Injury Surveillance Studies

2024/25 SVNS

Men's and Women's Tournaments

Final Report

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Contents

1 Introduction

World Rugby is committed to implementing injury surveillance studies (ISS) for all World Rugby major competitions and to disseminate the results within the Rugby community.

The aims of these studies are:

- to record and analyse injuries and illnesses sustained by male and female players at individual Tournaments,
- to identify changing patterns of injury, and
- to bring injury-related areas of concern to the attention of World Rugby's Chief Medical Officer.

World Rugby's 2024/25 men's and women's Rugby Sevens competitions consisted of two connected competitions. The top-tier men's and women's competitions, known as the SVNS, consisted of 12 countries competing in six tournaments followed by men's and women's Grand Final tournaments, involving the top eight placed men's and women's SVNS teams. The second-tier competition, known as the Challenger Series, consisted of twelve teams competing in two tournaments followed by one tournament involving the top eight teams and a Play-off tournament involving the top four teams from the Challenger Series of tournaments and the 9th to 12th placed teams from the SVNS Series.

The men's and women's injury surveillance results presented in this Report relate to the teams taking part in the six men's and six women's SVNS tournaments and the men's and women's SVNS Grand Final tournaments.

The injury surveillance results relating to the men's and women's Challenger Series tournaments and the men's and women's Challenger Play-off tournaments are presented in a separate Report

2 Methods

The men's and women's SVNS ISS were conducted in accordance with the definitions and protocols described in the World Rugby approved consensus statement on definitions and procedures for injury surveillance studies in Rugby (Fuller et al., 2007).

The definition of injury was: *'Any injury sustained during a SVNS tournament match or training activity that prevents a player from taking a full part in all normal training activities and/or match play for more than one day following the day of injury'*. A recurrent injury was defined as: *'An injury (as defined above) of the same type and at the same site as an index injury and which occurs after a player's return to full participation from the index injury'.*

The definition of an illness used in this study was: *'Any medical condition sustained while travelling to a SVNS tournament, while at a tournament or while travelling home at the end of a tournament that prevents a player from taking a full part in all training activities and/or match play for more than one day following the day of onset of the illness.'*

Injuries and illnesses that are not related directly to SVNS tournaments are not included.

Specific injuries and illnesses were classified using the Orchard coding system (Orchard, 2010). Injury location, type and cause together with the events leading to the injuries were also recorded. The complete lists of categories and sub-categories used for categorising injuries are provided in the rugby injury consensus publication (Fuller et al., 2007).

Injury/illness severity was determined by the number of days a player was injured/ill: a player was deemed to be 'injured/ill' until he/she could undertake full, normal training and be available for training and match selection, whether or not he/she was actually selected. Medical staff were required to make an informed clinical judgement about a player's fitness to train/play on those days when players were not scheduled to train or play. Injured/ill players were followed up after the individual tournaments to obtain their actual return to play date. The return to play dates for players with injuries/illnesses that remained unresolved 3 months after the final games in the 2024/25 SVNS were estimated on the basis of a clinical judgement and prognosis provided by the injured player's medical staff.

Where appropriate, differences in players' anthropometric data were assessed using unpaired t-tests; differences in the incidences, mean severity and proportions of injuries/illnesses were assessed using z-tests and differences in median severity using a Mann-Whitney U test. Differences in injury/illness numbers were assessed using the chi-squared test. Where applicable, statistical significance was accepted at the $p \leq 0.05$ level, although it is recognised that this could identify some differences that occurred by chance, due to the number of statistical comparisons being made in the study. For some parameters, potential differences were assessed for significance by comparing the 95% confidence intervals (CI) associated with the parameters.

The values for injury incidence, severity and burden prior to the 2023/24 competition, which are used in this report to show long-term trends in values, relate to previously published results for the men's and women's Sevens World Series. Whilst these values should be comparable with the values reported for the SVNS, it should be borne in mind that the structure and number of teams competing in the Sevens World Series were different to the current SVNS competitions.

3 Data collection

The men's and women's 2024/25 SVNS tournaments took place in Dubai (30 November – 1 December 2024), Cape Town (7 – 8 December 2024), Perth (24 – 26 January 2025), Vancouver (21 – 23 February 2025), Hong Kong (28 – 30 March 2025) and Singapore (5 – 6 April 2025); the SVNS Grand Final tournament took place in Los Angeles (3 – 5 May 2025).

Medical staff were asked to explain the purpose of the injury surveillance studies to their squad of players. Players' baseline anthropometric information (playing position [back, forward]; date of birth; body mass [Kg]; stature [cm]) was recorded before the start of the competitions.

Medical staff were asked to record injuries and illnesses sustained during each tournament using the World Rugby online Injury Surveillance Web App. A member of the team's medical staff recorded detailed information about each injury (date of injury, date of return to play, location and type of injury, cause of injury, event leading to injury) and illness (date of illness, date of return to play, type of illness)

sustained. Information entered on the ISS Web App was checked and followed up with team medical staff, if required.

4 Results

Results are presented separately for the women's and men's SVNS competitions. When assessing the results presented in this Report, it is essential that account is taken of the overall match exposure levels and the numbers of injuries sustained during each competition.

4.1 Women's SVNS competition

The 12 countries taking part in the six 2024/25 women's SVNS tournaments were: Australia, Brazil, Canada, China, Fiji, France, Great Britain, Ireland, Japan, New Zealand, Spain USA. The 8 countries taking part in the women's 2024/25 Grand Final tournament in Los Angeles were: Australia, Canada, Fiji, France, Great Britain, Japan, New Zealand, USA.

All participating countries provided players' anthropometric, injury, illness and training exposure information.

4.1.1 Players' anthropometric data

Table 1 summarises the numbers and anthropometric data for players categorised as backs, forwards and all players.

Table 1: Players' anthropometric data.

Measure	**Mean** (*Standard deviation, number of players*)		
	Backs	***Forwards***	***All players***
Stature, cm	165.9 (6.3, 146)	169.9 (5.7, 98)	167.5 (6.4, 244)
Body mass, Kg	65.1 (5.9, 146)	70.6 (7.0, 98)	67.3 (6.9, 244)
Age, years	23.7 (3.8, 146)	24.0 (3.4, 98)	23.8 (3.7, 246)

Forwards were significantly heavier ($p<0.001$) and taller ($p<0.001$) than backs but the difference in ages was not statistically significant ($p=0.478$).

Figures 1, 2 and 3 show the long-term (2011/12 to 2024/25) trends in backs and forwards age, stature and body mass.

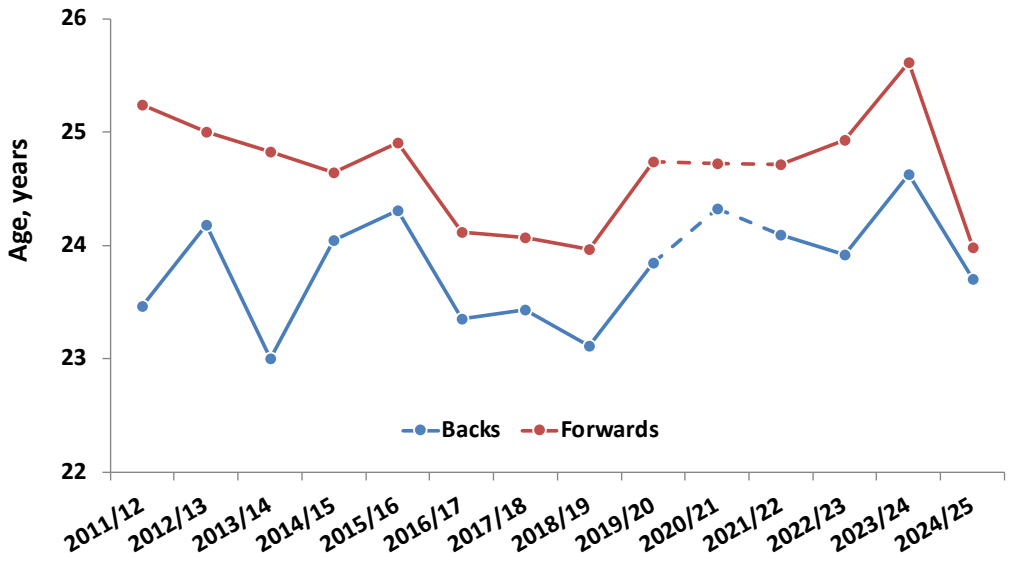

Figure 1. Trends in mean age of backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

