is FAIRNESS and SAFETY. The referee acts as a safety control officer, to ensure that matches are played safely, fairly and within the Laws.

SAFETY BEFORE KICK-OFF
The referee’s role in the modern game does not mean that he simply pitches up and blows the match. There are a few important things along the way that he needs to do.
The referee must be at the ground at least one hour prior to kick-off, as they will have numerous safety checks to complete:

For all school, club, community level and amateur rugby or Green standard matches, and before any match may continue:

- The referee needs to check that the playing enclosure meets the requirements of a safe match environment as described in the Field safety standards document on the BokSmart website.
- When doing this, check the playing surface, field markings, field dimensions, padding and general safety matters including advertising boards, dangerous edges, concrete barriers and the like to see that it is safe and free of stones, potholes or pools of water.
- Also check for any spectator control issues, and fix these beforehand.
- The referee must then check all players’ boots, studs, clothing, for potentially dangerous items, and any protective padding worn.
- It is highly recommended that the referee has a pre-match talk to the Captain and the Front rows, to discuss his expectations around the scrums, and also to make sure that all front rows clearly understand these.
- Given the diverse cultures, languages, and levels of experience and education across South Africa, it is important for continued safety at the scrums, that referees have this talk beforehand.
- It is also imperative that this is not a one-way communication, but rather a confirmation of the referee’s expectations and the players’ understanding of the scrum process, so that everyone knows their respective roles on the day.
- When calling the scrums, it is also vital that the referee uses a language that all of the participating front rows can understand.
- The referee has to confirm the active BokSmart Certification Status of each of the participating teams’ coaching staff, and should also have his BokSmart card available to produce this to the coaches during this time.
- The referee needs to receive and check the Team sheets beforehand to control for any potential Under-age or School Age-banding Regulation breaches, these need to be provided to him well before kick-off.
- Where School Age-banding Regulations apply, for cleared or exempted individuals, the referee has to request and see copies of the completed and signed off Schedule A and/or Schedule B documents to confirm proof of clearance.
- Should the coach or team manager of the involved team NOT have these signed-off Schedules available, the referee may not allow the players in question to participate in the match!
- If you are travelling to a tournament or a match, especially when travelling long distances, you also need to take some responsibility and ensure that you provide the hosting Union, club or school with everything that they need beforehand regarding your coaching staff and players, and have your team lists and clearance documentation, available on the day, where required.
- The referee then needs to confirm that the minimum medical support staff and equipment requirements are in place at the field.
- At least 1 actively qualified first aider should be in attendance at the field per match.
- At least one complete set of spinal board, neck collar, spider harness and head blocks needs to be visible and on field side.
• Remind the players that while on the field they are responsible for their own safety, as well as the safety of their opponents.

• Remind the teams that play must stop immediately when the whistle is blown.

• Request teams to respond to referee communications and instructions during the game.

• Encourage all players to wear a mouthguard.

• Make a final inspection of players’ clothing and gear just before the teams run onto the field.

• Should any of these safety requirements not be met, the referee should notify the home team official and order the problem to be rectified before the game can start. If this is not possible, the game should be abandoned.

For the Gold standard matches, which are Absa Currie Cup, all other interprovincial level matches, Cell-C Community Cup, Varsity Cup and Shield, SARU Youth Weeks, Schoolboy festivals, Classic Clashes and all amateur Sevens matches or tournaments at these levels, or for Gold Plus standard matches, which are Vodacom Super Rugby, all International Test Matches and International Sevens matches and tournaments, these minimum safety requirements, in addition to the Green standard necessities, are even stricter.

If everyone proactively does their bits before match day, then we will all enjoy our rugby with very few hiccups, and no matches will ever need to be called off.

Both coaches and referees have a standard duty of care to ensure that they do not put their players or the opposition players in harmful situations that are not of a reasonable standard naturally associated with playing the game of rugby.

Handling and Preventing Foul Play
The referee has a responsibility for ensuring that the match is played in the spirit of the game. He should:

• Penalise players or teams who transgress the Laws of the Game in an unsportsmanlike manner.

• Act decisively on incidents of foul play that could place players at risk.

• Ensure that preventative measures are covered in the pre-match communication.

• Influence the safety of players on the field by acting swiftly and harshly in response to high or dangerous tackles.

• Set the tone of the game by strictly enforcing the Laws that govern the tackle, breakdown and scrum, by penalising and sanctioning offenders.

THE TACKLE
The tackle remains the greatest injury causing event in rugby union, both on the catastrophic injury front and with general rugby injuries. It is for this reason and because of the relatively physical, high speed, high impact and unpredictable nature of tackles, that one should frequently revisit the safety basics of the tackle with your players.

Humans are also creatures of habit, and by repetition, one can ensure that tackling becomes instinctive and can be performed safely. The most effective tackling technique is also the safest.

The front-on tackle is the tackle with the most risk of injury and occurs the most frequently during the game. One of the most important parts of the front-on tackle is for the tackler to deny the attacking player space and options. Key points to remember are:
2. EFFECTIVE PLAY AND CONTROLLING THE GAME

Track the attacking player

- Stay square to your opponent for as long as possible
- Run towards the attacking player’s inside shoulder (the shoulder furthest away from the touchline)
- Deny your opponent space
- Shuffle and do not cross your feet

Keep your face up during the tackle

- Dropping your chin puts you at risk of concussion and neck injury

Keep your eyes open and sight your target

- Choose your target and look to where you are going to make contact

Focus on the core (between chest and hips) of the attacker

- A player’s body goes where the core goes. Footwork can be deceiving
2. EFFECTIVE PLAY AND CONTROLLING THE GAME

Keep your spine in line
- Emphasise back position
- This allows you to get into a lower, stronger and more powerful position

Align your head outside of the tackler and not in front
- Do not make contact with the top of the head
- Emphasise following the direction of the hit with the head
- Cheek-to-cheek or shoulder-to-waist is the safest height

Shorter, faster steps as you approach
- Stay on the balls of your feet to avoid being wrong footed
- Keep moving and don’t plant the feet

Keep your elbows low and hands up (boxer stance)
- This reinforces leverage and force of contact
- There is a larger surface area for contact

Dip and step into the tackle with the lead foot
- Emphasise same foot, same shoulder
- Step in as close as possible
- Emphasise the drop and hit
- Put your whole body into the contact for greater force and power

Punch and wrap the arms (hit-and-stick)
- Focus on hit-&-stick
- Pull player in close and drive from the legs

Maintain leg drive into the tackle
- This allows you to maintain forward momentum
- Once on the ground, return to feet quickly to be able to compete for the ball
2. EFFECTIVE PLAY AND CONTROLLING THE GAME

The Side-On Tackle
This is safer and less confrontational than the front-on tackle when it comes to impact and the risk of injury to the tackler, but at the same time the body positions and general techniques discussed earlier on should apply.

The Smother Tackle
The smother tackle is an advanced tackle where the tackler is more upright in defence and attempts to wrap his arms around the ball and the attacker’s arms. The idea is to prevent the player from being able to release the ball. There is no difference in the way the tackle is approached or taught, and the same steps are followed as mentioned above. However the tackle is performed at a target aimed above the waist level, and below shoulder height. This form of tackle is not recommended for younger and less experienced rugby players, as it is more confrontational than the traditional tackle and the risk of injury is higher.

The Referee’s Role in Controlling the Tackle
The referee has an important role in keeping the tackle situation as safely contested as possible.

Rugby is a collision sport, and already has an inherent risk of injury associated with it, and to ensure a safer contest, the TACKLER must therefore always pay due regard to the safety of the BALL CARRIER.

Dangerous illegal actions in the TACKLE that the referee needs to look out for:

- A player must not tackle nor tap, push or pull the foot or feet of an opponent jumping for the ball in a lineout or in open play.
- Except in a scrum, ruck or maul, a player who is not in possession of the ball must not hold, push or obstruct an opponent not carrying the ball.
- Shouldering / no arms used – A player must not charge or knock down an opponent carrying the ball without trying to grasp that player.
- Lifting a player from the ground and dropping or driving that player into the ground whilst that player’s feet are still off the ground such that the player’s head and/or upper body come into contact with the ground is dangerous play and is not allowed.

These tackles can cause serious injury, in particular to the head, neck and spine, and should be shown ZERO TOLERANCE.

Referees need to be STRONG and CONSISTENT in penalising offenders.
BALL CARRIES

Injuries to the ball carrier contribute substantially to total rugby injuries. Therefore when trying to make the game of rugby safer for all, one should attempt to play Smart rugby when taking the ball into contact:

Vary your play

- Do not always look for contact. More contact equals more potential damage to your body.
- Seeking constant contact makes your play predictable and ineffective.

Run evasive lines

- Run with the ball in both hands to create uncertainty
- See if the defender plants their feet
- Look for exposed or out-of-shape defensive lines
- Look your defenders in the eye to engage them
- Look for defenders’ feet crossing over
- Exploit available options
2. EFFECTIVE PLAY AND CONTROLLING THE GAME

When contact becomes unavoidable, you should:

- Carry the ball in two hands
- Take small steps on approach
- Maintain a low body position
- Keep your face up and eyes open
- Focus on the point of contact
- Present the hard parts of the body to the tackler (e.g., the shoulder)
- Drive through the tackle with the legs
- Present and transfer the ball when appropriate
- Take a wide power step into contact
- Protect the ball
2. EFFECTIVE PLAY AND CONTROLLING THE GAME
**THE SCRUM**

**NOTE:** Any reference made in the text to scrum engagement techniques, sequences, calls or Laws, are subject to any changes made and approved by either SARU or World Rugby after production of the materials provided. In these instances, the safety principles remain the same, but the newer scrum engagement techniques, sequences, calls or Laws, where applicable, would then supersede those provided for in this document.

**Effective Scrumming**

The scrum can effectively determine the outcome of a match, as it plays a vital role in one side gaining ascendancy over the other.

A significant amount of time should therefore be spent on the correct technical aspects of scrumming, as effective scrumming technique is also safe scrumming technique.

The difference between good and bad technique can have a major effect both on performance and injuries, and coaches therefore play a major role in injury prevention, by teaching, training and enforcing proper scrum technique to their players.

**Scrum Preparation Conditioning**

The principle of conditioning for scrumming is no different than for any other of the major systems such as defence, attack or the breakdown one encounters in rugby. Firstly all players must be prepared to understand, respect and execute the system - The big picture work.

Secondly every player has an individual role inside the system and must be conditioned to perform those tasks repeatedly and with sound technique - The small picture work. Very often coaches will spend little or no time at all, on the individual conditioning of players for scrum performance. This scrum specific individual conditioning is the building block of a sound scrum and should be attended to on a regular basis.

The following exercises are examples of those that address these scrum specific individual needs of players whilst including both technique and conditioning elements.

1. **Kettle Bell multi-directional walks:**
   (Water bottle to be used for younger players)
   This exercise has many advantages, one being that it balances a player and helps him with good square posture whilst developing the core muscles. Time is more important than load, short frequent steps and changes in direction with hands and feet to activate and surprise the core to a max. Maintaining the ‘Silverback’-position (Pg 19) is very important.

