

# ACTIVATE

World Rugby™ Injury Prevention Exercise Programme

## Manual for Activate training programmes

- 1  **A**  
programme
- 2  **U15**  
programme
- 3  **U16**  
programme
- 4  **U18**  
programme

# ACTIVATE

– a structured exercise programme to reduce injuries in youth and adult community rugby

## Acknowledgements

Activate was developed from a collaboration between researchers at the University of Bath and the Rugby Football Union: **Dr Grant Trewartha**, **Professor Keith Stokes**, **Dr Matthew Attwood**, **Dr Mike Hislop** (all University of Bath), **Dr Simon Kemp**, and **Dr Mike England** (both Rugby Football Union).

**Dr Alasdair Dempsey** (Griffith University), **Professor Carolyn Emery** (University of Calgary), **Dr Richard Mack** (Bath Rugby), **Ms Katie Morris** (Rugby Football Union), **Mr Des Ryan** (Arsenal Football Club), **Professor Evert Verhagen** (VU University), **Dr Matthew Cross**, **Dr Carly McKay**, **Dr Simon Roberts**, **Dr Sean Williams**, **Mr Vincent Singh**, and **Dr Shaun Williams** (all University of Bath) also contributed to developing and refining the design and content of the programme.

## Evidence behind Activate

**26–40%** & **29–60%**  
REDUCTION IN SOFT TISSUE INJURIES<sup>1,2</sup> REDUCTION IN CONCUSSION<sup>1,2</sup>

### References

<sup>1</sup> Hislop, M., *et al.* Reducing musculoskeletal injury and concussion risk in schoolboy rugby players with a pre-activity movement control exercise programme: a cluster randomised controlled trial. *British Journal of Sports Medicine*. 2017; 51 (15): 1-8.

Last accessed: <http://bjsm.bmj.com/content/51/15/1140> July 2018

## Introduction

Player welfare across rugby is a priority, and World Rugby continually works to ensure our stakeholders can access innovative, evidence-based tools shown to reduce injuries in the game.

The Activate Injury Prevention Programme is one example of an evidence-based tool with the potential to reduce injuries across youth and adult rugby, especially soft tissue injuries and concussion. As well as contributing to improved safety, reducing the number of injuries and amount of time missed due to injury can benefit the athletic development and performance of players which in turn can help to boost player retention and the chances of teams being successful on the field.

While being based on scientific evidence is important, Activate was also designed to suit the community rugby environment. This will help to ensure that players and coaches can get the most from the programme if used regularly and properly

In partnership with England Rugby and University of Bath, World Rugby strongly endorses the Activate programme to coaches across the rugby community.

### Dr Martin Raftery

Chief Medical Officer, World Rugby

<sup>2</sup> Attwood, M., *et al.* Efficacy of a movement control injury prevention programme in adult men's community rugby union: a cluster randomised controlled trial. *British Journal of Sports Medicine*. 2017; 52(6): 1-8.

Last accessed: <http://bjsm.bmj.com/content/52/6/368> July 2018

## What is Activate?

Activate is a structured, progressive exercise programme that is designed to be used as part of training sessions and pre-match warm-up routines.

The programme was developed using scientific evidence and expert opinion, whilst feedback from active coaches helped to ensure that the programme is suitable to use across community-level rugby settings.

There are four versions of Activate:

- Under-15 (Age 13–15 years)
- Under-16 (Age 15–16 years)
- Under-18 (Age 16–18 years)
- Adult (Age 18+ years)

Each version contains several progressive phases to be used throughout the playing season.

All versions of the programme share a similar structure and contain the same types of training activities:

- balancing and hopping exercises to improve general movement control
- bodyweight and partner resistance exercises to develop lower and upper body strength and control
- plyometric exercises to develop lower and upper body power
- landing and side-stepping to develop control and technique when performing these activities during play

Research has shown that the programme can reduce the number of injuries to muscles and ligaments (by 26-40%) and the number of concussions (by 29-60%) in youth and adult community-level rugby players. Using the programme more frequently has also been shown to further lessen injury risk.



