Additional file 2

Table 1: Methodological details and injury incidence of Netball descriptive epidemiological studies using hospital records, clinic records and insurance claim databases.

Study	Design	Population	Year(s) of study	Country of origin	Injury Definition	Injury Incidence	Body Region
Purdam (1987) [29]	Prospective study: data obtained from physiotherapy dept at AIS	Elite Netball and Basketball players at AIS. 20 Netball players	1986	AUS	All injuries presented to physiotherapy dept for treatment. Severity: based on no. treatments. Recurrent inj: inj > 1 mth from discharge	105 injuries. 5.25 inj/player/y	All
Hume (1993)[30]	Retrospective study: data obtained from health data, hospital emergency department, accident compensation and sports inj clinic databases	Total population of Netball players in New Zealand, estimated to be 98,680 in 1989– 1990 15+ y plus children 5-15 y, 143 netball hospitalisations, age 5+ y	1988 – 1992	NZ	Any inj reported to hospital ED, ACC, sports injury clinic or recorded in health statistics. Severity: Abbreviated Injury Severity score	Netball hosp rate: 143/100,000 players/y; Netball ED data: 7.7% all sport attendances; 9.5% players inj/y; Netball clinic data: 4.5%–5.3% players inj/y Netball sport insurance claims: 4.5 – 5.6% players inj/y	All
Hume & Marshall (1994)[31]	Retrospective study: data obtained from health, hospital emergency department, accident compensation and sports inj clinic databases	Netball population: 155,592 netball participants, 139 hospitalisations, age 15 y +	1978 – 1990	NZ	All injuries occurring in a place of recreation & sport, involving organised sporting activity or training for such. Severity: Abbreviated Injury Severity score	Netball inj rates: 3.1%– 27.0% of all sports inj. Hosp rate: 89.34/ 100,000 population	All
Finch et al. (1998)[12]	Retrospective study: hospital emergency department data collated by NISU. Standardised data collection form completed	General population: 98,040 sports and active recreation participants presenting to ED's. 2165	1989 – 1993	AUS	All injuries presented to ED. Severity: proxy measure of hosp admission after ED attendance.	Child netball inj 3.7%; adult netball inj 6.6% of all sport inj presentations	All

	by inj person, inj diagnosis and treatment completed by doctor	child (<15 y), 3098 adults (> 15 y) netball presentations					
Love et al. (1998)[32]	Retrospective study: data obtained from ACC database of sport injury dental claims	General population: 260 netball claims, age range 0 – 75+	1993 – 1996	NZ	Any new and minor dental claims made during each year. New claims are those that paid the claimant. Minor claims paid the health professional but not the claimant	260 netball dental claims/y	Dental
Hassan & Dorani (2001)[33]	Prospective study: all sports-related fractures reported to A&E Dept in a district hosp in NE, England	General population: 1255 children age 5– 15 y presented with sport inj, 54 netball presentations	1997 – 1998	UK	An injury while participating in sport that led to presentation at A&E. Severity: Injury Severity Score (ISS)	54 netball inj: 24% of A&E netball inj were fractures	All (Fractures)
Hon et al. (2001)[34]	Prospective study: all sports-related fractures presenting at Dept of Orthopaedic & Traumatology in a state hosp in W, Malaysia	General population: 113 patients presenting with fractures, 3 netball players. Age range 7 – 59 y	1998 – 1999	MAL	All fractures sustained during sports activity presenting to Dept of Orthopaedic & Traumatology	3 fractures out of 113: 2.7% of fractures in netball players	All (Fractures)
Cassell et al. (2003)[35]	Retrospective study: data obtained from hosp admissions, ED and GP presentations in catchment area of a regional hosp in Victoria, Australia	General population: age 4+ y, estimated 69,663 in study area. 2300 medically treated sports inj; netball 81ED, 67 GP	1994 – 1995	AUS	All sporting injuries receiving medical treatment recorded by 3 injury surveillance systems. Severity: length of hosp stay	Netball inj presentations: ED 6.9%; GP 6.7%	All
Chong & Tan (2004)[36]	Retrospective study: data obtained from medical records and telephone interviews of all ACL ligament reconstructions	General population: 259 patients with ACL ligament reconstruction: 13 female patients, 4 netball players (3 school,	1999 – 2002	SNG	All female ACL injuries requiring reconstruction	4 ACL inj of 13: 31% ACL inj to netball players	Knee (ACL)