2. **Off-center barbell twists with weighted plate on 1 side:**
   Stand with body weight supported on the balls of your feet, back parallel to the ground and in a low scrum position. Twist and rotate, lower and lift the bar sideways both with and against the load, while keeping good posture at all times. The movement should be slow and controlled with constant abdominal activation. Changing foot position, or split stance sets alternating the leading foot, can further add variation to the stimulus. The additional weight on the one side and/or the bar weight can also be reduced for players who still need to master the correct technique.
3. Scrum position walks with medicine ball in extended arms:

Body position here is most important - body weight supported on the balls of the feet, back parallel to the ground and in the correct ‘Silverback’ scrum position. The arms become an extension of the back and they are also stretched out in front and parallel to the ground, while holding the medicine ball. Take very small and frequent steps and work on maintaining good posture. Focus on time and not distance, build up to 30 seconds. The medicine ball can be replaced by a rugby ball or no ball at all for younger players or players who still need to master the correct technique.

4. 1-on-1 Glute Squeezes:

Low body position, but important to have hips and shoulders at the same height for both players. The player who resists the forward movement must gauge his resistance well to make the advancing player who squeezes, work hard, but must allow him to progress forwards slowly and constantly. Start with 10 squeezes each. Make sure to have a piston type movement that stays at one height. Very good exercise for all forwards, as it will prepare players for the squeeze without recoiling at scrum time. This can also be done against a 1-man sled or A-frame.

5. Elastic band lower back resists with front lifts:

The band goes around both feet and around the middle to upper back whilst the player is in the correct scrum position. Provide sufficient tension on the band to make the lower back work hard to maintain good posture. Keep the tension constant whilst lifting a weight. This can be a medicine ball, dumbbell or Kettle bell. With both hands, and straight arms in front, lift the weight up until the arms are parallel to the ground; slow and controlled movement is very important. The medicine ball can be replaced by a rugby ball or no ball at all for younger players or players who still need to master the correct technique.

‘Silverback’ position defined:

Face up, chest out and hollow back.
6. Resists on all 4:
Work with a partner, 1 player assumes the ‘Silverback’-position (same position as for the directional walks), activates and braces the core. The standing partner now applies changing pressures to move the player in any direction whilst the player on all 4’s attempts to resist the perturbations. It is important to change the angle, direction and amount of pressure the whole time and the player on the ground must adapt and resist accordingly. The player on the ground must strive to always remain grounded and strong on the spot in the initial ‘Silverback’-position. Use both arms and knees to perform pushing and pulling movements to destabilize the player. Perform 45 s repeats.

7. Eighth-man scrum against A-frame or 1 man sled:
The No 8 packs down against the A-frame or sled as if the uprights are his two locks. He performs continuous 1-man explosive scrums in this way to condition his back, and push-foot for powerful scrumming. The player must keep his core tight, straight back, shoulders square and remain in constant contact with the uprights, without leaning too much on them. The initial forward explosion should only come from the back foot.

8. Flanks Engage against A-frame or 1 man sled:
The flank packs down against the one upright of the A-frame or with only one shoulder on the cushion if using the sled, with feet parallel and 1 hand on the ground for balance to imitate the scrum. The player performs continuous 1-man explosive scrums in this way to condition his back, and to develop powerful scrumming. The player must keep his core tight, straight back, shoulders square and remain in constant contact with the upright, without leaning too much on it. The initial forward explosion must come from both feet.

9. Tyre push:
The player assumes the correct ‘Silverback’ pushing position against a tyre. The body position needs to be perfect with spine-in-line and hips at the same height as the shoulders. Legs should be angled between 90 and 120 degrees. The player pushes the tyre over a certain distance by using small steps, contracting the glutes and maintaining the core.
2. EFFECTIVE PLAY AND CONTROLLING THE GAME
Key Points to Remember During the Scrum

- Keep your chin off your chest
- Keep your face up and eyes open
- Keep your spine-in-line
- Front row should squeeze hips together
- Keep your hips and shoulders square
- Keep your shoulder level slightly above your hips at all times
- Distribute your body weight over the balls of the feet
- Align yourself properly according to your opposition.
- When asked to “Crouch”, bend in both the knees and hips.
- Get into a spine-in-line and parallel-to-the-ground body position, with the front rows set up ear-to-ear distance apart, with a clear gap between the front rows.
2. EFFECTIVE PLAY AND CONTROLLING THE GAME

- Maintain your hips and shoulders square
- If you are not ready, let the referee know “not ready sir” before continuing with the engagement sequence.

- When asked to “Bind”, reach out and firmly take the correct bind on the opposite front row’s jersey.

- Hold your position, and do not fully come together yet
- Maintain a visible clear gap between the front rows
- Press your tongue upwards against the roof of your mouth.

- Brace your neck and shoulders.
- Do not look away from your opponent at any time, focus on your target area.
- Draw your belly button in towards your spine and activate your core muscles.
- On “Set”, maintain and secure the bind, actively engage and come together.

- Do not look away or drop the head

- Keep your binds and grips up, and keep them tight and up until the scrum is complete.
- Stay in a strong body and neck position and keep the scrum square and stable.

- On the Referee’s silent call of “Yes 9”, and with the ball put into the scrum, drive from a low position forwards and contest for the ball.
The ‘SARU Modified Amateur Rugby Scrum Laws’, are applicable to different levels of play within the amateur game in South Africa, and also have the calls “Crouch, Bind, Scrum” instead of “Crouch, Bind, Set” at the lower age-groups, with variations in the impact on engagement and extent of the scrum contest post-engagement, which gradually progresses in levels of difficulty and impact within SARU’s greater Long Term Participant Development Strategy.

Please keep in mind that the Scrum Laws for U16 and below are slightly different at each level to those presented here, but the safety and preparation principles remain extremely relevant nonetheless. It remains prudent to continue to select the right players, and prepare and condition them properly, both physically and technically, to remain competitive and most importantly safe in the scrum.

In the true spirit of the game it is also essential that you identify and select players, who can over time safely and effectively develop into these positions and who can potentially also make it to the top one day.

The referee has the most control before the ‘put in’ of the ball, and must be vigilant in setting up the scrum correctly. The overriding principle here is safety first and referees are to apply a zero tolerance approach to any scrum infringements, where the safety of the front rows is compromised.

The Referee’s key safety principles in the scrum are the following:

- Referees must ensure that both teams respond adequately to the cadence of the scrum engagement sequence.
- Front rows need to be square and facing the opposition, i.e. over the mark and the 3 heads of each front row in line with their try line.
- For all levels, including the SARU amateur scrum laws, the front rows must be in the opposite channel and ear-to-ear distance apart after the ‘Crouch’ call, with a visible clear gap between the front rows.
- Ensure that each player’s weight is firmly supported on at least one foot.
- At the levels U16 and below, when the ‘Bind’ call comes, they must come together passively, and wait for the ‘Scrum’ call for the ball to be put in and the game to continue, either with or without scrum contest depending on the age-group.
- With U16 and below, the ball is put in on the ‘Scrum’ call, as the packs should by then be steady and stable after already having come together.
- For the U18’s and up, they must take the pre-bind on the ‘Bind’ call, but must remain braced and ear-to-ear distance apart with a visible clear gap maintained between the front rows.
- Referees must ensure that the front row’s shoulders are not lower than their hips.
- When the ‘Set’ call comes, the front rows actively engage, and the loosehead and tighthead props have to push and remain straight with proper binding and grips as per Law.
- Referees must ensure that neither of the teams charge their opponents, or that props engage too early.
- Referees must ensure that all players adopt a safe body position on engagement.
- Referees must ensure that the front rows form correctly and maintain their binds.
- Players must not intentionally collapse a scrum!
- The referee must seek stability of the scrum after the two packs have come together on the ‘Set’ call, and the scrum must be parallel to the touchline.
- Front rowsers should not be moving, i.e. shifting sideways or front/backwards.
- The scrumhalf has to wait for the referee’s silent call of ‘Yes 9’ to put the ball into the scrum.
- The ball has to be put in straight and has to be hooked.
• Ensure both teams are pushing straight, and not up or pulling down or inwards or outwards.
• Front row players must not intentionally lift their opponents off their feet or force them upwards out of the scrum.
• Referees must stop the scrum immediately when front row players collapse or stand up.
• Ensure safe body positions are maintained – no dipping or twisting of upper bodies.
• A fast wheel on the axis is unacceptable!

**A key point…**

It is the referee’s responsibility to set the scrum up for a successful outcome on match day. The referee has to ‘own’ the scrum until the ball is hooked, and after the hook, it is the responsibility of the players and coaches to ensure that teams scrum within the Laws of the game.
2. EFFECTIVE PLAY AND CONTROLLING THE GAME
THE LINEOUT

Effective Lineouts

Lineouts are an integral part of the modern game.

There are 3 main pillars that contribute to a successful lineout:

- The front lifter
- The jumper, and
- The back lifter

Key points during the Lineout

During lifting from the front

If you are lifting a 2-metre tall lock weighing 114 kg, you need a considerable amount of power and control. This is how:

- Face up, chest strong and spine-in-line
- Get into a strong leg position
- Use your space effectively
- Step in close to your jumper
- Support the jumper with a vice grip on their outer mid-thighs.
- Control the jumper back down safely to the ground

During jumping

An effective lineout jump has to be quick and decisive, to the ball, and with maximum power:

- Use your space to move effectively
- Take a brisk step towards your support player
- Dip quickly and not too deep
- Jump explosively using mainly your calf muscles and toes
- Half-turn towards your scrum half/inside half in the air as you jump

During lifting from the back

- The back supporter has a very important role when it comes to the safety of the jumper
- Face up, chest strong and spine-in-line
- Stand ankle to ankle with the jumper and facing your try line
- Use your space effectively
- Step in close and at a 45° angle behind your jumper
- Get into a strong leg position
- Support the jumper with a bucket seat hold just below the buttocks
- Control the jumper back down safely to the ground

The Referee’s Role in Controlling the Lineout

The referee must apply the laws to give players in the lineout legitimate protection to maximise safety and reduce the risk of injury.

Before the jump

- Ensure the 1m gap is maintained
- Try to determine where the ball is going to be thrown to and focus on it
- Ensure that the contest is fair by ensuring the ball is thrown in straight and that no player is hindered in any way

Jumpers

- Ensure jumpers are lifted and supported safely
- Ensure jumpers are brought back to ground safely by their support players
- Ensure there is no interference with the jumper whilst in the air
- Ensure jumpers are not pulled down and “crushed” by opposition jumpers landing on them

Players on the ground

- Ensure supporters are not taken out by opposition players
- Ensure players do not interfere with jumpers while their feet are off the ground
- Ensure players maintain the gap and do not cross the line prematurely, thereby posing danger to players in the air
RUCKS AND MAULS

Effective Rucking and Mauling

The ruck
A ruck is generally formed when the tackler, tackled player and ball are all on the ground, and when one or more of the support players from either side join the tackle, are on their feet and contest for the ball. A player that enters the tackle situation has to enter through what is termed the "gate" to contest the ball legally. Any new players entering the newly formed ruck thereafter have to enter from behind or alongside their hindmost player or last man.

A maul
A maul is generally formed when an attempt is made to tackle a player; the player is not brought to ground, but is held up by one or more defenders. One or more players of his team may also bind onto him to contest and/or maintain possession of the ball. All players have to be on their feet and moving.