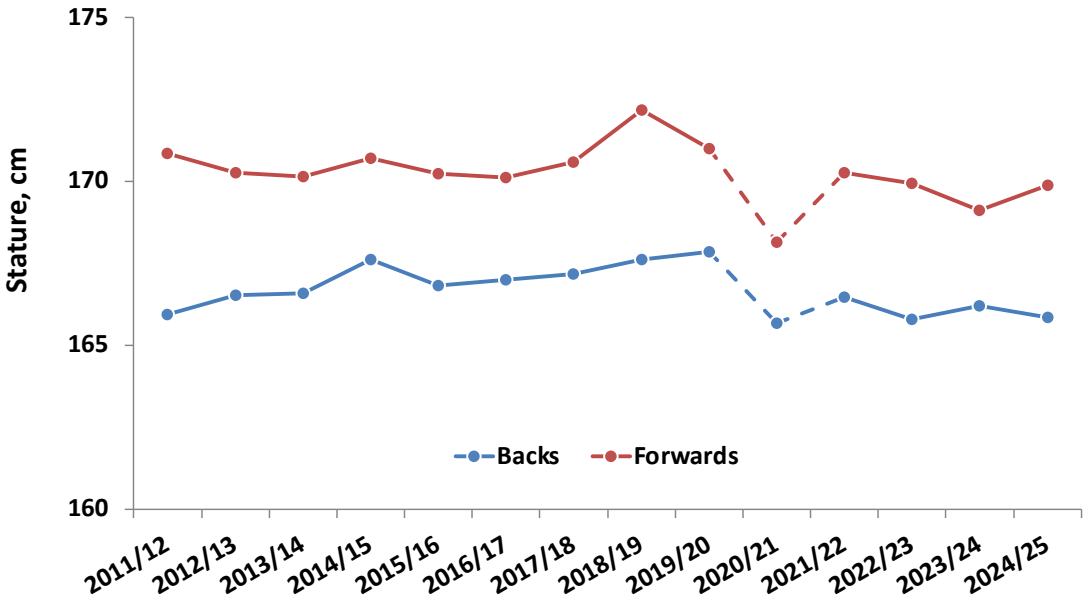

Figure 2. Trends in mean stature of backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

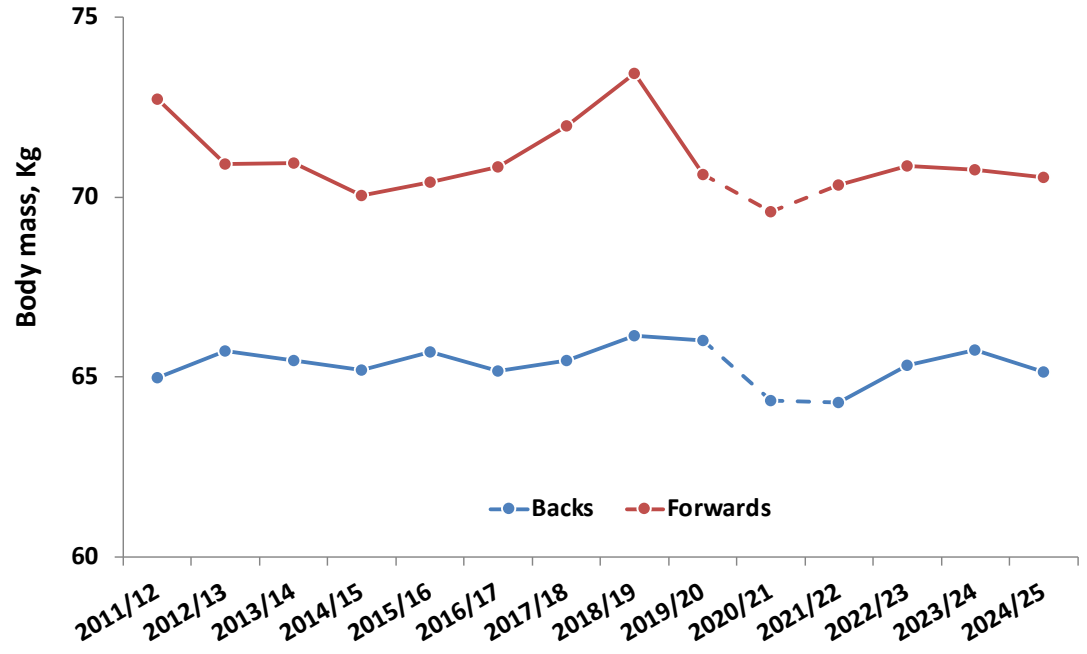

Figure 3. Trends in mean body mass of backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

There have been no statistically significant trends in players' age (backs: p=0.241; forwards: p=0.637), stature (backs: p=0.317; forwards: p=0.205) or body mass (backs: p=0.618; forwards: p=0.328) over the 2011/12 to 2024/25 period.

4.1.2 Match injuries

4.1.2(a) Incidence of injuries

Table 2 summarises the number of match injuries, exposures and incidences of injuries sustained by backs, forwards and all players during 2024/25. Two injuries were reported as recurrences (backs: 1; forwards:1). No injuries were reported as being career-ending.

Table 2: Injury numbers, exposures (player-match-hours) and incidences (injuries/1000 player-match-hours, 95% confidence interval) of match injuries.

Measure	*Backs*	*Forwards*	*All players*
Injuries	33	26	59
Exposure	365.9	274.4	640.3
Incidence	90 (64 – 127)	95 (65 – 139)	92 (71 – 119)

There is no significant difference (p=0.849) between the 2024/25 injury incidence values for backs and forwards.

The average number of match injuries sustained/team-game at each of the 2024/25 tournaments is shown in Figure 4.

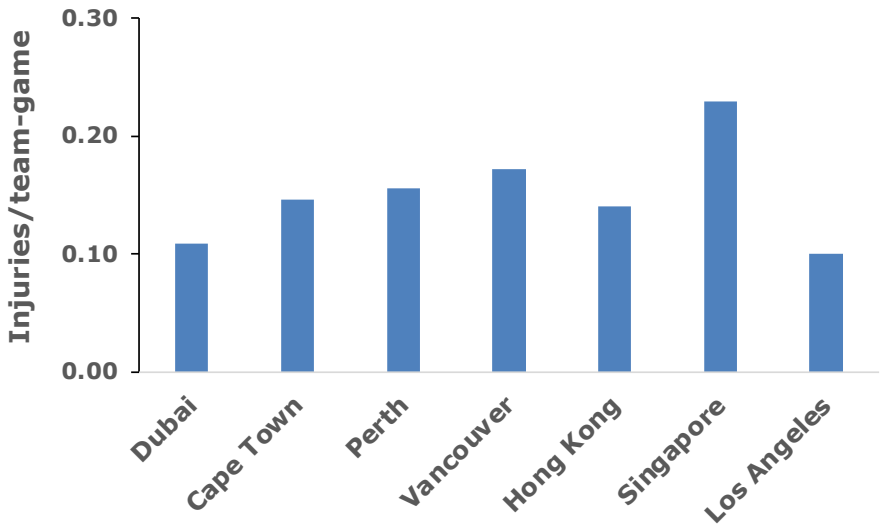

Figure 4. Average number of injuries/team-game.

There are no statistically significant trends in the incidence of injury for backs (p=0.650) or forwards (p=0.864) over the period 2011/12 to 2024/25 (Figure 5). Although there has been little difference between the incidence values recorded for backs and forwards over the last four seasons, the long-term (2011/12 to 2024/25) average incidence value for backs (108.5 injuries/1000 player-hours; 95% CI: 98.6

– 119.4) is significantly higher (p<0.001) than that for forwards (89.4 injuries/1000 player-hours; 95% CI: 79.1 – 100.9).

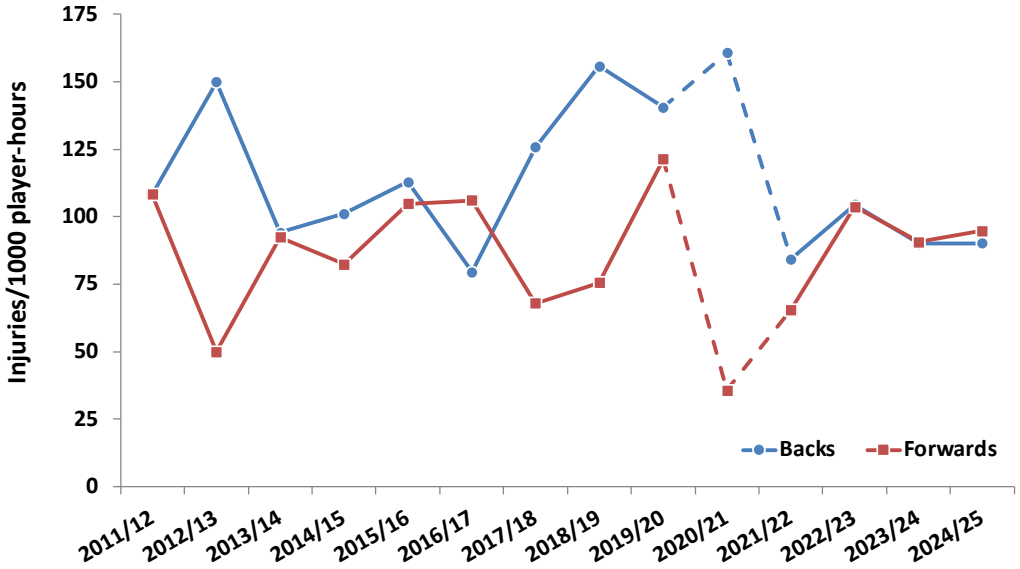

Figure 5. Long-term trends in injury incidence for backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

4.1.2(b) Severity of injury

A total of 4,408 player-days were lost through injury during the 2024/25 women's SVNS (backs: 2,749; forwards: 1,668).

Table 3 summarises the mean and median severities of injuries sustained during 2024/25 by players categorised as backs, forwards and all players.

Table 3: Mean and median severities of injuries.

