



2021 AFL Injury Report

Collaborators:

AFL Doctors Association

AFL Physiotherapists Association

AFL

1 Key Indicators

All Injuries	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Incidence (new injuries per club per season)	34.4	34.1	34.8	35.3	34.0	34.6	36.9	37.8	38.7	38.4
Incidence (recurrent)	4.4	4.6	3.7	4.8	4.1	5.6	5.4	3.6	4.7	3.6
Incidence (total)	38.8	38.7	38.5	40.1	38.2	40.3	42.3	41.4	43.4	42.0
Prevalence (missed matches per club per season)	134.7	118.7	131.0	129.2	138.3	146.7	147.1	151.2	153.8	157.1
New injury severity (average missed matches)	3.5	3.0	3.2	3.2	3.6	3.4	3.5	3.4	3.4	3.7
Recurrent injury severity (average missed matches)	3.2	3.2	3.7	4.0	4.6	4.5	3.7	4.8	4.4	4.6
Recurrence rate	13%	14%	11%	14%	12%	16%	15%	10%	12%	9%
Clubs participating	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	16/16	17/17
Average players per club	43.0	42.2	42.8	43.3	43.9	44.2	44.6	46.1	46.4	46.9

All Injuries	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Incidence (new injuries per club per season)	38.1	41.5	36.1	37.7	37.0	35.1	39.1	37.9	33.1	33.6
Incidence (recurrent)	3.6	5.1	4.4	4.0	3.7	2.7	3.8	3.2	1.6	3.5
Incidence (total)	41.7	46.6	40.5	41.7	40.7	37.8	42.9	41.1	34.7	37.1
Prevalence (missed matches per club per season)	147.7	158.1	146.0	156.2	139.8	141.3	163.5	168.2	-	-
New injury severity (average missed matches)	3.4	3.3	3.4	3.5	3.4	3.5	3.7	3.9	-	-
Recurrent injury severity (average missed matches)	4.9	4.0	4.7	3.7	3.0	3.9	3.9	3.6	-	-
Recurrence rate	9%	12%	12%	11%	10%	8%	10%	8%	5%	9%
Clubs participating	18/18	18/18	18/18	18/18	18/18	18/18	18/18	18/18	18/18	18/18
Average players per club	46.7	45.4	45.1	45.4	45.8	45.3	45.3	46.6	45.8	43.9

Note: Due to the compromised state league fixture during the COVID-19 pandemic, scaled incidence data was deemed to be the only relevant comparator to previous seasons. As a result, all injury prevalence data has been omitted from the 2021 AFL Injury Report. All incidence data contained in the 2021 AFL Injury Report reflects the average number of injuries per club scaled to a list size of 40 players over a season of 22 matches.