Key points during the ruck and maul

Rucks

Action Before Contact!
- Always enter the ruck alongside or behind the last man’s feet.
- Do not charge in from the side!
When approaching the ruck, drop your height at the ‘Powerline’.
The ‘Powerline’ is that imaginary line that support players cross approximately 3 m
from the post-tackle contest.
Come through the ‘gate’ and into the ruck tunnel.
In approach, keep your elbows low, hands up and arms close to the body.
Shorter, faster steps as you get closer.
Keep your face up, eyes open and sight your target.
Contact accuracy throughout the ruck is key!
Drop the body height when entering the ruck.
Keep your spine-in-line; head and shoulders slightly above the hips.
Try and get underneath your opposition and add dynamic leg-drive to win the battle
for space over and past the ball.
You have two choices either win the space or clear the threat!
Grip onto your team mate and protect either them or the ball, grip ‘in’ to contest for
the ball, or drive through and clean out your opposition.
Do not lead with or drop just the shoulder into the contact point.
You have to lead with the shoulder and arms together, in a strong controlled
clamping action.
Support your body weight at all times and battle to stay strong in the tunnel
throughout the contest.
Keep your head and neck in a strong and safe position tucked into the bucket of the
shoulders, with eyes facing up.
Do not go to ground and prevent the ball from emerging.
Once having either secured or lost possession, battle to get up and back into play
as fast as you can.

Return To Action!

Mauls
Always enter from behind the last man’s feet
Do not charge into the maul from the side
Keep your face up and eyes open

Keep your spine-in-line
Head and shoulders above hips.
Shorter, faster steps as you approach.
Keep your elbows low, hands up and arms close to the body.
Dip and step into the contact.
Enter from a low to a high position.
If the ball is not secure, attempt to secure it.
Bind onto the ball carrier and provide additional leg drive.
If the ball is secure, target the ball, and bind properly.
Attempt to rip the ball away and transfer the ball to the back of the maul.
Maintain your bind and provide additional leg drive.
Stay on your feet at all times.
Do not pull down or attempt to collapse the maul illegally.

The Referee’s Role in the Ruck and Maul
Although rucks and mauls are a dynamic and unstructured part of the game, the referee
needs to be aware of the potential dangers of these phases.

Referees need to focus on three main areas:
The formation of a ruck or maul
Ensure players enter from behind or alongside their hindmost player.
Ensure players do not jump or fall onto opposing players on the ground.
Be aware of players caught up on the wrong side of the ruck or maul being formed,
and give them protection.
Do not allow players to lift the legs of, or tackle, opponents in the ruck or maul.
Once the ruck or maul has been formed, observe how other players join the ruck or
maul.

Players joining the ruck or maul
Penalise players who charge in without the use of their arms
Do not allow players to step on or trample players on the ground in the ruck
When a ruck or maul goes to ground

- It is important to determine whether the ruck or maul went to ground legally or not.
- Stop play immediately if any player is in a potentially dangerous position.
- Ensure the ball is made available immediately once the ruck or maul has gone to ground.
- Ensure that players taking part in these phases of play do so within the Laws.
- Be aware of the players’ body positioning at all times.

3. Fair Play and the BokSmart Code of Conduct

The BokSmart Code of Conduct seeks to ensure that rugby is played in the true spirit of the game, and that all involved in the sport behave in a respectable manner.

Some of the most important issues the Code deals with include player discipline and safety, foul play, crowd violence, referee abuse, match fixing and doping.

The Code is dedicated to making the game safer for all, to uphold and revive the true spirit of rugby, to grow the game, and to improve the image of rugby in the public’s eye.

It also guarantees accountability and liability of all signed parties to honour the stipulations as set out in the Code of Conduct.

The complete Code of Conduct is available as a PDF document on the DVD, and can also be downloaded from the BokSmart website on www.BokSmart.com
3. FAIR PLAY AND THE BOKSMART CODE OF CONDUCT
4. Management of Rugby Injuries

Primary Survey

All medical treatment begins with the Primary Survey. This is the initial starting point where it is assessed whether the player is OK. The Primary Survey consists of:

1. **HHH** – Hazards, Hello, Help; and
2. **CAB** – Compressions, Airway, Breathing

1a. “Hazards” checklist

Treatment cannot start until you get to the player. Hazards include players running down the touchline and the possibility of blood once you get to the player.

- Wear gloves to avoid cross-infection
- Do not approach the player until it is safe to do so
- If the approach remains unsafe, call for assistance or wait for the risk to subside

1b. “Hello” checklist

- Tap the player on each shoulder and say “hello” into each ear to check whether they are conscious/responsive or not
- If they are awake and looking at you, greet the player and begin treatment

1c. “Help” checklist

- If the player is unconscious/unresponsive or has an apparent serious head/spinal injury, send for help immediately
- At this point your medical support staff should run on with spinal equipment and assist you
- Contact the BokSmart Spinaline number to access the service provider ER24 **0800 678 678**
- Ensure the player is taken to a hospital
**Align Spine**

With a potential spine injury, if there is more than one rugby medic attending to the player, one rugby medic needs to perform Manual In-Line Cervical Spine Stabilisation immediately.

The player’s spinal column needs to be secured to prevent any further movement as soon as possible.

If the player is lying on his side or face down, the medic needs to ensure that the player is safely rolled onto their back as quickly as possible using the “Rolling the Player Over” protocol (described later in this manual) whilst maintaining Manual In-Line Cervical Spine Stabilisation.

Once on their back, if the player’s neck is not in the neutral position the medic will need to apply gentle traction and align the spine into its normal position.

If the player is still unresponsive and not breathing (no breathing, not breathing normally or gasping) at this stage the second rugby medic should begin compressions as directed below whilst the first rugby medic continues to maintain Manual In-Line Cervical Spine Stabilisation (MILS).

**2a. Compressions**

**Compressions checklist**

To circulate oxygenated blood, push his chest to pump the heart, which in turn will cause the blood to circulate. This is how:

- Place the heel of your one hand on the sternum (breastbone) between the nipple line
- Place your hands one above the other with fingers interlocked
- Press down on the heels of your hands
- With elbows locked and shoulders directly above the player, push directly downwards on the sternum to a depth of at least 5 cm. Perform 30 compressions

- Compress the chest at a rate of at least 100 compressions per minute, making sure you release the chest completely between compressions. Do not bounce on the chest

- Compressions must be rhythmic – push hard and fast. Continue even if a rib breaks.
- After 30 compressions move onto airway checklist.
Techniques of opening the airway

**CHIN LIFT**

In an unconscious / unresponsive player with a suspected spinal injury, opening the airway remains the highest priority, but we do need to take extra precautions whilst doing so.

One medic needs to lie down and secure Manual In-Line Cervical Spine Stabilisation, securing the head in the neutral position. A second medic is needed to perform a Chin Lift. This is done by placing 2 fingers under the chin and applying a forward, upward movement. With the player’s chin lifting, the tongue moves from the base of the airway, thereby opening it.

**JAW THRUST**

If you have been trained and qualified to do so, you can also perform a Jaw Thrust technique (instead of the Chin Lift) to open the airway on a player with a suspected spinal injury. Whilst maintaining a firm hold on the player’s temples, position your fingers under the player’s jawbone and apply upward pressure, thereby opening the airway.

For anyone who is not trained, this may be difficult to perform; therefore the Chin Lift is the preferred technique.
**HEAD TILT CHIN LIFT**

In a player WITHOUT a suspected spinal injury, one would normally open the airway using a technique called the "Head Tilt Chin Lift". This is when the palm of your hand is placed on the player’s forehead and 2 fingers of your other hand are placed on the player’s chin. The player’s head is “tilted” backwards whilst the chin is simultaneously “lifted” upwards.

While performing this technique, the head tilt should nonetheless be performed gently and with minimal extension of the neck or cervical spine itself. Excessive or aggressive movement could easily cause further injury to a player with a cervical spine injury, so you are only advised to utilize this technique if the Chin Lift or Jaw Thrust techniques are unsuccessful and do not open the player’s airway sufficiently to allow air entry when performing ventilations.
4. MANAGEMENT OF RUGBY INJURIES
2c. “Breathing” checklist

After appropriately opening the airway, insert a CPR mouthpiece and perform 2 Rescue Breaths.

- Open and insert correctly, with the circular piece facing upwards
- Ensure your fingers do not touch the top surface of the mouthpiece's plastic skirt
- Open the airway using the appropriate technique
- Pinch the player’s nose closed
- Put your mouth completely over the circle of the mouthpiece forming a lip-seal around the player’s mouth
- Administer a breath over 1 second, watching the chest rise
- As the chest begins to rise, stop blowing, release the nose and allow the air to escape
- Administer a second breath, followed by 30 compressions
- After every 2 minutes (approximately 5 cycles) of 30 compressions and 2 breaths, reassess the player for responsiveness
- Continue CPR until the player either becomes responsive, professional medical help arrives and takes over, an Automated Electrical Defibrillator is applied to the player, until you are physically unable to continue or until it becomes unsafe to do so
- If you do not have a CPR mouthpiece, perform “hands only” CPR (at a rate of at least 100 compressions per minute without administering any breaths)
4. MANAGEMENT OF RUGBY INJURIES

**TREATMENT FLOW DIAGRAM**

**HAZARDS**

**PLAYER RESPONSIVE AND BREATHING NORMALLY**

HELP

CALL FOR FIELDSIDE RUGBY MEDICS

SECONDARY SURVEY

CALL BOKSMART SPINELINE IF REQUIRED

RENDER APPROPRIATE TREATMENT

GIVE 2 BREATHS

CHECK FOR OBSTRUCTIONS

RE-ATTEMPT TO OPEN THE AIRWAY
HEAD - TILT - CHIN - LIFT (REF PAGE 35)

**CONTINUE CPR (30:2) UNTIL:**
HELP ARRIVES, THE AED IS APPLIED, THE PLAYER BECOMES RESPONSIVE, OR IT BECOMES UNSAFE TO DO SO

CHEST RISE - YES

CHEST RISE - NO

**HAZARDS**

**HELLO**

**PLAYER UNRESPONSIVE, AND NOT BREATHING, NOT BREATHING NORMALLY OR GASPING**

HELP

CALL BOKSMART SPINELINE AND FIELDSIDE RUGBY MEDICS

PERFORM 30 CHEST COMPRESSIONS
PUSH HARD AND FAST AT A RATE OF AT LEAST 100 COMPRESSIONS PER MINUTE

OPEN THE AIRWAY
CHIN LIFT / JAW THRUST (REF PAGE 34)

CPR MOUTHPIECE
YES

CPR MOUTHPIECE
NO

“HANDS ONLY” CPR
CHEST COMPRESSIONS ONLY AT A RATE OF AT LEAST 100 COMPRESSIONS PER MINUTE

GIVE 2 BREATHS
Secondary Survey – with focus on head, neck and chest

The secondary survey is a systematic, methodical check to determine the exact nature and extent of the injury. Do not assume that the only injury sustained is the one you can see. Some important signs to look out for are:

- Pulse – rate, rhythm, volume
- Respiration – rate, depth, equal, sounds
- Pupils – equal, reacting to light
- Level of consciousness
- Reaction to pain
- Ability to move

Work from the head down towards the feet, treating the injuries as you come across them. Once completed, reassess the player, especially the head, neck and chest:

**“Head” checklist**

- Look for obvious bleeding
- Remove mouthguard
- Look for clear fluid coming from ears or nose (indicates potential brain injury)
- Ensure eyes follow you and are injury free
- If spinal injury is suspected, maintain Manual In-Line Cervical Spine Stabilisation

**“Neck” checklist**

- Do not apply pressure to back of neck during inspection
- Assess pain in neck area by asking player about symptoms
- Apply cervical collar and/or head blocks in the correct manner
- Continue with full cervical-spine injury protocol if there are ANY signs or symptoms of neck injury

**“Chest” checklist**

- Apply gentle pressure to ribs
- Apply dressings to bleeding
Head, Neck and Suspected Spinal Injury Management

Apart from external head injuries, be extremely cautious about internal injuries, which often occur as a result of impact. Head injuries can include unconsciousness, convulsions, as well as bleeding and eye injuries.

