SA RUGBY

BokSmart

WINNERS PLAY SMART

CHRIS BURGER PLAYERS FUND PETRO JACKSON

Rugby's Caring Hands

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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ONE IS ONE TOO MANY

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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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BokSmart contact details are available on the Website at **www.BokSmart.com**

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

Whilst the information is regarded as up-to-date and the advice and recommendations as best practice, any reference to trade names or products does not imply endorsement of these by BokSmart.

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CHRIS BURGER PETRO JACKSON PLAYERS FUND
Rugby's Caring Hands

A joint initiative by SA Rugby and the Chris Burger/Petro Jackson Players' Fund.

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Rugby safety is no accident.
It's a decision. A commitment.
Together, we can build a game of Rugby
that delivers zero catastrophic injuries.

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OUT
INSURANCE
BUSINESS

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 mindset 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, in the Rugby Safety Course videos and/or on the website.

BokSmart has taken upon itself to work towards an exceptionally ambitious goal of ZERO catastrophic injuries or events in South African Rugby Union. #*VisionZero* is focused primarily on preventing rugby-related fatalities and those catastrophic concussion, head, neck and spinal injuries where the victim does not physically recover. #*VisionZero* is not a target to be achieved by a certain date or time! It is a process whereby all rugby stakeholders actively work together towards the ultimate goal of achieving sustainable interventions and ZERO catastrophic rugby injuries or events in South Africa!

Rugby safety is no accident. It's a decision. A commitment. Together, we can build a game of Rugby that delivers zero catastrophic injuries. In fact, we not only 'can' do it. We must do it. For more information on #*VisionZero* go to: **https://www.springboks.rugby/general/boksmart-visionzero/**


OUT
SURANCE
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Winners play Smart Rugby!

1. Eating and Drinking Right for Rugby

Nutrition, like training, can make an important contribution to 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.

LEAVE NOTHING TO CHANCE:
Train the way you wish to play. The same applies to your diet!
Anything new should be tried and tested during training.

The best way to eliminate the risk of testing positive for banned- or World Anti-Doping Agency (WADA) prohibited substances associated with the use of dietary supplements, is to avoid taking them. Supplements can shift your focus away from more important and proven performance-enhancing factors like training and optimal nutrition, rest and recovery.
But, for the few supplements with evidence of effectiveness in specific situations, it is important that they are not used haphazardly. Instead they should be incorporated into the player's individualised and periodised dietary plan in a well-managed and controlled manner. This should be done under the guidance of a dietitian, who preferably has experience in working with high-performance sport.

Many players use supplements in an uncontrolled manner even without evidence of their effectiveness and performance benefits. 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, or 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:

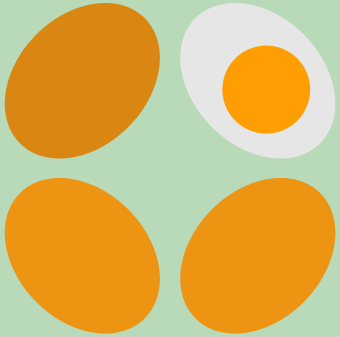
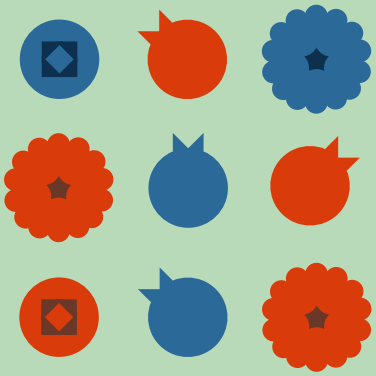
YOU ARE RESPONSIBLE – Under anti-doping regulations, the only person responsible for what goes into your body is YOU! Players cannot claim ignorance because of the directions or advice of others.

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 **https://www.world.rugby/keep-rugby-clean** for the latest WADA prohibited list.

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

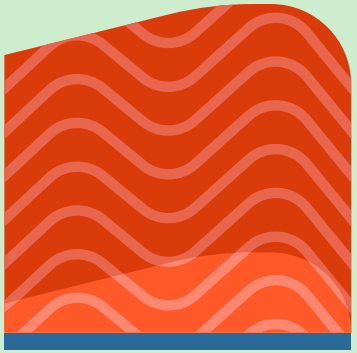
MAINTAIN A BALANCED DIET – Players will benefit from a healthy, well-balanced diet which should be put in place by an expert.

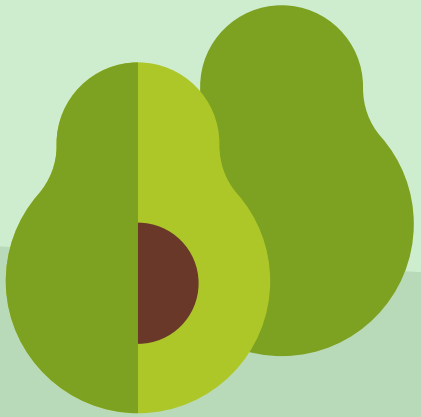
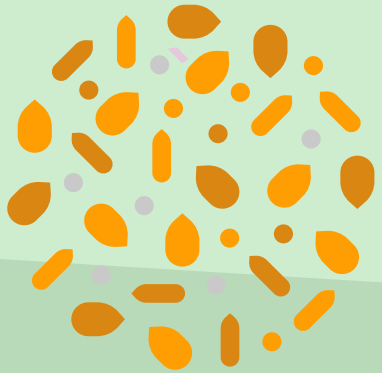



What can Smart nutrition do for you?

An optimal DIET, preferably compiled by a qualified and registered dietitian with experience in rugby nutrition, and which directly complements your training, can 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.



DRUGS IN SPORT

#KEEPRUGBYCLEAN

THE GOAL: ZERO ANTI-DOPING VIOLATIONS IN SOUTH AFRICAN RUGBY

THE ONLY WAY TO ZERO ANTI-DOPING VIOLATIONS IN SOUTH AFRICAN RUGBY: AVOID TAKING SUPPLEMENTS AND BANNED SUBSTANCES

BEFORE CONTEMPLATING SUPPLEMENTS:

1. Can you get what you need from food or fluids first, instead of from a supplement?
2. Does it work? Is it effective in offering a performance benefit in your situation?
3. Is it illegal?
4. Is there a risk of the product being contaminated?
5. Has it been batch tested according to WADA ISO standards for ALL WADA-banned substances?
6. Is it safe?
7. Are there any side effects that may adversely affect your health?

THE REAL-WORLD WAY: ZERO ANTI-DOPING VIOLATIONS IN SOUTH AFRICAN RUGBY

- Consult a dietician or sports physician first
- Always start with a food-first approach – fix your diet!
- Let the medical professionals decide whether or not you clinically need something
- If clinically needed, integrate these supplements into an individualised and periodised food plan
- Obtain clinical advice on a low-risk approach with regards to which supplements you can purchase

YOU ARE STILL ULTIMATELY RESPONSIBLE FOR WHAT GOES IN YOUR BODY! THE DECISION TO USE THE SUPPLEMENT OR NOT IS STILL YOURS TO MAKE

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 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: **https://www.springboks.rugby/general/boksmart-medical-protocol-eating-and-drinking-right/.** These sections 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

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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 SA Rugby expect to be in place.
- That all key rugby-safety regulations have been met.
- That their coaching staff only make age-appropriate team selections, and do not field under-aged or over-aged rugby players.
- That they have an appropriate Emergency Action Plan (EAP) in place that is accessible.

To minimise the opportunity for breaching rugby safety regulations and policies, there are various ways in which one can mitigate risk. The first way is by having internal controls and systems in place at your club or school to proactively prevent things from going wrong. It is therefore important to set up Technical tables on match days, to review Team Sheets for correct player ages and BokSmart Certification of coaches and referees, and to have dedicated personnel to ensure that all of the field safety aspects and medical minimum standards are met prior to kick-off.

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.

THE REFEREE SPOTLIGHT

TARGET: ZERO ILLEGAL TACKLES MISSED!

BE CONSISTENT ZERO TOLERANCE OF DANGEROUS PLAY

THE **HEAD & NECK** AREA IS A **STRICT NO-GO ZONE!**

PRE-MATCH CHECKS

1. A field safety inspection
2. Assess crowd control measures
3. Check for the minimum emergency medical equipment and qualified first aid personnel
4. Request to see the hosting club or school's emergency action plan
5. Check for BokSmart certification of coaches and match officials
6. Must review Team Sheets for age-appropriate players
7. Review any age-banding clearance documentation where applicable
8. A clothing and boots inspection of the teams participating in the match

ALMOST 60% OF ILLEGAL TACKLES WERE NOT SANCTIONED BY THE REFEREES

67 DANGEROUS TACKLE EVENTS LEFT UNSANCTIONED

GAME MANAGEMENT

1. MANAGE SERIOUS INJURIES
   - Clear communication between Referee and Medical staff
   - Don't use safety as a licence to cheat
2. SCRUM CADENCE
   - Crouch-Bind-Scrum (U16 and younger)
   - Crouch-Bind-Set (U18 and older)
3. CONTROLLING THE SCRUM CONTEST
   - Binds, scrum straight, elbows up, earn the turn
4. ROLLING REPLACEMENTS
   - 12 max using 7 bench players only
   - 4 of these substitutions must be reserved for front row players
5. DANGEROUS TACKLES:
   - High tackles
   - No-arm tackles
   - Tip tackles
   - Chop tackles
6. DANGEROUS CLEANOUTS
   - Neck rolls
   - Sharp shoulder
7. COLLISION IN THE AIR
   - Foul play?
   - Realistic opportunity to catch the ball AT POINT OF CONTACT?

     Yes – Play on No – Yellow Card/Red Card

   It is irrelevant whether or not the chaser or catcher has their eyes on the ball, and it is irrelevant whether or not it was accidental
8. NO KICKING THE BALL OUT OF RUCKS OR PLAYERS' HANDS WHILE ATTEMPTING TO GROUND THE BALL


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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 grounds 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:

https://www.springboks.rugby/general/boksmart-medical-protocol-safety-in-the-playing-environment/

- 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 ensure 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 with 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 must have their BokSmart card physically with them, or have it accessible in digital format on their Smartphone, and must also be able to verify the coach's or their personal certification status on **https://check.boksmart.com** if required to do so.
- 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 one actively qualified first aider should be in attendance at the field per match.

2

- 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 mouth guard.
- 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 The Currie Cup (all formats and age-groups, except for the Premiership Competition), all other interprovincial level matches, the Gold Cup, Varsity Cup and Shield, SA Rugby Youth Weeks, Schoolboy festivals, Classic Clashes and all amateur Sevens matches or tournaments at these levels, or for **Gold Plus** standard matches, which are The Currie Cup Premiership, 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.

RISK MANAGEMENT APPROACH TO RUGBY SAFETY

NEGLIGENCE

REASONABLE STANDARD OF EXPECTATION

EXTERNAL CONTROLS

- Referee per-match Field Safety Inspections prior to kick off
- Referee individual match audits before kick off
- Per-match Team Sheet review by referees prior to kick off
- Referee checks for under-aged or over-aged players and clearance documentation prior to kick off
- Independent auditing of match days by Union auditors
- Comprehensive safety audits of Clubs and Schools by Union auditors

DUTY OF CARE

- Coaches BokSmart Certified
- Referees and Assistant Referees BokSmart Certified
- Emergency Action Plans in place for both practices and matches
- Rugby body, club or school compliance with all rugby safety related regulations
  - SA Rugby Regulations pertaining to Under-Aged Rugby: Adult Rugby
  - SA Rugby Regulations pertaining to Under-Aged Rugby: School Rugby Age-Banding
  - SA Rugby Regulations pertaining to Under-Aged Rugby: Sevens Rugby
  - SA Rugby Regulations for the BokSmart Rugby Safety Programme at all Levels of Rugby
  - SA Rugby Concussion Regulations
  - SA Rugby Anti-doping Regulations
  - SA Rugby Minimum Medical Requirements for Rugby
  - SA Rugby Field Safety standard requirements for rugby to take place

PLAYER SAFETY

INTERNAL CONTROLS

- Age appropriate players placed in correct age groups prior to selection
- Technical table for controlling of all match day information and regulation compliance by hosting body
- Team Sheets checked and reviewed for correct player ages
- Coach and Referee BokSmart Certification checks by hosting body
- First Aider or Rugby Medic present and visible for every match played
- Emergency Spinal Immobilisation Equipment (Spinal Board, Neck Collar, Spider Harness, Head Blocks) present and visible
- Emergency Action Plan (EAP) in place and accessible
- Field Safety Inspections and adjustments made prior to matches
- Crowd control checked

DON'T LET **NEGLIGENCE** COME BACK TO BITE YOU!

BE PROACTIVE, BE INFORMED, AND **DO WHAT IS RIGHT** BY YOUR PLAYERS.

PLAYER SAFETY ALWAYS COMES FIRST. LET'S AIM FOR **ZERO** TOGETHER.

2

Handling and Preventing Foul Play

The referee has a responsibility to ensure 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.


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TACKLE LIKE A BOK
USE THESE TECHNIQUES TO LIMIT THE RISK OF INJURY TO BOTH THE TACKLER & BALL CARRIER
WITH BLITZBOK SUPERSTAR
SEABELO SENATLA
1. Step in close and lead with your arms
2. Head up, face up and eyes open
3. Do NOT drop your head!
4. Place your correct shoulder onto the ball carrier
5. Place your head and neck on the side or behind the ball carrier, and NOT in front
6. Tackle above the hips and below the chest
7. Wrap him up and pull him in tight
8. Drive through the contact with the legs
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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 highest 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:

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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.

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 ball carrier 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-and-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.

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 where the tackler is more upright in defense and attempts to wrap his arms around the ball and the attacker's arms. The idea is to prevent the attacking player from being able to release or off-load the ball in the tackle. This tackle, where used, is aimed at a target above the waist level, but for safety purposes, must always be below shoulder height. This form of tackle is not recommended for younger and less experienced players, as it is more confrontational than the traditional tackle, and the risk of injury is higher, especially with head clashes and concussions.

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. 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 (or try to tackle) an opponent above the line of the shoulders even if the tackle starts below the line of the shoulders.
- A tackle around the opponent's neck or head is dangerous play.
- Using a swinging or stiff arm to knock over a player is also a dangerous tackle!
- Early, late or tackling a player in the air is not allowed – it is the responsibility of the tackler to get his timing right.
- A player must not tackle an opponent whose feet are off the ground.
- 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.
- Shoulder charge / no arms used: a player must not charge or knock down an opponent carrying the ball without trying to grasp that player.
  The arm may never lag behind the shoulder in impact.
- Grass cutter / chop tackle: The tackler may not lead with a sharp shoulder and launch himself at his opponent's shins or knees without attempting to grasp the player with his arms. This illegal technique, known as the chop tackle or grass cutter, is extremely dangerous and has a sizable risk to both the tackler and ball carrier.
- 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.

2

These tackles can cause serious injury, in particular to the head, neck and spine, and should be shown ZERO TOLERANCE. Referees need to be STRICT and CONSISTENT in penalising offenders.

Tackle Law Changes

World Rugby has strengthened its commitment to injury prevention by introducing a zero-tolerance approach to reckless and accidental head contact in the sport. World Rugby has redefined illegal (high) tackle categories and increased sanctions to deter high tackles via a law application guideline. This applies at all levels of the game from 3 January 2017, with minimum on-field sanctions for reckless and accidental contact with the head, effectively lowering the acceptable height of the tackle. Two categories of dangerous tackles carry penalty offences to deter and eradicate high tackles:

Reckless Tackle

A player is deemed to have made reckless contact during a tackle or attempted tackle or during other phases of the game if in making contact, the player knew or should have known that there was a risk of making contact with the head of an opponent, but did so anyway. This sanction applies even if the tackle starts below the line of the shoulders. This type of contact also applies to grabbing and rolling or twisting around the head/neck area even if the contact starts below the line of the shoulders.

Minimum sanction: Yellow card

Maximum sanction: Red card

Accidental Tackle

When making contact with another player during a tackle or attempted tackle or during other phases of the game, if a player makes accidental contact with an opponent's head, either directly or where the contact starts below the line of the shoulders, the player may still be sanctioned. This includes situations where the ball-carrier slips into the tackle.

Minimum sanction: Penalty

2 Ball Carries

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First option is to run into a space, not a face

CARRY LIKE A BOK

USE THESE TECHNIQUES TO LIMIT THE RISK OF INJURY TO THE BALL CARRIER

When you have no choice...