Injury severity	***Severity (95% Confidence interval)**, days*		
	Backs	***Forwards***	***All players***
Mean	83.0 (45.8 – 120.3)	64.2 (34.9 – 93.4)	74.7 (50.3 – 99.1)
Median	32.0 (14.0 – 61.0)	25.5 (14.0 – 78.0)	26.0 (17.0 – 53.0)

There were no significant differences in the mean (p=0.425) or median (p=0.322) severity values recorded for backs and forwards during the 2024/25 competition.

There are no statistically significant long-term (2011/12 – 2024/25) trends (Figure 6) in the mean severity values (backs: p=0.601; forwards: p=0.988). Although there have been decreasing trends in median severity values (Figure 7) these have not reached statistical significance (backs: p=0.114; forwards: p=0.160).

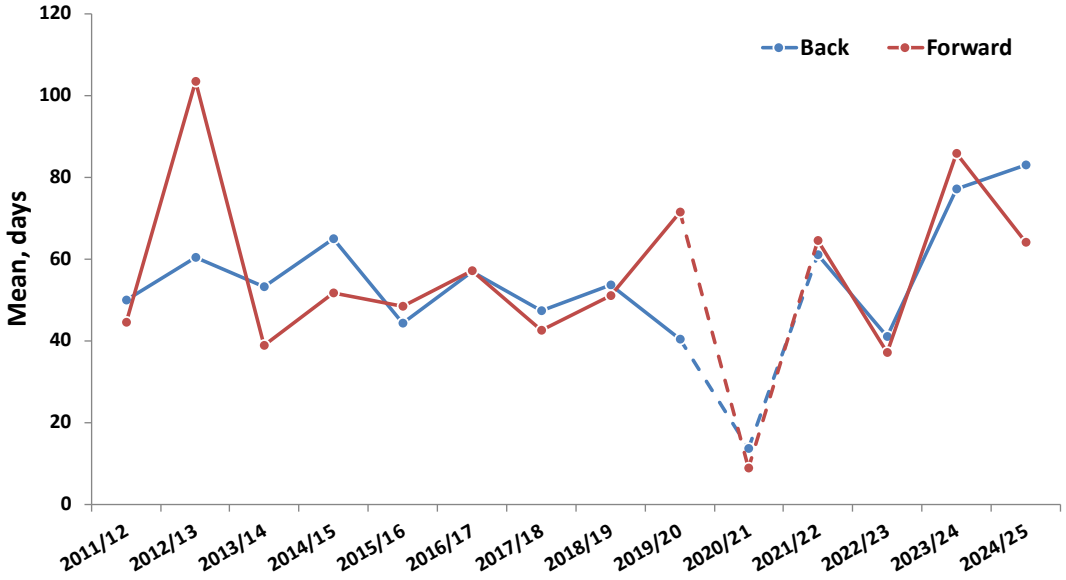

Figure 6. Long-term trends in mean injury severity for backs and forwards (Data for the 2020/21 season relate to a limited competition due to Covid)

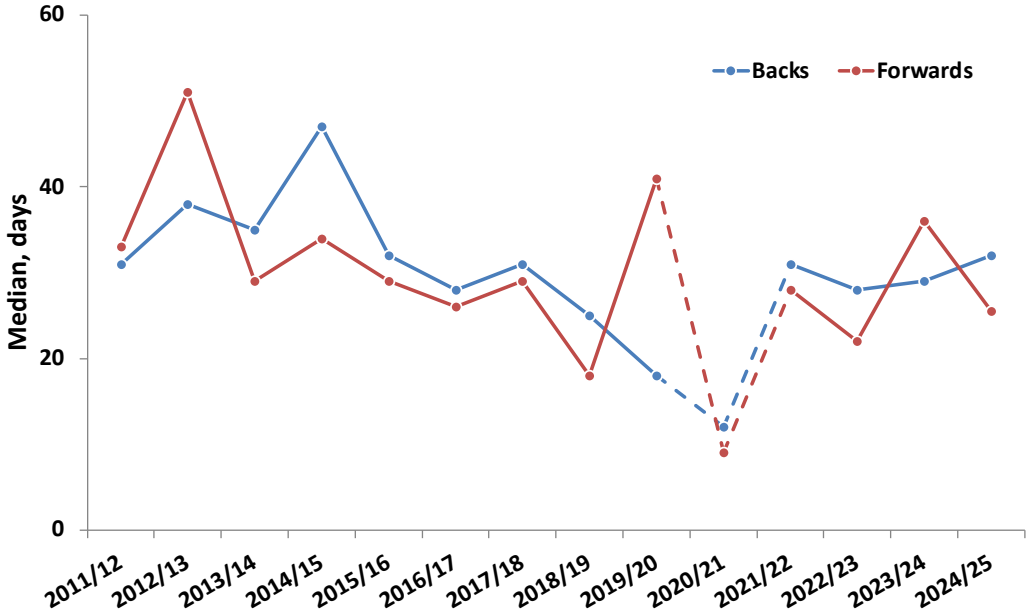

Figure 7 Long-term trends in median injury severity for backs and forwards (Data for the 2020/21 season relate to a limited competition due to Covid)

The 2024/25 SVNS injury incidence and mean severity values for all players lead to an overall injury burden value of 6,884 days-absence/1000 player-match-hours (95% CI: 5,334 – 8,885). There is no significant difference (p=0.424) between the injury burden values for backs (7,489 days-absence/1000 player-match-hours, 95%

CI: 5,324 – 10,534) and forwards (6.078 days-absence/1000 player-match-hours, 4,139 – 8,927).

Long-term trends (2011/12 to 2024/25) in the injury burden values of backs and forwards are shown in Figure 8.

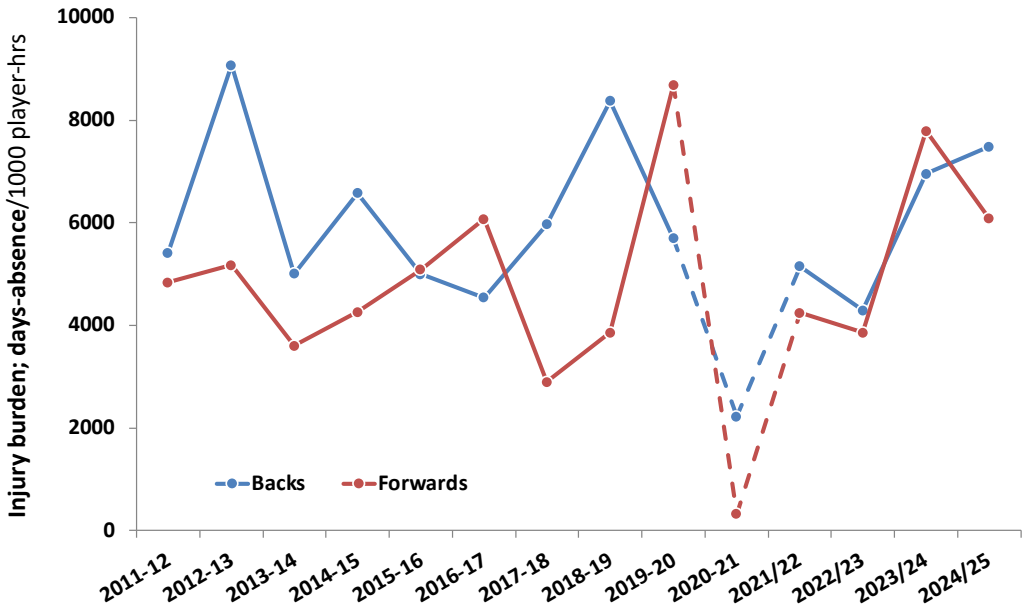

Figure 8. Long-term trends in injury burden for backs and forwards

There are no statistically significant trends in injury burden for backs (p=0.713) or forwards (p=0.625).

4.1.2(c) Location and type of injury

Table 4 presents the locations of injuries sustained by backs, forwards and all players during the 2024/25 SVNS.

Based on the 95% CIs, there are no statistically significant differences between the locations of injuries sustained by backs and forwards.

Head/face (36.4%), knee (33.3%) and ankle (12.1%) were the most common injury locations for backs, while head/face (23.1%), wrist/hand (19.2%) and knee (11.5%) were the most common injury locations for forwards.

Table 4: Main and sub-locations of injuries.