“Unconsciousness” checklist

Unconsciousness/unresponsiveness is extremely serious. In such cases, the game needs to be stopped and the BokSmart Spineline needs to be contacted immediately.

Spinal Injuries

Any injury to the cervical spine is extremely serious. Cord injuries can be summarised as follows:

- **Complete cord lesion** – the spinal cord is completely severed. The player will experience complete paralysis below the level of the injury
- **Incomplete cord lesion** – the spinal cord is partially severed or blocked. The player will experience motor or sensory effect in some areas but not in others
- **Spinal soft tissue injury** – Severe neck pain may indicate a spinal cord injury. The player must have an X-Ray to ascertain the nature of his injury
- **Spinal fractures** – The spinal column is fractured but the spinal cord may not yet be damaged. The slightest movement may worsen the injury dramatically

**Signs and symptoms of a spinal cord injury**

Signs & Symptoms of spinal injuries may include any or all of the following:

- **Deformity of the spine**
  The spinal column is not continuously aligned. This is an extremely difficult sign to notice. If the player is lying on his back, do not move the player’s body to inspect the spine

- **Pain at the site of the injury**
  This is one of the most common signs with spinal injuries

- **Inability to move**
  The player may not be able to move his arms or his legs

- **Lack of sensation to certain areas**
  The player may not be able to feel any sensation in his arms or his legs from stimuli that you provide

- **Pins & Needles**
  This could be in the arms or legs

- **Swelling**
  Soft-tissue swelling around the site of injury would not indicate that it is only a minor injury

- **Abdominal breathing**
  When the muscles used for breathing are not working due to nerve damage, but the player’s diaphragm is still working, the player will appear to be using his stomach only to breathe and his chest will not be rising and falling as he breathes

Priorpism

The player may have an erection due to changes in nerve and blood supply

Slow Heart Rate

Spinal injuries have an effect on the heart’s electrical conduction system and may cause the heart rate to be abnormally low, particularly for players who have been physically exerting themselves.
Treatment of a spinal cord injury – The Log Roll

Once you suspect a spinal cord injury, the injured player needs to be prevented from making any form of movement. The medical team must work as a complete unit, with the team leader securing the player’s head in a neutral position, and issuing calm and clear instructions to his team.

Rolling the player over

In the event of the player lying face-down after his injury, you need to turn the player onto his back to fully assess him. This is not an easy task and, if not done properly could be potentially life-threatening if the player has an unstable spinal injury.

Firmly grasp the player’s head and hold it in its relative position as the player is rolled onto his back. This means that the player’s head remains at the same angle and in the same position it was found in relation to their neck, shoulders and body throughout the process of rolling the player over.

Getting the player onto the trauma board

- One medic applies a cervical collar while the others prepare the equipment
- Position one medic on the side from where the trauma board is to be slid in
- At least 2 medics should be on their knees on the side to which the player is to be rolled
- The medic at the head should be the only one speaking
- The medics on their knees overlap their arms, take a firm grasp of the player, pull the player towards them and roll him onto his side on the instruction of the medic holding the head

Once the player is on his back, gently apply traction on the head and slowly move it into the neutral position.
4. MANAGEMENT OF RUGBY INJURIES

- The medic holding the head should ensure that the head and neck is stabilised at all times, and that he and his team roll the player as one unit without compromising the neck.

- The trauma board is then slipped into position against the player’s side touching the ground.

- The player is then slowly lowered onto the board.

Once the player is on the board

- Medics on the side take their overlapping hands and place them on the side of the player nearest them.
- The medic holding the head instructs the other medics to shift the player onto the centre of the board.

- The injured player is now fully immobilised.
- Place a warm blanket over the player and remove him from the field.
- Protect the player from onlookers and continue to speak calmly to him while monitoring his condition.

- Once the head blocks are on and the medical team have applied the spider harness the medic at the head can finally release the C-Spine stabilisation.
Treatment of Soft Tissue Injuries

Soft tissue injuries are associated with the muscle, tendons and ligaments and not the bones. The most effective way of determining the location of the injury is through pain. A ligament injury is called a sprain, while a muscle or tendon injury is called a strain. Signs and symptoms include pain, loss of movement or function of the limb, swelling of the joint, and bruising of the skin around the sprain or strain.

Soft tissue treatment tips (RICED)

- **Rest** – move the joint as little as possible, to minimise pain and limit bleeding into the injured area. Should last between 1 - 3 days
- **Ice** – cold pack the joint to help reduce swelling. Do not apply ice directly to the skin (wrap ice in a wet towel or similar). Apply ice for intermittent cycles of 10 - 20 minutes followed by 10 minutes at room temperature followed by another 10 - 20 minutes every 2 - 3 hours, frequency gradually reducing over the next 24 - 48 hours
- **Compression** – apply a stretch bandage to limit swelling, but avoid excessive restriction of blood supply. Best performed together with ice
- **Elevation** – Keep the limb or joint as high as possible. This helps drain fluids from the area (above the heart for upper limb and above level of the pelvis for lower limbs)
- **Diagnosis** – Consult a medical professional as soon as possible to determine an accurate diagnosis of the injury, so that the appropriate treatment and rehab process can begin

Soft tissue treatments – avoid HARM

The no HARM principle complements the RICED principle and is extremely important in the first 48 hours following a soft tissue injury.

**Avoid**

- **Heat** – blood vessels dilate, thereby increasing bleeding in injured area
- **Alcohol** – same as for Heat
- **Running** – detrimental to the repair process through increased swelling in the injured area
- **Massage** – same as for Running

Concussion Management

Concussion is frequently mismanaged, primarily due to the condition being misunderstood. Concussion refers to an injury to the brain as a result of a direct or indirect blow to the brain. Furthermore, a player does not have to lose consciousness or have memory loss to have suffered a concussion.

The BokSmart philosophy is that the outcome of a properly managed concussion should never be catastrophic in nature, and proper education on preventing, identifying, managing, treating and rehabilitating a player before returning to match play, forms an integral part of the programme.

A few key points to consider are:

1. Stabilise head injured players on-field, as you would for a neck injury, if there is a significant loss of consciousness, the player is clearly confused, or there is any suggestion of an associated neck injury
2. The concussed player must be assessed as soon as possible after the event by a medical doctor who is experienced in concussion management, and who holds knowledge of the current international and World Rugby guidelines on the matter
3. In circumstances where this is not possible, and the medical doctor does not have this knowledge, he should be referred to the BokSmart Website for the relevant information, and should follow the protocols provided
4. A concussed or suspected concussed player who shows any of the RED FLAGS (Pg 47) or “Important signs of a serious or deteriorating head injury”, should get to hospital immediately
5. A seizure or fit may be a normal physiological response to head trauma, but repeated seizures or fits are a RED FLAG
6. Return-to-play on the same day is definitely not allowed under ANY circumstances
7. Whether a coach, referee, parent or player, it is YOUR responsibility to ensure that any players suspected of suffering a concussion are cleared by a medical doctor before returning to play
8. Following a suspected concussion the player must first follow the graded return-to-play process before returning to full match play, even if a player has been cleared by a medical doctor
The 6 R’s of concussion:

Recognise:
You need to be able to recognise the signs and symptoms of a concussion or suspected concussion in your players. Learn them and know them!

Remove:
When you recognise any signs and symptoms of a concussion, or you suspect a concussion, remove the player immediately.

Refer:
Once you have permanently removed the player from the field, refer them to a medical doctor who understands concussions for a thorough clinical assessment.

Rest:
Rest the player completely until they are totally sign and symptom free, and off any medication that might modify the symptoms of concussion. Follow the minimum stand-down periods for each age-group category, before entering the graduated return-to-play process.

Recover:
Full recovery of signs and symptoms is mandated before entering into the age-appropriate graduated return-to-play protocol.

Return:
To return to play safely following a concussion or suspected concussion, the players must be completely sign and symptom-free, be medically cleared by a doctor to do so, and then must also complete the age-appropriate return-to-play protocol. For the purpose of concussion, full contact practice equals return to play.
What you need to look out for:

- Dazed, vacant or blank expression
- Lying motionless on the ground or very slow to get up
- Unsteady on feet
- Balance problems or falling over
- Incoordination
- Loss of consciousness or lack of responsiveness
- Confused or not aware of plays or events
- Grabbing or clutching of the head
- Convulsions/Fits
- Unusual emotional or irritable behaviour

What the player might tell you:

- Headache
- Dizziness
- Confusion or feeling slowed down
- Struggling with or blurred vision
- Nausea or vomiting
- Fatigue/tiredness
- Drowsy, feeling in a fog or difficulty concentrating
- A feeling of pressure in the head
- Sensitivity to light or noise

What questions you need to ask for children aged 5 – 12:

- Where are we now?
- Is it before or after lunch?
- What did you have last lesson/class OR who scored last in this game?
- What is your teacher’s/coach’s name?

Where there is any hesitation, uncertainty or one cannot verify the information, have the player permanently removed from the game or training session, and suspect a concussion. Further to this, if you have any doubt whatsoever, permanently remove the player from the field!

Here are a few situations where there can be absolutely no debate as to whether a player has sustained a concussion or not:

- Players who present with convulsions or fits
- Players who present with tonic posturing (uncontrolled rigidity of arms or legs)
- Players with confirmed or even suspected loss of consciousness
- Players who lose balance or look unsteady on their feet
- Players who are clearly disorientated OR confused
- Players who show definite changes in behaviour
- Players who are clearly dazed, dinged or can’t remember plays

This is also where feedback from your rugby colleagues who witnessed the incident can assist in making the right decision for the player!
The Graduated Return to Rugby after Concussion.

The graduated return to play protocol consists of 6 phases, of which the first is the age-appropriate mandated rest phase and the last stage is the full return to rugby.

Each Stage of the graduated return to play (GRTP) process is allocated a specific time period.

Stage 1 is physical rest until no symptoms remain.
For players 18 years old or younger: a minimum of 2 weeks off, and even longer if any signs or symptoms remain. For players 19 years old or older: a minimum of 1 week off and the player must be sign and symptom free.

Stage 2 is light aerobic exercise for 10-15 minutes
The player must be symptom free during the full 24 hour period.

Stage 3 becomes more sport-specific
Push the intensity up a bit, to where the player is exposed to running drills, where rugby specific movement patterns are added, but still includes no potential head impact activities yet.

Stage 4 progresses the player to more complex training
Drills where passing can be included. The purpose here is to combine non-contact exercise, coordination and decision-making, which increases the load on the brain. Before entering Stage 5, which represents normal training activities such as full contact practice, it is critical that the player is cleared by a medical doctor to do so.

Stage 5 normal rugby training including full contact practice
They should show no signs or symptoms during this Stage and the full 24 period before being given the final go ahead to return to full match play or Stage 6.
Stage 6 equals return to full match play!

If a player shows any signs or symptoms during any Stage, they should consult with their treating medical doctor, and move back a stage to where they were previously sign and symptom free, and attempt to progress again after a minimum of 24 hours rest.

Minimum stand down period after injury:

Players **18 years old or younger** = 2 weeks rest post injury + 4 days GRTP
(Earliest Return to Play = Day 19 post injury)

Players **19 years old or older** = 1 week rest post injury + 4 days GRTP
(Earliest Return to Play = Day 12 post injury)

**Emergency Number**

For any potentially serious concussion, head, neck or spine rugby injury contact the toll-free BokSmart SpineLine number, 0800678678, operated by ER24.