	from Dept Orthopaedic Surgery in E, Singapore	1 club). Mean age 23 y, range 13-38 y					
Otago & Peake (2007)[37]	Retrospective study: accepted netball insurance claims in Victoria, Australia, over a 12-m period	Total population of registered state netball players (age 10 y+), covered by insurance scheme: total 87,331. 829 insurance claims.	1999	AUS	All inj resulting in accepted insurance claims	9.49 inj/1000 netball players	All
Smartt & Chalmers (2009)[38]	Retrospective study: records of netball inj hosp over 6 y. Data obtained from linked public hospital discharges, and ACC claim datasets	Estimated population of netball players in New Zealand: 255,700 players, 1126 netball inj cases, age 5 y +	2000 – 2005	NZ	All netball inj cases recorded in hospital discharge datasets. Severity: Injury Severity score (ICISS)	Population inj rate: 5/100,000 netball participants	All
Flood & Harrison (2009)[39]	Retrospective study: netball and basketball inj resulting in hosp admission, data obtained from National Hospital Morbidity Database; over 4 y	Netball and Basketball population estimates. 5090 basketball-related, 4596 netball-related hospital admission. Age 5–54 y	2000 – 2004	AUS	All netball and basketball patients discharged from a private or public hospital over 5 y period	Av annual hosp rates: Basketball 1.7/1000 participants; Netball 1.4/1000 participants	All
Gianotti et al. (2009)[40]	Retrospective population-based study: knee ligament inj data from ACC records over 5 y	General population of New Zealand: approximately 4.1 million people. 3997 sport-related in: 746 netball. Age 0–85 y+	2000 – 2005	NZ	Any personal injury resulting in an ACC claim made at time of medical treatment	746 Netball ACLS; 18.7% of all sport-related ACLS inj	Knee ligaments
Gwynne-Jones et al. (2011)[41]	Retrospective study: patients identified from ED, in-patient, surgical audit and physiotherapy dept records, treated over 8.5 y	General population: 363 patients, 15– 60 y. 285 sport-related inj, 88 netball inj	1999 – 2008	NZ AUS	A complete, traumatic closed rupture of the Achilles tendon in hospital patients. Recurrent inj: re-ruptures	24/100,000 population Achilles ruptures	Achilles Tendon

Jansen et al. (2011)[42]	Retrospective study: ACLR data from National Hospital Morbidity Database, over 5 y	General population: 50,187 patients with ACLR over 5 y. 576 annual netball participants	2003 – 2008	AUS	All ACLR in study period concerning the population	Annual netball ACLR 1085: 188/100,000 participants	Knee (ACL)
Fernando et al. (2018)[43]	Retrospective case series: sport & recreation injuries presented to ED's across 38 hosp in Victoria, Australia, over 3 y; data recorded in Victorian Emergency Minimum Dataset	General population: 171,541 ED presentations, age 5+ y; 5483 netball ED presentations	2012 – 2015	AUS	All sports & recreation injuries reported to ED's	Netball ED presentations 4.7% of total. Annual inj rate 38.7/100,000 population	All
Joseph et al. (2019)[44]	Retrospective study: netball specific inj recorded in national insurance claim database over 1 season	All players registered to play in Netball Australia organised competition receiving insurance cover. Total participants 413,800 players. 1215 netball inj claims. Mean age 34 SD 17 y	2016	NZ	A netball injury resulting from an accident during matches or training for an organised Netball Australia competition	2.9 claims per 1000 participants	All
King et al. (2019)[45]	Retrospective study: sport-related inj data obtained from ACC. Moderate-to-serious & serious inj claims from 5 sports, including netball, over 5 y	General population: 853,824 total claims; 11,757 total netball claims. Severity: minor, moderate & serious claims	2012 – 2016	UK	Any injury assessed by a registered health practitioner as a result of sports participation. Severity based on treatment & time-loss classified as minor, moderate-to-serious, serious	Netball inj: 11,748 moderate-to-serious inj claims; 9 serious inj claims	All
Kirkwood et al. (2019)[13]	Retrospective ecological study: sports injury data from two sources; ED data & in-patient data from 2 hosp in	General population: Children and adolescents 0 – 19 y attending hosp; 11,676 sports inj ED	2012 – 2014		Any sports-related inj attendances at AE depts	157 netball injuries	All