### Shoulder 'Workout'

S:2 R: 1

D: 15 s each repetition

- Player one raises arms out in front at shoulder-height, while player two grasps player one's wrists
- Player two attempts to rapidly move player one's arms up and down, while player one attempts to resist

Key cues: Head neutral. Pinch the shoulders together. Brace through the core.



### Single Arm Row

S:1 R: 2 each side

- In pairs, grasp the wrist of each other's right arm
- The aim is to tap partner's shoulder with the right hand, while stopping the partners from doing the same

Key cues: Pinch the shoulders together. Brace through the core.

This instruction manual is part of a package of resources designed to help coaches use Activate with their players. In addition, coaching cue cards and filmed demonstrations of exercises are free to access online through the World Rugby Player Welfare Page (<http://www.playerwelfare.worldrugby.org/>), while a smartphone application will be available to download from the Apple and Android app stores.

This manual contains important information on how the programme should be used. Following the programme, as directed, as closely as possible will help to optimise its' effectiveness.

It is important that coaches understand how to deliver the programme, work to help players perform all exercises with good control, balance, and technique, and recognise when to progress players to more advanced phases of the programme. As well as accessing online materials, we encourage coaches to attend one of the face-to-face courses delivered by Trainers and Educators within their Union or by World Rugby during 2019 and 2020 to further develop their understanding of Activate and to share practice with fellow coaches.

## What are the benefits of using Activate?

Using Activate with players will help to develop and improve their:

- General movement control and skill – Many of the exercises in Activate can help to develop the stability and mobility that underpin the safe and effective performance of various movements when playing rugby
- Conditioning and athletic performance – The progressive nature of Activate can help to improve parts of players' athletic performance; such as: strength, power, running speed, and ability change of direction efficiently
- Physical robustness – Using Activate can help to develop the ability of muscles, tendons, and ligaments to handle the forces they experience when playing rugby, leading to a lower risk of these structures being damaged when playing rugby and other sports.

## How should Activate be used?

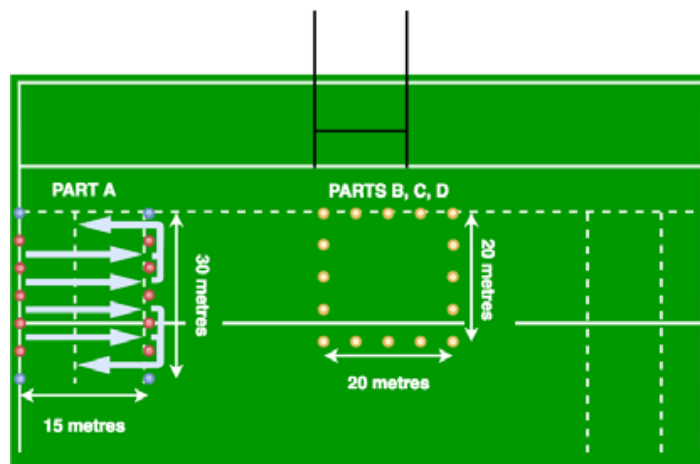
### Setup

Activate can be used at the beginning of and during training, as well as part of a pre-match warm-up. The youth programme should take 15-20 minutes to complete and the adult programme should take 20-25 minutes to complete once players and coaches are familiar with the exercises.

The programme begins with a running-based warm-up, followed by exercises to train and develop lower limb balance, strength, power, mobility, and control when landing and changing direction. While best to complete the activities on a natural or artificial turf pitch with plenty of space, a non-slip indoor surface (for example, a sports hall) can also be used. Coaches should always check the area where players complete the exercises is free of any potential hazards.



### Suggested pitch layout for Activate:



Activate has minimal need for equipment. Setting up only requires some cones to mark the areas to complete the exercises. Many exercises in Activate are performed individually or in pairs, while the running-based

activities are group-based. Coaches can also choose to introduce rugby balls or other available equipment should they feel this will make certain exercises more purposeful and fun for players. When players need to perform an activity for a time (for example, 30 seconds), it is best for someone other than the coach (for example, an assistant coach or player not taking part in the session) to keep time. This then allows the coach to focus on monitoring players' technique.