Knowing when to take a player off protects them. Recognise and remove!
Concussion is a brain injury.

Let’s not lose our heads on the rugby field. If in doubt, sit them out.
For additional up-to-date evidence-based information on concussion, its treatment and management, go to www.BokSmart.com

Important signs of a serious or deteriorating head injury - **RED FLAGS**

- Headaches that worsen
- Increasing drowsiness
- Inability to recognise people or places
- Deteriorating consciousness
- Increasing confusion or irritability

During the first 48-72 hours after the incident, do not:

- Consume any alcohol
- Take excessive painkillers
- Place yourself in an environment with excessive loud noise or bright light
- Work at a computer
- Exercise
- Drive a car

Players suspected of having suffered a neck injury, or whose level of consciousness or condition deteriorates, should be taken to hospital immediately.
Players suspected of having suffered a neck injury, or whose level of consciousness or condition deteriorates, should be taken to hospital immediately.

Concussion regulations, emphasising the need to “recognise and remove” at amateur level have been approved by the General Council of the South African Rugby Union (SARU).

In practice this means:

Players who are even suspected of having concussion – or are confirmed as having concussion

- Must be removed from the field of play and not return to play or train that day.
- Should consult with a medical doctor as soon as possible
- And where concussion is either suspected or confirmed, and only once cleared to do so by the medical doctor, these players must complete the ‘Graduated Return to Play Protocol’, as described in the World Rugby Concussion guidelines, in accordance with the SARU age appropriate criteria.

The regulation stresses that extra caution should be taken with players 18 years or younger who have a heightened risk of concussion. Full details of the concussion regulations can be found on the BokSmart Website: www.BokSmart.com.
Rehabilitation and Returning to Play

The management of injured players in rugby is generally centred around an early return to play approach. This happens despite the “best practice” principles that are available.

Returning to play too early can result in re-injury and recurrent injuries in rugby are generally more severe. There are four main phases associated with the healing process after injury:

1. **Time of injury**
   Strength of the injured structure or tissue decreases more as the size of the injured area, and severity of the injury increases.

2. **Inflammatory phase (4-6 days)**
   The body responds to injury with an inflammatory response around the injured site. This starts the repair process.

3. **Repair phase (5 days to 10-12 weeks)**
   The injured body part regains strength. Start of exercise rehabilitation.

4. **Remodelling phase (21 days to 6-12 months)**
   During this period the exercise rehabilitation should be sufficiently vigorous to prepare the injured body part for the demands of the game.

Once a player has been medically cleared for a return-to-play, the following steps need to be followed:

- The player has to pass the fitness standards of the team he is returning to
- The player needs to pass some skill-specific tests applicable to rugby
- The player can then begin practising with the team
- The player should be reintroduced into the match environment, with match time gradually increasing

The BokSmart Return-to-Play position statement, which suggests a best clinical practice approach in managing the return to play process, is available for download at www.BokSmart.com
5. Physical Preparation and Recovery Techniques

Basics of the warm-up
The purpose of warming up before a rugby practice or match is to increase the temperature of the body and its working muscles, to prevent injury, and improve performance on the field. Warming up also allows the players to prepare mentally for the upcoming session or match.

Warm-ups should be fun and simple and include drills that are familiar to the players, including active dynamic stretching before the session or match, and static stretches afterwards.

Structuring a warm-up
A structured warm-up should consist of progressive activities combined with dynamic flexibility exercises, followed by movements that mimic the specific movement patterns of the sport. The warm-up should meet the needs of the individual and the team, while the type, duration and intensity of every warm-up will be determined by the objective of the coaching session or match, as well as how much time is available.

A general warm-up involves the whole body. The best examples are jogging or cycling.

A specific warm-up includes rugby movements such as jumping, stepping, catching, tackling, kicking, passing, accelerating and decelerating during the warm-up.

There are five phases in any good warm-up:

1. **Phase 1 – Aerobic, combined with dynamic stretching**
The focus is to increase body temperature, improve cardiorespiratory function of the lungs and heart, and improve muscle elasticity slightly.
Example: jog across the width of the field in twos or threes while passing the ball in depth at different distances and completing a lower-body dynamic stretch every time they reach the other side.

2. **Phase 2 – General Skill (Medium Intensity)**
This is where rugby movement patterns are simulated and the mental preparation begins.
Example: the team splits into four groups and forms a square. Using two balls, the players run towards the group diagonally opposite them, popping a ball to a teammate on the other side.

3. **Phase 3 – Specific Skill (High Intensity)**
Position-specific exercises performed here will stimulate muscle contraction speed and reaction time.
Example: Outside backs will complete 30-40 metre speed run-throughs with a swerve at maximum pace. Loose forwards and inside backs will complete turning with acceleration and a subsequent ball steal against a hit shield. Tight forwards will complete turning in a short space and 1-1 scrumming.

4. **Phase 4 – Functional Skill – Position specific OR technical specificity**
This is one of the most important phases, as it is very specific to what will happen in the match. Forwards and backs will split up. The backs will kick and pass, step and sprint and forwards will jump and throw, support and drive.

5. **Phase 5 – Final Dynamic Stretching / Upper-body Specific movements**
The only things left to do now is some final dynamic stretches to ensure range of motion is optimal, and the muscles can function optimally and respond quickly.
It is the shortest of all the phases and players should rehydrate at the end of it.
5. PHYSICAL PREPARATION AND RECOVERY TECHNIQUES

A typical pre-match warm-up

Minute 0-10: Kickers & Hookers enter the field of play
Minute 10-20: Individual warm-up per position
• Passing (Accuracy & Distance)
• Offensive / Defensive situations (2 v 1 / 3 v 2 / 1 v 1 / 2 v 2)
• Acceleration
• Sprinting
  o Tight 5: 4 x 10m Shuttles
  o Loose forwards & Inside Backs: 2 x 20-30m sprints
  o Outside Backs: 2 x 40m sprints
Minute 20-35: Team warm-up
• Handling for speed, distance and accuracy with game simulative pressure
• Defensive drill
• Positional split
Minute 35: Back into change room
Minute 43: Take the field
Minute 45: Kick-off

The cool-down

The cool-down enables the body temperature to drop and the heart to return to a resting state.

The length of this period will depend on the intensity and duration of the preceding session or match.

After a practice session, it is advisable not to stop exercise immediately, but to gradually reduce the intensity. This can include slow jogging and/or fast walking, followed by static stretching.

Players who complete static stretching during the cool-down period tend to have fewer problems with muscle soreness directly after strenuous activity.

Recovery strategies

Recovery forms an integral part of the whole training and playing process. High volumes of training with insufficient recovery lead to symptoms of fatigue with an accompanying high risk of injury. It’s also vitally important to allow the body to recover properly after a match. Here’s how:

Within the first five minutes: Rehydrate and refuel. Eat/drink carbohydrate and protein. A ‘Sports Drink’ as defined earlier (Pg 8) is adequate. Players need to be reminded that thirst is a poor guide of hydration status.

5 to 15 minutes: Cool-down - Move lightly for five to eight minutes, then stretch for eight to 10 minutes.

15 to 20 minutes: Use a hydrotherapy modality, for example contrast showers* or cold bath* (see examples below). Self massage, using predominantly shaking techniques to stimulate the nervous system. The players should continue to hydrate.

Examples

Contrast shower – Alternate one minute of hot (as hot as tolerable) with thirty seconds of cold (as cold as tolerable). Repeat three times.
Cold bath – Use a temperature of five to 15° C. Immerse for five to seven minutes. Move body parts during the immersion.

Within the first 60 minutes: Continue to hydrate. Ingest more food.
Carry out a performance review. Start to relax, use music if appropriate.
Wear a compression garment.

In the evening: Relax as appropriate, for example read or go to a movie or socialise.
Continue to hydrate and refuel.

Prior to bed: Use relaxation skills to switch off. Follow routine sleep guidelines.

Next day: Active recovery session (i.e. pool session)
Stretching

Flexibility is the ability to move a joint or series of joints smoothly and easily throughout a full range of motion. Stretching should be sport specific and movement specific, and directly related to the activity that will follow. Stretching prepares the muscles for the forthcoming activity and ensures they can contract and relax at the same match-specific intensity and speed, and at an optimal range of movement.

Tips

- **Avoid pain** and don’t complete stretches that feel uncomfortable
- **When you experience pain it is a warning sign** that the muscle has reached the end-point in its range of movement.
- **Breathe normally** don’t hold your breath
- **Normal breathing is important** for the supply of oxygen to the working muscles, the removal of carbon dioxide, and the control of blood pressure.
- **Repeat the stretch on both sides**, e.g. legs, arms and side of body.
- **Stretch slowly** and smoothly (if choosing static stretching) without any jerking or bouncing movements. Remember to choose the right stretches at the right time.
- **Do Active Dynamic stretches** before a session or match and Passive Static stretches at the end of the session or match.

Supine (Looking up to the sky) Lower Back Stretch

Lie down on your back, knees together and bent, feet on the ground, shoulders square and flat with the neck in neutral. Move from the middle to the right, left and then back to the right.
**Prone Calf walk-outs**

Support your body on your hands and on the balls of your feet as if getting into a push-up position. Move your buttocks slightly up and start stepping downward with your heels towards the ground in a rhythmical manner. Alternate your feet.

**Supine Knee holds with ‘rocking’ and release**

Lie supine, tuck your knees into your chest and hold it in with your arms over your knees. Release your knees and straighten your legs out when moving down and forward in the ‘rocking movement’.

At the end of the movement, move your hands towards your feet by straightening your arms and sliding your hands down your shins. Move back into the starting position as soon as you have ‘attempted’ to touch your toes.

Rock backwards again with your knees tucked in, and complete another ‘toe touch’ at the end of the downward movement. The second option is a split in legs and allowing a slight groin stretch.
Walking Hamstring Stretch

Stand erect and take a small step forward. At the same time as the step is taken, reach with the opposite side’s hand towards your opposite foot’s (the one at the front) big toe. On the next step, cross over to the other hand and foot, e.g. right hand and left foot. Keep looking forward.

Standing Lunge Walk with Hip Flexor stretch

Complete a slight forward lunge. At the end of the lunge, extend the arm of the back leg straight up towards the sky. Hold it there for 2-5 seconds and take another lunge forward with subsequent change of extended arm.
Lunge Walk

Stand erect with the hands on the hips and feet together. Take a step forward and hold your balance for a second.

Immediately push back off the front foot into the starting position. Change feet after every repetition. Change of stepping direction can be included.
**Standing Squat / Quad stretch**

Stand erect with your arms crossed and your hands on your shoulders. Split your feet apart to about shoulder width. Squat down as if sitting on a chair and move up to the starting position as soon as your thighs are parallel to the ground. Advanced: Increase the speed of the movement and complete a slight jump at the end of the upward movement.

**Upper-body Push-up and open**

Complete a push-up with the hands wider than the shoulders. At the end of the upward movement, balance on one arm and rotate the upper-body away from the supported side with the hand pointing towards the sky. Change between left and right sides rhythmically.
6. Pre-Participation Screening of Players

In rugby, pre-participation screenings are vital. They determine those aspects of a player’s personal and family history that place the person at greater risk of sudden death, serious illness, or musculoskeletal injury while on the rugby field.