	Oxfordshire, England, over 2.25 y	attendances, 154 netball attendances					
Sutherland et al. (2019)[46]	Cross-sectional study: Sports injury ACLR data from ACC, over 8 y	General population: 20,751 male and female ACLRs. 3088 netball claims. Mean age 29 SD 11 y	2009 – 2016	NZ	Any injuries involving claims made for primary ACLR	Netball 3088 (20%) of sports-related ACLR claims	Knee (ACL)
Belcher et al. (2020)[47]	Retrospective study: audit of netball injury ACC claims, over 10 y	Total population of Netball New Zealand affiliated members. Age range 10–24 y	2008 – 2017	NZ	New netball-related claims involving 4 treatments or more, or cost > $100NZD	20–24 y group highest 10 y inj rate: Ankle 77.8, Knee 71.6/1000 players. 10–14 y group highest increase in inj risk 2008–2017: Ankle 84% IRR 1.9, knee 133% IRR 2.5	Ankle & Knee
Chan et al. (2021)[48]	Retrospective study: ACLR data from electronic medical records & registry data of tertiary public hospital in Singapore, over 3.5 y	General Asian population: 696 male and female patients, 21 netball participants	2013 – 2016	SING	All ACL injuries involving primary ACLR, on ACLR registry. Recurrent: concomitant inj	Netball 21 injuries (4.3%) of all ACLR patients	Knee (ACL)
Mitchell et al. (2021)[49]	Cross-sectional study: Acute sports-related inj presented to fracture clinic at Peterborough city hospital, England, over 1 y	General population of school age children (6-18 y), 54 netball presentations	2018 – 2019	UK	All sports-related inj in school age children, reporting to fracture clinic. Severity: surgical treatment equals severe injury	Netball 54 injuries: 1 (2%) requiring surgery, 6 (11%) requiring physiotherapy	All (Fractures)

AUS, Australia; NZ, New Zealand; UK, United Kingdom; MAL, Malaysia; SING, Singapore; AIS, Australian Institute of Sport; Inj, injury/injuries; Hosp, Hospitalisation; y, years; m, month; SD, standard deviation; NISU, Australian National Injury Surveillance Unit; ACC, Accident Compensation Corporation; A&E Dept, Accident and Emergency Department, NE, North East, W, Western; ED, Emergency Department; GP, General Practitioner; E, Eastern; ACLS, Anterior Cruciate Ligament surgeries; ACLR, Anterior Cruciate Ligament reconstruction, IRR, Incidence Rate Ratio's

Table 2: Methodological details and injury incidence of Netball descriptive epidemiological studies from injury surveillance of competitions.

Study	Design	Population	Year(s) of study	Country of origin	Injury Definition	Injury Incidence	Body Region
Hopper, (1986)[27]	Prospective cohort study: questionnaire completed by inj player and Physio post treatment. 14-wk State competition	Recreational to competitive level Junior (12–15 y) & Senior (16 y +) netball players. Total 3,108 players	1983	AUS	Any injury presenting to First Aid room requiring immediate medical care or with some form of disability. Minor inj not included.	158 inj. 5.2% of population. 50.83/player/ match	All
Hopper et al. (1995a)[50]	Prospective cohort study: questionnaire completed by inj player and Physio post treatment. 14-wk State competition over 5 y	Recreational to competitive level netball players, 14 y + (mean age 18.8 ±5.6 y). Total 11,228 players	1985–1989	AUS	Any inj presenting to First Aid room requiring immediate medical care or presented with some form of disability. Minor inj not included. Severity identified by Physio, graded 1, 2 or 3 based on symptoms.	608 inj. 5.4% inj or 0.054/player /match	All
McKay et al. (1996)[51]	Prospective cohort study: netball and basketball inj; trained observers recorded inj, players completed questionnaire & follow-up telephone interviews monitored inj progress over 2 seasons	Elite & recreational players. Total 16,162: 6,972 basketball players & 9,190 netball players, mean age 27.2 y SD 7.8	1991–1992	AUS	An action in which the player perceived bodily harm had been sustained, causing stoppage of play, substitution or obvious disability. Severity classified on time-lost as trivial, minor, substantial, major, severe	Netball 159 inj; 17.30 inj/1000 netball players. Basketball 127 inj; 18.22 inj/1000 basketball players.	All
Pringle et al. (1998)[52]	Cross-sectional study: trained observers collected rugby union, rugby league & netball inj data on standardised incident form, over 4-wk period. Follow-up telephone interviews by Physio's monitored inj participants until recovery	Junior recreational level. Ages 5–16 y. Total participants 5174; 1512 netball players	Not Known	NZ	All inj that impaired a player's performance. Severity classified on time-lost as minor or moderate	Netball 15 inj: 13inj/1000 players hrs. Moderate rate: 6/1000 player hrs	All
			1995	AUS			All