2 Injury Incidence – Total, New & Recurrent Injuries Per Club Per Season

Body Area	Injury	2021 Incidence		
		Total Injuries	New Injuries	Recurrent Injuries
Head	Concussion	3.68	3.59	0.10
	Fracture (e.g. Skull, maxilla, nose, mandible)	0.24	0.24	0
	Other head/face injury (e.g. Laceration, contusion, dental, eye injuries)	0.19	0.19	0
Neck	Facet joint/disc injury	0.15	0.15	0
	Fracture (e.g. Vertebral arch, transverse process)	0.05	0.05	0
	Other neck injury	0	0	0
Shoulder	Gleno-humeral joint - sprain/subluxation/cartilage/labral injury	0.58	0.53	0.05
	Gleno-humeral joint - dislocation	0.49	0.44	0.05
	AC joint - sprain/dislocation	0.63	0.58	0.05
	Sterno-clavicular (SC) joint - sprain/dislocation	0.05	0.05	0
	Clavicle – fracture	0.15	0.15	0
	Scapula – fracture	0.05	0.05	0
	Pectoral muscle - partial/complete tear	0.10	0.10	0
	Other shoulder injury (e.g. Rotator cuff tendinopathy, subacromial bursitis, etc)	0.10	0.10	0
Arm	Humerus fracture	0.05	0.05	0
	Other arm injury (e.g. Contusion)	0	0	0
Elbow	Elbow joint dislocation	0	0	0
	Elbow joint sprain (e.g. Medial ligament)	0	0	0
	Elbow fracture (e.g. Radial head)	0	0	0
	Other elbow injury (e.g. Chondral joint injury, ruptured biceps tendon, etc)	0	0	0
Forearm	Forearm (radius/ulna) fracture	0.05	0.05	0
	Other forearm injury (e.g. Contusion, muscle injury)	0	0	0
Wrist	Wrist sprain (e.g. Scapho-lunate ligament, distal radio-ulna joint, etc)	0.05	0.05	0
	Wrist (carpal bone) fracture (e.g. Scaphoid)	0.10	0.10	0
	Other wrist injury	0	0	0
Hand	Thumb/finger ligament injury	0.05	0.05	0
	Thumb/finger dislocation	0.10	0.10	0
	Hand fracture	1.16	1.12	0.05
	Thumb/finger tendon injury	0.10	0.10	0
	Other hand injury	0	0	0
Trunk	Costo-chondral joint sprain	0.05	0.05	0
	Rib fracture (including costal cartilage fracture)	0.24	0.24	0
	Internal chest or abdominal injury (e.g. Pneumothorax, bruised lungs, bruised/lacerated liver/spleen)	0.24	0.24	0
	Other chest or abdominal injury	0.05	0.05	0
Thoracic Spine	Thoracic Joint injury (e.g. Ligament sprain, facet joint arthropathy, disc degeneration, costo-vertebral joint, etc)	0	0	0
	Thoracic spine fracture (vertebral body, transverse process)	0	0	0
	Other thoracic spine injury	0	0	0

Lumbar Spine	Facet joint/Sacro-iliac joint mediated pain	0.10	0.10	0
	Fracture (e.g. Acute transverse process/spinous process, pars stress fracture)	0.39	0.39	0
	Disc injury (e.g. Prolapse)	0.63	0.58	0.05
	Other lumbar spine injury	0.15	0.15	0
Groin/Hip	Hip joint pain (i.e. Any intra-articular hip pathology e.g. Chondral, labral, FAI)	0.19	0.19	0
	Acute adductor strain	0.53	0.49	0.05
	Acute Iliopsoas strain	0.19	0.15	0.05
	Hip contusion (e.g. Iliac crest contusion)	0.15	0.15	0
	Chronic groin pain (including adductor tendinopathy, pubic bone stress, pubic symphysis overload)	1.07	0.87	0.19
	Other hip/groin injury	0.15	0.15	0
	Other buttock injury (e.g. Gluteal muscle strain, haematoma)	0	0	0
Hamstring	Hamstring strain	6.54	4.94	1.60
	Hamstring contusion	0.15	0.15	0
	Hamstring tendon rupture/avulsion	0.29	0.29	0
	Hamstring tendinopathy	0.10	0.10	0
	Other Hamstring (thigh) injury	0.34	0.34	0
Quadriceps	Quadriceps strain	0.44	0.44	0
	Quadriceps contusion	0.39	0.39	0
	Quadriceps tendon rupture/avulsion	0.10	0.10	0
	Quadriceps tendinopathy	0	0	0
	Other Quadriceps (thigh) injury	0.05	0.05	0
Knee	Meniscus injury	0.34	0.34	0
	Tibiofemoral joint articular cartilage (chondral) injury	0.19	0.15	0.05
	Patellofemoral joint articular cartilage (chondral) injury	0.39	0.39	0
	ACL injury	0.97	0.92	0.05
	MCL injury	0.73	0.68	0.05
	PCL injury	0.68	0.63	0.05
	LCL injury	0.19	0.19	0
	Patella tendon rupture/avulsion	0.05	0.05	0
	Patella tendinopathy	0.10	0.05	0.05
	Iliotibial band syndrome	0.19	0.15	0.05
	Other knee injuries	0.68	0.68	0
Leg	Acute leg (tibia and/or fibula) fracture	0.44	0.39	0.05
	Tibia stress fracture	0.19	0.19	0
	Fibula stress fracture	0.10	0.10	0
	Other leg injury	0.29	0.29	0
Calf	Calf strain	3.01	2.81	0.19
	Calf contusion	0.05	0.05	0
	Other calf (leg) injury	0.05	0.05	0
Achilles	Achilles tendon rupture/avulsion	0.05	0.05	0
	Achilles tendinopathy	0.58	0.34	0.24
Ankle	Cartilage injury	0.24	0.24	0
	Lateral/medial ligament sprain	1.26	1.26	0
	Syndesmosis injury	1.65	1.55	0.10
	Other ankle injury	0.63	0.58	0.05