### Progression

Activate comprises several progressive phases (Youth – four phases; Adult – seven phases). Players should start using the programme at the beginning of pre-season training, but can also start using the programme later in the season too. If starting later in the season, all players should still begin at the starting phase of the programme and progress through the phases onwards.



Exercises are designed to become more challenging when moving through the phases to challenge and develop players' physical abilities. Players will generally need six-eight weeks for each phase (12-16 sessions per phase if the programme is used twice per week) to develop a suitable level of control, balance, and technique with the exercises before moving to a new phase. Certain exercises can also be altered within each phase to suit the needs of individual players within the group, either by increasing or decreasing the challenge.



## Youth Programme Structure

Each phase of the youth programme consists of four parts and has 16 exercises to complete in total.

Part	Focus	Time	Number of Exercises
A	Running-based preparation and Change of Direction Practice  <b>Focus:</b> Running technique, coordination and changing direction through enhancing movement control in the trunk and lower limbs	2 mins	3
B	Lower body Balance Training  <b>Focus:</b> Developing movement control during static and dynamic activities	4 mins	2
C	Targeted Resistance Training  <b>Focus:</b> Improving strength, stability, and mobility across the upper and lower body	8 mins	5
D	Landing, Change of Direction, and Plyometrics  <b>Focus:</b> Improving control through the trunk and lower limbs during controlled landing and changing direction activities	6 mins	2

## Adult Programme Structure

Each phase of the adult programme consists of four parts and has 12 exercises to complete in total.

Part	Focus	Time	Number of Exercises
A	Running-based preparation and Change of Direction Practice  <b>Focus:</b> Running technique, coordination and changing direction through enhancing movement control in the trunk and lower limbs	10 mins	2
B	Range of Movement, Strength and Balance  <b>Focus:</b> Developing movement control and mobility across the upper and lower body	7 mins	6
C	Strength, Stability, Agility and Power  <b>Focus:</b> Improving strength, stability, and mobility across the upper and lower body	7 mins	6
D	Strength and Fitness  <b>Focus:</b> Developing anaerobic conditioning and neck strength	6 mins	2





## How should Activate be coached to players?

For Activate to be effective, players need to perform the activities with appropriate control, balance, and technique. Coaches leading the programme play a key role in monitoring their players, communicating key coaching points to improve performance, and ensuring exercises are completed with good form.

When beginning the programme or a new phase of the programme, coaches should consider using the following practices:

- Take some time before starting a new phase to become familiar with the new exercises. This could include viewing video clips of the exercises or reading through the programme manual to understand how to complete the exercise.
- Dedicate a little more time than usual for the first session of a new phase. This will allow coaches to communicate specific coaching points to players and to check understanding without rushing through.
- Explaining the purpose of each part of the programme and its benefits to the players
- Demonstrate the correct technique to the whole playing squad. Using a player to demonstrate allows the coach to talk through the key coaching points for performing the exercise for the whole group to see.
- Allow the players to have a go at the exercise in pairs or small groups to get a feel for how the exercise should be completed.

Once players are familiar with the exercises within a phase, coaches should begin to emphasise the following:

- Using a selected number of key cue points specific to each exercise
- Prioritising quality over quantity when completing the activities.

- In older age groups and adults, encouraging players to coach each other if working in pairs or small groups.
- Watching players completing the exercises and providing constructive feedback to correct technique if required.
- Publicly praising players that complete the exercises with good control, balance, and technique.

## The “Key Activate 8” coaching cues

While each individual exercise has some unique points that coaches should use to instruct their players, there are also some generic cues that coaches can also use that are common across many exercises and will help to coach players in performing the exercises with good posture and control. These cues are referred to as the “Key Activate 8” and include:

- Head Neutral / Lifted (Think “Look over your sunglasses”)
- Chest Up
- Pinch the shoulders together
- Shoulders level with hips
- Brace through the trunk
- Soft Knees
- Hip, Knee, Ankle in Line
- Knee over Toes

Each exercise in the Activate programme typically includes two or three associated Key Activate 8 cues.