Hume & Steele (2000)[53]	Prospective cohort study: questionnaire completed by inj player reporting for medical treatment during 3-day State Champs	Sub-elite players U17, U19, U23 & Open (over 23y). Total of 940 netball players.	1997	AUS	All players reporting for treatment of any inj incurred during the 3-day champs	131 inj: 0.14/ player; 139.4 inj/1000 players; 23.8/1000 playing hrs	All
Stevenson et al. (2000)[54]	Prospective cohort WASIS study: Baseline data and incidence of injury over 1x 5-m season, self-report questionnaire with follow-up telephone interview once/m over season	Community level sports clubs from 4 sports. Total 1512 participants; 258 netball players, age 13–30 y, mean 22 y	1997–1998	AUS	Council of Europe definition: any inj occurring during sports participation leads to: reduction in sports activity, need for advice/treatment and/or adverse economic or social effects. Severity based on level of treatment graded minor, moderate or severe	112 netball inj:12.1 inj /1000 hrs of participation	All
Finch et al. (2002)[55]	Prospective cohort WASIS study: Baseline data and incidence of injury over 2 consecutive 5-m seasons, self-report questionnaire with follow-up telephone surveys once/m over season	Community level sports clubs from 4 sports. Total 999 participants; 247 netball players, age 13-30 y, mean 22 y	Not Known	AUS	Council of Europe definition: see Stevenson et al. (2000)	216 inj: 19.2% netball players inj:11.3 inj/1000 hrs of participation	All
Finch & Cassell (2006)[56]	Retrospective cohort study: self-report household telephone survey of active recreation inj, over 12 m period.	General population; recreational level. Total 1084 participants; ages 5 y+. 648 across all sports	2009	SA	Any inj during sport or active recreation regardless of treatment or time loss. Significant injury: required treatment, interfered daily activity &/or impacted subsequent activity	34 netball inj: 19 inj/10,000 population; 51/1000 participants; 24/1000 significant inj	All
Langeveld et al. (2012)[15]	Prospective cohort study: questionnaire completed by team manager, coach or medical staff daily during USSA & national champs: 3 x tournaments over 4-6 days	Elite/Sub-elite U19, U21 & Senior players. 1280 netball players			Any physical complaint during a netball match or training requiring medical attention. Severity: no. missed matches. Recurrent inj: same type as	205 inj in 192 players; 15% one or more inj. 500.7 inj/1000 playing hrs.	

					index inj post recovery from index inj		
			2010	SA			All
Pillay & Frantz (2012)[57]	Cross-sectional study: self-report questionnaire of player inj during National netball tournament 2010. Recall period of 1 netball season	Elite/Sub-elite level netball players. Total 360 players: 55 Club (24.1±6.3 y); 147 Provincial (23.9±5.1); 52 National (24.3±4.3)			Any physical complaint during match or training irrespective of need for medical attention or time loss. Severity based on symptoms graded as mild, moderate, severe. Repeated inj defined as inj to same site	301 inj in 157 players; 1.9 inj/player over 1 season. 61.8% players inj; Club level 54.5%, Provincial 59.2%, National 84.3%	
			2003> 2007	JAM			All
Singh et al. (2013)[58]	Retrospective cohort study: self-report questionnaire of player inj & related inj factors, over 5 y period	Elite/Sub elite players: Senior (over 21 y), U21 & U16 age groups. Total of 59 players			Trauma to body resulting in the cessation of play. Severity: Grade I, II or II. Recurrent inj: repeated inj to same site	70 inj, 68% players inj; 29% sustained at least 1 inj; 27% 2 inj; 12% 3 inj	
			Not Known	SA			All
Ellapen et al. (2015)[59]	Retrospective cohort study: self-report questionnaire of netball inj history & related inj factors, recall period 12 m	Junior (school) level netball players, age 13–17 y. Total 413 players			Distress or pain while playing netball preventing physical activity for > 1 day. Pain severity rating 1–5: no pain, mild, moderate, severe, worst pain	258 inj; 62% of players inj	
			2018	AUS			Overuse inj of knee, ankle & shoulder
Bissell & Lorentzos (2018)[60]	Prospective cohort study: self-report questionnaire on overuse inj (Oslo Sports Trauma Center questionnaire) completed 1x/wk over 12 wk season	Recreational/Club level players. Total 37 players, adults < 45 y			All players reporting overuse inj during the 12 wk season. Severity score 0–25: 0 no problems, 25 most severe time-loss and pain	Overall inj prevalence: 77.7%. 25% significant overuse inj	
			2018	AUS			All
Smyth et al. (2020)[61]	Prospective cohort study: medical attention & self-report inj data recorded at National Netball champs over 6 consecutive days	Sub-elite level netball players. Total 192 players; 96 U17, 96 U19			IDCF: Any inj that required physio assessment irrespective of time-loss. Sports incapacity: inj resulted in any match time-loss or reduction in capacity based on HPQ.	103 medical attention inj in 80 players: 89.4 inj/1000 player hrs. Sports incapacity: 19.1	