Foot	Midfoot sprain (e.g. Lis franc injury)	0.34	0.24	0.10
	1st MTP joint sprain (turf toe)	0.24	0.19	0.05
	Acute foot fracture (e.g. Metatarsal)	0.05	0.05	0
	Foot stress fracture (e.g. Navicular, metatarsal, sesamoid)	0.39	0.39	0
	Plantar fascia rupture/avulsion	0.15	0.15	0
	Plantar fascia pain	0.05	0.05	0
	Other foot injury	0.44	0.39	0.05
Medical	Medical illness (including infections, mental health issues, etc)	1.36	1.26	0.10
Non-Specific	General soreness / management	0.15	0.15	0
	Non-football related injury	0.34	0.29	0.05
TOTAL		37.1	33.6	3.5

Note: All incidence data contained in the 2021 AFL Injury Report reflects the average number of injuries per club scaled to a list size of 40 players over a season of 22 matches.

3 Injury Incidence By Year – Total Injuries Per Club Per Season

Body Area	Injury	Total Incidence		
		2019	2020	2021
Head	Concussion	1.92	1.30	3.68
	Fracture (e.g. Skull, maxilla, nose, mandible)	0.46	0.41	0.24
	Other head/face injury (e.g. Laceration, contusion, dental, eye injuries)	0.18	0.06	0.19
Neck	Facet joint/disc injury	0	0	0.15
	Fracture (e.g. Vertebral arch, transverse process)	0.14	0.12	0.05
	Other neck injury	0.05	0	0
Shoulder	Gleno-humeral joint - sprain/subluxation/cartilage/labral injury	0.59	0.36	0.58
	Gleno-humeral joint - dislocation	0.32	0.47	0.49
	AC joint - sprain/dislocation	0.46	0.59	0.63
	Sterno-clavicular (SC) joint - sprain/dislocation	0.09	0.06	0.05
	Clavicle – fracture	0.18	0.24	0.15
	Scapula – fracture	0.09	0.18	0.05
	Pectoral muscle - partial/complete tear	0	0.30	0.10
	Other shoulder injury (e.g. Rotator cuff tendinopathy, subacromial bursitis, etc)	0.18	0.18	0.10
Arm	Humerus fracture	0.05	0	0.05
	Other arm injury (e.g. Contusion)	0	0	0
Elbow	Elbow joint dislocation	0.05	0.06	0
	Elbow joint sprain (e.g. Medial ligament)	0.09	0	0
	Elbow fracture (e.g. Radial head)	0	0	0
	Other elbow injury (e.g. Chondral joint injury, ruptured biceps tendon, etc)	0	0.06	0
Forearm	Forearm (radius/ulna) fracture	0.05	0.06	0.05
	Other forearm injury (e.g. Contusion, muscle injury)	0.05	0	0
Wrist	Wrist sprain (e.g. Scapho-lunate ligament, distal radio-ulna joint, etc)	0	0.06	0.05
	Wrist (carpal bone) fracture (e.g. Scaphoid)	0	0.06	0.10
	Other wrist injury	0.14	0	0
Hand	Thumb/finger ligament injury	0	0	0.05
	Thumb/finger dislocation	0.05	0.12	0.10
	Hand fracture	0.14	0.89	1.16
	Thumb/finger tendon injury	0.46	0.06	0.10
	Other hand injury	0	0	0
Trunk	Costo-chondral joint sprain	0.05	0.06	0.05
	Rib fracture (including costal cartilage fracture)	0.05	0.47	0.24
	Internal chest or abdominal injury (e.g. Pneumothorax, bruised lungs, bruised/lacerated liver/spleen)	0.23	0	0.24
	Other chest or abdominal injury	0.32	0.24	0.05
Thoracic Spine	Thoracic Joint injury (e.g. Ligament sprain, facet joint arthropathy, disc degeneration, costo-vertebral joint, etc)	0.14	0.06	0
	Thoracic spine fracture (vertebral body, transverse process)	0	0	0
	Other thoracic spine injury	0	0.12	0