Location of injury	*Proportion, % (95% Confidence interval)*		
	Backs	***Forwards***	***All players***
Head/neck	**39.4 (22.7 – 56.1)**	**26.9 (9.9 – 44.0)**	**33.9 (21.8 – 46.0)**
Head/face	36.4 (20.0 – 52.8)	23.1 (6.9 – 39.3)	30.5 (18.8 – 42.3)
Neck/cervical spine	3.0 (0 – 8.9)	3.8 (0 – 11.2)	3.4 (0 – 8.0)
Upper limbs	**9.1 (0 – 18.9)**	**34.6 (16.3 – 52.9)**	**20.3 (10.1 – 30.6)**
Shoulder/clavicle	3.0 (0 – 8.9)	7.7 (0 – 17.9)	5.1 (0 – 10.7)
Upper arm	0.0 (-)	0.0 (-)	0.0 (-)
Elbow	0.0 (-)	7.7 (0 – 17.9)	3.4 (0 – 8.0)
Forearm	0.0 (-)	0.0 (-)	0.0 (-)
Wrist/hand	6.1 (0 – 14.2)	19.2 (4.1 – 34.4)	11.9 (3.6 – 20.1)
Trunk	**0.0 (-)**	**7.7 (0 – 17.9)**	**3.4 (0 – 8.0)**
Sternum/upper back	0.0 (-)	3.8 (0 – 11.2)	1.7 (0 – 5.0)
Abdomen	0.0 (-)	0.0 (-)	0.0 (-)
Low back	0.0 (-)	3.8 (0 – 11.2)	1.7 (0 – 5.0)
Sacrum/pelvis	0.0 (-)	0.0 (-)	0.0 (-)
Lower limbs	**51.5 (34.5 – 68.6)**	**30.8 (13.0 – 48.5)**	**42.4 (29.8 – 55.0)**
Hip/groin	0.0 (-)	0.0 (-)	0.0 (-)
Anterior thigh	0.0 (-)	3.8 (0 – 11.2)	1.7 (0 – 5.0)
Posterior thigh	3.0 (0 – 8.9)	3.8 (0 – 11.2)	3.4 (0 – 8.0)
Knee	33.3 (17.2 – 49.4)	11.5 (0 – 23.8)	23.7 (12.9 – 34.6)
Lower leg	0.0 (-)	0.0 (-)	0.0 (-)
Ankle	12.1 (1.0 – 23.3)	7.7 (0 – 17.9)	10.2 (2.5 – 17.9)
Foot/toe	3.0 (0 – 8.9)	3.8 (0 – 11.2)	3.4 (0 – 8.0)

Tables 5 presents the types of injuries sustained by backs, forwards and all players during the 2024/25 SVNS.

Based on the 95% CIs, there are no statistically significant differences between the types of injuries sustained by backs and forwards.

Sprain/ligament injuries (42.4%), brain/concussion (33.3%) and bone fracture (9.1%) were the most common injury types for backs, while sprain/ligament injuries (26.9%), brain/concussion (19.2%) and fracture (19.2%) injuries were the most common types for forwards.

Table 5: Main and sub-types of injuries.

Type of injury	*Proportion, % (95% Confidence interval)*		
	Backs	*Forwards*	*All players*
Bone	**9.1 (0 – 18.9)**	**23.1 (6.9 – 39.3)**	**15.3 (6.1 – 24.4)**
Fracture	9.1 (0 – 18.9)	19.2 (4.1 – 34.4)	13.6 (4.8 – 22.3)
Other bone	0.0 (-)	3.8 (0 – 11.2)	1.7 (0 – 5.0)
C/PNS	**33.3 (17.2 – 49.4)**	**19.2 (4.1 – 34.4)**	**27.1 (15.8 – 38.5)**
Brain/concussion	33.3 (17.2 – 49.4)	19.2 (4.1 – 34.4)	27.1 (15.8 – 38.5)
Nerve	0.0 (-)	0.0 (-)	0.0 (-)
Joint, non-bone/lig[t]	**42.4 (25.6 – 59.3)**	**42.3 (23.3 – 61.3)**	**42.4 (29.8 – 55.0)**
Dislocation/sublux[n]	0.0 (-)	7.7 (0 – 17.9)	3.4 (0 – 8.0)
Lesion meniscus/etc	0.0 (-)	3.8 (0 – 11.2)	1.7 (0 – 5.0)
Sprain/ligament	42.4 (25.6 – 59.3)	26.9 (9.9 – 44.0)	35.6 (23.4 – 47.8)
Other	0.0 (-)	3.8 (0 – 11.2)	1.7 (0 – 5.0)
Muscle/tendon	**9.1 (0 – 18.9)**	**11.5 (0 – 23.8)**	**10.2 (2.5 – 17.9)**
Haematoma	6.1 (0 – 14.2)	7.7 (0 – 17.9)	6.8 (0.4 – 13.2)
Muscle strain	3.0 (0 – 8.9)	3.8 (0 – 11.2)	3.4 (0 – 8.0)
Tendon injury/etc	0.0 (-)	0.0 (-)	0.0 (-)
Skin	**0.0 (-)**	**0.0 (-)**	**0.0 (-)**
Other injuries	**6.1 (0 – 14.2)**	**3.8 (0 – 11.2)**	**5.1 (0 – 10.7)**

C/PNS: Central and peripheral nervous systems

Over the period 2011/12 to 2024/25, knee-ligament (16.9%), brain/concussion (15.0%), ankle ligament (10.7%) and hamstring strain (4.3%) injuries have been the most common specific injuries sustained by backs. For forwards, the most common injuries have been brain/concussion (21.5%), knee-ligament (11.9%), ankle-ligament (7.7%) and hamstring strain (6.5%).

For backs, knee ligament (38.2%), ankle ligament (8.9%), concussion (4.8%) and hamstring strain (4.1%) injuries have been responsible for most lost time. For forwards, most lost time has been the result of knee ligament (39.4%), hamstring muscle strain (9.1%), concussion (6.8%) and ankle ligament (3.1%) injuries.

4.1.2(d) Nature and cause of onset of injury

Table 6 summarises the nature of onset of injuries sustained by backs, forwards and all players during the 2024/25 SVNS.

Table 6: Nature of onset of injury.

Nature of injury	*Proportion, % (95% Confidence interval)*		
	Backs	*Forwards*	*All players*
Acute	93.9 (85.8 – 100)	100.0 (-)	96.692.0 – 100)
Gradual onset	6.1 (0 – 14.2)	0.0 (-)	3.4 (0 – 8.0)

Over ninety-five per cent of all injuries sustained were acute in nature. There is no significant difference between the results for backs and forwards (p=0.200).

Table 7 summarises the cause of onset of injuries sustained by backs, forwards and all players during the 2024/25 SVNS.

Table 7: Cause of onset of injury.

Cause of injury	*Proportion, % (95% Confidence interval)*		
	Backs	***Forwards***	***All players***
Contact	75.8 (61.1 – 90.4)	92.3 (82.1 – 100)	83.1 (73.5 – 92.6)
Non-contact	24.2 (9.6 – 38.9)	7.7 (0 – 17.9)	16.9 (7.4 – 26.5)

Over eighty per cent of all injuries sustained were contact injuries. The difference between backs and forwards has not reached statistical significance (p=0.093).

The range of match activities associated with injuries sustained is shown in Table 8.

Table 8: Match activities associated with injury events.

Measure	***Backs***	***Forwards***	***All players***
Collision	18.2 (5.0 – 31.3)	8.3 (0 – 19.4)	14.0 (5.0 – 23.1)
Ruck	6.1 (0 – 14.2)	8.3 (0 – 19.4)	7.0 (0.4 – 13.6)
Running	18.2 (5.0 – 31.3)	4.2 (0 – 12.2)	12.3 (3.8 – 20.8)
Tackled	36.4 (20.0 – 52.8)	45.8 (25.9 – 65.8)	40.4 (27.6 – 53.1)
Tackling	12.1 (1.0 – 23.3)	25.0 (7.7 – 42.3)	17.5 (7.7 – 27.4)
Other	9.1 (0 – 18.9)	8.3 (0 – 19.4)	8.8 (1.4 – 16.1)

Being-tackled was the most common cause of injury for both backs (36.4%) and forwards (45.8%). Based on the 95% CIs, there is no significant difference between the results for backs and forwards.

The most common match activities associated with concussion injuries in 2024/25 SVNS were being tackled (37.5%), tackling (31.3%) and collision (25.0%).

4.1.2(e) Match period of injury

Table 9 provides a summary of the match periods when injuries were sustained by backs, forwards and all players.

Table 9: Period of match when injuries were sustained.

Period of match	*Proportion, % (95% Confidence interval)*		
	Backs	***Forwards***	***All players***
First half	45.5 (28.5 – 62.4)	53.834.7 – 73.0)	49.2 (36.4 – 61.9)
Second half	54.5 (37.6 – 71.5)	46.2 (27.0 – 65.3)	50.8 (38.1 -63.6)

There is no statistically significant difference between the match periods when backs and forwards were injured (p=0.522).

4.1.2(f) Removal of injured players from pitch

During the 2024/25 SVNS, 50.8% (95% CI: 38.1 – 63.6%) of injured players were removed from play immediately, 23.7% (95% CI: 12.9 – 34.6%) were removed later in the game but 25.4% (95% CI: 14.3 – 36.5%) remained on the pitch until the end of the game.

Of the 16 players sustaining brain/concussion injuries, 8 (50.0%) were removed from play immediately, 6 (37.5%) were removed later in the game and 2 (12.5%) remained on the pitch until the end of the game.

4.1.3 Training injuries

Eight training injuries were reported during the 2024/25 SVNS tournaments (backs: 8; forwards: 0). A total of 7,043 player-training-hours (backs: 3621; forwards:3422) were recorded during the competition, which means the overall incidence of injury was 1.1 (95% CI: 0.6 – 2.3) injuries/1000 player-training-hours (backs: 2.2; forwards: 0.0). The mean severity of training injuries sustained by all players was 63.9 days (95% CI: 43.1 – 84.7) and the median severity of injury was 63.5 (95% CI: 25.0 – 115.0). The injury burden value associated with training injuries was 73 days-absence/1000 player-hours (95% CI: 36– 145).