						inj/1000 player hrs.	
Botha et al. (2020)[62]	Cross-sectional study: standardised self-report questionnaire on inj & training modalities at 2 tournaments.	Junior (U15, U16) & Senior (U19) school level netball players. Total 560 players: 220 U15, 220 U16, 120 U19.	2015 & 2017	SA	Any physical complaint during netball match-play or training requiring medical attention	46 inj: 17 U15, 20 U16, 9 U19. 22.5 inj/1000 playing hrs: 22.8 U15, 22.8 U16, 21.2 U19.	All
Sinclair et al. (2020)[63]	Cross-sectional study: inj diagnosed by medical doctor. Inj questionnaire completed with support of research assistant weekly. Inj data collected over 2 consecutive seasons	U18 secondary school, U19, U21 & Senior Elite Free State netball players. Total 96 players	2017–2018	SA	Any physical complaint during netball match-play or training requiring medical treatment, loss of time or performance restriction. Severity: based on time-loss categories slight, minor, moderate, major	48 inj: 33.9 inj/1000 hrs of match play	All
Janse van Rensburg et al. (2021)[16]	Prospective cohort study: inj data collected during Netball World Cup 2019; 10-day tournament. Inj surveillance forms completed by team physician &/or venue medical doctors.	Elite level players: 16 national teams. Total 192 players, mean age 26.6 y	2019	SA	Any newly acquired inj & exacerbations requiring medical attention during the tournament. Severity: number days lost Recurrent inj: recovery from index injury and subsequent presentation of same inj	49 match-play inj in 39 players: 54.8/1000 player hrs. Prevalence 20.3%	All
Toohey et al. (2022)[64]	Prospective cohort study: inj data collected during SSN (pre-season, in-season & off-season), over 3 consecutive seasons. Data recorded by medical doctor or Physiotherapist using centralised database	Elite level players: 8 teams, total 119 players: mean age 25.4 SD 4.2 y	2017 – 2019	AUS	All inj requiring medical attention and time-loss. Severity based on length of time-loss. Subsequent injury: any inj following initial inj in time period	866 inj in 102 players over 3 seasons: 3.9 inj/365 player days. Time-loss inj: 1.8 inj/365 player days	All

AUS, Australia; NZ, New Zealand; SA, South Africa; JAM, Jamaica; UK, United Kingdom; Inj, injury/injuries; Physio, Physiotherapy/Physiotherapist; Champs, Championships; y, year; m, month; wk, week; hrs, hours; Av, Average; U, Under; SD, standard deviation; AIS, Australian Institute of Sport; NISU, National Injury Surveillance Unit; WASIS, Western Australian Sports Injury Study; IDCF, Concurrent Injury Definitions Concept Framework; HPQ, Oslo Sports Trauma Research Centre Health Problems Questionnaire SSN, Suncorp Super Netball League

Table 3: Methodological details and results of Netball analytic epidemiological studies

Study	Design	Population	Year(s) of study	Country of origin	Injury Definition	Injury Incidence	Risk Factors	Results
Hopper & Elliott, (1993)[65]	Retrospective & Prospective cohort study: questionnaire of lower limb & back inj history & inj data during champs. Podiatric assessment at start of champs.	Elite/Sub-elite U16, U21 & Open (over 21) players at national netball champs. Total 228 players.	1988	AUS	A lower limb or back disability that caused pain or some form of dysfunction. Severity based on deformation grades 1–3	52 inj: 23% inj during champs. 504 previous inj	Age, previous inj, level of comp, taping/bracing, quarter & time in quarter, perceived inj cause, lower limb & back podiatric assessment. Foot types classified as: normal, rearfoot varus, pronated foot or other	No significant differences between inj v non-inj players for perceived landing techniques. No relationships between inj and podiatric measures
Hopper et al. (1994)[66]	Retrospective cohort study: questionnaire inj history prior to champs. Biomechanical assessment of both feet during champs	Elite/Sub-elite U16 & U21 players at national netball championships, Total 204 players.	1988	AUS	All previous lower limb injuries	188 inj players. 449 lower limb inj in career	Foot types: classified as: normal, pronating with rearfoot abnormalities, pronating with forefoot abnormalities, non-pronating foot types or other	90% players had symmetrical foot types & at least 1 lower limb inj. 55% players had 1–2 lower limb inj in career. Pronating foot types with rearfoot abnormalities most frequent type in players with lower limb inj
Hopper et al. (1995b)[67]	Prospective cohort study: questionnaire completed by players & physio post treatment during 14-wk State comp. Risk factors recorded pre-season	Elite to recreational players. 72 Senior players; age 15-36 y; mean 20 y.	1989	AUS	Any inj presenting to first aid room requiring immediate medical care or resulting in some form of disability. No minor	22 inj during champs: 30.6% players inj	Age, level of comp, somatotype, hypermobility, static balance, vertical jump, anaerobic fitness	Young, elite players with greater vertical jump, anaerobic peak power & lower endomorphy at higher risk of inj. Jumping ability best predictor of inj. Ankle & knee inj mechanisms were poor