Lumbar Spine	Facet joint/Sacro-iliac joint mediated pain	0.18	0.12	0.10
	Fracture (e.g. Acute transverse process/spinous process, pars stress fracture)	0.23	0.41	0.39
	Disc injury (e.g. Prolapse)	0.64	0.53	0.63
	Other lumbar spine injury	0.27	0.47	0.15
Groin/Hip	Hip joint pain (i.e. Any intra-articular hip pathology e.g. Chondral, labral, FAI)	0.82	0.30	0.19
	Acute adductor strain	0.96	0.53	0.53
	Acute Iliopsoas strain	0.32	0.12	0.19
	Hip contusion (e.g. Iliac crest contusion)	0.09	0.12	0.15
	Chronic groin pain (including adductor tendinopathy, pubic bone stress, pubic symphysis overload)	0.96	0.83	1.07
	Other hip/groin injury	1.10	0.77	0.15
	Other buttock injury (e.g. Gluteal muscle strain, haematoma)	0.14	0.18	0
Hamstring	Hamstring strain	6.07	5.27	6.54
	Hamstring contusion	0	0.06	0.15
	Hamstring tendon rupture/avulsion	0.18	0.47	0.29
	Hamstring tendinopathy	0.09	0.36	0.10
	Other Hamstring (thigh) injury	0.41	0.36	0.34
Quadriceps	Quadriceps strain	1.19	1.60	0.44
	Quadriceps contusion	0.41	0.24	0.39
	Quadriceps tendon rupture/avulsion	0.05	0.06	0.10
	Quadriceps tendinopathy	0	0	0
	Other Quadriceps (thigh) injury	0.18	0.06	0.05
Knee	Meniscus injury	0.50	0.30	0.34
	Tibiofemoral joint articular cartilage (chondral) injury	0.55	0	0.19
	Patellofemoral joint articular cartilage (chondral) injury	0.27	0.30	0.39
	ACL injury	0.87	0.95	0.97
	MCL injury	0.96	0.36	0.73
	PCL injury	0.27	0.41	0.68
	LCL injury	0.32	0.24	0.19
	Patella tendon rupture/avulsion	0.05	0.06	0.05
	Patella tendinopathy	0.18	0.06	0.10
	Iliotibial band syndrome	0.14	0.24	0.19
	Other knee injuries	1.14	0.77	0.68
Leg	Acute leg (tibia and/or fibula) fracture	0.18	0	0.44
	Tibia stress fracture	0.23	0	0.19
	Fibula stress fracture	0.18	0	0.10
	Other leg injury	0.50	0.12	0.29
Calf	Calf strain	3.74	2.79	3.01
	Calf contusion	0.23	0.36	0.05
	Other calf (leg) injury	0.18	0.18	0.05
Achilles	Achilles tendon rupture/avulsion	0.09	0.12	0.05
	Achilles tendinopathy	0.46	0.36	0.58
Ankle	Cartilage injury	0.50	0.06	0.24
	Lateral/medial ligament sprain	1.32	1.24	1.26
	Syndesmosis injury	1.10	0.89	1.65
	Other ankle injury	0.41	0.18	0.63