In most clubs and schools, the coach is usually the person closest to the players, and therefore he may be the best person to conduct an initial screen.

The most important things to screen for are cardiovascular disease, concussion, and other neurological injuries.

Cardiovascular disease is the single biggest cause of sudden death in young rugby players and other sports in South Africa, and the challenge for coaches is to ‘red flag’ potentially dangerous risk factors to avoid a possible disaster.

Head and neck injuries, on the other hand, account for the largest proportion of catastrophic injuries in South African rugby.

Coaches, referees and players should all be familiar with the range of symptoms possibly associated with concussion, as unrecognised or poorly managed concussion may result in catastrophic injury or brain damage. Coaches who detect any symptoms of concussion should ensure that the player involved seeks medical advice immediately.

Other potentially dangerous conditions to watch out for include players suffering from flu, asthma and heat-related illness.

Screenings also help coaches find out about the medications players are using, as well as medical conditions the player did not feel was worth mentioning, such as diabetes or hypertension.

The coaches’ pre-participation screening form is available on the DVD in PDF format, and can be downloaded from the BokSmart website at www.BokSmart.com.

BokSmart Pre-Participation Questionnaire

AIMS: Any sport involving physical exertion and contact contains inherent risks and may cause bodily harm. The purpose of this questionnaire is to help coaches, who are often closest to players during exercise, to identify players who may be at risk of serious injury or illness when playing rugby, and to help prevent such medical conditions by referring them for appropriate medical intervention.

INSTRUCTION: Ideally this questionnaire should be completed during pre-season, about 4-6 weeks before training starts. Players should answer all questions. A positive answer (YES) to any of the questions requires the player to be followed up by a medical professional associated with the school, club or union, or recommended by SARU. Written medical clearance should be received for the specific condition highlighted before participation in any match or training session.

PLAYER’S PROFILE:

Name: _______________________________ Club/School: ___________________________
Date of birth: _________________________ Contact number: _______________________
Emergency contact: ___________________ Contact number: _______________________
Doctor’s name: _______________________ Contact number: _______________________
Coach’s Name: _______________________ Contact number: _______________________

☐ Player cleared for play ☐ Player referred

Medical professional to whom referred: ___________________________________________

Medical clearance received: __________________________ Date ______________________

Coach’s signature: __________________________ Date ______________________
## Screening Question

<table>
<thead>
<tr>
<th>Screening Question</th>
<th>Yes</th>
<th>No</th>
<th>If answered YES, follow suggested course of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Have you ever been told by a doctor not to participate, or to limit activity, in sports?</td>
<td></td>
<td></td>
<td>Consult a medical doctor for investigation of the specific condition.</td>
</tr>
<tr>
<td>2. Do you suffer from any medical condition that requires daily medication, e.g. asthma, diabetes, high blood pressure, rheumatic fever, heart disease, epilepsy, bleeding disorder, HIV?</td>
<td></td>
<td></td>
<td>Ascertain that the player has the appropriate prescribed medication. Receive medical clearance from a medical doctor before exercise.</td>
</tr>
<tr>
<td>3. Do you have any allergies, e.g. bees, grass, pollens or medicines?</td>
<td></td>
<td></td>
<td>Ensure that the player has appropriate prescribed anti-allergy medication (adrenaline, anti-histamines, cortisone) close by at all times. Ensure you have contact details for the player’s doctor or the nearest Emergency Room. Suggest a medic alert bracelet.</td>
</tr>
<tr>
<td>4. Have you ever passed out or nearly passed out during exercise?</td>
<td></td>
<td></td>
<td>Refer for a medical doctor’s evaluation, including exercise stress test.</td>
</tr>
<tr>
<td>5. Has a doctor ever ordered a test for your heart, e.g. ECG, scan, etc.?</td>
<td></td>
<td></td>
<td>Receive medical clearance from the relevant doctor.</td>
</tr>
<tr>
<td>6. During exercise, do you have chest pain or severe shortness of breath?</td>
<td></td>
<td></td>
<td>Consult a medical doctor for an evaluation, including exercise stress test.</td>
</tr>
<tr>
<td>7. During exercise, do you get tired a lot quicker than your friends do?</td>
<td></td>
<td></td>
<td>Refer for a medical evaluation citing possible excessive exercise-associated fatigue.</td>
</tr>
<tr>
<td>8. Have you had any ‘flu-like’ illness during the past 2 weeks?</td>
<td></td>
<td></td>
<td>Receive medical clearance that the player has fully recovered.</td>
</tr>
</tbody>
</table>
### Screening Question

<table>
<thead>
<tr>
<th>Screening Question</th>
<th>Yes</th>
<th>No</th>
<th>If answered YES, follow suggested course of action</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Has any family member ever died suddenly, for an unexplained reason?</td>
<td></td>
<td></td>
<td>Advise that the player gives a thorough medical history to, and be examined by, a medical doctor.</td>
</tr>
<tr>
<td>10. Have you suffered a head injury this season?</td>
<td></td>
<td></td>
<td>Receive a medical certificate from a sports doctor, neurologist or neurosurgeon that the player has fully recovered.</td>
</tr>
<tr>
<td>11. Have you sustained 3 or more head injuries or concussions in your life?</td>
<td></td>
<td></td>
<td>Refer the player for medical assessment by a sports doctor, neurologist or neurosurgeon before being cleared.</td>
</tr>
<tr>
<td>12. Have you ever suffered from headaches, dizziness, loss of memory or confusion after a blow to the head?</td>
<td></td>
<td></td>
<td>Refer the player for medical assessment by a sports doctor, neurologist or neurosurgeon before being cleared.</td>
</tr>
<tr>
<td>13. Do you suffer from headaches, numbness or ‘pins and needles’ while exercising?</td>
<td></td>
<td></td>
<td>Refer the player for medical assessment by a sports doctor, neurologist or neurosurgeon before being cleared.</td>
</tr>
<tr>
<td>14. Have you ever had a seizure (fit)?</td>
<td></td>
<td></td>
<td>Refer the player for medical assessment by a neurologist or neurosurgeon before being cleared.</td>
</tr>
<tr>
<td>15. Have you ever injured your neck?</td>
<td></td>
<td></td>
<td>Refer the player for medical assessment by a sports doctor, neurologist or neurosurgeon before being cleared. Advise ongoing neck strengthening routine, preferably prescribed by a physiotherapist or biokineticist.</td>
</tr>
<tr>
<td>16. Is there anything that you would like to see a doctor about?</td>
<td></td>
<td></td>
<td>Refer to a medical doctor.</td>
</tr>
</tbody>
</table>
7. Pre-Season Testing and the Physical Profiling of Players

The testing of players before the start of every season provides rugby coaches with vital information about players’ body composition, as well as levels of strength, speed, power, flexibility, agility and cardiorespiratory endurance.

Pre-season testing and fitness profiling may also reveal injuries that might otherwise not have been picked up until the season starts.

Perhaps most importantly, testing also allows coaches to improve the performance of their players, by reviewing previous tests and gathering information about the player’s current training regime, to draw up a new, customised training regimen to cater for the specific strengths and weaknesses of each player.

A typical testing procedure will comprise the following elements:

**Consultation**

This is always the first step in the process. It allows the tester to make the correct decision about which tests to complete, informs the team or individual on the process to be followed, and lets the team or player know why they are being tested and what the testing involves.

**Anthropometry**

Coaches need to know the physical shape of their players before the season starts. Anthropometry is the science of measuring the physical parameters of the human body. It is used to evaluate a player’s size, shape, body proportions, body composition and degree of asymmetry between the dominant and non-dominant limbs. This information can be useful in designing intervention programmes as well as helping the coach track the progress of his players.

**Flexibility**

Coaches need to know how flexible his players are. Flexibility tests will determine a player’s range of motion around a joint, or series of joints. Flexibility is not a specific performance-related variable, but may be important in injury-prevention.

**Speed and agility**

Coaches need to know how fast and agile their players are. The aim of these tests is to determine players’ maximal speed, as well as to determine their ability to accelerate, decelerate and change direction at maximal speed.

**Power**

Coaches need to know how powerful and explosive their players are. Power is the ability to complete maximal work in the shortest amount of time and measurements of power will tell a coach a lot about whether his players possess the necessary explosiveness to be competitive.

**Muscle strength**

Coaches need to know how strong their players are. Testing of muscle strength refers to the external force that can be generated by a specific muscle or group of muscles.

**Cardiorespiratory fitness**

Coaches need to know that their players are healthy, and whether they have a sufficient base level of fitness at the beginning of the season.

**Repeat sprint ability**

Coaches need to know whether their players are sufficiently conditioned to resist fatigue in short duration, high-intensity and intermittent exercise – this type of fatigue is specific to the demands of rugby. Such testing also measures the endurance of the legs and lower back.
8. Protective Equipment in Rugby

The use of protective equipment in rugby - from customised mouthguards to space-age compression garments - has increased exponentially in recent years.

To manage and control the protective wear industry, World Rugby has issued directives and specifications about the wearing of protective equipment by players. The documents are on the World Rugby website at www.worldrugby.org

Protective Equipment can mainly be categorised as follows

- Mouthguards
- Headgear
- Padded equipment
- Compression garments

Mouthguards

It has been shown that wearing a mouthguard reduces head acceleration in contact situations, and has had a big impact on the reduction in dental claims. There is no evidence that mouthguards prevent concussion. However, there is enough evidence to suggest that mouthguards be worn at all times during practices and matches.

Mouthguards – practical tips

- Inspect mouthguards regularly for any signs of wear and tear
- Replace your mouthguard at least every 2 years
- Growing children should replace their mouthguards every 6 months
- To decrease mouth dryness, apply a light coating of Vaseline to the lips and mouthguard before use. Combine with frequent sips of water
- Wash in cool or lukewarm soapy water and rinse.
- Store in a rigid container
- Do not chew excessively when under stress during a match as this will lead to a quicker deterioration of the mouthguard

Headgear

The use of headgear will not prevent concussion, but should be encouraged for all players at all levels, as it does provide a measure of protection against bruising, lacerations and abrasions.

Headgear – practical tips

- Wear during practices and matches
- Headgear should fit properly (different sizes are available)
- Headgear should be properly fastened with the chin straps
- If headgear becomes damaged in any way (torn), it should be replaced
- Wash regularly in cool or lukewarm water and rinse properly

Padded equipment

Shoulder pads are commonly used today but there is no consensus on whether wearing them prevents severe injuries. However, their benefits do include minimising soft-tissue bruising sustained from direct impact.

Padded equipment – practical tips

- Wear during practices and matches
- Padding should fit snugly and not be too big
- Wash padding regularly in cool or lukewarm water and rinse properly
- Do not tumble dry
- Learn correct falling techniques
- Do weight training to build up muscles as added protection

Compression garments

Although this type of protective equipment is relatively new, there is evidence that the wearing of compression garments may reduce muscle strains and ligament sprains, and help prevent the recurrence of hamstring injuries.

Compression garments – practical tips

- Garments should fit properly
- Replace torn garments
- Do not expose to high temperatures (ironing) or tumble dry
- Wash in cool or lukewarm water and rinse properly
- Garments must be worn under other sport clothes
9. Safety in the Playing Environment

Coaches and referees frequently have to decide whether a match should be allowed to take place or not, depending on the presence of basic medical support, as well as other external conditions such as an appropriate emergency action plan, emergency medical equipment, facilities and extreme environmental conditions.

From a medical point of view, everyone who participates in a rugby match, from school games to a Test match, should have access to on-site medical care. Where there are only 1-2 First Aiders available for multiple games happening simultaneously at a venue, they should be stationed at a centralised point, and be visible and accessible to all.