## Frequently Asked Questions

### What sort of exercises are included in a typical phase of the Activate programme?

The types of training methods within both youth and adult versions of the programme typically include: running and change of direction-based activities, lower limb balance training, plyometrics and landing activities, and bodyweight and partner resistance training. A sample phase of youth (under-16) and adult Activate programme is included here:

Youth (U16) Sample Phase		
Part A	Snake Runs	2 repetitions of 15 metres
	Walking Crunch	2 repetitions of 15 metres
	Plant and Cut	4 repetitions of 15 metres
Part B	Single Leg Balance with eyes closed	6 repetitions of 3 seconds on each leg
	Hop and Stick Forwards	6 repetitions on each leg
	Zombie Squat	8 repetitions
Part C	Single Leg Bridge	4 repetitions on each leg
	Plank with Alternate Leg Raise	30 seconds
	Press up to Plank	4 repetitions
	Static neck contractions	10 seconds in each direction
Part D	Side Step and Sway	3 repetitions on each leg
	Pogo Jumps	16 repetitions

Adult Sample Phase		
Part A	Small-sided Games	5-10 minutes
	Snake Runs	2 repetitions of 15 metres
Part B	Squat Stands	12 repetitions
	Heel to Toe Walk with Knee Raise	2 repetitions of 15 metres
	Single Leg Balance Back Slaps	30 seconds on each leg
	Shoulder Static Resisted Lateral Raise	2 repetitions of 15 seconds
	Shoulder Static Resisted External Rotation	2 repetitions of 15 seconds
Part C	Arabesque with Aeroplane	10 repetitions on each leg
	Mountain Climber	6 sets of 5 repetitions
	Hop and Stick Forwards	6 repetitions on each leg
	Pop Press ups – wide to narrow	15 repetitions
	Jogging high ball Jumps	2 sets of 5 repetitions
	Diagonal skip to sway lunge	2 sets of 5 repetitions
Part D	Shoulder workout	2 sets of 15 seconds
	5 metre shuttle – repeated sprint conditioning	2 sets of 30 seconds
	Static Neck Contractions	15 seconds in each direction



**Arm Side Raise**  
Each player 15 repetitions  
to the side and slightly away from the body while partner offers resistance

Key cues: Head neutral. Chest up. Pinch the shoulders together.



**Resisted Arm Rotation**  
S:1 R:2 each player D: 15 s each  
• Hold arms close to the body and bend elbows to 90°  
• Try to move hands to the side of the body while keeping elbows touching the body, with partner offering resistance

Key cues: Head neutral. Chest up. Pinch the shoulders together.



**Single Leg Arabesque**  
S:1 R:10 each leg  
• Stand on one leg, with the standing knee slightly bent  
• Slowly lean forward from the hip until the trunk is parallel to the ground and arms are spread to the sides  
• Return to upright while maintaining balance

Key cues: Head neutral. Brace through the trunk. 12° knee, ankle in line.

### **Which version of Activate should be used?**

Activate has been designed to differ slightly for each age group to better serve the needs of players as they get older and gain more training experience. Players aged 13-15 years should use the under-15 programme, while players aged 15-16 years should use the under-16 programme, and players aged 16-18 should use the under-18 programme. Players older than under-18 should use the adult programme.

### **When should Activate be completed?**

Ideally Activate should be completed during team-based training sessions and as the first team-based activity of a match-day warm-up routine.

What should be done if time to warm up is limited before training session or matches?

For training sessions, it is possible to incorporate parts of Activate within the main part of the session, such as through breakout or skill/game zone activities. Alternatively, certain parts of Activate can be prioritised to cut down on time during the warm-up, although this should be a last resort. When prioritising which parts to complete when time is short, Activate should be completed in the following order:

Youth Programme	Adult Programme
1) Part C – 8 minutes	1) Part B – 7 minutes
2) Part D – 6 minutes	2) Part C – 7 minutes
3) Part B – 4 minutes	3) Part D – 6 minutes
4) Part A – 2 minutes	4) Part A – 10 minutes

### **Are there differences when using the programme before matches or training sessions?**

The Adult programme has a separate match-day specific phase that should be completed as part of pre-match warm ups throughout the season. Phases 1 to 7 of the adult programme should be used before or during training sessions throughout the season.