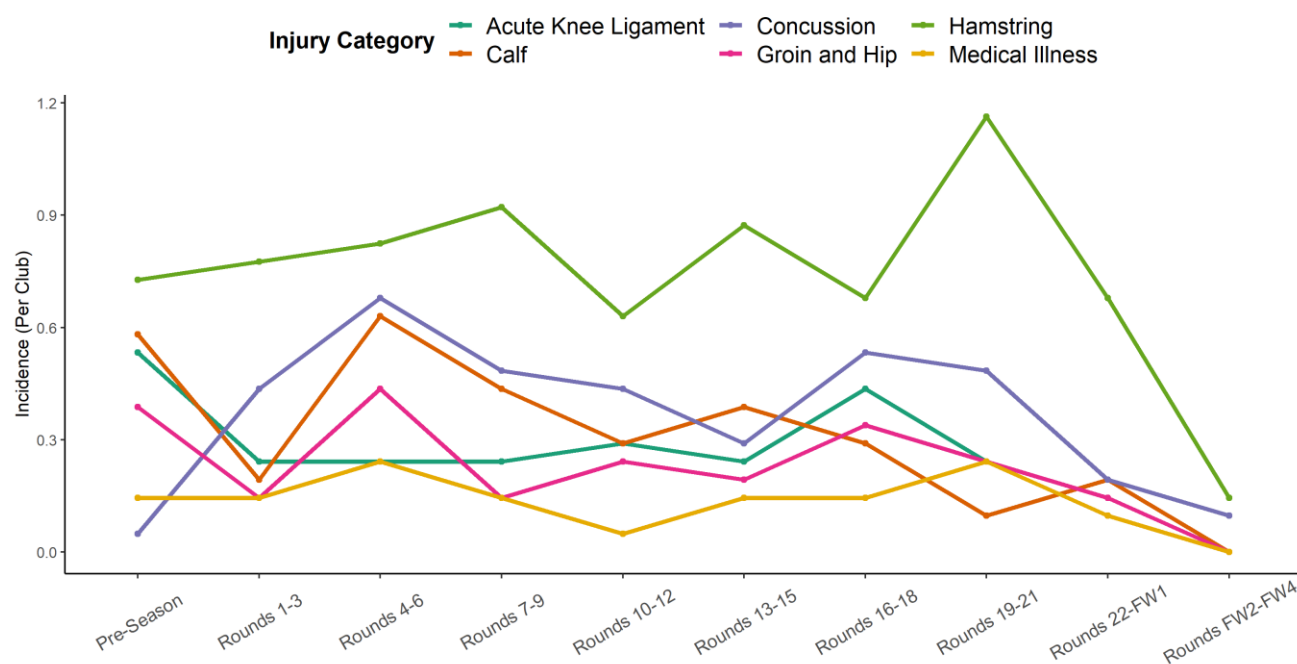
Foot	Midfoot sprain (e.g. Lis franc injury)	0.23	0.36	0.34
	1st MTP joint sprain (turf toe)	0.37	0.36	0.24
	Acute foot fracture (e.g. Metatarsal)	0.32	0.71	0.05
	Foot stress fracture (e.g. Navicular, metatarsal, sesamoid)	0.78	0.71	0.39
	Plantar fascia rupture/avulsion	0.09	0.12	0.15
	Plantar fascia pain	0.09	0.06	0.05
	Other foot injury	0.27	0.36	0.44
Medical	Medical illness (including infections, mental health issues, etc)	3.56	2.13	1.36
Non-Specific	General soreness / management	0.05	0.06	0.15
	Non-football related injury	0.18	0.41	0.34
TOTAL		41.1	34.7	37.1

Note: All incidence data contained in the 2021 AFL Injury Report reflects the average number of injuries per club scaled to a list size of 40 players over a season of 22 matches.