The 8 training injuries were sustained during contact rugby skills (1), semi-contact rugby skills (3), non-contact rugby skills (2) and warm-up (2) activities.

Three of the injuries sustained were lower leg muscle strains, 3 were ankle ligament sprains, 1 was a knee ligament sprain and 1 was hamstring strain. No further analyses were carried out on the training injuries.

4.1.4 Illnesses

A higher than usual number of illnesses (17) were reported during the 2024/25 SVNS (viral infections: 6; respiratory tract infections: 6; diarrhoea: 2; other: 3). Five of the respiratory tract infections were sustained within one team while travelling home from one tournament. No additional analyses were undertaken.

4.2 Men's SVNS competition

The 12 countries taking part in the seven 2024/25 men's SVNS tournaments were: Argentina, Australia, Fiji, France, Great Britain, Ireland, Kenya, New Zealand, South Africa, Spain, Uruguay, USA. The 8 countries taking part in the men's 2024/25 SVNS Grand Final tournament in Los Angeles were: Australia, Canada, Fiji, France, Great Britain, Japan, New Zealand, USA.

All participating countries provided players' anthropometric, injury, illness and training exposure information.

4.2.1 Players' anthropometric data

Table 10 summarises the numbers and anthropometric data for players categorised as backs, forwards and all players.

Table 10: Players' anthropometric data.

Tournament/ measure	**Mean** (*Standard deviation, number of players*)		
	Backs	***Forwards***	***All players***
Stature, cm	180.4 (6.4, 133)	187.4 (6.0, 95)	183.3 (7.1, 228)
Body mass, Kg	84.3 (7.2, 133)	93.8 (6.6, 95)	88.2 (8.4, 228)
Age, years	24.5 (3.7, 133)	24.9 (3.8, 95)	24.7 (3.7, 228)

Forwards were significantly taller ($p<0.001$) and heavier ($p<0.001$) than backs but the difference between ages did not quite reach statistical significance ($p=0.076$).

Figures 9, 10 and 11 show the long-term (2011/12 to 2024/25) trends in backs and forwards age, stature and body mass.

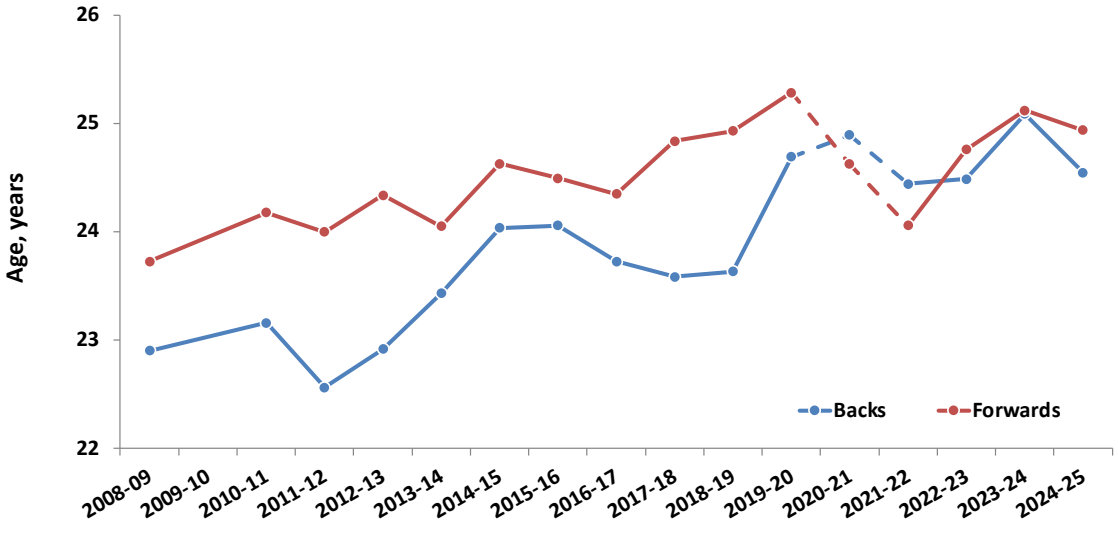

Figure 9 Trends in mean age of backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

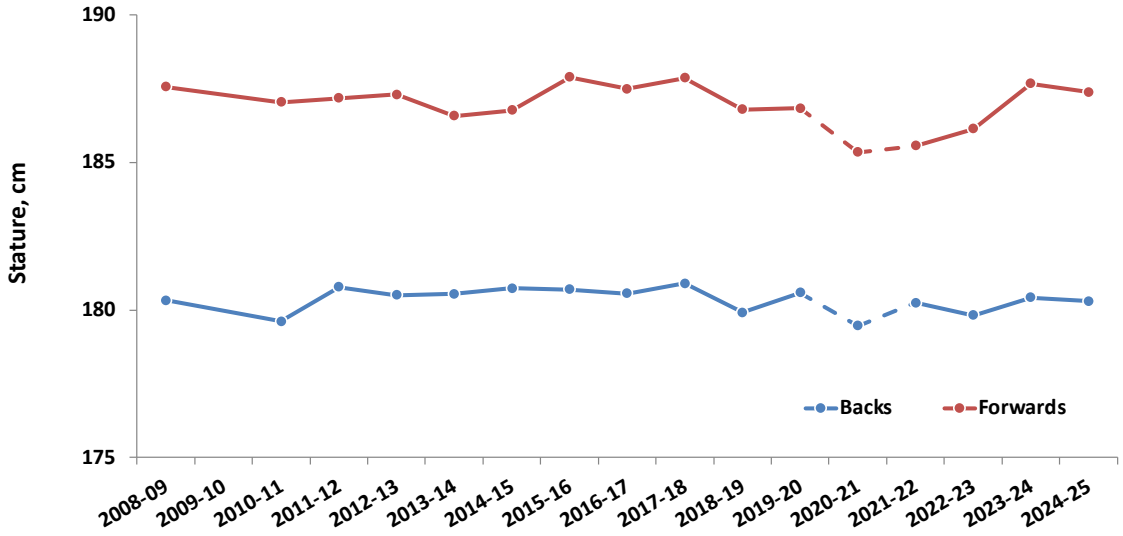

Figure 10. Trends in mean stature of backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

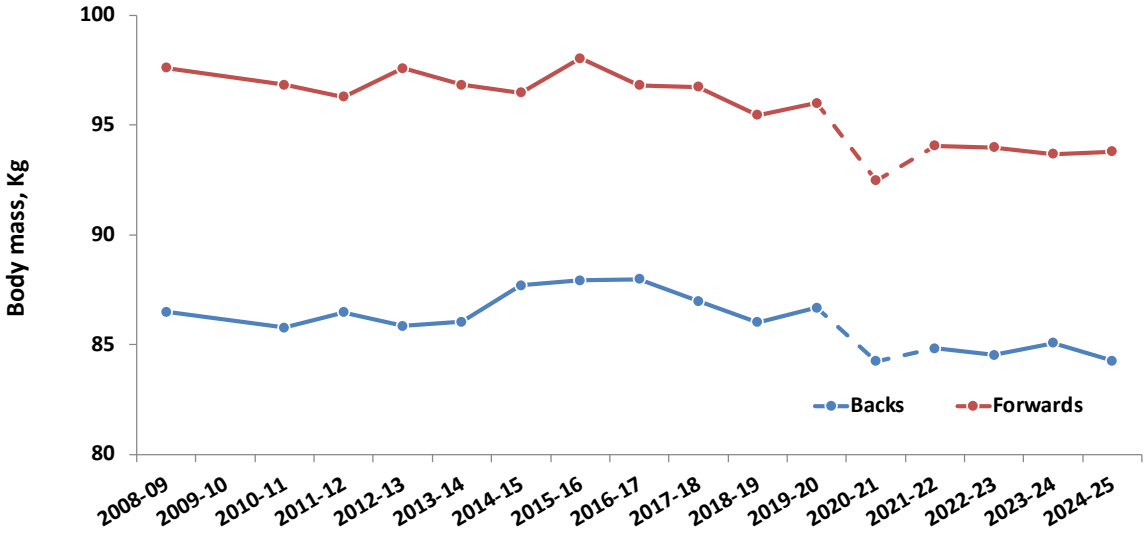

Figure 11. Trends in mean body mass of backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

There are statistically significant increasing trends in the age of backs ($p<0.001$) and forwards ($p=0.002$) and statistically significant decreasing trends in the body mass of backs ($p=0.028$) and forwards ($p<0.001$). There are no significant trends in the stature of either backs ($p=0.444$) or forwards ($p=0.246$).

4.2.2 Match injuries

4.2.2(a) Incidence of injuries

Table 11 summarises the number of match injuries, exposures and incidences of injuries, during the eight 2024/25 SVNS tournaments, for players categorised as backs, forwards and all players. Recurrences accounted for 3.7% of all injuries sustained (backs: 3.4%; forwards: 4.1%).

Table 11: Injury numbers, exposures (player-match-hours) and incidences (injuries/1000 player-match-hours, 95% confidence interval) of match injuries.

Tournament	*Backs*	*Forwards*	*All players*
Injuries	54	31	85
Exposure	365.9	274.4	640.3
Incidence	148 (113 – 193)	113 (79 – 161)	133 (107 – 164)

There was no significant difference (p=0.234) between the incidences of match injuries sustained by backs and forwards during 2024/25 SVNS.