1. Confront the contact!
2. Stay low, and step in close with a power step
3. Present your leading shoulder to the tackler, NOT your head!
4. Protect the ball
5. Keep your head up and forward, with eyes open
6. Do NOT drop the head
7. Once you have made contact, drive through with the legs

WITH SPRINGBOK SUPERSTAR
SIYA KOLISI

#VISIONZERO
ONE IS ONE TOO MANY

2

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

- Look for defenders' feet crossing over

- 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

- Exploit available options

2

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)

- Take a wide power step into contact

- Protect the ball

- Drive through the tackle with the legs
- Present and transfer the ball when appropriate

2 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 SA Rugby 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. Coaches therefore play a major role in injury prevention by teaching, training and enforcing proper scrum techniques in 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. Kettlebell 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 29) 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.

2

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.

'SILVERBACK' POSITION DEFINED:
FACE UP, CHEST OUT AND HOLLOW BACK.

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 Kettlebell. 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.

2

6. Resists on all fours:

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 fours 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 second 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.


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2 Key Points to Remember During the Scrum

- Keep your chin off your chest

- Keep your face up and eyes open

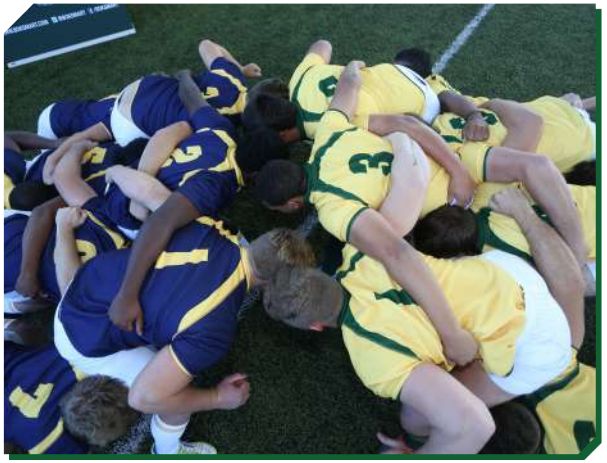
- Keep your spine in line

- 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

- 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

- With the ball put into the scrum, drive from a low position forwards and contest for the ball

2

The 'SA Rugby 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 SA Rugby'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 SA Rugby 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 must be fed into the scrum 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 rowers should not be moving, i.e. shifting sideways or front/backwards.
- 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 up the scrum 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

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 bent 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

2

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.

2

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RUCK LIKE A BOK

USE THESE TECHNIQUES TO LIMIT THE RISK OF INJURY

13C

MALCOLM MARX

1. Always enter the ruck alongside or behind the last man's feet
2. Shorter, faster steps as you get closer
3. Drop your body height when entering the ruck
4. Keep your spine-in-line
5. Keep elbows low, hands up and arms close to the body
6. Face up, eyes open and sight your target
7. Do not charge in from the side!
8. No leading with a sharp shoulder into the cleanout
9. Head and shoulders slightly above the hips
10. Try and get underneath your opposition
11. Lead with the arms, in a strong controlled clamping action
12. Wrap the player up and get the shoulder on
13. Either win the space or clear the threat

A Grip onto your team mate and protect them or the ball

B Or drive through with the legs to win the battle for space over and past the ball

C Or grip in to contest for the ball

14. Support your body weight
15. Keep your head and neck tucked into the bucket of the shoulders

13A

SIYA KOLISI

13B

EBEN ETZEBETH

#VISIONZERO
ONE IS ONE TOO MANY

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 3m 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.

2

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 that players taking part in these phases of play do so within the Laws.
- Be aware of the players' body positioning at all times.

GENERAL CONTACT SAFETY PRINCIPLES

BALL CARRY

NEVER LEAD HEADFIRST INTO CONTACT

PRESENT YOUR **HARD PARTS** OF THE BODY TO THE TACKLER

TUCK THE HEAD AND NECK **INTO THE BUCKET** OF THE SHOULDERS WHEN CONTESTING ON THE GROUND

STAY AWAY FROM THE HEAD AND NECK OF THE OPPOSITION PLAYER THIS IS A **NO-GO AREA**

AIM TO HIT BELOW THE CHEST LINE & MID-TORSO

DO NOT AIM TOO LOW OR TOO HIGH

KEEP YOUR **FACE UP,** EYES OPEN AND LOOKING FORWARD

DON'T DROP THE HEAD DOWN

BEND OR LEAN FORWARD IN THE HIPS WHEN GOING INTO CONTACT

NEVER GO IN UPRIGHT

DRIVE THROUGH WITH THE LEGS ONCE HAVING MADE CONTACT

BREAK DOWN

TACKLE

ALWAYS KEEP YOUR **SPINE IN LINE** OR MAINTAIN A STRAIGHT NEUTRAL SPINE IN CONTACT

NO ROUNDED BACKS

PLACE THE HEAD & NECK TO **THE SIDE OR BEHIND** THE PLAYER

NEVER IN FRONT OF THEM

WRAP THEM UP AND GET YOUR SHOULDER ONTO THE OPPOSITION IN THE TACKLE OR RUCK CLEANOUT

LEAD WITH YOUR **ARMS FIRST** IN THE TACKLE AND RUCK

NO SHARP SHOULDERS

#VISIONZERO
ONE IS ONE TOO MANY

3

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 can be downloaded from the BokSmart website on ***www.BokSmart.com***


ER24
084 124

4. Management of Rugby Injuries

SARU's protocol for medical staff entering the playing field to attend to an injured player, whilst a match is being played.

1. Referees must give permission to qualified medical staff before they can enter the field of play.

- This can be done beforehand in the change room, for example, or by stopping play and calling the medics on.
- If no permission is given beforehand, the medics must clear this with the referee before kick-off. Permission shall not be unreasonably withheld.

2. Qualified medical staff entering the playing area to attend to an injured player whilst play is still going on, must:

- Do so without interfering with play.
- Do so without any danger to players or themselves.
- Consider where play is and not enter the field when there is a possibility of compromising the play, their personal safety or the players' safety.
- Continually make themselves aware of where play is moving, once they have entered the field of play and are attending to the injured player.

3. The referee is to stop play when it moves in the direction of players being treated by medical personnel.

- The Assistant referees are to be aware of this and advise the referee accordingly should he be unsighted.
- For the sake of reference and consistency, a distance of 10m should be considered as safe.
- Should the play move to within 10m of the treating medical personnel and injured player, the referee is to stop play.

Primary Survey

All medical treatment begins with the Primary Survey. This is the initial starting point where one assesses 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

- If you suspect a head, neck or spine injury, move straight in and perform (Cervical Spine) Manual In-Line Stabilisation (MILS) immediately
- Say "Hello" into each ear to check whether they are conscious or responsive, or not
- If they are awake and looking at you, greet the player and begin treatment
- Talk to them and ask them not to move their neck, unless prompted to do so
- Reassure them that you will assist them in this process

1c. Help checklist

- If the player is unconscious or unresponsive or not responding properly or has an apparent serious head, neck or spinal injury, send for help immediately
- At this point your medical support staff should run on with the required spinal or emergency equipment and assist you
- Contact the BokSmart Spineline number ***0800 678 678*** to access the service provider ER24, unless you already have suitably qualified emergency medical support staff on site who are attending to the player
- Ensure that the player is taken to a hospital

However, an unconscious or unresponsive player is not always the result of a head, neck and spine injury. A player who shows no signs of life may have a suffered a sudden cardiac arrest. Call for urgent medical assistance.

So, when a player suffers a sudden cardiac arrest on field, what can we do?

One of the key starters is recognition, followed by action.

With any player who collapses, and who is unresponsive, without any trauma involved, immediately suspect sudden cardiac arrest. Do not assume that sudden jerking movements of the body are seizures, as these are common in sudden cardiac arrest too. Occasional gasping can also occur.

If the player does not show any signs of life or have a palpable pulse and spontaneous breathing (at least 2 adequate breaths in 10 seconds), you can assume the player is in cardiac arrest.

Appropriate management of sudden cardiac arrest involves recognising it quickly. After recognition, apply CPR immediately i.e. within 10 seconds of recognising it. In those situations, where necessary, and where you are able to do so, the player needs defibrillation as soon as possible.

Move in and start the basic CPR process, activate your emergency action plan, where available ask for an AED (Automated External Defibrillator), and access your emergency services network immediately.

As a lay rescuer, if you have not trained to do full CPR, perform hands-only CPR or compressions only. Push hard and fast on the centre of the player's chest.

Start compressions even if the unresponsive victim has occasional gasps. Perform approximately 100 - 120 compressions per minute. Continue this until qualified help arrives and takes over from you.

Chest compressions only are recommended for the layperson who is simply helping out, or who is either not willing, not trained, or not skilled enough to manage the airway and breathing techniques.

Chest compressions only is easier to train, and with far less risk to the cervical spine, wherever this may be involved.

Current consensus, when it comes to cardiac arrest, is to begin with Compressions and then, where capable or trained to do so, to move onto managing the Airways and Breathing (CAB).

The time taken between recognising the event, starting CPR, and defibrillation, relates directly to patient survival outcome.

In other words, the shorter the time delay between recognising and defibrillation, the better the player's chances of survival. For each minute in delay, the chances of survival drop considerably.

Remember though, that as a lay rescuer, rather stick to compressions only, unless suitably qualified and appropriately skilled to do otherwise.

With a spinal patient as an additional complication, also prioritise Manual In-Line Stabilisation or MILS to keep the head and neck still throughout, until qualified help arrives on scene.

Do not move the player off the field simply to allow the game to continue or to remove the player out of the public eye. This is a life-determining procedure, so continue your compressions or CPR until qualified help arrives and takes over.

4 Align Spine

With a potential spine injury, one must secure the player's spinal column to prevent any further movement as soon as possible.

If there is more than one medic or first aider attending to the player, one medic or first aider needs to perform (Cervical Spine) Manual In-Line Stabilisation (MILS) immediately.

With unqualified lay rescuers, such as coaches or referees, if you suspect a spinal injury, you should apply spinal motion restriction, such as placing your hands, one on either side of the player's head, and hold it still.

As coaches or referees, you are not expected to do anything other than manage the situation, activate your emergency action plan, and keep the player calm, still and warm, until qualified medical personnel arrive on site to take over and deal with the situation.

Of concern here is that during many of the processes in attempting to stabilise the player, there is ample chance for unintentional movement at the site of the injury. This can either limit, create or worsen the nerve damage, especially where there is an unstable spinal injury involved. So, try to keep the player still and calm. The longer the spine is out of alignment or the spinal canal is narrowed, the greater the potential for permanent damage. Therefore, you need to access emergency medical services as quickly as possible.

If an unresponsive player is lying on his side or face down, the arriving medic needs to ensure that the player is safely rolled onto his back as quickly as possible using the **"Rolling the Player Over"** protocol (Page 59) or **"Log-Roll Techniques"** (Page 62), depending on who is available, whilst maintaining MILS.

After having arrived on site, the emergency medical services personnel would have to gradually realign the cervical spine, depending on the level of pain experienced by the injured player, at the same time monitoring the player's neurological status, and prepare the player for safe transport from the field to the hospital.

Once rolled over, if the player is unresponsive and not breathing (not breathing, not breathing normally or gasping), at this stage, the second medic should begin compressions and start CPR, whilst the first medic continues to maintain Manual In-Line Stabilisation or MILS.

The availability of local emergency service providers, the availability of transport, shortage of resources, lack of facilities and equipment, and varying levels of skill, could all contribute towards the success or lack of success of the treatment plan.

Non-medical, untrained, lay rescuers however, must not move the spine injured player, except in a life-threatening emergency situation, where no immediate and qualified medical support is available on-site and where the injured player could potentially die, if not rolled over (refer to Page 59).

For the non-medical, untrained, lay rescuer, if the player is unresponsive and not breathing, apply compressions only, as described on Page 49.

As an untrained, non-medical, lay rescuer, DO NOT ATTEMPT TO REALIGN THE SPINE!

It is worth noting however, that even if you do everything spot on, sometimes, the injury event has already damaged the spinal cord, and the player may not get better.

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 the one hand in the centre of the chest, on the lower part of the breast bone (according to AHA).
- Place the heel of the other hand on top of the first one, with hands overlapped, and fingers interlocked.
- Press down on the heels of your hands.
- Keep your elbows locked and straight throughout, with your shoulders directly over your hands.
- Push directly downwards on the sternum to a depth of around 5 cm (according to AHA), while not pushing too deep (not more than 6 cm).

- Compressions should be performed at a rate of 100-120 compressions per minute.
- Avoid leaning on the chest between compressions, to allow the chest wall to bounce back and recoil sufficiently after each compression.
- This recoil assists with blood flow back to the heart, and therefore continued blood flow within the body.
- Compressions must be rhythmic – push hard and fast. Continue even if a rib breaks.
- If qualified, able and willing to do so, after 30 compressions, give 2 rescue breaths as described in the breathing checklist.
- For non-medical, unqualified, lay rescuers, continue with compressions only.
- Remember to push hard and fast at all times.
- If you get tired, get someone to take over from you, to ensure that you continually deliver effective compressions.

2b. Airway checklist

The air flows down a passage of structures called the airway, which can be blocked by the player's tongue when he is unconscious. You need to Open, Maintain and Protect the airway.

Open

- Opening a player's airway under normal conditions is a relatively simple task.
- Once there is a suspected spinal injury, however, this procedure becomes more complicated, (see Techniques of opening the airway, Pages 50/51).

Maintain

- Keep your hands in the appropriate position to ensure the airway remains open.

Protect

- Ensure the airway is not blocked by incorrect position, vomit, or foreign objects e.g. mouth guard.
- If the player vomits, immediately log-roll him onto his side and perform a vomit drill to avoid vomit slipping down the airway and into the lungs.
- Consider using a cloth or a sock to wipe any excess vomit from the player's mouth.
- Perform the vomit drill quickly and carefully, without compromising the cervical spine (log-roll procedure explained on Page 62).

Techniques of opening the airway

When suitably qualified, skilled and able to do so, the three main airway-opening techniques, are the *chin lift, jaw thrust* and *head-tilt chin-lift* techniques.

You can see these techniques in action at the following Video Clip link: **https://youtu.be/D_ZKcO8Ww_c?t=320**.

If you suspect that there is a spinal injury involved, you need to be more conservative, and limiting unnecessary spinal movement is crucial.

If trained or qualified to do so, and taking standard spinal precautions, start with the simple *chin-lift* technique for opening the airways.

If the *chin-lift* is unsuccessful and you are trained to use it, then use the *jaw-thrust* technique.

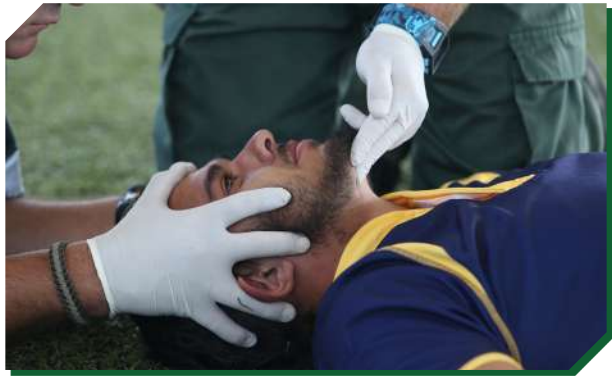
If this remains unsuccessful in opening the airway, and the person's life depends on it, progress to the *head-tilt chin-lift technique.*

Always control for as little spinal movement as humanly possible

CHIN-LIFT

In an unconscious or unresponsive player with a suspected spinal injury, and who is not breathing, 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 Stabilisation (MILS), securing the head in the neutral position. A second medic needs to perform a chin-lift. One does this 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.



Chin-Lift

Chin-Lift

JAW-THRUST

If you have been trained and are 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.

Jaw-thrust

Jaw-thrust

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 you place the palm of your hand on the player's forehead and 2 fingers of your other hand on the player's chin. The player's head is "tilted" backwards whilst the chin is simultaneously "lifted" upwards.

Head-tilt chin-lift

Head-tilt chin-lift

While performing this technique, one should nonetheless tilt the head gently and with minimal extension of the neck or cervical spine itself.

4

Excessive or aggressive movement could easily cause further injury to a player with a cervical spine injury!
So, you are only advised to utilise 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.