4 Injury Incidence Breakdown

Injury Category	2021 Incidence	2021 Injuries		
		Match	Training	Other
Concussion	3.68	89%	11%	0%
Other Head and Neck	0.63	69%	23%	8%
Shoulder	2.13	77%	20%	2%
Arm, Elbow, Wrist and Hand	1.65	71%	29%	0%
Trunk and Back	1.84	39%	53%	8%
Groin and Hip	2.28	51%	45%	4%
Hamstring	7.42	70%	29%	1%
Quadriceps	0.97	55%	45%	0%
ACL (Knee)	0.97	60%	30%	10%
MCL, PCL, LCL (Knee)	1.60	91%	6%	3%
Other Knee	1.94	52%	42%	5%
Ankle	3.78	69%	27%	4%
Calf	3.10	48%	52%	0%
Achilles	0.63	92%	8%	0%
Other Leg and Foot	2.67	60%	33%	7%
Medical Illness	1.36	-	-	-
Non-Football Injuries & General Soreness	0.49	-	-	-
TOTAL	37.1	66%	30%	4%

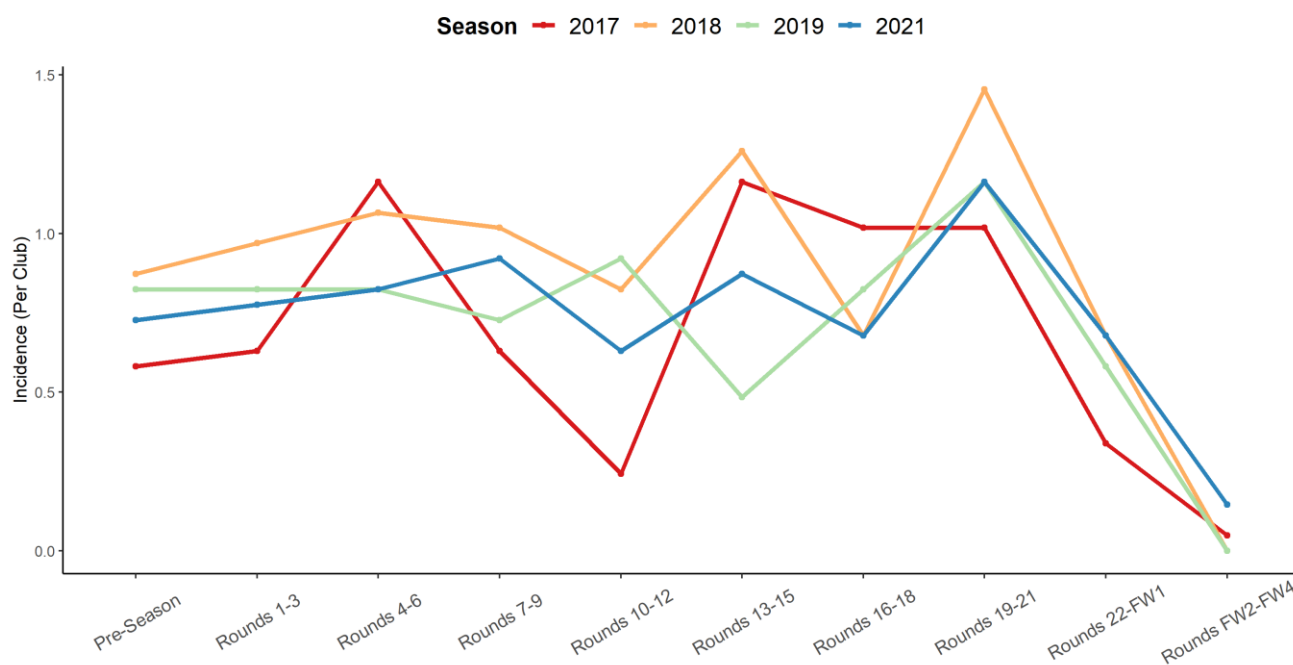
5 Injury Incidence Timing Breakdown – Total Injuries Per Club Per Round