The average number of match injuries sustained/team-game at each of the 2024/25 tournaments is shown in Figure 12

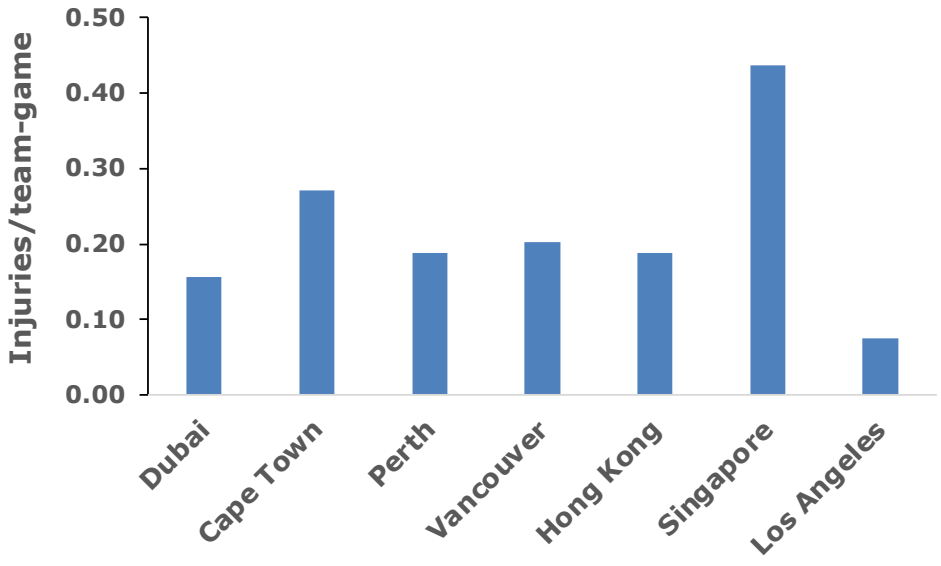

Figure 12. Average number of injuries/team-game.

Figure 13 shows the long-term trends in the incidences of injury for backs and forwards.

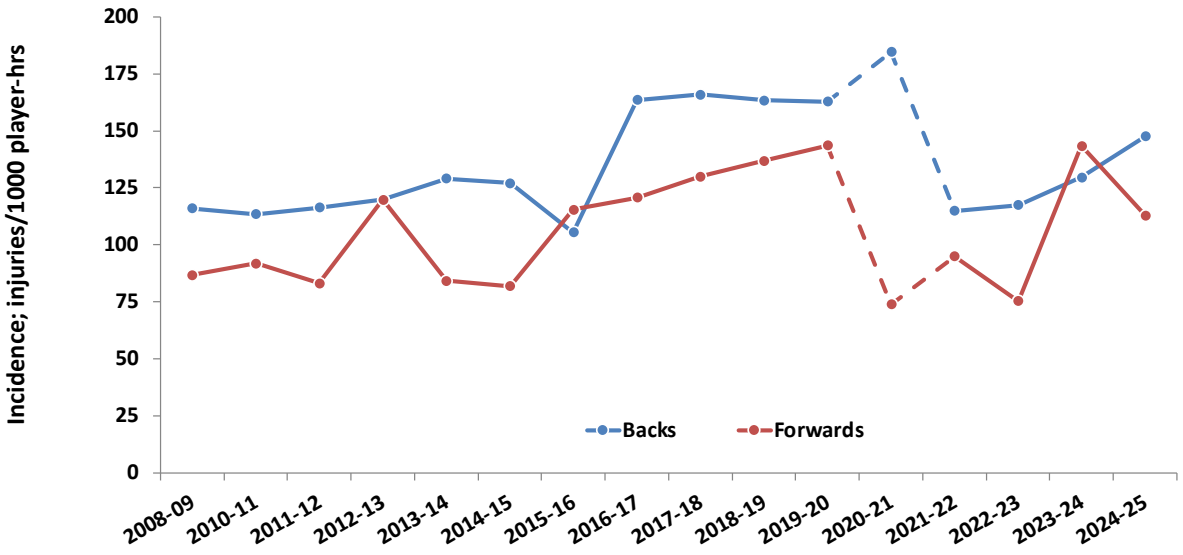

Figure 13 Long-term trends in injury incidence for backs and forwards
(Data for the 2020/21 season relate to a limited competition due to Covid)

There are no statistically significant trends in the incidence of injury for backs (p=0.125) or forwards (p=0.250) over the period 2008/09 to 2024/25. The long-term (2008/09 to 2024/25) average incidence value for backs (133.1 injuries/1000 player-hours; 95% CI: 126.0 – 140.6) is significantly higher (p<0.001) than that for forwards (106.4 injuries/1000 player-hours; 95% CI: 99.2 – 114.2).

4.2.2(b) Severity of injury

A total of 3,543 player-days were lost through injury during the 2024/25 SVNS (backs: 2,258; forwards: 1,285).

In addition, one forward player retired from rugby after sustaining a concussion injury.

Table 12 summarises the mean and median severities of injuries sustained during the 2024/25 SVNS for players categorised as backs, forwards and all players.

Table 12: Mean and median severities of injuries.

	***Severity (95% Confidence interval)**, days*		
Injury severity	***Backs***	***Forwards***	***All players***
Mean	41.8 (27.0 – 56.6)	42.8 (26.5 – 59.2)	42.2 (31.1 – 53.3)
Median	20.5 (14.0 – 30.0)	27.0 (18.0 – 49.0)	21.5 (17.0 – 30.0)

There were no significant differences in the mean (p=0.928) or median (p=0.283) severity values between backs and forwards during the 2024/25 competition.

There has been a long-term (2008/09 – 2024/25) increasing trend (Figure 14) in the mean severity value for forwards (p=0.030) but the trend for backs has not reached statistical significance (p=0.119).

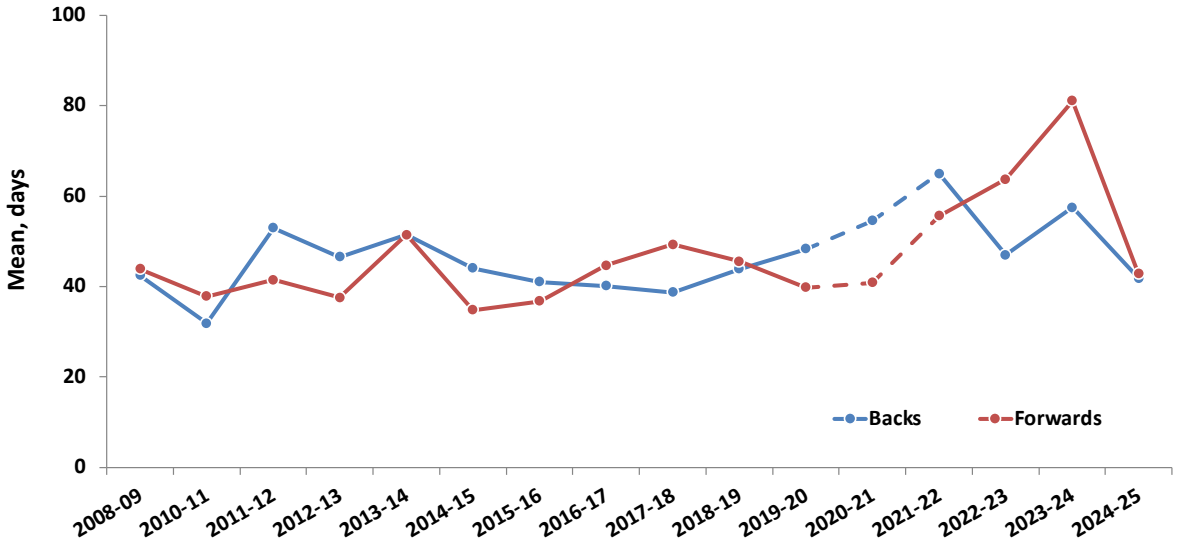

Figure 14 Long-term trends in mean injury severity for backs and forwards (Data for the 2020/21 season relate to a limited competition due to Covid)

There have been no statistically significant trends (Figure 15) in the median severity values for backs (p=0.596) or forwards: p=0.913).