Phases 1 to 4 of the youth programmes can be used before matches and before or during training sessions throughout the season.

The only exercises that should not be completed in pre-match warm-ups are the Nordic Hamstring Curl variations, which can tire the hamstring muscles.

### **The best benefits come from using Activate three times per week, but what would happen if my players cannot do the programme that many times?**

Results from the studies showed that the most compliant teams saw the greatest reduction in injuries, however teams that completed the programme once or twice per week still saw a reduction in injuries. As with any training programme, using the programme as often as is practical in your situation is likely to optimise the reduction in injuries that you are likely to see.

### **Some of my players are struggling to complete certain exercises, what should I do?**

The Activate programme focuses on improving players' movement quality and control. If a player or players struggle with some of the exercises, lower the number of repetitions to focus on quality over quantity. If players still struggle to complete exercises with a lower number of repetitions, then regress to a previous phase, or in some cases exercises will have associated regressions. Encourage players to continue with the current exercises because they should improve their capability through practice over the course of the six to eight weeks for a phase.

### **What if a player gets injured or misses part of the programme before coming back?**

Activate may be used as part of return to participation for players returning to training after injury. Players coming back after injury should continue to use the phase they were completing at the time they were injured, even if their squad have moved to a new phase. These players should only progress to the next phase once they can complete the phase without pain and have developed the necessary level of competency.



## Why does using Activate reduce injuries?

This has not yet been investigated, but there are several theories as to why the Activate programme may reduce injuries. The finding that soft tissue injuries were substantially reduced in teams using the Activate programme would suggest some training effects on muscles, tendons and ligaments which helped to strengthen these structures. As well as this, it may be possible that the programme helped to improve the general movement control and quality of players.

The reduction in concussions may be attributed to the neck exercises in the Activate programme. There is some evidence that neck strength and function are associated with concussion risk in other sports, so the exercises may have helped to strengthen the muscles in the neck to better tolerate the forces experienced during rugby while also helping to maintain other aspects of function like range of motion or proprioception.

**PART D**  
3 min.

**INTENSITY**  
75%

**Landing, change of direction, and plyometric training to develop power and control**

**Shuttle To Edge of Square**  
S: 1 R: 2 each direction
 

- Begin standing with feet shoulder-width apart
- On coach's cue, turn and run to the edge of the square
- When 2/3 strides from the edge, plant the outside foot and cut back to the start position

**Key cues:** Chest up. Hip, knee, ankle in line. Knee over toes.

**Broncos** S: 1 R: 6
 

- Beginning in crouched position, spring the feet backwards to adopt a press-up position
- Using the arms, explosively press the torso back towards the feet to finish in a crouched position

**Key cues:** Head lift. Shoulders level with hips. Brace through the trunk.

## Can all players use the programme?

The studies that tested the Activate programme were carried out on adolescent schoolboys aged 14–18 years-old and adult male players. Whilst the exercise programme is also likely to benefit other younger age groups as well as female rugby players, it should be noted that not all exercises may be appropriate for these groups. Coaches should use their discretion in these cases to modify the programme to suit the needs of other playing groups.

## I don't like completing Activate in its current format and layout, can I modify the programme without reducing the effects on injury risk?

The teams involved in both studies that tested the Activate programme typically used the programme as a standalone warm-up for matches and training sessions. However, it is possible to alter the structure of the programme if the quality of the exercise completion is not diminished, and the modification to using the programme is safe. Coaches are encouraged to be creative when delivering and integrating Activate so that their training sessions can remain purposeful and enjoyable for the players.

Common examples of modification to the programme include delivering Activate in parts throughout the training session rather than entirely as a warm-up and integrating the exercises within games as breakout skill zones or game zones.

## I am working with a youth team and have just come to the end of a season – should I stay with the same version of Activate or move to a different programme for the next season?

Activate is designed to offer continuity as teams move from Under-15 to Under-16, Under-16 to Under-18, and Under-18 to Adult rugby. As players move through the age groups to adult rugby, they should progress to the appropriate version of the programme because the exercises within the separate programmes are slightly more advanced to reflect the needs of each age group.



WORLD  
RUGBY™

[www.world.rugby](http://www.world.rugby)