Head-tilt chin-lift

4

2c. Breathing checklist

- Those rescuers, who are willing, and sufficiently trained or experienced, should deliver rescue breaths.
- Open the airway using the appropriate technique.
- After opening the airway, apply a CPR mask or insert a CPR mouthpiece and perform 2 rescue breaths.
  - For the CPR mouthpiece, open and insert it correctly, with the circular piece facing upwards. Ensure your fingers do not touch the top surface of the CPR mouthpiece's plastic skirt.
  - For the CPR mouthpiece, pinch the player's nose closed underneath the plastic skirt. Put your mouth completely over the circle of the CPR mouthpiece forming a lip-seal around the player's mouth.
- Each breath should last around 1 second, and be sufficient to see the chest rise.
- Administer a first breath (over 1 second).
- As the chest begins to rise, stop blowing, release the mask/nose and allow the air to escape.
- Do not blow too hard or too fast as this can cause damage to the lungs.
- Administer a second breath (over 1 second), and resume compressions.
- When applying rescue breaths, do not interrupt compressions for longer than 10 seconds at a time!
- The ratio of compressions to rescue breaths should be 30 compressions to 2 rescue breaths.
- After every 2 minutes (approximately 5 cycles) of 30 compressions and 2 breaths, reassess the player for responsiveness or for a sustained normal breathing pattern; this should again take no longer than 10 seconds to assess.
- If no normal breathing is found, continue with either compressions only or with CPR depending on your level of expertise.
- Continue compressions or CPR until the player either becomes responsive, professional medical help arrives and takes over, an Automated External Defibrillator (AED) is applied to the player, until you are physically unable to continue, or until it becomes unsafe for you to continue.
- If you do not have a CPR mask or CPR mouthpiece, or are a non-medical, untrained, lay rescuer, then perform hands-only CPR (compressions only, at a rate of at least 100-120 compressions per minute, without administering any breaths).

TREATMENT FLOW DIAGRAM

FOR SUITABLY **TRAINED** MEDICAL SUPPORT PERSONNEL

SEE LEGAL DISCLAIMER:
WWW.BOKSMART.COM

HAZARDS

HELLO

PLAYER RESPONSIVE & BREATHING NORMALLY

HELP CALL FOR FIELDSIDE MEDICS

SECONDARY SURVEY

CALL BOKSMART SPINELINE IF REQUIRED

RENDER APPROPRIATE TREATMENT

PLAYER UNRESPONSIVE
AND NOT BREATHING, NOT BREATHING NORMALLY OR GASPING

HELP
CALL BOKSMART SPINELINE, ADDITIONAL FIELDSIDE MEDICS, AND FOR AN **AED** IF AVAILABLE

PLAYER FACE UP (SUPINE)
LIFE-THREATEN-ING SITUATION

PLAYER FACE DOWN (PRONE)
LIFE-THREATENING SITUATION

NO MEDICAL SUPPORT
ROLL PLAYER OVER (HAINES TECHNIQUES) PAGE 59

MEDICAL SUPPORT
ROLL PLAYER OVER (LOG-ROLL, PUSH TECHNIQUE) PAGE 62

PERFORM 30 CHEST COMPRESSIONS
Push hard and fast at a rate of at least 100-120 compressions per minute, 5-6 cm depth

OPEN THE AIRWAY
CHIN-LIFT / JAW-THRUST PAGE 50/51

CPR MASK/MOUTHPIECE
Rescuer able to provide ventilations and willing

CPR MASK/MOUTHPIECE
Rescuer unable to provide ventilations or unwilling

GIVE 2 RESCUE BREATHS
No longer than 10 seconds duration

HANDS-ONLY CPR
Chest compressions only at a rate of at least 100-120 compressions per minute

CHEST RISE - YES

CHEST RISE - NO

RE-ATTEMPT TO OPEN THE AIRWAY
HEAD-TILT CHIN-LIFT PAGE 51
Try to reposition the airway, don't delay compressions. Minimise interruptions in compressions to less than 10 seconds!

CHECK FOR AND CLEAR ANY OBSTRUCTIONS

GIVE 2 RESCUE BREATHS
No longer than 10 seconds duration

CONTINUE CPR (30:2) UNTIL:
Help arrives, an AED is applied *(automated external defibrillator)*, the player becomes responsive, or it becomes unsafe to continue

BOKSMART SPINELINE
0800 678 678

OPERATED BY
EMERGENCY MEDICAL CARE
ER24

4

TREATMENT FLOW DIAGRAM
FOR NON-MEDICAL, UNTRAINED, LAY RESCUERS

SEE LEGAL DISCLAIMER: WWW.BOKSMART.COM

HAZARDS

HELLO

PLAYER RESPONSIVE & BREATHING NORMALLY

HELP CALL FOR FIELDSIDE MEDICS

SECONDARY SURVEY

CALL BOKSMART SPINELINE IF REQUIRED

RENDER APPROPRIATE TREATMENT

PLAYER UNRESPONSIVE
AND NOT BREATHING, NOT BREATHING NORMALLY OR GASPING

HELP
CALL BOKSMART SPINELINE, ADDITIONAL FIELDSIDE MEDICS, AND FOR AN **AED** IF AVAILABLE

PLAYER FACE UP (SUPINE)
LIFE-THREATENING SITUATION

PLAYER FACE DOWN (PRONE)
LIFE-THREATENING SITUATION

NO MEDICAL SUPPORT
ROLL PLAYER OVER (HAINES TECHNIQUES) PAGE 59

HANDS-ONLY CPR
Push hard and fast at a rate of at least 100-120 compressions per minute, 5-6 cm depth

CONTINUE COMPRESSIONS UNTIL:
Help arrives, an AED is applied *(automated external defibrillator)*, the player becomes responsive, or it becomes unsafe to continue

BOKSMART SPINELINE
0800 678 678
OPERATED BY
EMERGENCY MEDICAL CARE ER24

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 that 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 mouth guard
- Look for clear fluid coming from ears or nose (might indicate a potential brain injury!)
- Ensure eyes follow you and are injury free
- If spinal injury is suspected, maintain MILS or Manual In-Line Stabilisation

Neck checklist

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

Chest checklist

- Apply gentle pressure to the ribs
- Apply dressings to bleeding

4 Head, Neck and Suspected Spinal Injury Management

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

Unconsciousness checklist

Unconsciousness or unresponsiveness is extremely serious. In such cases, you need to stop the game and where applicable, you need to activate your Emergency Action Plan (EAP), and contact the BokSmart Spineline immediately.

Spinal Injuries

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

- **Complete cord lesion –** no remaining spinal cord function. The player will experience complete paralysis below the level of the injury.
- **Incomplete cord lesion –** partially injured spinal cord. 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 column injury. The player must have a stress X-ray or MRI to ascertain the nature and severity of his injury.
- **Spinal fractures –** Fracture to the spinal column, but there may not be damage to the spinal cord yet. The slightest movement may worsen the injury dramatically.

HEAD, NECK & SPINE

INJURY IDENTIFICATION AND MANAGEMENT

YEARLONG NECK STRENGTHENING **PREVENTION** **SAFE & EFFECTIVE CONTACT TECHNIQUES**

TRADITIONAL SIGNS AND SYMPTOMS OF A POTENTIAL SPINAL CORD INJURY:

- A visible deformity or change in shape of the player's spine
- The player may experience severe pain at the site of injury
- The player is unable to move their arms or legs
- They are unable to feel anything in their arms or legs
- Pins and needles in the arms or legs is common
- There might or might not be swelling visible in the injured area
- The player breathes using their stomach only, and not using their chest
- In males, they could also experience priapism or have an erection
- They have an abnormally low heart rate for someone who has been exerting themselves on the rugby field

ADDITIONAL CUES RECEIVED THAT MIGHT ASSIST IN CONFIRMING A SUSPECTED SPINAL CORD INJURY:

- Sudden inability to move
- Felt a 'buzzing' sensation
- Heard something like gunshots in the head
- Felt like a tree branch bending then breaking
- Started feeling numb from feet and finger tips
- Confused and frequently trying to get up or asking others to help them up
- Immediate loss of feeling and struggling to breathe
- Wanted to stand up, but could not understand why they couldn't
- Had no pain, but could not move
- Could not see or smell anything; sensory shutdown
- Unable to hear or talk
- Severe pain and feeling like 'on fire'; an intense burning sensation, or feeling incredibly 'hot'
- Feeling like legs were floating in the air

SIGNS AND SYMPTOMS + MECHANISM OF INJURY – GREATER POTENTIAL FOR GETTING IT RIGHT!
THE QUICKER YOU ACT, THE BETTER THE OUTCOME!

WATCH THE GAME!

DON'T SIMPLY MOVE OR ROLL THE PLAYER OVER!

IS THERE A PROBLEM?

YES *Stop the game and manage*
Full spinal precautions on-field
Activate your Emergency Action Plan (EAP)

NO *Carry on,*
assess and clear
or remove the player

KEEP THEM ON THE FIELD, BY PUTTING IN THE HARD WORK, OFF IT!

4

Rolling the player over

Do not simply roll a concussed player or a player with a suspected serious head, neck or spine injury over!

Although your intentions might be noble, if done incorrectly it could be life threatening or life changing, especially if the player sustained an unstable spinal injury. The neck vertebrae might be badly displaced, and one false move could create a sizable problem. Therefore, it is best to leave this to the medical professionals!

However, under certain life-threatening emergencies only, there could be a justified need for you as a coach or referee, to roll the player over onto their side or back.

In these circumstances, one cannot wait for medical personnel to arrive on site, as the player would potentially die!

Examples of this would be an unconscious or unresponsive player at a rugby practice lying face-down in the mud, lying on their back and vomiting, or lying face down and not breathing, and more importantly, where no immediate and qualified medical support is available on-site. In such an unconscious or unresponsive player where they cannot breathe or their life is in jeopardy, the **HAINES** or **H**igh **A**rm **IN E**ndangered **S**pine techniques can be used.

The three HAINES techniques that might be required are:

HAINES 1 – From lying on back to side lying

- If you were holding MILS, release it and move in next to the player

- Get onto your knees at the level of his upper back
- Raise the arm that you are going to roll him onto above his shoulders and lie it down alongside the injured player's head

  - Use the arm furthest away from you if you are rolling the player away from you (demonstrated in the pictures)
  - Or use the arm nearest to you if you are rolling him towards you (alternative method)
- Bend his other arm across his chest, and bend the corresponding knee, to assist in rolling him over

- Place your one hand underneath and support the head, and use the other hand at the hip to assist

- While supporting the head and neck, swiftly roll the player over onto his side, and rest his head on his raised arm and shoulder
- Prop the injured player up in the side-lying position by using the bent knee and bent arm to provide additional support

- Observe the injured player for signs of breathing or responsiveness, and call for help

4

HAINES 2 – From lying face down to side lying

- If you were holding MILS, release it and move in next to the player
- Get onto your knees at the level of his upper back, on the opposite side to which the injured player is facing

- Raise the arm *nearest* to you that you are going to roll him onto, above his shoulders, and lie it down alongside the injured player's head
- Place your one hand underneath and support the head and neck

- Reaching over mid-torso, place your other hand above the hip furthest away from you
- While supporting the head and neck, swiftly pull the player towards you and roll the player over onto his side

- Rest his head and neck onto his raised arm and shoulder in the side-lying position
- Prop the injured player up in the side-lying position by using the bent knee and uppermost arm to provide additional support

- Observe the injured player for signs of breathing or responsiveness, and call for help

4

HAINES 3 – From lying face down to lying on back

- After having done **HAINES 2,** and safely manoeuvring the player from lying face down to a side-lying position, and only when required to do so, continue with the process of rolling the unresponsive player onto his back

- While continuing to support the head and neck underneath, and also controlling the hip, gently lower the injured player onto his back
- Provide MILS, Compressions or CPR, if required, qualified, willing and able to do so, or observe the injured player for signs of breathing or responsiveness, and call for help

Only use these techniques if there is a life or death situation, you are on your own, and there is no qualified medical support immediately available!

4 Spinal Motion Restriction Techniques

The following section will provide you with a brief overview of some of the technical processes that are required to manage a catastrophically injured rugby player, on field, and to stabilise them onto a spinal board.

Do not attempt these, unless you are suitably trained and qualified to do so!

During the initial care of suspected spinal cord injured players, it is critical that all precautions are taken to minimise movement of the injured spine. This is especially important when dealing with an unstable cervical spine, and until proven otherwise, every traumatic spine injury should be assumed unstable.

To achieve sufficiently restricted motion of a player, and to get them ready for transport, they need to be transferred and secured on a full-body immobilisation device. In most cases in rugby, this would be a spinal board, together with foam head blocks, rigid cervical collar (under review), and a spider harness.

Getting the player safely onto the spinal board is another challenging procedure, as you need to move the head, neck and torso together, in sync, and limit or restrict movement of the cervical spine. Medical staff would also have to provide continuous Manual In-Line Stabilisation or MILS, during the process of placing the player onto the spinal board.

Further considerations are the size of the player, their shoulder width, and the stabilisation technique best suited to that particular player. This can be a complex decision, and therefore should best be left to the medical personnel who are skilled at doing this.

One can use several techniques in getting an injured player onto the spinal board. The most commonly used in the field are the log-roll variations (prone and supine), and the lift-and-slide techniques such as the straddle lift-and-slide technique, and the 6-plus lift-and-slide.

The spinal segmental movement is largest in the log-roll from a supine (or lying on your back) position when compared to the other supine techniques. The straddle lift-and-slide technique requires 5 people, the 6-plus lift-and-slide, 8 people, and for the log-roll, a minimum of 4 people are required.

Unfortunately, you very seldom find injured rugby players lying on their back on the ground, ready for you to take them to hospital, and you rarely have enough capable hands available on site to use the alternative techniques. Therefore, the majority of EMS providers would focus on teaching, training and using the log-roll variations.

With the prone or ‘face-down’ head, neck and spine injured rugby player, and to minimize patient handling, the only technique that you can use is the log-roll, and the log-roll from a prone position tends to have more spinal movement than the log-roll from a supine position. For this reason, to limit this extra movement when required to use the log-roll, all rescuers or paramedics need to be adequately trained in using this technique.

The push technique is also preferred over the pull technique for the prone log-roll, as spinal motion in the push technique is more controlled and more restricted. However, whichever technique is ultimately used, it always has to be in the best interests of the injured player’s personal welfare and potential long-term outcome, and the medical professionals involved need to make this decision based on the seriousness, presentation, circumstances and severity of the injury.

LOG-ROLL TECHNIQUES

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.

The Prone Log-roll (PUSH) technique

Log-rolling the Prone player onto the spinal board

- Position the lead medic at the injured player’s head

- The lead medic’s main role is to stabilise the cervical spine and limit its movement

- The next 2-3 assisting medics, depending on how many are available, are positioned at the shoulders and chest, hips and legs, on the same side that the patient's head is facing

- The remaining medic is in charge of managing the spinal board placement
- The assisting medics, on their knees, overlap their arms, take a firm grasp on the player, and follow the instructions of the lead medic, who is holding the head

- The lead medic at the head then directs the assisting medics to carefully log-roll the prone player away from them

- They do this on the lead medic's instructions, by pushing and rolling him towards the remaining medic, who is holding the spine board at a 45° angle beneath and against the injured player
- The assisting medics who are rolling the player, at the halfway mark when the player is side-lying, then adjust their hand position, and slowly lower the injured player onto the spinal board

- The spinal board is simultaneously controlled and lowered in sync with the player, by the medic managing the spinal board

- The lead 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 ever compromising the neck
- The injured player, where required, and using the appropriate technique, is then moved accordingly to the centre of the board

4

The Supine Log-roll (PULL) technique

Log-rolling the Supine player onto the spinal board

- With the player already on his back, the lead medic at the head, gently applies traction and slowly moves the head into the neutral position, provided the player experiences no pain
- Position another medic on the side from where the spinal board is to be slid in

- At least 2 assisting medics should be positioned on their knees on the side to which the player is to be rolled
- The lead medic at the head should be the only one speaking
- On the instructions of the lead medic holding the head, the assisting medics on their knees overlap their arms, reach over, take a firm grasp on the player, pull the player towards them and roll him onto his side

- The lead 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 ever compromising the neck
- The medic controlling the spinal board, then slips it into position, at an angle of approximately 30°- 90°, against the player's side touching the ground
- The injured player and the spinal board are then simultaneously rolled back to the ground with the player being gently lowered, in sync, onto the board

- The injured player, where required, and using the appropriate technique, is then moved accordingly to the centre of the board

LIFT-AND-SLIDE TECHNIQUES

Straddle lift-and-slide technique

Lifting the Supine player onto the spinal board with the Straddle Lift-and-Slide

- Five rescuers are required for this manoeuvre
- With the player already on his back, the lead medic at the head, gently applies traction and slowly moves the head into the neutral position, provided the player experiences no pain

- The lead medic at the head, maintains Manual In-Line Stabilisation (MILS)
- Position another medic at the feet, from where the spinal board is to be slid in
- Three assisting medics straddle the body at the level of the chest (1 medic), pelvis (1 medic), and lower extremities (1 medic) to perform the lift
- The three medics bend forward and slightly turn to the same side, place both hands firmly around and underneath the body, and ready themselves to lift the injured player
- On the instruction of the lead medic at the head, the team lifts the player as a unit and parallel to the ground, to a height of about 10-20cm
- The medic at the feet then slides the spinal board in beneath the player from the feet towards the head
- Once the spinal board has been correctly placed beneath the player, and on instruction of the lead medic, the player is then carefully lowered onto the board

6-Plus lift-and-slide technique

Lifting the Supine player onto the spinal board with the 6-Plus Lift-and-Slide

- Eight rescuers are required for this manoeuvre
- With the player already on his back, the lead medic at the head, gently applies traction and slowly moves the head into the neutral position, provided the player experiences no pain

- The lead medic at the head, maintains Manual In-Line Stabilisation (MILS)
- Position another medic at the feet, from where the spinal board is to be slid in
- Six additional medics are placed in pairs on their knees across from each other at the chest (2 medics), pelvis (2 medics), and lower extremities (2 medics) to perform the lift
- The six medics place their hands firmly underneath the body on their respective sides, and ready themselves to lift the injured player

- On the instruction of the lead medic at the head, the team lifts the player as a unit and parallel to the ground, to a height of about 10-20cm
- The medic at the feet then slides the spinal board in beneath the player from the feet towards the head
- Once the spinal board has been correctly placed beneath the player, and on instruction of the lead medic, the player is then carefully lowered onto the board

CERVICAL COLLARS

A very big talking point of late has been the debate of whether or not to use cervical collars.