					injuries. Severity based on deformation grades 1–3			landing, back inj were player contact
Hopper (1997)[68]	Prospective cohort study: lower limb and back inj diagnosed, treated & recorded by physio during champs. Risk factors measured pre-season	Elite/Sub-elite U16, U21 & Open players at national netball champs. Mean ages: U16 14.8 y, U21 19.2 y, Open 23.7 y. Total 213 players	1988	AUS	A lower limb or back disability that caused pain or some form of dysfunction	52 inj (24%) sustained lower limb & back inj	Playing position, level of comp, somatotype.	No significant relationship between somatotype and inj incidence. Differences in somatotypes existed across playing positions or comp levels
Smith et al. (2005)[69]	Cross sectional study: questionnaires of players self-reported inj & assessment of hypermobility during early season.	Junior players, age 6-16 y from 13 clubs competing in NSW Junior League. Total 200 players	Not Known	AUS	Trauma to body part causing player to cease play & miss minimum 1 game	69 injuries, 35% of players inj playing netball	Age, ethnicity, playing position, previous inj, playing experience, games/week, hypermobility	Highest number inj from hypermobile group: 43% players inj. Players with higher hypermobility scores 3 x more likely to be inj. Inj rate increased 1.5 x every playing y.
McManus et al. (2006)[14]	Prospective cohort WASIS study: risk factors and injury incidence from 2 consecutive 5 m seasons, baseline questionnaire and monthly telephone interviews.	Community level participants from range of sports. 368 netball players, age 16 – 30 y.	1997 – 1998	AUS	Inj during sport causing reduction in activity, need for medical advice &/or adverse social or economic effects.	272 inj: 14 inj/1000 player hrs	Inj history, number y playing, no. games & practices/wk, warm-up/cool-down patterns, time in season	Inj risk factors were no warm-up & not open to new ideas. Protective risk factors were training > 4hrs/wk & no inj in previous 12 m period.

Ferreira & Spamer (2010)[70]	Prospective cohort study: injuries recorded by physio at clinic. Biomechanical, anthropometric & physical ability risk factors recorded pre-& post-1 season	Elite North-West University first team netball players. Total 25 players, age 18–23 y	2007	SA	All inj during match or training activities. Severity based on time-loss graded 1, 2 or 3	46 inj; 1.84 inj/player	Biomechanics (symmetry, dynamic mobility, local stability), anthropometrics (ht, wt, BMI, fat %), physical ability (agility, balance, explosive power), inj cause.	Inadequate physical /motor abilities (agility, balance, explosive power) biomechanical changes & increased anthropometry over the season may increase inj risk. Most common inj mechanism incorrect landing (52%)
Maulder (2013)[71]	Prospective cohort study: inj self-reported every 2 weeks via email/phone over 6 m season, Limb dominance and asymmetry risk factors recorded pre-season	Elite and Sub-elite players. Age 18–25 y; mean 21.6 y. Total of 24 players.	Not Known	NZ	All lower limb inj that affected performance & required medical treatment, causing missed training &/or game time.	9 inj: 37.5% of players inj	Lower limb dominance & asymmetry, agility test: unanticipated straight-run & 180° turn tasks	All inj to players dominant leg. Dominant limb asymmetry >10% in 57% inj & 14% non-inj players.
Coetzee et al. (2014)[72]	Prospective cohort study: questionnaire of injuries & training history modality, completed by team manager, coach or medical staff daily during champs (3 x tournaments)	Elite U19, U21 & Senior players at USSA champs. Total of 1280 participants.	2009	SA	Any physical complaint during netball match or training requiring medical attention. Severity based on time-lost: slight, minimal, mild, moderate, serious. Recurrent inj: same type as index inj post recovery	205 inj; 15% one or more inj. 500.7 inj/1000 playing hrs	Training habits (core stability, neuromuscular, biomechanical & proprioceptive training), playing surface.	Factors associated with increased inj risk were previous inj, limited core stability, NMC & proprioceptive training. Inj rate 1.9 x higher on concrete compared to synthetic surfaces.
Attenborough et al. (2016)[73]	Cross-sectional study: recurrent	Elite/inter-district & club	2013–2014	AUS	CAI: recurrent ankle sprain	69 inj: 72%	Level of competition, previous inj, perceived	High prevalence of CAI in netball players,