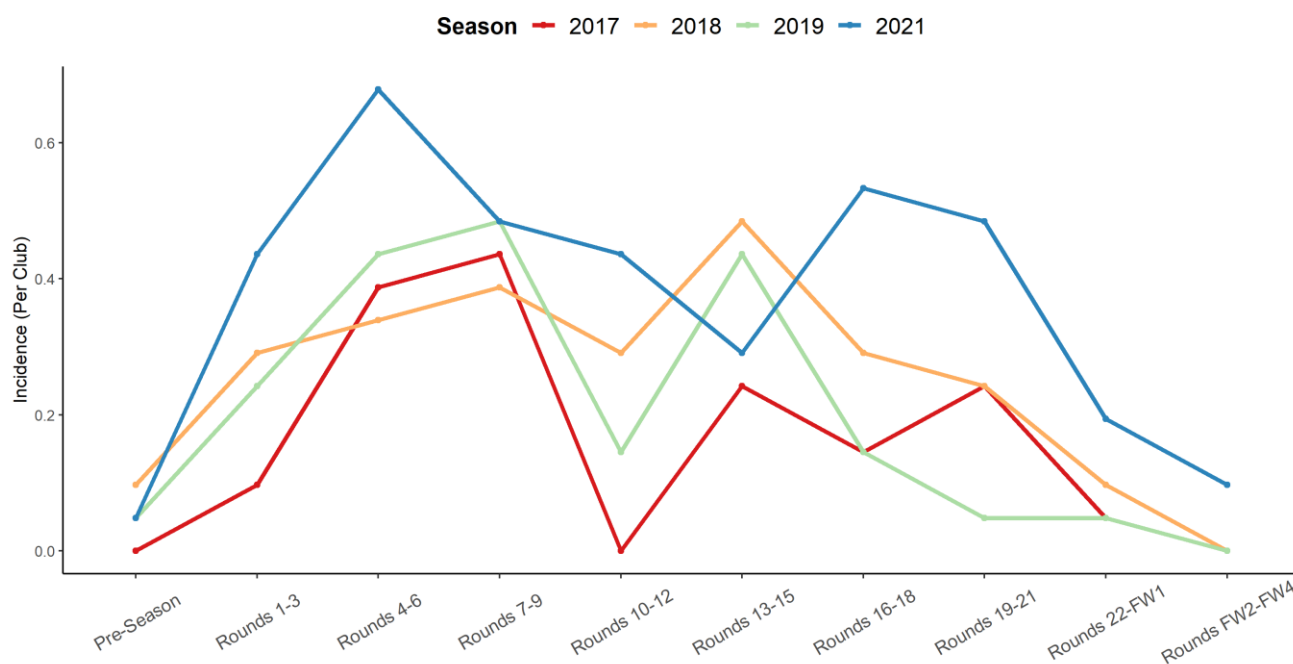
Note: The Pre-Season total includes all injuries from training sessions and pre-season matches resulting in the player missing Round 1 of the 2021 AFL Premiership Season. Round 12 comprised of 6 AFL Premiership Season matches, Round 13 comprised of 7 AFL Premiership Season matches and Round 14 comprised of 5 AFL Premiership Season matches. All other rounds comprised of 9 AFL Premiership Season matches. There were 9 AFL Finals Series matches played in 2021.

6 Injury Incidence Timing Breakdown – Total Hamstring and Concussion Injuries Per Club Per Round Per Season

6.1 Hamstring Incidence



6.2 Concussion Incidence



Note: The Pre-Season total includes all injuries from training sessions and pre-season matches resulting in the player missing Round 1 of the respective AFL Premiership Season.