In the past one used cervical collars as a universal standard when immobilising the neck. However latest spinal motion restriction techniques do not advocate the use of a poorly fitting collar, as it may in fact worsen raised intracranial pressure, compromise the management of the patient's airway and potentially worsen the injury. The decision to use a collar or not remains an on-site clinical decision of the attending medical professionals.

There is a recent growing body of evidence and medical opinion that one should NOT routinely use collars within the pre-hospital environment. There are no studies showing increased benefit to using both head blocks and collars. There are also studies with some patients using head blocks only, who did not deteriorate neurologically.

If a neck or spinal cord injury is suspected, spinal motion restriction remains a critical intervention, best left to the professional emergency services to manage.

Occasionally, cervical spine injuries are also accompanied by traumatic brain injuries, and in these cases, an ill-fitting cervical collar may in fact increase the intracranial pressure. This goes directly against the recommended treatment plan for a traumatic brain injury, which fundamentally looks to lower intracranial pressure.

Collars if too small or too tightly applied can also restrict breathing.

So, for now, when they are applied, rigid collars must always be used in combination with spinal board and head blocks, as collars on their own provide very little if any support to the neck or cervical spine.

Even though it is evident that collars do not have too much of an effect in stabilising the cervical spine, for now, to simply discontinue their use across the board, would be irresponsible, as there are times where it might indeed be required to have them applied.

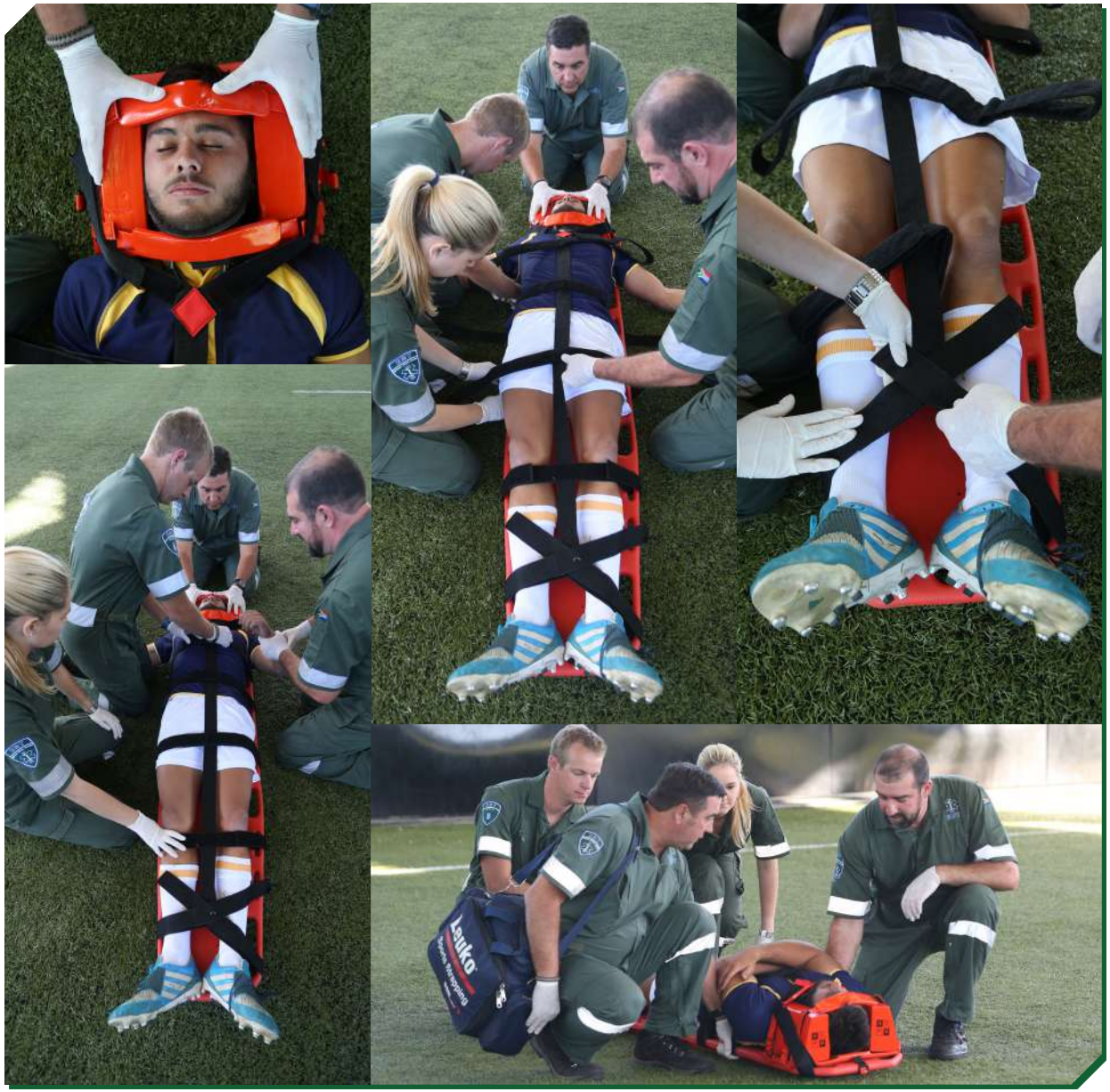
It also remains a visual reminder to medical personnel to maintain spinal precautions, and it limits voluntary movement by the injured player.

Whether or not the collar needs to be applied, remains an on-site medical decision. What is however non-negotiable, is that a rigid collar must be available during rugby matches, so that medical personnel can use it, when complete immobilisation is indicated or required.

The decision to use or not to use a cervical collar, must, within their medical scope of practice, be made by the qualified medical personnel involved in treating the patient on site, and once having assessed the situation and having made an informed clinical decision.

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 lead medic holding the head instructs the assisting medics to shift the injured player onto the centre of the board
- If the patient is feeling nauseous you may want to start with the harness, so that you can turn the patient lateral if they vomit, while still maintaining manual in-line spinal motion restriction
- Start with the Y at the top, and tie both sides at the same time progressively applying tension towards the bottom part of the strap
- Medics on the side are to apply both sides of the head blocks to the base plate attached to the spinal board
- Once the head blocks are on (with or without the rigid cervical collar; **this remains the on-site lead medic's clinical decision!**) and the medical team have applied the spider harness the lead medic at the head can finally release the C-Spine stabilisation
- The injured player is now fully immobilised
- Place a warm blanket over the player and remove him from the field
- Take very careful note of active and passive arm or leg movement. Pass this information on to the EMS when they arrive
- Protect the player from onlookers and continue to speak calmly to him while monitoring his condition
- Try to minimise potential harmful side-effects of pre-hospital spinal immobilisation on a spinal board, by limiting the time spent strapped to the spinal board, but without compromising the injured player
- The spinal board should only be used for extrication purposes. A vacuum mattress, where available, may be better suited for longer term care of the patient requiring spinal motion restriction



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)

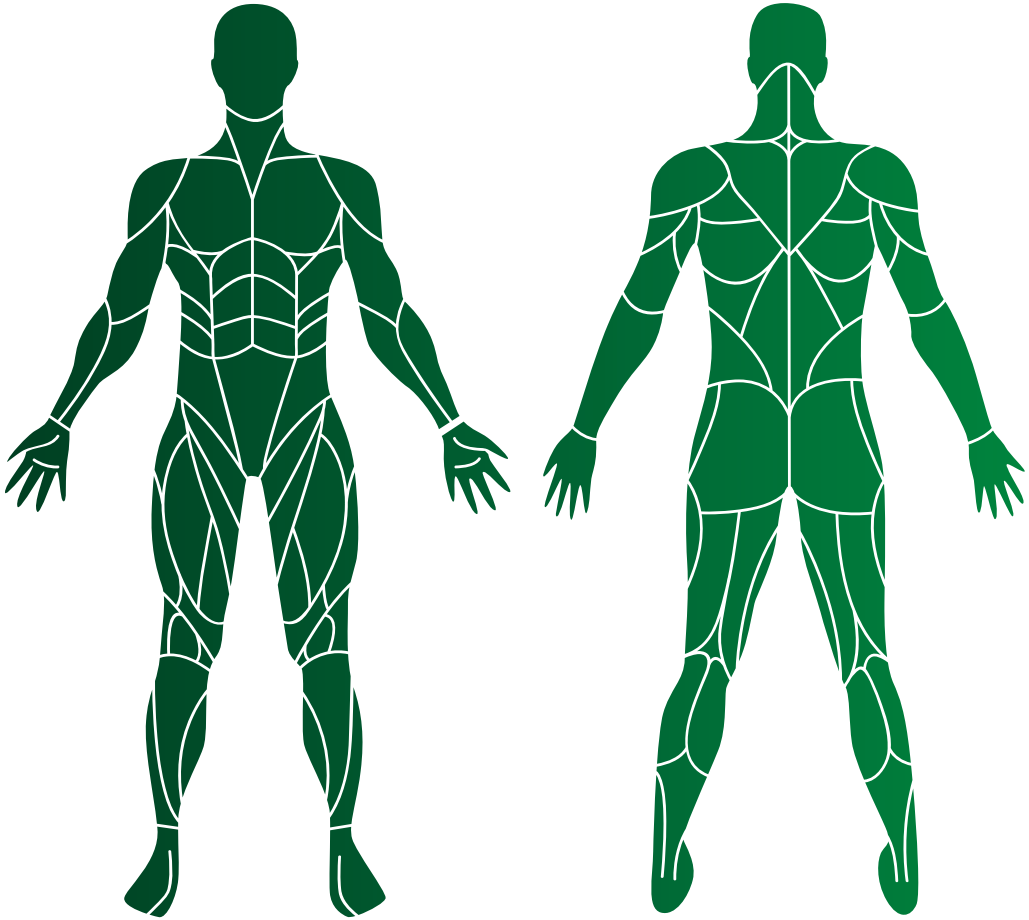
- **Rest** – move the joint as little as possible, to minimise pain and limit bleeding into the injured area. Should last between 1 - 3 days
- **Ice** – cold pack the joint to help reduce swelling. Do not apply ice directly to the skin (wrap ice in a wet towel or similar). Apply ice for intermittant 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



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Concussion Management

Concussion is frequently mismanaged, primarily due to the condition being misunderstood. Concussion is a **BRAIN INJURY** causing a disturbance to **BRAIN FUNCTION.** Furthermore, a player does not have to lose consciousness or have memory loss to have sustained a concussion.

In line with #*VisionZero*, the BokSmart philosophy is that if handled correctly at the time and managed appropriately afterwards, there should be ZERO concussed players ending up with long-lasting or permanent outcomes. Proper education on preventing, identifying, managing, treating and rehabilitating a player before returning to match play, forms and integral part of the BokSmart programme.

4

Roughly 1 in 3 concussions are sport-related, and result in a substantial number of visits to hospital emergency departments. Most brain injuries in team sports are in 15-19 year-old players, and caused by collisions with another player, through either being tackled or by tackling, head-to-head collisions, head-to-knee collisions and head-to-ground collisions.

The good news is that 80-90% of concussed players will recover completely within days to weeks, and using a formalised graduated return to sport process, can safely return to rugby.

The bad news is that the remaining 10-20% of difficult patients, would require further investigation and probably multiple interventions. The risk of repeat concussions and more serious brain injury is greatest within 7-10 days after the initial event.

Roughly 95% of players should have full clinical recovery and return back to training or match play by 21 days after a concussion. However, these players still have a 60% greater risk of incurring a time-loss injury after the concussion, even if they went through the graduated return to sport process.

One of the greatest predictors of a concussion seems to be… *HAVING HAD ONE BEFORE!*

Most studies show that the majority of concussed athletes show symptom resolution around 7 days after sustaining a concussion, but might not yet have completely recovered, as other measures of brain function deficits, may still remain.

A more conservative approach to concussion management, and especially in the youth, may still be the wisest choice.

WHEN IN DOUBT SIT THE PLAYER OUT

HEADS UP
PREVENT CONCUSSIONS
www.BokSmart.com/Concussion

A few key points to consider are:

1. Stabilise head-injured players on-field, as you would for a neck injury if there is any loss of consciousness, the player is clearly confused, or there is any suggestion of an associated neck injury
2. World Rugby recommends the use of high-flow oxygen for all patients with concussion and suspected head injury until the EMS or Emergency Medical Service arrives. This aims to provide oxygen-rich blood to the brain to minimise secondary injury. All efforts should be concentrated on the safe transfer of the patient to the appropriate medical facility for assessment.
3. 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
4. In circumstances where this is not possible, and the medical doctor does not have this knowledge, he should be referred to the BokSmart Website **www.BokSmart.com/Concussion** for the relevant information, and should follow the protocols provided
5. Medical Doctors and Field side medics involved in rugby union should also be requested to complete the World Rugby Concussion modules. For more info go to **https://www.world.rugby/the-game/training-education/elearning**
6. A concussed or suspected concussed player who shows any of the ***RED FLAGS*** ***(Pg 79)*** or **"important signs of a serious or deteriorating head injury"**, should get to hospital immediately. If any of these are present either on the field or in the hours and days after the incident, then get this player to the hospital or a suitably experienced medical doctor for urgent medical attention
7. A seizure or fit may be a normal physiological response to head trauma, but repeated seizures or fits are a ***RED FLAG***
8. Return-to-sport on the same day is definitely not allowed under ***ANY*** circumstances

4

9. Whether a coach, referee, parent or player, it is ***YOUR*** responsibility to ensure that any players suspected of sustaining a concussion are cleared by a medical doctor before returning to rugby

10. Following a suspected concussion the player must first follow the graded return-to-sport process before returning to full match play, even if a player has been cleared by a medical doctor

The initial check-up and clearance after the event by a medical doctor is simply there to rule out any potential complications that may or may not be present. This medical clearance is only applicable for entering into the return-to-sport process, which also includes an initial and compulsory rest period, and is definitely not for returning straight back into playing rugby!

Because signs and symptoms can sometimes be delayed and only appear later on, repeated medical assessments of players suspected of having concussions is recommended. It is also for this purpose that rugby, being a collision sport, has specific medical and return-to-sport protocols, to ensure that players have the best possible opportunity of making a safe return to rugby, with minimal risk of re-injury or catastrophic events.

The signs and symptoms immediately after the injury occurred may be notably different from those when the player eventually sees the medical doctor a few hours later. The fact that the player was 'knocked out', or had sustained a concussion on the field remains there, even though the signs and symptoms might or might not have been present at the time of the clinical assessment. The very reason that the player was referred to the hospital or doctor, is sufficient suspicion of concussion for them to enter into the compulsory rugby-specific concussion management process.