	ankle sprain history collected pre-season via self-report questionnaire. CAI measures: perceived & mechanical ankle instability.	players. 42 Club, 54, Elite/inter-district: total 96 players. Mean age: 21.4 ±6.3 y			&/or perceived ankle instability &/or mechanical ankle stability. Severity: CAITY score Recurrent sprain: 2 or more sprains to same ankle	previous ankle sprain, 47% recurrent sprain	ankle instability: Cumberland Ankle Instability tool - Youth. Mechanical ankle instability: ankle arthrometer	particularly recurrent ankle sprains & perceived ankle instability.
Attenborough et al. (2016)[74]	Cross-sectional study: lifetime ankle inj history via self-report form. Static & dynamic balance measures.	Elite/inter-district & club players. 42 Club, 54, Elite/inter-district: total 96 players. Mean age: 21.4 ±6.3 y	Not known	AUS	All ankle sprains causing immobilisation &/or time-loss	72% had previous ankle sprain: 26 Club, 43 Inter-district players inj	Level of competition, age, previous inj, static and dynamic balance: demi-pointe and star excursion tests,	Balance measures not influenced by previous ankle sprain. Level had no effect on balance ability
Stuelcken et al. (2016)[75]	Retrospective study of medically diagnosed, televised ACL injuries. Inj mechanisms identified from video.	Elite players in ANZ champs. Total of 16 players with ACL inj.	2009–2015	AUS	All televised ACL injuries during ANZ champs	16 ACL inj: 63% left knee, 37% right knee. WA 63% cases, C 19%, GS 12%, WD 6%.	Game situation, movement patterns, player behaviour & potential mechanism at time of injury. Playing position, quarter.	50% ACL inj non-contact, 50% indirect contact. 44% attacking third, 37% centre third, 19% defensive third. 69% attacking play, 25% defensive play, 6% loose ball. Landing from a jump most common ACL inj activity (81%).
Attenborough et al. (2017)[76]	Prospective cohort study: Ankle inj data collected across one season by team physio or via self-report. Risk	Elite/inter-district & club players. Total 94 players. Mean age: 21.5 ±6.3 y	2013–2014	AUS	All ankle injuries resulting in time loss ≥ one full match or training session	11 inj: 1.74 sprains/1000 hrs; 6.75/1000 h match-play;	Perceived ankle instability, ankle sprain history & joint laxity, muscular power, vertical jump height, static & dynamic balance	Dynamic balance (posterior-medial SEBT) < or equal to 77.5% of leg length associated with higher risk ankle sprain (4.04 x higher). Previous inj

	factor data collected pre-season					0.40/1000 h training		not risk factor for future sprain.
Pickering Rodriguez et al. (2017)[77]	Prospective cohort study: Lower body inj data reported by physio or self-report during season. Risk factors: lower body stiffness collected pre-season and 1x/month across 14 wk season	1 Elite and 2 sub-elite teams at national or state champs. Total 29 players, mean age 24.1±3.2 y	2013	AUS	Non-contact, match or training, soft tissue damage of lower limb resulting in time loss ≥ 1 game	12 inj (41%); 11.29 lower body inj/1000 h; Elite: 19.35/1000 h; Sub-elite: 7.13/1000 h	Lower body stiffness, level of competition	Higher soleus & Achilles stiffness in elite netball players resulted in an increased incidence of non-contact lower limb inj
Whatman & Reid (2017)[78]	Cross-sectional study: self-report overuse knee & ankle inj history in previous 12 months (Oslo Sports Trauma Center questionnaire). Risk factor data collected during tournament	Junior (secondary school) netball players. Total 166 players, mean age 16±1 y	Not Known	NZ	All ankle & knee inj with no identifiable event responsible for onset. Substantial inj: moderate or severe reduction in or inability to compete in matches or training	Prevalence knee inj 31%, substantial inj 10%; Ankle inj 51%, substantial inj 24%	Movement quality, ankle ROM, frontal-plane knee angle during single-leg squat & drop jump, physical performance (vertical jump)	Movement quality, landing technique & ankle ROM poor in secondary school netball players. No significant differences in factors between players with and without history of overuse ankle & knee inj
Horgan et al. (2020)[79]	Retrospective cohort study: inj & risk factor data collected form self-report and medical diagnosis, recorded on AIS Athlete Management System over 4 y	Elite & Pre-elite national & state netball players. Total 536 players, mean age 18.8±4.6 y	2015–2018	AUS	Loss or abnormality of bodily structure or functioning during training or competition diagnosed as a medically recognised inj	1122 inj; daily probability 0.98 ± 0.06%	Training preparedness (fatigue, mood, motivation, soreness, sleep duration & quality), training load	Inj had significant bidirectional (increased & decreased) associations with soreness, sleep quality & duration.