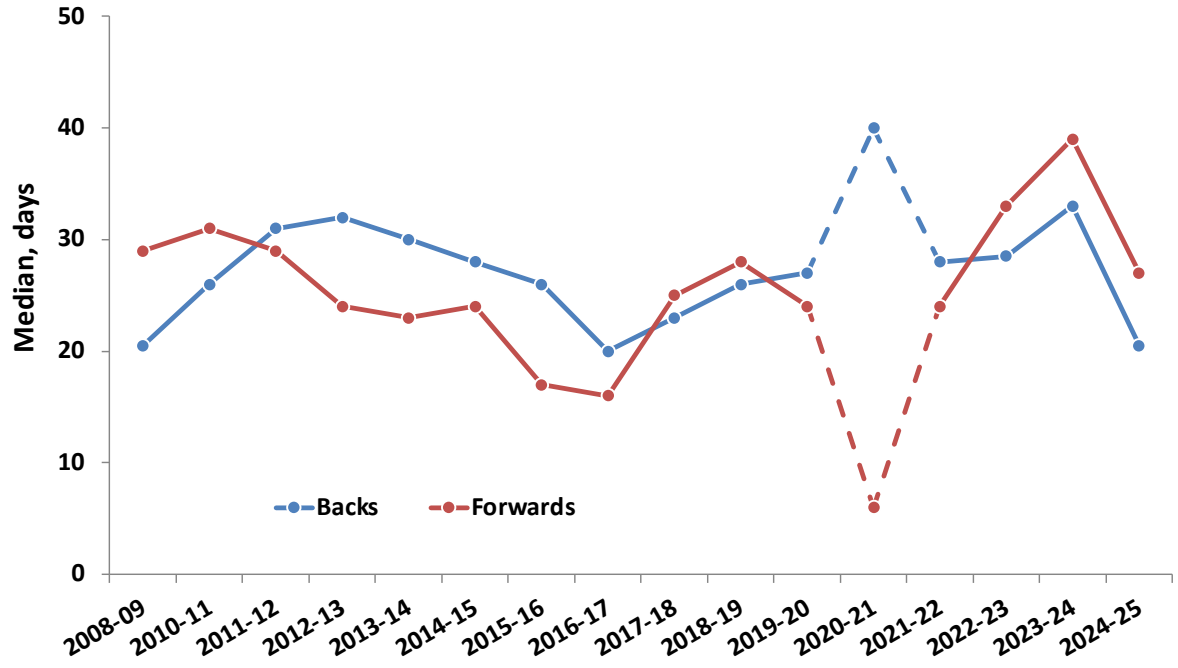

Figure 15. Long-term trends in median injury severity for backs and forwards (Data for the 2020/21 season relate to a limited competition due to Covid)

The 2024/25 injury incidence and mean severity values lead to an injury burden value across all players of 5,600 days-absence/1000 player-hours (95% CI: 4,527 – 6,926). The value for backs (6.,171 days-absence/1000 player-hours; 95% CI: 4,727 – 8,058) was not significantly different (p=280) than that for forwards (4,839 days-absence/1000 player-hours; 95% CI: 3,403 – 6,881). There are significant long-term increasing trends in injury burden values (Figure 16) for both backs (p=0.024) and forwards (p=0.038) (Figure 16).

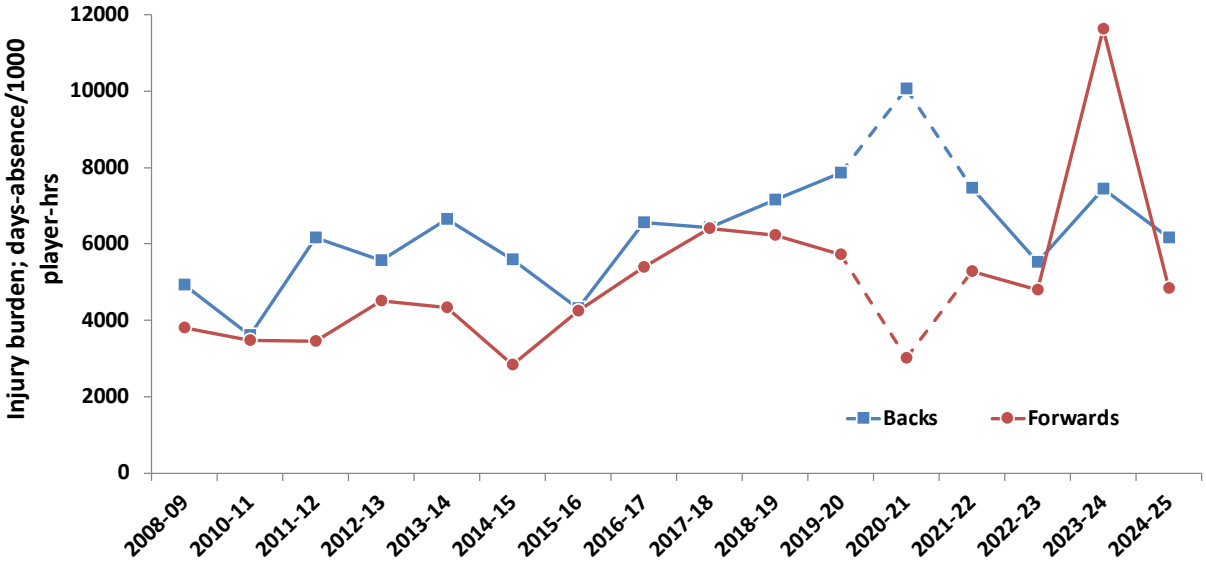

Figure 16. Long-term trends in injury burden for backs and forwards

4.2.2(c) Location and type of injury

Tables 13 presents the locations of injuries sustained by backs, forwards and all players during the 2024/25 SVNS.

Based on the 95% CIs, there are no statistically significant differences between the locations of injuries sustained by backs and forwards.

Head/face (27.8%), posterior thigh (14.8%) and shoulder/clavicle (11.1%) were the most common injury locations for backs, while head/face (29.0%), ankle (16.1%) and knee (12.9%), were the most common for forwards.

Table 13: Main and sub-locations of injuries.

Location of injury	*Proportion, % (95% Confidence interval)*		
	Backs	***Forwards***	***All players***
Head/neck	**27.8 (15.8 – 39.7)**	**29.0 (13.1 – 45.0)**	**28.2 (18.7 – 37.8)**
Head/face	27.8 (15.8 – 39.7)	29.0 (13.1 – 45.0)	28.2 (18.7 – 37.8)
Neck/cervical spine	0.0 (-)	0.0 (-)	0.0 (-)
Upper limbs	**20.4 (9.6 – 31.1)**	**16.1 (3.2 – 29.1)**	**18.8 (10.5 – 27.1)**
Shoulder/clavicle	11.1 (2.7 – 19.5)	9.7 (0 – 20.1)	10.6 (4.0 – 17.1)
Upper arm	1.9 (0 – 5.4)	0.0 (-)	1.2 (0 – 3.5)
Elbow	0.0 (-)	0.0 (-)	0.0 (-)
Forearm	0.0 (-)	0.0 (-)	0.0 (-)
Wrist/hand	7.4 (0.4 – 14.4)	6.5 (0 – 15.1)	7.1 (1.6 – 12.5)
Trunk	**3.7 (0 – 8.7)**	**6.5 (0 – 15.1)**	**4.7 (0.2 – 9.2)**
Sternum/upper back	1.9 (0 – 5.4)	6.5 (0 – 15.1)	3.5 (0 – 7.5)
Abdomen	1.9 (0 – 5.4)	0.0 (-)	1.2 (0 – 3.5)
Low back	0.0 (-)	0.0 (-)	0.0 (-)
Sacrum/pelvis	0.0 (-)	0.0 (-)	0.0 (-)
Lower limbs	**48.1 (34.8 – 61.5)**	**48.4 (30.8 – 66.0)**	**48.2 (37.6 – 58.9)**
Hip/groin	5.6 (0 – 11.7)	0.0 (-)	3.5 (0 – 7.5)
Anterior thigh	0.0 (-)	3.2 (0 – 9.4)	1.2 (0 – 3.5)
Posterior thigh	14.8 (5.3 – 24.3)	9.7 (0 – 20.1)	12.9 (5.8 – 20.1)
Knee	9.3 (1.5 – 17.0)	12.9 (1.1 – 24.7)	10.6 (4.0 – 17.1)
Lower leg	3.7 (0 – 8.7)	0.0 (-)	2.4 (0 – 5.6)
Ankle	7.4 (0.4 – 14.4)	16.1 (3.2 – 29.1)	10.6 (4.0 – 17.1)
Foot/toe	7.4 (0.4 – 14.4)	6.5 (0 – 15.1)	7.1 (1.6 – 12.5)

Tables 14 presents the types of injuries sustained by backs, forwards and all players during the 2024/25 SVNS.

Based on the 95% CIs, there are no statistically significant differences between the types of injuries sustained by backs and forwards.

Brain/concussion (27.8%), muscle strain (22.2%) and sprain/ligament (20.4%) injuries were the most common injury types for backs, while brain/concussion (25.8%), sprain/ligament (25.8%), muscle strain (12.9%), fracture (12.9%), and haematoma (12.9%) injuries were the most common types for forwards.

Table 14: Main and sub-types of injuries.