Occasionally there can be more significant or longer lasting problems, and it is important that coaches, team medics or medical doctors, who understand current best practice, concussion management protocols, monitor those players with concussions, and even suspected concussions.

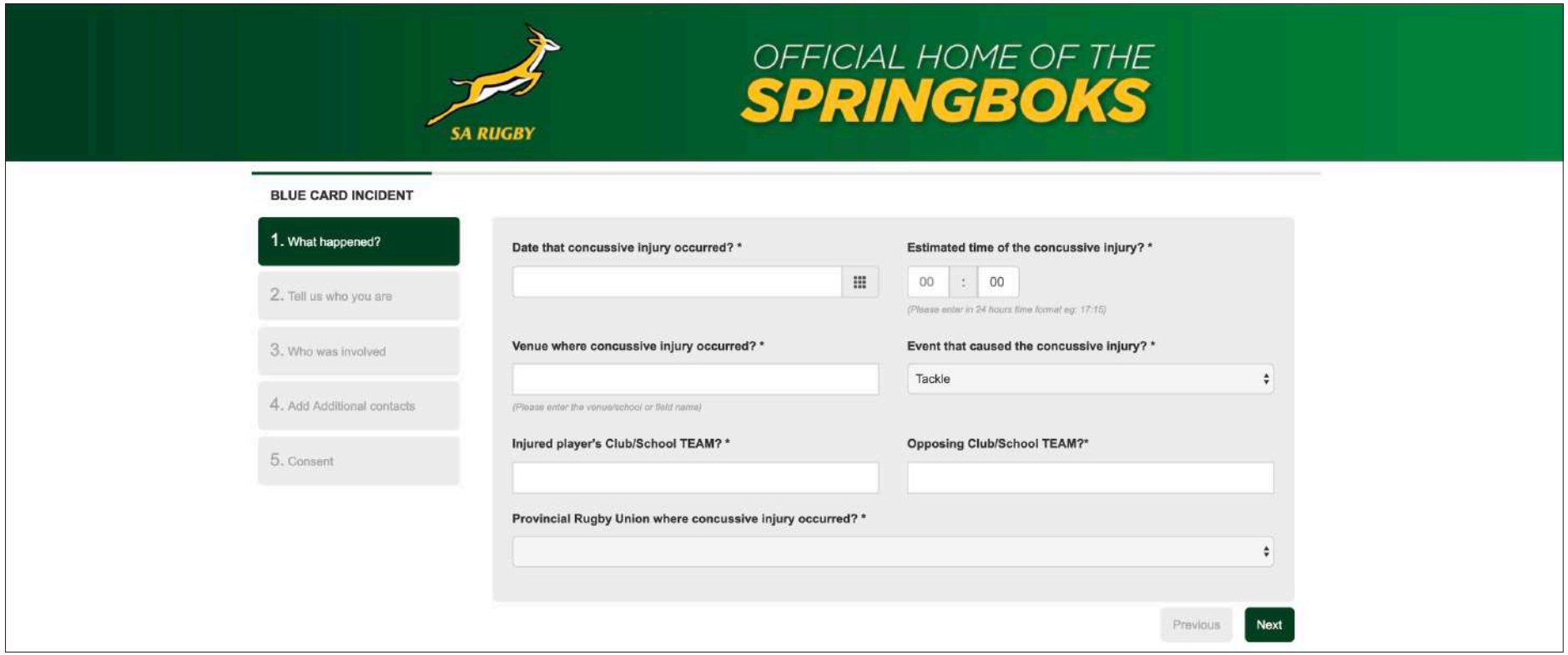
Concussion Blue Card protocol

In 2019, a Blue Card concussion system is being progressively introduced to the amateur, club and school game across South Africa. This advance is merely an operational extension of current concussion management guidelines. It is simply an operational process of recording these concussions or suspected concussions, via a standardised referee's Blue Card report, and the current Team Sheet formats in South Africa also have a place for noting this information.

There is also a Blue Card online Footprint App **https://bluecard.footprintapp.net/** (only applicable in South Africa) for anyone involved in witnessing the event, including the match referee, to log this event electronically and then subsequently to obtain appropriate concussion advice and information on the correct return to rugby processes to follow for that player.

Via a collaboration with Sports Concussion SA, the parties captured onto this App are able to gain access to a database of medical doctors who are sufficiently versed in concussion management for rugby union should they wish to utilise this concussion specialist resource.

The list of medical doctors will grow as more medical doctors are registered on this database via Sports Concussion SA. The Blue Card online App will be freely accessible to all. Utilising the Concussion Specialist network will however be at own cost. Everyone whose email details are logged onto this App when reporting the event, will automatically be emailed the key elements of Concussion advice, as per the above, to better operationalise SARU's current regulations and policies, and to ensure that the correct advice in the management of concussion for rugby union is provided to the end users. It will significantly increase the reach of SARU's concussion messaging.



THE REFEREE SPOTLIGHT
BLUE CARD

BLUE CARD CONCUSSION PROCESS

1. Referee or Medical professional recognises a potential concussion event
2. Referee then signals Blue Card to the player
3. Visual cue to all watching –> Concussion or suspected concussion
4. Player is permanently removed from the field of play
5. Player is logged onto the Club or School's submitted Team Sheet as a Concussion
6. Referee to submit Blue Card report to the Provincial Rugby Union
7. Referee, Coach, Team management, Player, Parent or Family member logs the Blue Card onto the SA Rugby Online software **https://bluecard.footprintapp.net**
8. All contact persons listed when logging the Blue Card on the App will receive emailed advice on the required GRTS processes to follow with the player
9. All Blue Card concussion events recorded on the App will be stored on a national database
10. Sport Concussion SA's information: **011-3047724, 0825746918,** Email: **sportsconcussion@mweb.co.za** will also be emailed to them should they wish to access Medical Doctors who are sufficiently knowledgeable in Concussion management for rugby union

SA RUGBY CONCUSSION REGULATIONS
https://www.springboks.rugby/general/boksmart-legislation/

The following are 11 OBVIOUS SIGNS & SYMPTOMS that you as a referee, coach or medical support staff simply cannot miss, and cannot allow players presenting with any of these to continue in a match or practice. THESE ARE IMMEDIATE BLUE CARDS!

THOSE SIGNS AND SYMPTOMS TYPICALLY SEEN ON-FIELD:

1. Confirmed loss of consciousness; this is clear and obvious, the player was knocked out
2. Suspected loss of consciousness, or from what you saw happen on the field, where you have a strong suspicion of the player having lost consciousness
3. Convulsions or fits after making contact
4. Tonic posturing, abnormal muscle contractions or muscle stiffening
5. Balance disturbance, ataxia, stumbling or falling over
6. Clearly dazed, dinged or unable to think or react properly

THOSE ADDITIONAL SIGNS AND SYMPTOMS TYPICALLY IDENTIFIED DURING AN ON-FIELD ASSESSMENT:

7. The player is clearly not orientated in time, place or person or doesn't know what time it is, where they are or who they are talking to
8. Definite signs of confusion in the player
9. Definite changes in behaviour for that player
10. Oculomotor signs for e.g. spontaneous nystagmus or rapid involuntary eye movements
11. On-field identification of regular signs or symptoms of concussion as highlighted in your pocket BokSmart Concussion Guides

LAW 3.22 (C): The referee decides *(with or without medical advice)* that it would be inadvisable for the player to continue. The referee orders that player to leave the playing area.

LAW 3.24: 'If, at any point during a match, a player is concussed or has suspected concussion, that player must be immediately and permanently removed from the playing area. This process is known as "RECOGNISE AND REMOVE".'

THE 6R'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.

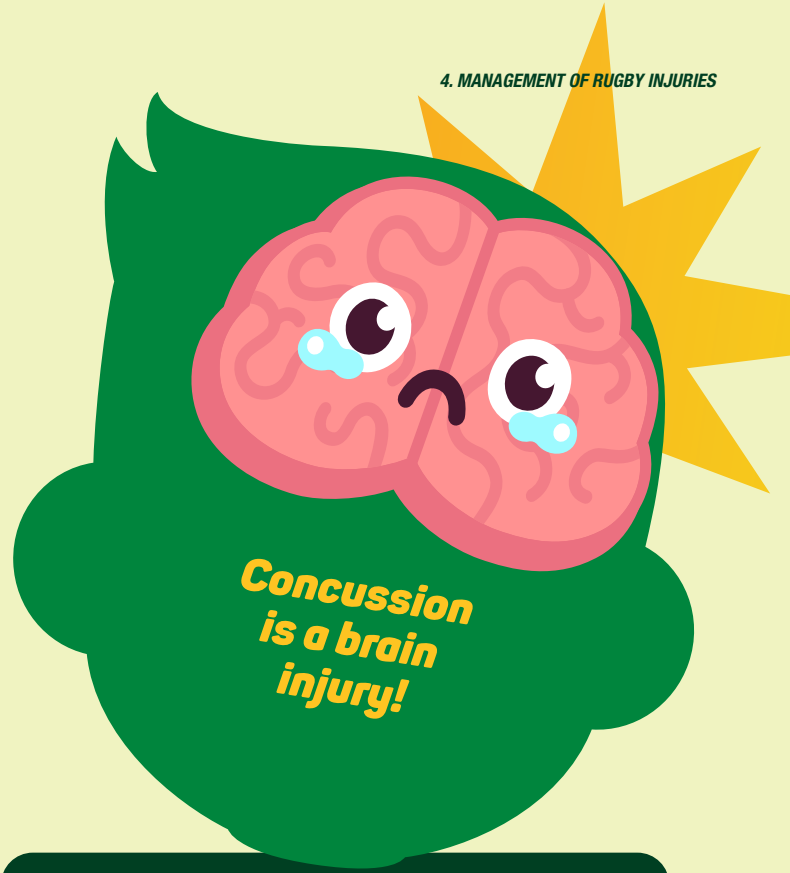
REFER:
Once you have permanently removed the player from the field, refer them to a medical doctor who understands concussions for a thorough clinical assessment.

REST:
Rest the player 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-sport process.

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

RETURN:
To return to sport 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-sport protocol. For the purpose of concussion, full contact practice equals return to sport.

CONCUSSION MANAGEMENT



PREVENTION
5Es

1. **EDUCATE** your team, club or school on concussions
2. **ENFORCE** the laws, protocols and policies in your players
3. **ENHANCE** your players' protection against concussion by preparing them properly for rugby
4. **EQUIP** your players with the right information about what works and what does not
5. **EVALUATE** your concussion prevention process and policies yearly to ensure that you remain up to date with what is expected at the time

IDENTIFICATION
6Rs

1. **RECOGNISE** concussions
2. **REMOVE** the player
3. **REFER** them to a medical doctor to clear them of any complications, NOT for going back to rugby
4. **REST** them according to their age-group requirements
5. **RECOVER** until sign and symptom free
6. **RETURN** them to play, once they have gone through the rugby specific return to sport process without any hiccups

MANAGEMENT
MEDICAL CLEARANCE STEPS

1. **Medical doctor clearance** of complications straight after event
2. **Clearance to start GRTS** after age-appropriate stand-down period
3. **Clearance to progress** to full contact after Stage 4 of GRTS

4

MADDOCKS' QUESTIONS

QUESTIONS YOU NEED TO ASK TO PLAYERS 13 YEARS OF AGE AND OLDER

- What venue are we at?
- What team are you playing?
- What half is it?
- Who scored last in this game?
- Who did you play last week/game?
- Did your team win the last game?

QUESTIONS YOU NEED TO ASK 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.

MONITORING: *CONCUSSION REGISTER*

1. Must be done by a responsible person at School or Club
2. Step by Step monitoring of progression through the rugby-specific GRTS
3. Recordal of medical steps and processes

SIGNS AND SYMPTOMS

WHAT YOU NEED TO LOOK 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
- Poor coordination
- Loss of consciousness or lack of responsiveness
- Confused or not aware of plays or events
- Grabbing or clutching the head
- Convulsions
- More emotional or irritable

WHAT THE PLAYER MIGHT TELL YOU

- Headache
- Dizziness
- Confusion or feeling slowed down
- Struggling with or blurred vision
- Nausea or vomiting
- Fatigue
- Drowsy, feeling in a fog or difficulty concentrating
- A feeling of pressure in the head
- Sensitivity to light or noise
- Memory loss for events before, during or after the game or practice

NAME OF PLAYER	SURNAME OF PLAYER	TEAM PLAYED FOR	DIVISION	AGE	DATE OF BIRTH	COACH	DATE OF CONCUSSION/ SUSPECTED CONCUSSION	DATE OF MEDICAL ASSESSMENT TO RULE OUT COMPLICATIONS	NAME OF MEDICAL DOCTOR	COMPULSORY RECOVERY REST PERIOD USED	CLEARANCE RECEIVED TO ENTER GRADUATED RETURN TO PLAY PROCESS	DATE OF MEDICAL ASSESSMENT CLEARANCE RECEIVED	DATE OF COMPLETION OF GRTS	SIGNED OFF & ACKNOWLEDGED BY COACH	DATE RETURNED TO FULL MATCH PLAY
Clint	*Readhead*	*Senior Adult*	*d*	*46*	*May 14, 1970*	*Dawie Snyman*	*August 1, 2016*	*August 2, 2016*	*Dr Jerome Mampane*	*1 week*	*Yes*	*August 9, 2016*	*August 13, 2016*	*Yes*	*August 20, 2016*

PLEASE USE A **COMMON SENSE** APPROACH

You don't need a handbook to identify a suspected concussion If you suspect one, take the player off, it's really that simple

4

THE GRADUATED RETURN TO SPORT (GRTS) PROTOCOL

EACH STAGE PROGRESSION **AFTER** THE STAND-DOWN PERIOD IS A MINIMUM OF **24 HOURS**

STAGE	REHABILITATION	OBJECTIVE	EXERCISE ALLOWED
1	Minimum age-appropriate rest period	**RECOVERY**	• Complete body and brain rest for the first 24-48 hours • Followed by rest and light exercise (walking, slow, stationary cycling) that does not worsen symptoms
2	Light aerobic exercise (20 minutes)	**INCREASE HEART RATE**	• Light jogging swimming or stationary cycling at low to moderate intensity • No resistance training • Symptom free during full 24-hour period
3	Sport-specific exercise (25-30 minutes)	**ADD MOVEMENT**	• Running drills • No head impact activities
4	Non-contact training drills	**EXERCISE, COORDINATION AND COGNITIVE LOAD**	• Progression to more complex training drills, e.g. passing drills • May start progressive resistance training • Player MUST be medically cleared at the end of this Stage before going to Full-contact training or Stage 5
5	Full-contact practice	**RESTORE CONFIDENCE AND ASSESS FUNCTIONAL SKILLS BY COACHING STAFF**	• Normal rugby training activities • If player remains sign and symptom-free for the full 24 hours, they then move on to Stage 6
6	Return to match play/sport	**RECOVER**	• Player rehabilitated and can be progressively re-introduced into full match play

4 NOTES:

- a player may only start the GRTS process once cleared by a medical doctor and all symptoms have disappeared
- a player may only progress to the next stage if no symptoms occur during or after exercise in each stage
- a player must again be cleared by medical doctor before starting full-contact training

AGE-APPROPRIATE STAND-DOWN & GRTS – EARLIEST RETURN TO SPORT

PLAYERS 18 AND YOUNGER: 2 weeks rest post injury + 4 days GRTS (Earliest return to rugby – Day 19 post injury)
PLAYERS 19 AND OLDER: 1 week rest post injury + 4 day GRTS (Earliest return to rugby – Day 12 post injury)

PLAYER AGE GROUP	COMPULSORY REST PERIOD POST CONCUSSION	CAUTION!	GRTS	CAUTION!	NUMBER OF MISSED FULL WEEKS
18 AND YOUNGER	Minimum of **2 WEEKS** off before starting the GRTS process, even longer if any signs or symptoms remain	**CAUTION! Return To Sport protocol should be started only if the player is symptom free and off medication that modifies symptoms**	4 Stage GRTS with progression every 24 hours if no symptoms. Total GRTS days = a minimum of 4 days	**CAUTION! Contact Sport should be authorised only if the player is symptom free and off medication**	Earliest Return To Sport = 2 weeks rest post injury + 4 days GRTS (Play – **DAY 19** post injury)
19 AND OLDER	Minimum of **1 WEEK** off before starting the GRTS process, even longer if any signs or symptoms remain				Earliest Return To Sport = 1 week rest post injury + 4 days GRTS (Play – **DAY 12** post injury)

CAUTION: Any player with a second concussion within 12 months, a history of multiple concussions, players with unusual presentations or prolonged recovery should be assessed and managed by health care providers *(multidisciplinary)* with experience in sports-related concussions. It is recommended that if this expertise is unavailable then as a minimum the player should be managed using the protocol from the lower age group.