There are three categories of minimum requirements that must be adhered to (“Gold +”, “Gold” and “Green”), depending on the type of matches being played:

“Green” Category Events

The minimum personnel required for a rugby game to take place are:

- One or two persons suitably trained in Emergency Field-Side Care (A Trained First Aider, or Paramedic).
- BokSmart Rugby Medic(s) – Minimum requirement at match venues in communities who are considered socio-economically disadvantaged or underprivileged (for further information go to www.BokSmart.com) – these should not be seen as replacement personnel for a first aider or paramedic, where they are available!

Referees/coaches who have First Aid knowledge add immense value, and all referees and coaches must be BokSmart certified as of 2011. The presence of a Sports Medicine trained doctor or a doctor experienced in treating sports injuries will also be valuable.

Green guidelines refer to the minimum requirements for the following designated rugby levels of play:

- Normal School Rugby matches
- Normal Club rugby matches
- Community rugby
- All Sevens format matches in the above mentioned categories.

Gold guidelines are the minimal safety requirements for elite level events. Gold level events can be subdivided into two sub-categories – Gold and Gold+

Gold

- Absa Currie Cup tournaments (all formats and age-groups, except for the Premiership Competition)
- Vodacom Cup
- All other interprovincial level matches, including Amateur Interprovincial matches and tournaments
- Cell-C Community Cup
- Varsity Cup and Shield
- SARU Youth Weeks
- Schoolboy festivals
- Classic Clashes
- All Sevens matches or tournaments at these levels

Gold+

- Absa Currie Cup Premiership
- Vodacom Super Rugby
• All International Test Matches
• All International Sevens matches and tournaments

For the Gold standard matches, or for Gold+ standard matches, these minimum safety requirements, in addition to the Green standard necessities, are more stringent.

**Minimum requirements for assessments of safe environmental conditions**

**Hot conditions:**
• Ambient temperature-relative humidity device
• Wet-bulb globe thermometer (WBGT) or Whirling hygrometer
• Telephonic access to the weather service for the WBGT information is also acceptable

**Guidelines for matches played in hot conditions**
• Water and cold towels must be available alongside the field
• Water breaks should be held regularly, e.g. a 1 min break after 20 min in each half
• The referee should also consider increasing the halftime break from 10 min to 15 min
• Temperature should be less than or equal to a WBGT reading of 28° to be safer
• If you have a Whirling hygrometer, the recommendations are that temperature should be less than or equal to 30° C, and humidity less than 60% to be safer

For more advice on this matter consult your Safety in the Playing Environment and Tournament Medical and Safety Minimum Standards documents for the additional safety measures and protocols that are compulsory for these levels of matches and tournaments.

These are available on the BokSmart Website www.BokSmart.com or linked Page: http://boksmart.sarugby.co.za/content/playing-environment-safety. The minimum requirements with regards to Field Safety standards are also available on the BokSmart website at the same link. Where the Safety at Sports and Recreational Events Act of 2010 applies, this also needs to be addressed according to Law.
9. SAFETY IN THE PLAYING ENVIRONMENT
# 9. SAFETY IN THE PLAYING ENVIRONMENT

## Checklist:

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<thead>
<tr>
<th>Environmental conditions</th>
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<th>Gold</th>
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*Telephonic access to this information is sufficient

**Where indicated in certain underprivileged or disadvantaged communities, this cannot be seen as a requirement.
The following algorithm may be used to manage any potential catastrophic injury. This algorithm may vary from venue to venue depending on the support and facilities available in the immediate area.

**However, each Emergency action plan should detail the following:**
- Layout of the facility and access to the facility
- Equipment available
- Internal support personnel
- External support personnel
- Communication required
- Follow up required post catastrophic injury

**Emergency Action Plan – Potential Catastrophic Injury:**
A document should be available that is easily accessible to all emergency personnel and team management involved on match day, and should contain the following:

**Facility Details:**
This should include the directions to the match venue – GPS coordinates if known would be beneficial to the emergency personnel – including details regarding access and access control procedures.

**Facility layout including access to field and emergency vehicles:**
This should also include the position of keys and other security measures that may hinder quick access of emergency personnel.

**Emergency Equipment:**
A detailed list should be readily available and visible, detailing all equipment and emergency medication available. Its whereabouts should also be clearly defined.

**Personnel:**
Both host club/union personnel as well as emergency support personnel contracted for the event should have clearly defined roles and responsibilities delineated in the emergency action plan.

**Communications:**
Clear communication is the key to effective management of an injured player. Communication w.r.t. the role of each member of the medical team as well as communication between the internal; external and emergency unit/ BokSmart SpineLine personnel is imperative to ensure not only the optimal care of the player but also to ensure the players management and family are fully informed as to his situation.

**Follow up:**
A designated person, normally the Match Doctor for “Gold” and “Gold+”, or the team coach or manager for “Green” categories, should be nominated to ensure all parties are kept informed about the condition of the injured player until he is returned to the safekeeping of his nearest kin or designated team management member, whichever may be applicable at the time.
## EMERGENCY ACTION PLAN:

<table>
<thead>
<tr>
<th>Emergency Action Plan</th>
<th>Designated Responsibility</th>
<th>Name</th>
<th>Contact info.</th>
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<td>Management: (Pitch Protocol)</td>
<td>Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic</td>
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<tr>
<td>Management: (Medical room Protocol)</td>
<td>Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic</td>
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<td>Evacuation Protocol: (Field)</td>
<td>Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic</td>
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<tr>
<td>Evacuation Protocol: (Medical room, Spinal unit, General Hospital, Trauma Unit)</td>
<td>Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic</td>
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<tr>
<td>Communication: (BokSmart Spineline, SICM, Ambulance service, Spinal unit/hospital)</td>
<td>Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic</td>
<td></td>
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</table>
Emergency Action Plan

Designated Responsibility: Name Contact info.

Done (√/X)

Management:

(Pitch Protocol)

Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic

(Medical room Protocol)

Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic

Evacuation Protocol:

(Field)

Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic

(Evacuation Protocol:

(Medical room, Spinal unit, General Hospital, Trauma Unit)

Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic

Communication:

(BokSmart Spineline, SICM, Ambulance service, Spinal unit/hospital)

Match/Venue Dr/ Highest qualified paramedic/ first aider or BokSmart Rugby Medic

9. SAFETY IN THE PLAYING ENVIRONMENT
10. Serious Injury Protocol

SARU via BokSmart have endorsed the appointment of a Serious Injury Case Manager (SICM), whose primary role is to assist SARU in the appropriate management of rugby-related serious and/or catastrophic injuries.

The BokSmart Spineline’s Emergency Service provider (ER24) is the first point of contact in the case of such an injury. In the case of a suspected serious and/or catastrophic injury to the head, neck, spine, brain or fatality of an injured rugby player, the SICM will provide the link between the relevant club, school or team and SARU.

A serious and/or catastrophic injury is defined as any head, neck, spine, or brain injury that is life-threatening, or has the potential to be permanently debilitating and results in the emergency admission of a rugby player to a hospital or medical care centre.

In the event of a serious and/or catastrophic rugby injury, a person of authority should be identified at the club or school to immediately take charge of managing the situation. In the case of such an injury seniority should preside with a sports physician, medical doctor, emergency care personnel, physiotherapist, biokineticist, rugby medic, first aider, coach, referee, and manager in that order.

The following protocol should then be adhered to

1. Provide immediate on-site and appropriate medical care of the injured player
2. Telephone the “BokSmart Spineline” call centre on 0800 678 678 and alert the Emergency Medical Service provider, ER24, to the injury
3. Arrange that the Emergency Medical Service provider has dispatched an appropriate emergency response team to the venue, e.g. ambulance where applicable.
4. Ensure the injured player is suitably transported to the hospital or medical facility.
5. The Emergency Medical Service provider will then immediately notify the SICM
6. The SICM will then accordingly notify:
   a. SARU’s Senior Manager: Medical
   b. SARU’s Senior Manager: Rugby Safety
7. SARU’s Senior Manager: Medical will then contact:
   a. All the relevant rugby personnel
   b. The relevant Provincial union’s CEO
   c. SARU’s GM of Corporate Affairs
8. The SICM will remain in frequent contact with the Emergency Medical Service team and the hospital or medical facility to which the injured player has been transported.
9. The SICM will also where possible notify the player’s family of the injury, unless in the case of a fatality, whereby the police will take responsibility for this task.
10. The SICM will identify a singular point of contact within the club, school or team and keep them updated about the situation.
11. If the injury is as serious as was originally suspected, and the situation requires it, the SICM will then fly/travel to the relevant hospital and visit the patient to:
   a. Ensure that adequate care is provided
   b. Complete a follow-up questionnaire where possible
   c. Submit a report to:
      i. SARU’s Senior Manager: Medical
      ii. SARU’s Senior Manager: Rugby Safety
      iii. The Chairman of the Chris Burger/Petro Jackson Players’ Fund

The club, school or team’s identified responsible person in charge must

1. Telephone the “BokSmart Spineline” number immediately
2. Coordinate with the Emergency Medical Service provider to arrange suitable transportation to the nearest and most suitable hospital or medical facility
3. Record and collate to the best of their abilities the injury details, and the personal details of anyone associated with the injury, including witness reports if any are available
4. Notify the next of kin, unless in the case of a fatality, whereby they should contact the police, who will perform this task

5. Both the identified responsible person AND the referee, individually must complete the “Serious Injury Report” form and e-mail or fax it within 48 hours to the SICM (Mrs. Gail Baerecke – Cell: 072 890 3538, e-mail: manager@playersfund.org.za, fax: 021 659 5653), who in turn will send copies on to the SARU’s Senior Manager: Medical, SARU’s Senior Manager: Rugby Safety, and the relevant Provincial Union CEO.

**The BokSmart Serious Injury Case Manager or SICM number is NOT an emergency helpline. If you require emergency assistance regarding a potentially serious head, neck or spine rugby injury, then please call the BokSmart Spineline, 0800 678 678, operated by ER24, immediately.**

If you are wanting to report on a serious head, neck or spine rugby injury, then you can leave a message on the SICM number, and they will get back to you as soon as possible

**Provincial Union’s responsibilities**

1. The Provincial Union’s representative should confirm knowledge of the injury and contact SARU’s Senior Manager: Medical, and Senior Manager: Rugby Safety in this regard
2. The Province has to nominate a representative that will attend any inquest or participate in any investigation that might arise regarding the incident
3. Arrange hospital visits by Provincial team players, for the patient if possible
4. Assist the club, school or team in any fund-raising initiative that might arise

**SARU’s responsibilities**

1. Maintain regular contact with the SICM to be updated about the progress of the patient and the situation
2. Make contact with the family and show support where possible
3. Ensure relevant documentation is received and due process is followed
4. Maintain accurate records of the serious injury report on the SARU database
5. Facilitate an in-depth investigation into the incident where relevant or applicable

**The complete “Serious Injury Report” form can be downloaded from www.BokSmart.com.**
11. Strength and Conditioning for Effective Rugby

Physical conditioning has become increasingly important in modern rugby. The advent of professionalism has been associated with an increase in the number of passes, tackles, rucks, tries, and ball-in-play time, which means players need to be more conditioned than ever before to be competitive. There has been a significant increase in muscle mass and strength of elite rugby players over the past century, thanks to better knowledge and implementation of training and nutritional strategies.