7 AFL Concussion Audit – Diagnosed Concussions From AFL Matches (Regardless of Matches Missed)

Year	Number of Concussions	Number of Clubs	Matches	Player Hours	Incidence (Per 1000 Player Hours)	Average AFL Concussions Per Club	Incidence (Per Club Per Season)*
2011	75	17/17	392	9,408	7.97 (95% CI 6.17-9.78)	4.41	8.42
2012	68	13/18	300	7,200	9.44 (95% CI 7.20-11.69)	5.23	9.97
2013	61	17/18	389	9,336	6.53 (95% CI 4.89-8.17)	3.59	6.90
2014	58	18/18	414	9,936	5.84 (95% CI 4.34-7.34)	3.22	6.16
2015	52	16/18	360	8,640	6.02 (95% CI 4.38-7.65)	3.25	6.36
2016	63	17/18	391	9,384	6.71 (95% CI 5.06-8.37)	3.71	7.09
2017	63	17/18	392	9,408	6.70 (95% CI 5.04-8.35)	3.71	7.07
2018	74	18/18	414	9,936	7.45 (95% CI 5.75-9.14)	4.11	7.86
2019	65	18/18	414	9,936	6.54 (95% CI 4.95-8.13)	3.61	6.91
2020	42	18/18	324	6,221	6.75 (95% CI 4.71-8.79)	2.33	7.13
2021	74	18/18	414	9,936	7.45 (95% CI 5.75-9.14)	4.11	7.86
TOTAL	693	187	4204	99,338	7.02 (95% CI 6.50-7.54)	3.71	7.37

* Calculated as number of concussions per club per season (assuming 40 players and 22 rounds per season).

8 Observations

- The 2021 AFL Injury Report has been presented in a more concise format due to the compromised state league fixture. This significantly limited the accuracy of injury prevalence data, resulting in it being omitted from the 2021 AFL Injury Report.
- Total injury incidence (33.6 new injuries per club) remained stable compared to the 2020 season (33.1 new injuries per club). 2021 injury incidence decreased compared to the 2017 (35.1 new injuries per club), 2018 (39.1 new injuries per club) and 2019 (37.9 new injuries per club) AFL seasons.
- The three most common injuries in 2021 were hamstring strains, concussions and calf strains.
- The injury recurrence rate (9%) remains low and has been relatively stable over the past 5 years.
- Hamstring strains remain the most common injury, with an incidence of 4.94 new injuries per club. The incidence of hamstring strains in 2021 was comparable to the 2020 season (4.86 new injuries per club) as well as the 2017 (5.35 new injuries per club) and 2019 (5.11 new injuries per club) seasons but was decreased compared to the 2018 season (6.35 new injuries per club). Incidence of hamstring strains was at its highest between Rounds 19 and 21. On average, hamstring strains resulted in 20 missed AFL matches per club during the 2021 season. This prevalence rate is comparable to the 2017 to 2020 seasons.
- The incidence of concussions causing matches to be missed increased to 3.68 injuries per club in the 2021 AFL season. Although this is higher than the incidence observed in the 2020 AFL season (1.30 concussion injuries per club), the increase was expected in line with updates made to the AFL & AFLW Concussion Guidelines for 2021. The more conservative approach to return-to-play means that the earliest a player can return to play after a concussion is 12 days, meaning that the majority of players with a concussion will miss at least one match and are therefore represented in the incidence figures. Injuries sustained before a bye or in the last match of the year may not miss a match and consequently would not be included in the overall incidence figures.
- The concussion audit – summarised in Table 7 – encompasses concussion incidence regardless of whether a match was missed. The incidence of all concussions (regardless of whether a match was missed or not) remains relatively stable (7.45 per 1000 player hours, 95% confidence interval 6.50 - 7.54) compared to previous seasons.