EXAMPLE: 1. 'Players 19 and older' uses the 'Players 18 and younger' protocol and 2. for 'Players 18 and younger' the minimum rest period should be doubled.

However, the medical doctor clearance is non-negotiable and must always be provided before entering the GRTS and before starting full-contact training, regardless of who is available to manage or monitor the GRTS process.

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.

EMERGENCY NUMBER

For any potentially serious concussion, head, neck or spine rugby injury contact the toll-free BokSmart Spineline number,

0800 678 678

operated by

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 evidence-based information on concussion, its treatment and management, go to:

www.BokSmart.com/Concussion

Red Flags

4

Important signs which may indicate an even more serious life-threatening or deteriorating head injury:

- Headaches that worsen
- Increasing drowsiness
- Inability to recognise people or places
- Deteriorating consciousness
- Increasing confusion or irritability
- Repeated vomiting
- Seizures or slurred speech
- Enlargement of one or both pupils
- Unusual behavioural changes
- Severe neck pain
- Weakness or numbness in the limbs

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 sustained a neck injury, or whose level of consciousness or condition deteriorates, should be taken to hospital immediately.

4

Why is concussion prevention important?

Concussion is a brain injury which should be identified, treated and managed correctly. Failure to do so can potentially have serious consequences. Reducing the incidence or rate of concussion is important for rugby players' health, well-being and ongoing participation in the game.

Can all concussions be prevented?

Considering there are 2 teams of 15 players on the field, having frequent high-speed, high-impact collisions, and within an ever-changing environment, it becomes very difficult to control the safety aspects of ALL contact situations between players. As such, concussions will never completely be prevented. That is why "Recognising and Removing" is so essential for player well-being.

Equally important to preventing primary concussions, is a secondary prevention strategy; that is to avoid further concussions in a player, who has already had a concussive head injury.

A number of important intervention strategies may help reduce the chance, rate and recurrence of concussions.

The cornerstone of Concussion Prevention is therefore – **Educate, Enforce, Enhance, Equip** and **Evaluate** – collectively referred to as the **Five E's**

EDUCATE

- The more you know about concussion, the more you can do to prevent the negative consequences of concussions!
- Recognising concussion and educating yourself are currently the best tools to prevent concussions
- Learn how to identify a concussed player
- Identify those situations which may place players at higher risk of concussions
- Follow best practice principles in managing concussions
- Use the freely available Website **www.BokSmart.com/Concussion** and the other additional free resources available in your club or school
- Go online to the World Rugby Player Welfare site **https://www.world.rugby/the-game/training-education/elearning** and take yourself through their Concussion education modules

ENFORCE

- Play strictly by the laws of the game of Rugby Union
- Do not allow dangerous tackles and players flying in or diving recklessly into rucks
- Ensure that ALL coaches and referees are BokSmart Certified at all times, and carry their BokSmart Concussion Guides with them
- Enforce the medical assessments, stand-down periods and mandated Graduated Return To Sport protocols, on all of your players who have suspected or confirmed concussions

ENHANCE

- Work only on safe and effective tackling techniques. Do this often!
- Heads up into contact reduces the moment of inertia and impact forces, and can reduce the risk of concussions
- Perfecting tackle technique is crucial for preventing concussions
- Tackle technique is often not good in younger developing rugby players, and still requires a lot of coaching and individual practice
- Regular practicing of safe and effective tackling techniques should therefore start at a young age so that it eventually becomes instinctive
- Concussion rates also increase as game time progresses, and fatigue worsens tackle technique
- Essentially, the fitter you are for rugby, the easier it is to maintain good tackle technique and thereby reduce the risk of concussion!
- It is also important to occasionally, practice tackling under fatigued conditions to reinforce safer tackling techniques under these circumstances!
- Strengthen the neck! This should be done throughout the year!
- Practice and coach safe rucking techniques, and principles, especially for those players already in the ruck contesting for the ball.

EQUIP

- Although mouth guards do not prevent concussion, players should use them to prevent injuries to teeth, gums and the tongue.
- It is preferable to have a mouth guard fitted by a dentist.
- The use of rugby headgear may help reduce friction injuries to the ears and cuts to the scalp, but they do not prevent concussions.
- There is currently no rugby equipment that reduces concussion, but rules and legislation can lower this risk

EVALUATE

- Ensure that your school or club has a concussion policy and action plan in place for suspecting, identifying, treating and managing concussions.
- Those who do not have a concussion policy or plan, will be less likely to recognise and remove players with suspected concussions, and will certainly not manage them properly
- Reassess this policy at the end of every season and align it with the updated BokSmart protocols.

Concussion Register

For this plan to be successful, it is important to establish an internal Concussion Register for each team at your club or school, and to have someone accurately track and monitor the concussed players, throughout their recovery process

SUGGESTED TIMELINES TO BE RECORDED FOR EACH CONCUSSED PLAYER:

- Name of the player, coach of the team, team played for, and the age of the player
- Date of suspected or confirmed concussion
- Date of medical assessment to rule out any complications, including the name of the Medical Doctor, and whether they cleared the player or not
- Confirmed rest recovery period utilised, based on the players age group
- Date of medical clearance received to enter the rugby specific graduated return to sport process
- Date of completion of the rugby specific Graduated Return To Sport process with the player showing no signs and symptoms remaining
- Date of official return to full match play

This process ensures that you as a club or school are following best practice principles in managing your concussed players, and that you are providing the standard duty of care expected of you. It also protects you if something happens to the player further down the line.

HEADS UP

PREVENT CONCUSSIONS

www.BokSmart.com/Concussion

The BokSmart Concussion Guide

Every coach and every referee on the BokSmart course should have the BokSmart Concussion Guide with them at every practice or match that they are involved in. All the necessary information you require to make an informed decision on a suspected concussed player is available at your fingertips, including important advice to give to the player after the game or practice session.

Remember, if in doubt, sit the player out.

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 (SA Rugby).

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

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 Sport Protocol’, as described in the World Rugby Concussion guidelines, in accordance with the SA Rugby 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-sport 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 body part 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 return-to-sport, 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-Sport position statement, which suggests a best clinical practice approach in managing the return to sport process, is available for download at www.BokSmart.com

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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:

Phase 1 – Aerobic, combined with dynamic stretching 1

The focus is to increase body and muscle 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.

Phase 2 – General Skill (Medium Intensity) 2

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.

Phase 3 – Specific Skill (High Intensity) 3

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.

Phase 4 – Functional Skill – Position specific OR technical specificity 4

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.

Phase 5 – Final Dynamic Stretching / Upper-body specific movements 5

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.

SAFE "SIX"

INJURY PREVENTION EXERCISES

NOTE: The BokSmart 'Safe Six' are a group of injury prevention exercises that target areas of the body that are at greater risk of injury. The exercises have been chosen to focus on joint stability, strength, balance and control, and can be done in a very short time, and can even be incorporated into the warm-up at practices. Find out more here: **https://www.springboks.rugby/general/boksmart-safe-six/**

The BokSmart Safe 'Six' is built around 'Six' injury prevention exercises that with a little bit of practice, anyone can do, anytime and anywhere. The tackle phase is the main cause of most rugby injuries. The BokSmart Safe 'Six' therefore targets those areas of the body that are frequently injured in the tackle. Minimum time and no equipment are needed. Do not rush it! Rest 30 seconds between each set and each exercise and focus only on good technique. Repeat the circuit twice at each session and follow the Safe 'Six' routine a minimum of three times a week. This should be seen as an addition to normal training and should not take more than 15-20 minutes. If doing this separate from your rugby sessions, do some light jogging for a minute or two to warm-up for before starting the routine. This can also be done as part of your warm-up before a rugby training session.

1. THE 'SIX'-METER SHUTTLE-RUN

BENEFITS FOR DYNAMIC HIP, ANKLE AND KNEE STABILITY

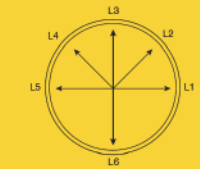
Measure out a distance of approximately 6 m, with 1 m interval markings. Running at three-quarter pace, run 6 shuttles (there and back), progressing each new shuttle by 1 m to a maximum of 6 m for the last return shuttle run. Alternate your turning foot at each end of each shuttle. Maximum distance covered = 42 m per set. Perform two sets, before moving onto the next exercise.

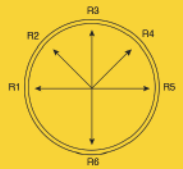
2. THE 'SIX'-POINT LUNGE

BENEFITS FOR HIP, PELVIS, ANKLE AND KNEE, STRENGTH AND STABILITY

Starting in the middle, with hands on hips, and leading with your left foot, lunge towards the L1 position, drop down and hold this position briefly, then push back to the start. Next, lunge to the L2 position, drop down, hold briefly then push back. Continue this pattern up to the L6 position with the left foot leading. Keep shoulders and hips square to the front. Once completed with the left foot, then lead with the right foot, and follow the R1 – R6 movement pattern. Keep the back foot or non-leading foot planted or fixed throughout

LEFT LEG LEAD (L1-L2-L3-L4-L5-L6) **RIGHT LEG LEAD (R1-R2-R3-R4-R5-R6)**





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3. THE BUTT-SMART 'SIX'

BENEFITS FOR GLUTES, LOWER BACK, HAMSTRINGS AND CORE, STRENGTH AND STABILITY

Get into a kneeling position with arms folded across the chest. Have a partner hold your lower legs in place by applying downward pressure onto your ankles. Tighten your Glutes and Hamstrings and do not bend forward in the hips. Keeping your back stiff and straight throughout, gradually lean forward and resist the falling down movement as long as possible. When you can no longer resist your fall, catch yourself, and fall down into a press-up position. Push yourself back up to where you can tighten the Hamstrings and Glutes to actively lift and bring yourself back to the start position. Repeat six times.

4. THE 'SIX'-ON-A-SIDE PUSH-UP AND TWIST

BENEFITS FOR SHOULDER, SPINAL CONTROL AND CORE, STRENGTH AND STABILITY

Complete a push-up with the hands placed slightly wider than the shoulders. Maintain a straight body without arching or bending in the lower back. At the end of the push-up, balance on one arm, twist and rotate the upper-body and leading arm slowly away from the supported side with the hand pointing towards the sky. Alternate between left and right sides. Perform 12 reps, 6 on each side.

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5. THE 'SIX'-BOK LUNGE

BENEFITS FOR HIP, PELVIS, ANKLE AND KNEE, STRENGTH AND STABILITY

Stand upright with the hands held behind the head. With your hips level and back straight, lunge forward with the left leg. At the end of the lunge, push up with the front left leg, and bring your back right leg through while lifting the right knee. Hold this position briefly and with control, reverse the movement back to the start. Alternate between left and right leading legs. Perform 12 reps, 6 on each leg.

6. 'SIX' DYNAMIC REACHES

BENEFITS FOR SHOULDER, HIP, SPINE, PELVIS, LOWER BACK, ANKLE AND KNEE, STABILITY, BALANCE AND CONTROL

Balance on the left leg while keeping this left leg slightly bent at the knee. Lean slowly forward, reaching as far as you can with both arms and not losing balance; chest facing the ground at all times. At the same time as leaning forward, lift the back right leg up to form a straight line with the upper body, while keeping the hips square to the ground. Hold this position for six seconds. Alternate left and right legs between reps. Perform 6 reps, 3 on each side.

IF YOU HAVE ANY CURRENT INJURIES OR ARE CONCERNED IN ANY WAY, PLEASE CONSULT A MEDICAL PROFESSIONAL BEFORE PARTICIPATING ON THIS PROGRAMME.
FOR MORE PREVENTION PROGRAMMES AND ADVICE ON RUGBY SAFETY GO TO: WWW.BOKSMART.COM, WWW.FACEBOOK.COM/BOKSMART AND FOLLOW: @BOKSMART ON TWITTER.
SEE LEGAL DISCLAIMER: HTTP://BOKSMART.SARUGBY.CO.ZA/DISCLAIMER


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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
    - *Tight 5: 4 x 10m Shuttles*
    - *Loose forwards & Inside Backs: 2 x 20-30m sprints*
    - *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 5 minutes: Rehydrate and refuel. Eat/drink carbohydrate and protein. 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 ten 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

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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.

Starting Position

Finishing Position

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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.

Left Calf

Right Calf

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.

1st Option (Legs Together)

2nd Option (Legs split)

Right Hand, Left Foot

Left Hand, Right Foot

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.

Left Arm, Left Hip Flexor

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.

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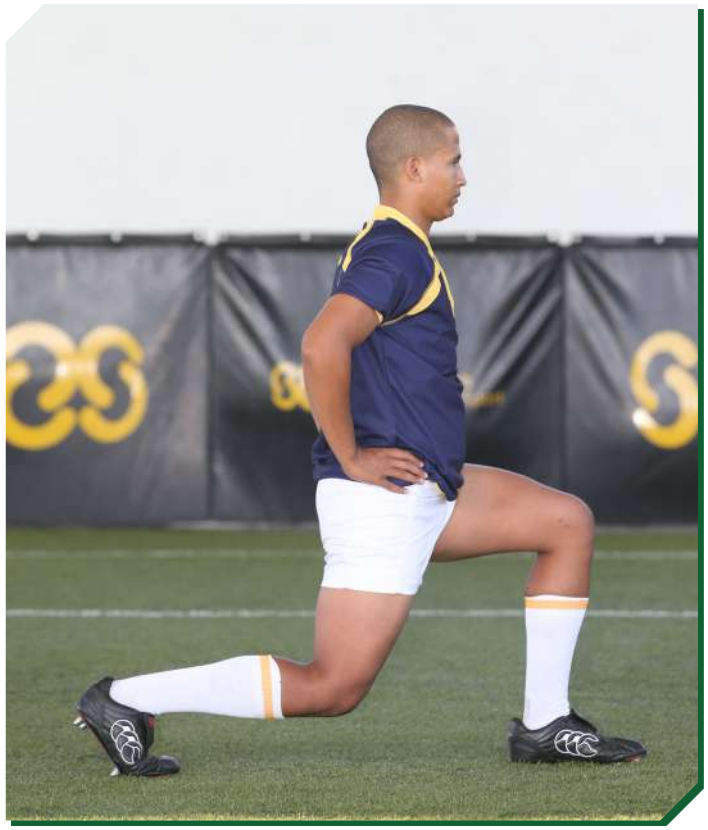
Right Arm, Right Hip Flexor



Forward Lunge

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 off the front foot back to the starting position. Change feet after every repetition. Change of stepping direction can be included.

Positional Reference

Starting Position

Finishing Position

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 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 SA Rugby. 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 _____

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	Screening Question	Yes	No	If answered YES, follow suggested course of action
1.	Have you ever been told by a doctor not to participate, or to limit activity, in sports?			Consult a medical doctor for investigation of the specific condition.
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, depression/anxiety, ADHD?			Ascertain that the player has the appropriate prescribed medication. Receive medical clearance from a medical doctor before exercise.
3.	Do you have any allergies, e.g. bees, grass, pollens or medicines?			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.
4.	Have you ever passed out (fainted/lost consciousness) or nearly passed out during exercise?			Refer for a medical doctor's evaluation, including exercise stress test.
5.	Has a doctor ever ordered a test for your heart, e.g. ECG, scan, etc.?			Receive medical clearance from the relevant doctor.
6.	During exercise, have you ever had chest pain or severe shortness of breath?			Consult a medical doctor for an evaluation, including exercise stress test.
7.	During exercise, do you get tired a lot quicker than your friends do?			Refer for a medical evaluation citing possible excessive exercise-associated fatigue.
8.	Have you had any 'flu-like' illness during the past 4 weeks? Covid-19, chest colds, gastroenteritis and other viral illnesses would be included in this group.			Receive medical clearance that the player has fully recovered.