Within a team the development of these characteristics varies considerably, making the sport of rugby unusual, compared to other team sports in which the players within a team are generally more similar in their characteristics. This variation also places unique challenges on the strength and conditioning trainer, particularly if the rules of the “specificity of training” are applied within each training session. For example, the physical demands of a prop are quite different to the demands of a scrumhalf and it is understandable why their training programmes need to be specifically adapted.

The physiological demands of rugby are complex and require all players, irrespective of position, to develop the following attributes:

- Strength
- Power
- Speed
- Acceleration
- Muscle endurance
- Repeat sprint ability
- Motor co-ordination (skill)
- Flexibility
- Cardiovascular fitness
- Muscle mass

Peak fitness for rugby is attained when the fitness characteristics which are important for the demands of rugby are developed systematically. This is achieved by periodising training.

**Periodisation**

Periodisation has been defined as “the methodical planning and structure of training aimed at bringing or keeping an athlete at peak sports performance”.

**Basic Rugby Conditioning**

Structured resistance training programmes should be designed to include various training goals, specifically: muscle hypertrophy, strength, explosive power and injury prevention. Examples during the off season, pre-season, in season and post-season (transition) follow:
Off Season
This is the period where players capitalise on the lack of formal rugby training sessions by establishing a base level of fitness conditioning and building strength and muscle.

Players may be categorised as either beginner lifters (less than 2 months experience of structured strength training), intermediate (2-12 months) or advanced (longer than 12 months).

**Strength training recommendations during the off-season**

**Preparation Phase**
Moderate (1-3 sets of 10-15 repetitions) to high volume (multiple sets of 10-15 repetitions) utilising loads of 50-70% of the one repetition maximum (1RM).

**Hypertrophy Phase**
6-12 repetitions at 70-85% of 1RM for a total of 3-5 sets per exercise.
Rest 1-2 minutes between lifts. Train up to six times per week.

**Fitness conditioning recommendations during the off-season**

(Preparation and Hypertrophy phases)
Players with a low base level of fitness and high body fat levels should utilise this phase to build a base level of fitness conditioning with high volume low-moderate intensity aerobic conditioning.

Players who are trying to build muscle should reduce their aerobic training substantially during this phase, aerobic sessions should be kept short and primarily be of high intensity to not negate/nullify the goals of building muscle.

Pre-Season
The emphasis of the pre-season is typically divided into a strength phase and a power phase.

**Resistance training recommendations during the strength phase of the pre-season**

**Advanced players**
Train at 85% and more of 1RM (1-6 reps) for a total of at least 8 sets per major muscle group, and training a muscle group 2 times per week.

**Intermediate players**
Train at 80-85% of 1RM (6-8 reps), performing at least 5 sets per major muscle group and training 3 times per week.

Rest for 2-3 minutes for core, multi-joint lifts and 1-2 minutes for assistance exercises.

**Resistance training recommendations during the power phase of the pre-season**

Both muscular strength and velocity training should be done in this phase.

For velocity training, perform more specific movements with lighter loads (30-60% 1RM) for 3 to 6 repetitions per set.

Do not train to failure and ensure maximal movement velocity.

A multi-set (3 to 6 sets) power programme integrated into a strength training programme is recommended for intermediate and advanced lifters.

Olympic-type exercises such as the power clean, hang clean, hang-pull, etc. are ideally suited for this phase of training. If unsure of correct technique, consult a professional before attempting these!
Always perform high velocity power exercises first in a non-fatigued state, followed by high intensity strength training.

For strength training, advanced and intermediate lifters should perform heavy loading (85%-100% of 1RM) in order to increase the force component of the power equation (power = force x velocity). Rest for 2-3 minutes for core and power lifts to ensure optimal recovery between sets.

**Fitness conditioning recommendations during the pre-season**

As the season approaches, there should be a shift towards greater specificity of match fitness conditioning, as well as the inclusion of speed and agility conditioning to improve sprint performance.

**IN-SEASON**

The focus of the in-season phase is to maintain the level of strength and conditioning which has been achieved through the increased volume of the off- and pre-season training phases.

The challenge to strength and conditioning coaches is to maintain levels of fitness conditioning, as well as strength, power and body mass during the in-season.

**Resistance training recommendations during the in-season**

A decrease in muscle mass during an in-season period is avoidable with a well designed periodised programme.

Train twice a week. The first workout of the week should emphasise strength and hypertrophy maintenance and the second workout, typically 48-72 hours later, should emphasise power maintenance.

Do 3 sets for core strength and power lifts.

**Fitness conditioning recommendations during the in-season**

- Fitness conditioning should be maintained through the continued use of highly specific fitness conditioning drills that mimic the demands of competition.
- Keep in-season sessions short and sharp.
- Continue with speed and agility conditioning.
- Coaches should consider moderate volume and high intensity fitness training in the weeks leading up to less demanding or less important matches, and low volume and high intensity in the weeks leading up to more demanding and important matches.
- Monitor players on a daily basis for signs of overtraining.
- Ensure time is allocated for physical and mental recovery (i.e. adequate rehydration and refueling, a structured cool down and stretch session, hydrotherapy and relaxation)

**Transition/Recovery Stage**

The transition phase is traditionally a phase of active rest and recuperation and commonly prescribed after the season has finished. This phase should last for between 1 and 4 weeks, and should include only non-sport specific recreational activities performed at low volume and intensity.
Conditioning for Reducing the Risk of Neck Injuries

Severe neck injuries are the most devastating form of rugby injury and most often have life-changing consequences for the player. They sometimes result in extreme functional disability and/or death. The treatment as well as the management of personal care is often extensive and financially draining. Such incidents reinforce the fact that one cannot overstate the need for active prevention of neck injuries and moreover cannot neglect the issue of promoting safety in rugby.

Even though not many severe and/or catastrophic neck injuries occur (in relation to the number of hours that players are exposed to the game of rugby), any severe and/or catastrophic neck injury incurred is unacceptable.

**Neck strengthening example**

The risk of neck injuries can be reduced by conditioning the neck, which in turn assists it in resisting extreme forced hyperflexion (forward bending), rotation or extension (backward bending) and thereby reduces the chances of developing a severe and/or catastrophic neck injury.

**Tips**

Perform conditioning and preventative strengthening exercises around the off- and pre-season phases.

During the season, at least 1 to 2 sessions per week should include neck strengthening exercises or preventative rehabilitation of some kind. Unless otherwise specified, build up to 10 repetitions of each set.

**AE = Advanced exercise**

Progress within your level of ability, and if you are unsure, ask a competent professional for advice!

**Isometric holds**

(lateral flexion to the left and right, forward flexion, extension, left and right rotation):

Sit or stand while performing the exercises which follow on the next page:

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### Neck injury prevention

Five ways of reducing the incidence of neck injuries in rugby are:

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<table>
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<tr>
<td><strong>1</strong></td>
<td>The creation of awareness programmes and training courses for coaches, referees, medical support staff and most notably the players,</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td>Astute player selection, e.g. do not choose someone to play in the front row if they are not physically suited, conditioned or adequately coached for it,</td>
</tr>
<tr>
<td><strong>3</strong></td>
<td>Constantly assess and amend the Laws of the game, especially in the contact situations, e.g. rucks, mauls, scrums and tackles,</td>
</tr>
<tr>
<td><strong>4</strong></td>
<td>Impose the Laws – referees have to be ultra-strict with these infringements and players should be punished for contravening them, and</td>
</tr>
<tr>
<td><strong>5</strong></td>
<td>Emphasize strength and conditioning of the players with specific attention to neck strengthening exercises.</td>
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</table>
Isometric flexion (forward bend)

Apply resistance with one or both hands to the forehead. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to bend the neck forwards and place the chin on the chest. Once maximal tolerable resistance has been applied, hold for 5-10s, and relax.

This is one repetition.

Isometric extension (backward bend)

Apply resistance with one or both hands to the back of the head. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to bend the neck backwards and place the top of the head on the back. Once maximal tolerable resistance has been applied, hold for 5-10s, and relax.

This is one repetition.

Isometric lateral flexion (sideward bend to the left)

Apply resistance with one or both hands to the left side of the head. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to place the left ear on the left shoulder. Once maximal tolerable resistance has been applied, hold for 5-10s, and relax.

This is one repetition.
Isometric lateral flexion (sideward bend to the right)

Apply resistance with one or both hands to the right side of the head. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to place the right ear on the right shoulder. Once maximal tolerable resistance has been applied, hold for 5-10s, and relax.

This is one repetition.

Isometric rotation to the left

Apply resistance with one or both hands to the left side of the forehead. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to rotate the head to the left. Once maximal tolerable resistance has been applied, hold for 5-10s, and relax.

This is one repetition.

Isometric rotation to the right

Apply resistance with one or both hands to the right side of the forehead. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to rotate the head to the right. Once maximal tolerable resistance has been applied, hold for 5-10s, and relax.

This is one repetition.
**Prone neck lifts**

Kneel on all fours. Relax your head down. Attempt to curl your head upwards and backwards towards the base of your neck, hold briefly and control back to the starting position. Aim for 20-30 repetitions per set.

**Variation 1:** Have a partner apply hand resistance throughout the movement, but still enabling the player to move his neck through the normal range of motion (aim for 10 reps).

**Buddy scrums**

Have 2 players starting on knees opposite each other. Get them to engage while supported on hands and knees. Once they have engaged, ask them to scrum against each other. Gently, and with control, scrum forwards and backwards against each other. After each set swap sides with the head position.
Theraband neck flexion (with partner)

Lie on your back with knees and hips bent, have a training partner take a strip of Theraband and hold it tightly over your forehead. Attempt to curl your head upwards against the Theraband and place your chin onto your chest, hold briefly and control back to the starting position.

Theraband lateral flexion (with partner)

Lie on your side, with your head relaxed to the side. Have your training partner hold a strip of Theraband tightly over your head just above the ear line. Attempt to curl your head upwards and sideways against the Theraband and place your ear onto your shoulder, hold briefly and control back to the starting position.
Lunges with neck harness/theraband control (forwards, backwards, sideways) (AE)

Use either a neck harness or Theraband tubing, whichever may be available

Use a partner to perform the following:

**Forward lunge**
Have your partner stand behind you with the Theraband placed over your forehead, and angling slightly downwards. Keeping your neck strong and stable, step and lunge forward against the resistance of the Theraband.

Hold briefly and return to your starting position.

**Backwards lunge**
Have your partner stand in front facing you with the Theraband placed over the back of your head, and angling slightly downwards. Keeping your neck strong and stable, step and lunge backwards against the resistance of the Theraband.

Hold briefly and return to your starting position.
Diagonal lunges with neck harness/theraband control (AE)

Have your partner stand behind you with the Theraband placed over your forehead, and angling slightly downwards. Keeping your neck strong and stable, step and lunge diagonally against the diagonal resistance of the Theraband. Hold briefly and return to your starting position.

Side lunge

Have your partner stand next to you with the Theraband placed over the side of your forehead, and angling slightly downwards. Keeping your neck strong and stable, step and lunge sideways against the resistance of the Theraband. Hold briefly and return to your starting position.
For more detailed programmes, instructions and information, consult the BokSmart website on

www.BokSmart.com

BokSmart
NATIONAL RUGBY SAFETY PROGRAMME
A PRACTICAL GUIDE TO PLAYING SMART RUGBY

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Providing coaches, referees, players, and administrators with the knowledge, skills, and leadership abilities to ensure that safety and best practice principles are incorporated into all aspects of contact rugby.