Type of injury	***Proportion, % (95% Confidence interval)***		
	Backs	***Forwards***	***All players***
Bone	**3.7 (0 – 8.7)**	**16.1 (3.2 – 29.1)**	**8.2 (2.4 – 14.1)**
Fracture	3.7 (0 – 8.7)	12.9 (1.1 – 24.7)	7.1 (1.6 – 12.5)
Other bone	0.0 (-)	3.2 (0 – 9.4)	1.2 (0 – 3.5)
C/PNS	**27.8 (15.8 – 39.7)**	**25.8 (10.4 – 41.2)**	**27.1 (17.6 – 36.5)**
Brain/concussion	27.8 (15.8 – 39.7)	25.8 (10.4 – 41.2)	27.1 (17.6 – 36.5)
Nerve	0.0 (-)	0.0 (-)	0.0 (-)
Joint, non-bone/lig[t]	**25.9 (14.2 – 37.6)**	**32.3 (15.8 – 48.7)**	**28.2 (18.7 – 37.8)**
Dislocation/sublux[n]	3.7 (0 – 8.7)	0.0 (-)	2.4 (0 – 5.6)
Lesion meniscus/etc	0.0 (-)	6.5 (0 – 15.1)	2.4 (0 – 5.6)
Sprain/ligament	20.4 (9.6 – 31.1)	25.8 (10.4 – 41.2)	22.4 (13.5 – 31.2)
Other	1.9 (0 – 5.4)	0.0 (-)	1.2 (0 – 3.5)
Muscle/tendon	**38.9 (25.9 – 51.9)**	**25.8 (10.4 – 41.2)**	**34.1 (24.0 – 44.2)**
Haematoma	9.3 (1.5 – 17.0)	12.9 (1.1 – 24.7)	10.6 (4.0 – 17.1)
Muscle strain	22.2 (11.1 – 33.3)	12.9 (1.1 – 24.7)	18.8 (10.5 – 27.1)
Tendon injury/etc	7.4 (0.4 – 14.4)	0.0 (-)	4.7 (0.2 – 9.2)
Skin	**0.0 (-)**	**0.0 (-)**	**0.0 (-)**
Other injuries	**3.7 (0 – 8.7)**	**0.0 (-)**	**2.4 (0 – 5.6)**

C/PNS: Central and peripheral nervous systems

Over the period 2008/09 to 2024/25, brain/concussion (14.6%), ankle ligament (12.6%), hamstring strain (11.0%) and knee ligament (9.1%) injuries have been the most common specific injuries sustained by backs. For forwards, the most common injuries have been brain/concussion (14.5%), ankle ligament (11.8%), knee ligament (11.3%) and hamstring strain (5.7%).

For backs, knee ligament (18.2%), ankle ligament (12.7%), hamstring strain (9.4%) and shoulder dislocation (9.3%) injuries have been responsible for most lost time. For forwards, most lost time has been the result of knee ligament (24.9%), ankle ligament (9.4%, shoulder dislocation (7.7%), lower leg fracture (5.8%) and brain/concussion (5.8%) injuries.

4.2.2(d) Nature and cause of onset of injury

Table 15 summarises the nature of onset of injuries sustained by backs, forwards and all players during the men's 2024/25 SVNS.

Table 15: Nature of onset of injury.

Nature of injury	***Proportion, % (95% Confidence interval)***		
	Backs	***Forwards***	***All players***
Acute	96.3 (91.3 – 100)	96.8 (90.6 – 100)	96.5 (92.5 – 100)
Gradual onset	3.7 (0 – 8.7)	3.2 (0 – 9.4)	3.5 (0 – 7.5)

Over ninety-five per cent of all injuries sustained during 2024/25 were acute in nature (backs: 96.3%; forwards: 96.8%). There is no statistically significant difference between the values for backs and forwards (p=0.904).

Table 16 summarises the cause of onset of injuries sustained by backs, forwards and all players during the men's 2024/25 SVNS.

Table 16: Cause of onset of injury.

Cause of injury	*Proportion, % (95% Confidence interval)*		
	Backs	***Forwards***	***All players***
Contact	79.6 (68.9 – 90.4)	83.9 (70.9 – 96.8)	81.2 (72.9 – 89.5)
Non-contact	20.4 (9.6 – 31.1)	16.1 (3.2 – 29.1)	18.8 (10.5 – 27.1)

Over eighty per cent of all injuries sustained were the result of contact events (backs: 79.6%; forwards: 83.9%). The difference in values for backs and forwards is not statistically significant (p=0.632). The match activities associated with the injuries sustained are shown in Table 17.

Table 17: Match activities associated with injury events.

Measure	***Backs***	***Forwards***	***All players***
Collision	3.8 (0 – 8.9)	6.9 (0 - 16.1)	4.9 (0.2 – 9.5)
Lineout	0.0 (-)	3.4 (0 – 10.1)	1.2 (0 – 3.6)
Ruck	13.2 (4.1 – 22.3)	10.3 (0 – 21.4)	12.2 (5.1 – 19.3)
Running	17.0 (6.9 – 27.1)	6.9 (0 – 16.1)	13.4 (6.0 – 20.8)
Tackled	26.4 (14.5 – 38.3)	37.9 (20.3 – 55.6)	30.5 (20.5 – 40.5)
Tackling	37.7 (24.7 – 50.8)	34.5 (17.2 – 51.8)	36.6 (26.2 – 47.0)
Other	1.9 (0 – 5.5)	0.0 (-)	1.2 (0 – 3.6)

Backs were more likely to be injured as a result of tackling compared to being-tackled, whereas forwards were slightly more likely to be injured as a result of being-tackled than tackling. Based on the 95% CIs, there are no statistically significant differences in the match activities responsible for injuries sustained by backs and forwards.

The most common match activities associated with concussion injuries during the 2024/25 SVNS were tackling (63.6%), being tackled (22.7%), and ruck (13.6%).

4.2.2(e) Match period of injury

Table 18 provides a summary of the periods during matches when injuries were sustained during the 2024/25 SVNS.

Table 18: Period of match when injuries were sustained.

Period of match	*Proportion, % (95% Confidence interval)*		
	Backs	***Forwards***	***All players***
First half	38.9 (25.9 – 51.9)	32.3 (15.8 – 48.7)	36.5 (26.2 – 46.7)
Second half	61.1 (48.1 – 74.1)	67.7 (51.3 – 84.2)	63.5 (53.3 – 73.8)

There is no statistically significant difference between the match periods when backs and forwards were injured in the 2024/25 SVNS (p=0.542).

Based on the 95% CIs, injuries are significantly more likely to be sustained in the second half of matches.

4.2.2(f) Removal of injured players from pitch

During the 2024/25 SVNS, 48.2% (95% CI: 37.6 – 58.9%) of injured players were removed from play immediately, 25.9% (95% CI: 16.6 – 35.2%) were removed later in the game and 25.9% (95% CI: 16.6 – 35.2%) remained on the pitch until the end of the game.

Of the 23 players sustaining brain/concussion injuries, 17 (73.9%) were removed from play immediately, 4 (17.4%) were removed later in the game and 2 (8.7%) remained on the pitch until the end of the game.

4.2.3 Training injuries

Eight training injuries were reported during the 2024/25 SVNS tournaments (backs: 6; forwards: 2) from a total of 6,475 player-training hours (backs: 3,367; forwards: 3,107). This equates to an overall incidence of training injuries of 1.2 injuries/1000 player-training-hours (95% CI: 0.6 – 2.5). There was no significant difference (p=0.212) between the incidences of injury for backs (1.8 injuries/1000 player-training-hours; 95% CI: 0.8 – 4.0) and forwards (0.6 injuries/1000 player-training-hours; 95%; CI: 0.2 – 2.6).

The mean severity of training injuries sustained by all players was 27 days (95% CI: 17 - 37). For backs, the mean severity was: 31 days (95% CI: 21 – 41) and for forwards 15 days (95% CI: 0 – 39); the difference in mean severities for backs and forwards was not statistically significant (p=0.230). The overall median severity of training injuries was 28.5 days (backs: 30.0; forwards: 14.5).

The overall injury burden value associated with training for all players was 33 days-absence/1000 player-training-hours (95% CI: 16 – 66). The difference in values for backs (55 days-absence/1000 player-hours, 95% CI: 25 – 122) and forwards (9 days-absence/1000 player-hours, 95% CI: 2 – 37) was statistically significant (p=0.030).

The 8 training injuries were sustained during semi-contact (3) and non-contact (2) rugby skills and warm-up (3 activities.

Six of the injuries sustained were muscle strains (posterior thigh: 2, anterior thigh: 1, hip/groin: 1, foot: 1, lower leg: 1), and two (knee, lower back) were cartilage injuries. No further analyses were carried out on the training injuries.

4.2.4 Illnesses

The total number of illnesses (20) reported (backs: 13, forwards: 7) in 2024/25 was higher than usual. Thirteen of these illnesses were reported during the Cape Town tournament. All 13 of these illnesses were related to gastroenteritis/diarrhoea and resulted, on average, in 4.5 days absence each.

No further analyses of the illnesses were undertaken.

5. References

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6. Acknowledgements

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Country	Women's tournaments	Men's tournaments
Argentina	-	Julian Ferraris
Australia	Francesca Faulkner, Kylie Baldwin	Jarrad Rangihuna
Brazil	Nagela Freitas, Felipe Fontana	-
Canada	Danielle McNally, Aiyanna Grubac, Allison Rodway	-
China	I-Tsen Shih	-
Fiji	Bulou Nanise, Kautane Erasito	Eroni Tavalea
France	Thibault Fouquet, Pauline Vogt	Elsa Mercier, Tanguy Garcia
Great Britain	John Swain	Olivia Withers, John Swain
Ireland	Ed Mias, Christina Finlay	Christina Finlay, Orla Armstrong
Japan	Nao Ugajin	-
Kenya	-	Lamech Francis Bogonko
New Zealand	Lauren McDonald	Rachel Lambert
South Africa	-	Hugh Everson, Janesh Ganda
Spain	Sergio Lopez Castillo	Henar Lucio
Uruguay	-	Juan Manual Fonseca
USA	Nicole Titmas	Colby Thompson, Delaney Cassidy