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Screening Question		Yes	No	If answered YES, follow suggested course of action
9.	Has any family member ever died suddenly, for an unexplained reason?			Advise that the player gives a thorough medical history to, and be examined by, a medical doctor.
10.	Have you sustained a head injury this season?			Receive a medical certificate from a sports doctor, neurologist or neurosurgeon that the player has fully recovered.
11.	Have you sustained three (3) or more head injuries or concussions in your life?			Refer the player for medical assessment by a sports doctor, neurologist or neurosurgeon before being cleared.
12.	Have you ever suffered from headaches, dizziness, loss of memory or confusion after a blow to the head?			Refer the player for medical assessment by a sports doctor, neurologist or neurosurgeon before being cleared.
13.	Do you suffer from headaches, numbness or 'pins and needles' while exercising?			Refer the player for medical assessment by a sports doctor, neurologist or neurosurgeon before being cleared.
14.	Have you ever had a seizure (fit)?			Refer the player for medical assessment by a neurologist or neurosurgeon before being cleared.
15.	Have you ever badly injured your neck?			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.
16.	Is there anything that you would like to see a doctor about?			Refer to a medical doctor.


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One of the silent killers in sport, is sudden cardiac death, with the vast majority of these incidents occurring during, or immediately after a practise or match.

Sudden cardiac death, generally refers to someone, with or without pre-existing heart disease, who dies suddenly and unexpectedly from a cardiovascular cause. Most of these cases happen in recreational sport. This can involve a young athletic child, or your older, less athletic, middle aged, weekend warrior. And the majority of sudden cardiac deaths are in males.

The mechanisms of cardiac death can vary between coronary artery disease, cardiomyopathies or heart muscle conditions, heart valve abnormalities, rupture or splitting of the major blood vessels, or electrical conduction problems in the heart.

Sudden cardiac death is uncommon, and even more uncommon in fit, young rugby players, but it does affect those involved quite dramatically.

Most exercise related cardiac deaths are due to some form of underlying cardiovascular disease that was never picked up while the players were alive. When sudden cardiac arrest happens, there is very seldom a positive result, and historically most players have died.

So…. What can we do about this?

In around 80% of sudden cardiac death cases, there are pre-existing coronary heart diseases involved. In the majority of these, the patient had no clinically recognised heart disease beforehand. In other words, no-one was aware of the fact that the person had the disease, and the first indication of the disease was the fatal event.

The standard risk factors for coronary heart disease may then, to some extent gauge certain players' potential risk of Sudden Cardiac arrest on the sports field.

Therefore, what are some of the more relevant risk factors that may predispose a player to coronary heart disease, and therefore potentially also, to sudden cardiac arrest while participating in rugby?

- If your dad had a heart attack, bypass surgery, or died from a heart related problem before the age of 55, or your mom before the age of 65, then you are at higher risk.
- If you are a smoker, are constantly surrounded by people who are smoking, or have stopped smoking less than 6 months ago, then you are at higher risk.
- If you are one of those weekend warriors, who does not get at least 30 minutes of moderate intensity exercise, at least 3 days in a week, for at least 3 months, then you are at higher risk.
- If your waistline is more than 102 cm in men, and for ladies more than 88 cm, then you are at higher risk.
- If you have high blood pressure or blood pressure above 140/90, or are on blood pressure lowering medication, then you are at higher risk.
- If you have high cholesterol, and/or have high blood sugar, or are on medication for lowering either or both of these, then you are at higher risk.

The more of these risk factors that you meet, or if you have a pre-existing heart condition, such as hypertrophic cardiomyopathy, then you are at greater risk of sustaining sudden cardiac arrest or sudden cardiac death while participating in rugby.

Smoking, diabetes, obesity, high blood pressure and high cholesterol are strongly related to sudden cardiac death. Heavy alcohol intake has also been associated with sudden cardiac death. And if a player has a known heart condition, and has been advised NOT to play, then they should stop playing rugby.

As very few sport-induced sudden cardiac arrest cases, ever survive, primary prevention is currently the most effective tool that we have to reduce their incidence. So, it is in your flagged players' best interests, to stop their bad habits, get themselves back into shape, get back into a healthy lifestyle, and if the medical doctor gives them the nod, get back into rugby, but with far less risk of sudden cardiac death.

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 their 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 mouth guards 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

- Mouth guards
- Headgear
- Padded equipment
- Compression garments

Mouth guards

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

Mouth guards – practical tips

- Inspect mouth guards regularly for any signs of wear and tear
- Replace your mouth guard at least every 2 years
- Growing children should replace their mouth guards every 6 months
- To decrease mouth dryness, apply a light coating of Vaseline to the lips and mouth guard 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 mouth guard

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).

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

- The Currie Cup tournaments
  (all formats and age-groups, except for the Premiership Competition)
- All other interprovincial level matches,
  including Amateur Interprovincial matches and tournaments
- Gold Cup
- Varsity Cup and Shield
- SA Rugby Youth Weeks
- Schoolboy festivals
- Classic Clashes
- All Sevens matches or tournaments at these levels

Gold+

- The 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.

9

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°C 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. In those areas of the country where this might be relevant, also consult the **Guidelines for Dealing with Lightning** document, for more on what to do when Lightning approaches.

These are available on the BokSmart Website www.BokSmart.com or linked Page: **https://www.springboks.rugby/general/boksmart-medical-protocol-safety-in-the-playing-environment/.** 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.


ER24
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SAFETY IN THE PLAYING ENVIRONMENT CHECKLIST

ENVIRONMENTAL CONDITIONS	GREEN	GOLD	GOLD+	CONFIRMED (√ / X)
Whirling Hygrometer/ WBGT*	√	√	√	
Lightning warning system*	√	√	√	
Telephone access	√	√	√	
MEDICAL PERSONNEL	**GREEN**	**GOLD**	**GOLD+**	
Match Doctor	X	X	√	
Venue Doctor	X	√	√	
Specialist services on site	X	X	√	
Specialist services on standby	X	√	√	
Nursing sister	X	X	√	
Medical liaison	X	X	√	
ALS paramedics	X	X	√	
ILS paramedics	X	√	√	
BAA	X	√	√	
Trained First Aider	√	X	X	
Ambulance and staff on site	X	√	√	
Ambulance and staff on standby	√	X	X	
Air staff (on standby)	X	√	√	

*Telephonic access to this information is sufficient
**Where indicated in certain underprivileged or disadvantaged communities, this cannot be seen as a requirement

EQUIPMENT	GREEN	GOLD	GOLD+	CONFIRMED (√ / X)
Spinal board and harness	√	√	√	
Cervical collars and head blocks	√	√	√	
BokSmart Concussion Guide	√	√	√	
SCAT tool	√**	√	√	
First Aid bag	√**	√	√	
ALS equipment	X	√	√	
Golf cart	X	√	√	
MEDICAL ROOM	**GREEN**	**GOLD**	**GOLD+**	
Medical tent/station	√	X	X	
Emergency treatment room	X	√	√	
ADVANCED CARE	**GREEN**	**GOLD**	**GOLD+**	
ALS equipped ambulance on site	X	X	√	
ILS equipped ambulance on site	X	√	X	
Access to emergency medical services	√	X	X	
Trauma unit (< 1 hour)	√	√	√	
Spinal unit (< 4 hours)	√	√	√	
HEMS (Helicopter air ambulance) on standby	X	√	√	

SAFETY IN THE PLAYING ENVIRONMENT

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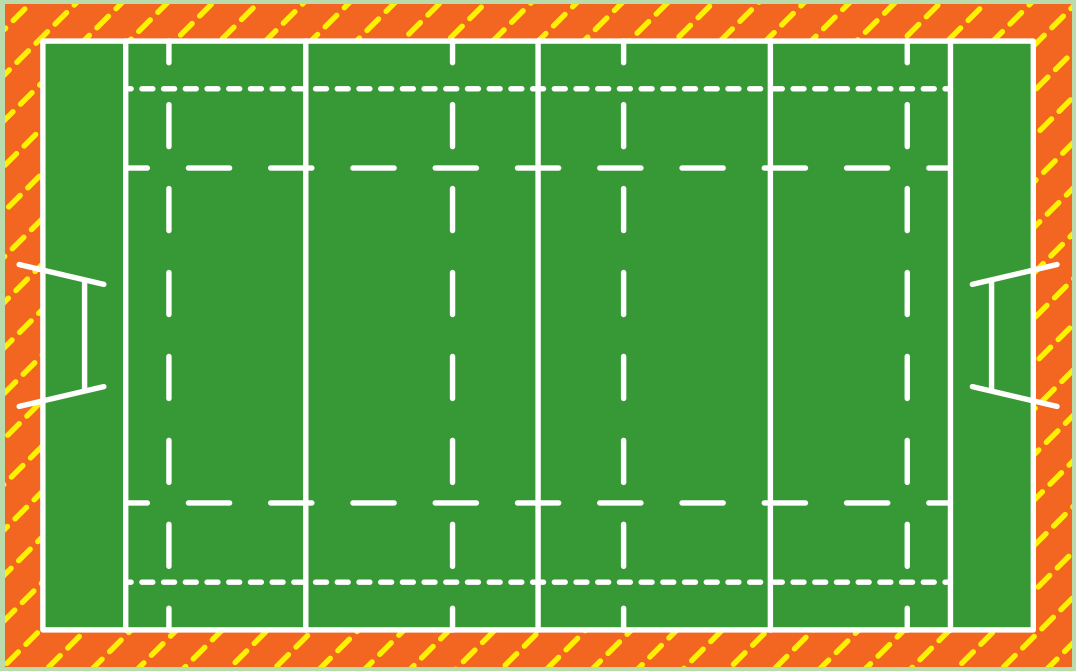

FIELD SAFETY INSPECTION DECISION MAKING

BASIC CONSIDERATIONS:

- Condition of playing field in accordance with the laws of the game?
- Athletic field or concrete border around playing field within 5 m of the playing field?

Fixed objects within 5 m of playing field?

Movable objects within 5 m of playing field?

9

SAFETY DECISION MAKING MATRIX

SAFE TO PLAY

SAFE TO PLAY
WITH MINOR ADJUSTMENTS OR FIXES

- Bring field markings in to make field smaller and create sufficient distance away from movable or fixed objects surrounding the field
- Increase playing enclosure perimeter space surrounding the playing field to create sufficient distance away from movable objects
- Need to provide protective padding or mats over athletic field, concrete border, or in front of movable or fixed objects
- Need to completely remove unsafe fixed or movable objects
- Perform 'chicken-parade' inspection of fields before matches to remove any dangerous objects such as glass

UNSAFE TO PLAY

Unsafe to play, major adjustments required.

All rugby suspended until cleared by Union representative

EMERGENCY ACTION PLAN OR EAP DETAILS REQUIRED

- 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

ADDITIONAL INFORMATION

- Nearest Accessible Private Hospitals
- Nearest Accessible Government Hospitals
- Nearest Spinal Unit Accessible
- Local Government Emergency Service Providers
- Local Private Emergency Service Providers
- BokSmart Spineline
- SICM or Serious Injury Case Manager
- Always have qualified adult supervision with scholars
- Practice techniques regularly with medical teams prior to match days

Are YOU ready to deal with a catastrophic, head, neck or spine injury?

Everyone always says, this won't happen to me, but what if it does?

You NEED to be prepared, because time to treatment is critical when managing a player with a potentially catastrophic head, neck or spine injury.

If you have a system that works, and all the role players know what to do, then you can save time, get the medical staff required activated quicker, know where to take your injured player, and ultimately get them to be treated sooner rather than later.

The less time required to get them to appropriate medical care, the better their chances of a less severe and less permanent outcome.

If you have an opportunity to walk, rather than end up in a wheelchair, would you not do everything you can to give yourself that chance?

Be prepared, have an emergency action plan that is simple, accessible, and one that everyone understands.

If you have an effective and tested emergency action plan, you can be better prepared, and leave ZERO to chance. Get them to hospital quickly and effectively. It is especially important to have a clear emergency action plan in rural areas or where there is a reliance on the public health-care system and public transport. Patients with early admission to spinal units have been shown to have better functional outcomes and are less likely to develop secondary complications such as pressure sores or neurological worsening.

Every school or club participating in rugby should have a written structured Emergency Action Plan (EAP) on file. This needs to be developed in collaboration with the local emergency services personnel, the school or club officials, first aiders, school or club medical staff, and club or school administrators.

So, what are some of the red flags that you should look for when deciding whether or not it is serious enough for the emergency action plan to kick into first gear?

When you see any of these in your players, in the absence of another more obvious injury, then turn the key, and activate the Emergency Action Plan:

- Severe neck pain and tenderness
- Weakness and neck pain
- Paraesthesia, pins and needles or lack of sensation in the arms, hands, legs or feet
- Not able to move arms, hands, legs or feet
- Abnormal or unpleasant and painful sensations felt when touched
- Persistent apprehension and unyielding neck spasms

EMERGENCY ACTION PLAN – POTENTIAL CATASTROPHIC INJURY OR EVENT

An emergency action plan must be in place before the start of a match or practice. This plan must be accessible, affordable, reproducible and current. This means that all personnel, equipment, emergency transport and referral partners are available at all games throughout the season and where applicable are on standby during practices.

The emergency action plan should be updated prior to every fixture. Changes in personnel and their contact details should be clearly marked and their availability confirmed before the fixture. Where rosters of personnel are in place, ensure all relevant personnel are contacted and their availability confirmed prior to the match or practice.

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.

Each Emergency Action Plan should detail the following:

1. Layout of the facility and access to the facility
2. Equipment available
3. Internal support personnel
4. External support personnel
5. Communication required
6. Follow up required post catastrophic injury

A document or file should be available that is easily accessible to all emergency personnel and team management involved on match day, or coaches at a practice, and should contain the following:

1. LAYOUT OF THE FACILITY AND ACCESS TO THE FACILITY:

This should include the Directions to the match or practice venue – GPS coordinates if known will be beneficial to the emergency personnel – including details regarding access and access control procedures. Facility layout including access to field and emergency vehicles should also include the position of keys and other security measures that may hinder quick access of emergency personnel.

2. EQUIPMENT AVAILABLE:

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

3. INTERNAL SUPPORT PERSONNEL:

Hosting club/school/union personnel should have clearly defined roles and responsibilities delineated in the emergency action plan.

4. EXTERNAL SUPPORT PERSONNEL:

The medical personnel required at a rugby game or practice will vary depending on the level of competition. However, the higher the level of training of medical support personnel, together with more personnel being available on match day is desirable.

5. COMMUNICATION REQUIRED:

Clear communication is the key to effective management of an injured player. Communication with regards to the role of each member of the medical team as well as communication between the internal; external and emergency unit or BokSmart Spineline personnel is imperative to ensure not only the optimal care of the player, but also to ensure the player's management and family are fully informed about his situation.

For those players without a Medical Aid or Medical Insurance, it is equally important to ensure that you know where the nearest Government Hospital is to your school or club that is capable of receiving and treating a catastrophically injured rugby player. For those players with Medical Aid or Medical Insurance, the nearest capable Private Hospital also needs to be recorded. The nearest Spinal Unit must also be on file.

6. FOLLOW UP REQUIRED POST CATASTROPHIC INJURY:

A designated person, normally the Medical 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/ROLE PLAYERS:

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			
Management: (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			

10. Serious Injury Protocol

SA RUGBY via BokSmart have endorsed the appointment of a Serious Injury Case Manager (SICM), whose primary role is to assist SA RUGBY in the appropriate follow-up management of rugby-related serious and/or catastrophic injuries, and data-collection on these cases. The SICM is also the direct link to the Chris Burger Petro Jackson Players' Fund support system.

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 SA Rugby.

Only Serious concussion, head, neck or spine injuries meeting the following criteria, are to be reported to the SICM:

THE INJURY MUST:

1. ***BE POTENTIALLY LIFE-THREATENING FOR THE PLAYER***
2. ***BE POTENTIALLY DEBILITATING OR DISABLING***
3. ***RESULT IN THE PLAYER BEING ADMITTED TO HOSPITAL***

You will know these kind of injuries when you see them… but let's hope that you never do!

The BokSmart Spineline 0800 678 678 number and road transport service, operated by ER24, is only available to those rugby players who have sustained serious concussion, head, neck and spine injuries during either a rugby match or practice.

The BokSmart Spineline is a service purely there to assist in the road transport of such a player, when there is insufficient capacity or ability to provide this service at the event. Only the road transport costs will be covered for those players, who do not subscribe to a Medical Aid or cannot pay, who fall into this category, and who have accessed this 0800 678 678 number directly.

Players with medical aid, will be billed according to standard tariffs. If the caller contacts ER24 directly, or any other emergency service provider, and whether they have medical aid or not, this free transportation service will NOT apply, and the player will be invoiced accordingly.

The Chris Burger Petro Jackson Players' Fund, South African Rugby Union, BokSmart and ER24 are NOT under any circumstances responsible for any hospital, doctor or specialist costs incurred as a result of any injury that might occur during either a rugby match or rugby practice, even while accessing the BokSmart Spineline service.