Smith et al. (2020)[80]	Prospective cohort study: lower limb inj recorded by player/coach over 1 season. Follow-up telephone call from researcher. Risk factor data recorded pre-season via questionnaire.	Community/ recreational level (1 club) netball players across 9 divisions. Total 269 players; age 7–42 y	2016	AUS	All bodily damage caused by competing or training for netball	169 inj in 107 netball players; 13.8/1000 exposure hrs	Age, playing experience (yrs), netball hrs/wk, other physical activity hrs/wk, use of warm-up & cool-down, use of taping or bracing, footwear age, ht, wt, BMI, ankle dorsi-flexion ROM	Previous inj history & age > 13.5 y significantly increased risk of lower limb inj. Most common mechanisms: collisions & awkward landings
Sinclair et al. (2021)[81]	Prospective cohort study: Self-administered inj report questionnaire, weekly follow-up over 1 season. Pre-season risk factor data recorded	U18 secondary school, U19, U21 & Senior Elite Free State netball players. Total 77 players	2017-2018	SA	Any physical complaint during a netball match or training requiring medical attention. Severity: based on time-loss categories slight, minor, moderate, major	48 inj: 33.9 inj/1000 hrs of match play	Age, playing position, inj history, BMI, body fat, balance, flexibility, explosive power, upper & lower body strength, core strength, speed & agility	Higher body fat%, wt & BMI associated with lower inj risk. No skill-related fitness tests were associated with an increased inj risk
Belcher et al. (2022)[82]	Cross-sectional study: systematic video analysis of medically diagnosed, televised ACL inj, over 8.5 y	Elite level: Senior netball players in ANZ or International competitions. Total 21 players with ACL inj	2011 – 2019	NZ	All televised ACL inj during match-play	21 ACL inj: 57% left, 43% right knee. WA most inj (33%), C (24%), GS & WD (14%)	Game situation, movement patterns, player behaviour & inj mechanism at time of injury. Playing position, quarter	Most inj cases in attacking third (57%), 76% attacking play, 81% landing from jump: 76% double-legged, 24% single-legged. 81% rapidly breaking on injured leg, mostly extended knee position. Often unbalanced backward lean at landing & head

								turned away from inj side
Mullally et al. (2023)[83]	Cross-sectional study: online survey; self-report inj previous 12 m, inj situation, length time-loss & inj management. Administered worldwide for 6 m period	Recreational level netball players: Total 193 players >18 y (mean age 33.7 ±11.2 y)	Not Known	UK	Any netball inj sustained in previous 12 m, & knee inj in previous 5 y, that prevented participation in ≥1 match or training session	73 upper limb inj: 37.8 inj/100 players/y 182 lower limb inj: 94.3 inj/100 players/y	Injury situation, length of time unable to play, knee inj management. Playing position, quarter	Common mechanisms: upper limb inj: collision with opponent (27%), ball struck hand (24%), lower limb inj landing (48%) & collision with opponent (18%). 46% knee inj; mechanisms landing (45%), wear & tear (25%), change direction (18%). Mean knee inj time-loss: training 6.8 ± 7 m, matches 8.2 ± 7.4 m
AUS, Australia; NZ, New Zealand; SA, South Africa; Inj, injury/injuries; Comp, Competition; Physio, Physiotherapy/Physiotherapist; Champs, Championships; y, year; m, month; wk, week; U, Under; ht, height; wt, weight; BMI, body mass index; SD, standard deviation; WASIS, Western Australian Sports Injury Study; CAI, Chronic Ankle Instability; CAITY, Cumberland Ankle Instability Tool; AIS, Australian Institute of Sport; ANZ, Australia and New Zealand premiership								