All medical bills, regardless of whether players have medical aid or not, or whether they have accessed the BokSmart Spineline or not, are for the players' and/or their family's own accounts.

The nearest and most suitable hospital or medical facility (i.e., private or state hospital) must be determined by the school or club's emergency action plan, and the player's medical aid status. The club or school must identify and have present at the field a Responsible Person to take charge of managing the situation. Responsible Person for the purposes hereof, means, in order of seniority, a sports physician, medical doctor, emergency care personnel, physiotherapist, biokineticist, rugby medic, first aider, coach, referee, and manager.

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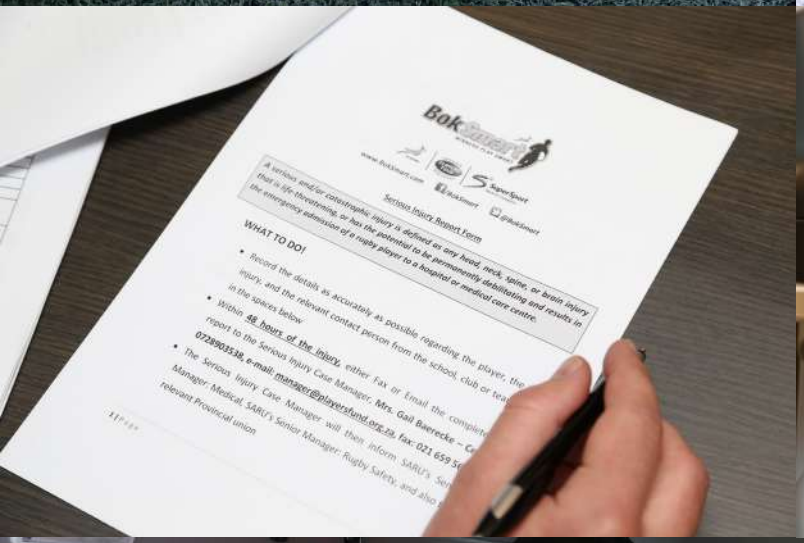
SAMSUNG
080 067 8678


Bok Smart
Serious Injury Report Form
WHAT TO DO!


ER24
AED

10 *In the event of a Serious and/or Catastrophic Injury during a rugby match or practice at a club or school where:*

1. Emergency Medical Services **are not present** at the field.

The Responsible Person must:

1.1 Provide on-site and appropriate medical care of the injured player, or if he/she is not qualified to do so, a suitably qualified person in attendance must do so.

1.2 Immediately alert the 'BokSmart Spineline' call centre on phone number

0800 678 678

which is linked to the Emergency Service provider, ER24.

1.3 Ensure that an appropriate emergency response team has been dispatched to the venue via the 'BokSmart Spineline' process, i.e., an ambulance. Alternatively, this does not always have to be ER24; they might be further away and delay timely transport and access to treatment.

1.4 Oversee the transportation of the injured player to the hospital or medical facility, if so required.

1.5 Record and collate to the best of his/her ability the injury details, and the personal details of anyone associated with the injury, including witness reports if any are available.

1.6 Notify the next of kin, unless in the case of a fatality, whereby he/she must contact the police, who will perform this task.

1.7 Notify the SICM by completing the 'Serious Injury Report' form and e-mail or fax it within 48 hours to the SICM.

2. Emergency Medical Services **are present** at the field.

2.1 The Responsible Person/EMS provider must provide on-site and appropriate medical care of the injured player.

2.2 The Responsible Person/EMS provider must contact the 'BokSmart Spineline' number immediately and log the event with ER24.

2.3 Should the Emergency Medical Service (EMS) provider not have appropriate transportation available at the venue, they must request or dispatch an appropriate emergency response team to the venue, e.g., an ambulance. This does not always have to be ER24; they might be further away and delay timely transport and access to treatment.

2.4 If so required, the player must be transported to the nearest and most suitable hospital or medical facility.

2.5 The Responsible Person/EMS provider must 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.

2.6 The Responsible Person/EMS provider must notify the next of kin, unless in the case of a fatality, whereby they must contact the police, who will perform this task.

2.7 The Responsible Person/EMS provider must notify the SICM of the incident by completing 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

The SICM or Serious Injury Case Manager's number is not an emergency helpline service.

If it is an emergency, then call the BokSmart Spineline number 0800 678 678 operated by ER24, or your NEAREST EMERGENCY MEDICAL SERVICE PROVIDER.

The SICM number is simply there for notifying the SICM of the Serious or Catastrophic Head, Neck, or Spine injury, once it has already happened.

When asked to do so, simply leave a short message and your contact details, and log the incident.

Provincial Union's responsibilities

1. The CEO of the Provincial Union once made aware of the incident via the SICM or otherwise, should confirm knowledge of the injury and contact SA RUGBY's Senior Manager: Medical, and SA RUGBY's Senior Manager: Rugby Safety, in this regard.
2. Has to participate and assist with any follow-up investigation or inquiry regarding the incident.
3. Where possible arrange hospital visits for the patient, which may include Provincial team players.
4. Assist the club, school, or team in any fund-raising initiative that might arise, if applicable.

SA Rugby's responsibilities

1 SA RUGBY's Senior Manager: Medical, once notified by the SICM, must contact:
a. All the relevant SA RUGBY personnel
b. The relevant Provincial union's CEO
c. SA RUGBY's GM of Corporate Affairs

2 Maintain regular contact with the SICM to be updated about the progress of the patient.

3 Ensure that copies of the relevant Serious Injury Reports and Serious Injury Follow-up Questionnaire documentation, where applicable, are received.

4 Maintain records of these serious injury reports on the SA RUGBY database.

5 Request an in-depth investigation into the incident by the Provincial Rugby Union, 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 to be competitive. There has been a significant increase in muscle mass and strength of elite rugby players over the past century, in particular the last twenty years, 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 "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 and recovery 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 examples (also see 'Safe Necks' routine) page 126

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 are you 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:

Neck injury prevention

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

1. ***The creation of awareness programmes and training courses for coaches, referees, medical support staff and most notably the players***
2. ***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***
3. ***Constantly assess and amend the Laws of the game, especially in the contact situations, e.g. rucks, mauls, scrums and tackles***
4. ***Impose the Laws – referees have to be ultra-strict with these infringements and players should be punished for contravening them***
5. ***Emphasize strength and conditioning of the players with specific attention to neck strengthening exercises***

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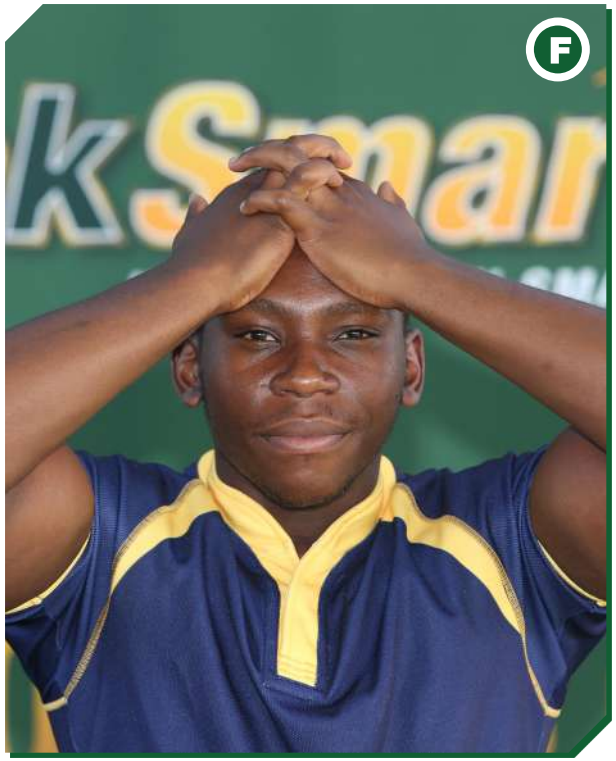


Isometric flexion (forward bend)

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)

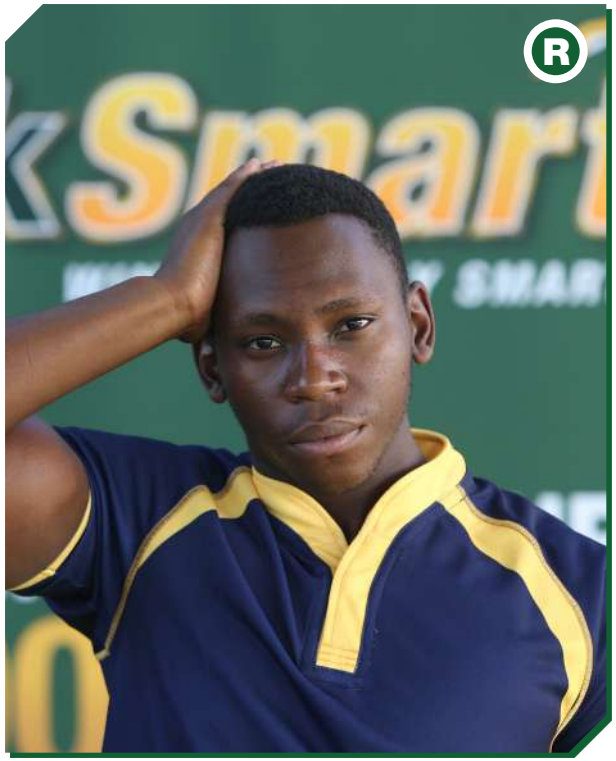
Apply resistance with one or both hands to the back of the head. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to bend the neck backwards and place the top of the head on the back. Once maximal tolerable 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)

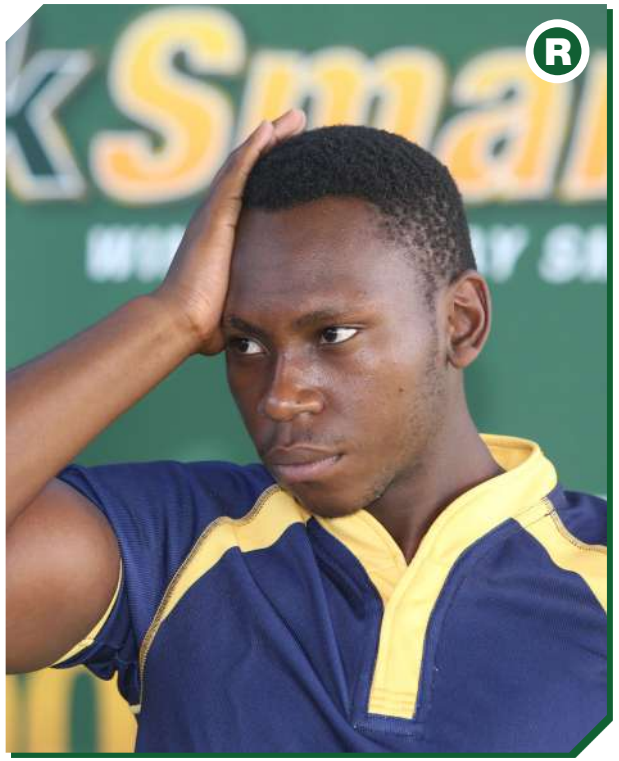
Apply resistance with one or both hands to the right side of the head. Without causing any movement, discomfort or pain, gently apply pressure, and progressively increase this pressure while resisting and attempting to place the right ear on the right shoulder. Once maximal tolerable resistance has been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

11

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.

11

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.

11

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.

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. Vary your angles and forward direction of lunging for each repetition.

SAFE NECKS

MOVE 2 X THROUGH THE CIRCUIT

Compliance and frequent exposure to neck strengthening exercises is the key to success here. For more options on neck exercises, go to *www.BokSmart.com*. Let there be ZERO rugby players in South Africa who are not on regular neck strengthening routines, at least two to three times a week.

1

WRESTLER'S BRIDGE

(6 REPS)

Lying on your back with your arms folded across your chest, and your knees bent with feet on the floor. Depending on your limits of strength and ability, either place your feet closer to or further away from your buttocks. Push with a strong neck against the ground, and lift your hips upwards until your body, thighs and neck are parallel with each other in the air. Hold this position for a second or two, lower back to the starting position, and repeat. Never work into pain, and only go as far as you can go without losing your shape or form.

PRONE NECK LIFTS AGAINST BAND

(6 REPS)

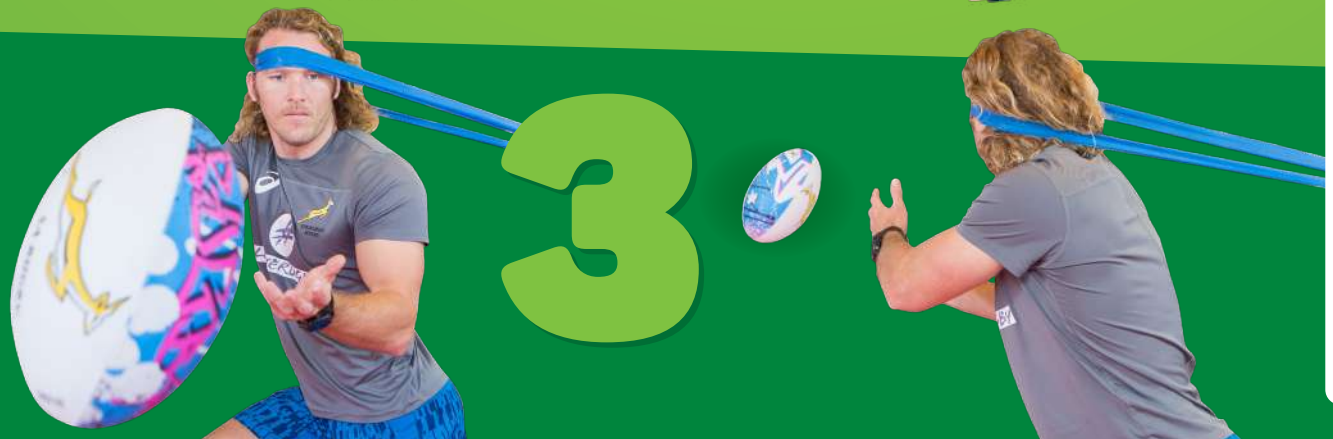
Supported on all fours, with a Theraband or some form of elastic tubing in your hands. Take the strip of elastic tubing and wrap it around the back of your head just above the ears. Pull it tight enough to provide resistance. Keep the chin tucked in at all times, lift your head upwards against the resistance as far as you can, hold it briefly, control back to the starting position and repeat.

2

LUNGE WITH BAND & PASS RUGBY BALL

(6 REPS ON EACH SIDE OR 12 REPS ALTERNATING SIDES THROUGHOUT)

Have one partner stand behind you with a Theraband or elastic tubing placed over your forehead, and angled slightly downwards. Keeping your neck strong and stable, step and lunge forward against the resistance of the elastic tubing. Do this at different angles for each repetition. While doing so, another player will pass you a rugby ball. While keeping the neck strong against the resistance of the tubing, with control turn the head and neck slightly, catch the ball and pass it either back to the same player, or to another player standing on the other side, while bringing the back leg forward to meet the front leg. Hold this position briefly, then step back and return to your starting position.



3

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ONE IS ONE TOO MANY

4 SUPINE BAND NECK CURLS
(6 REPS)

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

5 BUDDY ALTERNATING SIDE-NECK SCRUMS (3 X EACH SIDE FOR 6 SECONDS)

Have 2 players starting on hands and knees opposite each other. Get them to engage and bind properly. Once they have bound, ask them to push against each other with just enough force to be settled and have some resistance. While maintaining this position, have them push their heads and necks sideways against each other for 6s, then release. Quickly alternate head position, and repeat on the other side for another 6s. Build up the force applied during the 6s and also with each repetition. Perform the set number of repetitions. This can also be done using a Physio ball and players facing opposite each other and working on both sides against the ball.

6 BUDDY NECK TUSSLES (4 X 6 SECONDS)

Stand upright and facing each other. Without being overly aggressive, try and move the neck of your partner, by pulling, pushing and grappling with his head and neck using your arms and hands. The idea is not to try and hurt them, but to work and adjust the head and neck against some resistance applied from various directions. Each player simply tries to unsettle the other, but at the same time has to resist and counter the forces applied to them.

For more detailed programmes, instructions and information, consult the BokSmart website on ***www.BokSmart.com***

NATIONAL RUGBY SAFETY PROGRAMME
A PRACTICAL GUIDE TO PLAYING SMART RUGBY

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SA RUGBY

NOTES:

NOTES:

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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.

CHRIS BURGER PLAYERS FUND PETRO JACKSON

Rugby's Caring Hands

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