

Table 5 Summary of study characteristics

| Study | Study Design | Sample | Risk Factors | Outcome | Length of Tracking |
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| Arnason et al. (2004) | Prospective cohort study | 306 male elite Icelandic soccer league players (31 injuries) | Age, body size, body composition, ROM, power, jumping ability, peak O ² uptake, ankle or knee instability, previous injury or player exposure. | Acute hamstring injury diagnosed by team physical therapist. | 17 weeks |
| Bennell et al. (1998) | Prospective cohort study | 102 male professional AFL players (14 injuries) | Previous history of hamstring injury, maximum voluntary concentric and eccentric torque of quadriceps and hamstring muscles. | Acute hamstring strain diagnosed by medical staff at each club. | 25 weeks |
| Bennell et al. (1999) | Prospective cohort study | 67 male AFL players (professional and amateur) (8 injuries) | Toe touch distance, hip and lumbar flexion angles and the lumbo-femoral ratio. | Acute hamstring injury diagnosed by medical staff at each club. | 32 weeks |
| Bradley & Portas, (2007) | Prospective cohort study | 36 male elite English Premier League Soccer players (32 injuries, only 29% were hamstring strain injuries) | Age, limb dominance, body size, playing position and ROM. | Acute hamstring strain diagnosed by the team physiotherapist. | 40 weeks |
| Brooks et al. (2006) | Prospective cohort study | 546 male English Premiership Rugby Unions players (164 hamstring injuries) | Age, ethnicity, body mass and height, number of training sessions and volume. | Hamstring injury diagnosed by medical personnel at each club. | 52 weeks over 2 seasons |
| Cameron et al. (2003) | Prospective and retrospective cohort study (retrospective data was excluded) | 20 professional male AFL players (6 injuries) | Motor control, leg swing movement discrimination, thigh muscle strength and previous history of hamstring injury. | Acute hamstring strain or recurrence measured by club medical officer and MRI. | 2 seasons, 50 weeks |

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| Christensen, & Wiseman, (1972) | Prospective cohort study | 9 members of a university varsity track team (2 injuries) | Right and left leg knee flx/ext strength, previous injury history, flexibility (hip on thighs). | Acute hamstring injury diagnosed by team physician. | 30 weeks |
| Croisier et al. (2008) | Prospective cohort study | 462 male professional soccer players (35 injuries) | Isokinetic strength variable including H/Q peak torque ratio, absolute peak torque and speed of concentric contraction. | Acute hamstring injury diagnosed by medical staff of each team. | 40 weeks |
| Emery, (1999) | Systematic review | Children and adolescent sporting injuries. All muscle strain injuries | | | |
| Engbretsen et al. (2010) | Prospective cohort study | 508 male Norwegian 1st, 2nd and 3rd division soccer players (61 injuries) | Age, height weight, BMI, player position, countermovement jumps, sprint tests, Nordic hamstring strength test and hamstring length. | Acute hamstring strain diagnosed by a physiotherapist (including overuse muscle injury). | 40 weeks |
| Foreman et al. (2006) | Systematic review | Elite Athletes | | | |
| Fousekis et al. (2011) | Prospective cohort study | 100 professional soccer players | Isokinetic muscle strength, muscle flexibility, age, height, weight, anthropometrics, knee joint stability, previous injury | Hamstring strain diagnosed by a physiotherapist | 43 weeks |
| Gabbe et al. (2005) | Prospective cohort study | 126 male community level AFL players (26 injuries) | Age, previous hamstring injury, flexibility, ROM and neural mobility. | Acute hamstring strain diagnosed by club physiotherapist or medical staff member. | 25 weeks |

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| Gabbe, Bennell, Finch, (2006) | Prospective cohort study | 174 male Australian Rules Football players (135 elite, 39 community level) (21 injuries) | Age, previous history of hamstring injury within 12 months, ROM of ankle dorsiflexion, AROM hip internal and external rotation, spinal and lower limb flexibility, hamstring and hip flexor muscle flexibility and neural mobility. | Acute hamstring strain diagnosed by club physiotherapist or medical staff member. | 25 weeks |
| Gabbe, Bennell, Finch, Wajswelner, et al. (2006) | Prospective cohort study | 222 male elite AFL players (31 injuries) | Age, injury history, height, weight, BMI, ankle dorsiflexion ROM, AROM hip internal and external rotation, spinal and lower limb flexibility, hamstring and hip flexor muscle flexibility and neural mobility. | Hamstring muscle injury diagnosed by medical staff at each club. | 25 weeks |
| Gibbs et al. (2004) | Prospective cohort study | 77 male professional AFL players. (31 injuries) | Location, length and cross sectional area of the intramuscular lesion. | Acute and recurrent hamstring injury diagnosed by MRI. | 45 weeks |
| Hagglund et al. (2006) | Prospective cohort study | 263 (197 analysed after drop-outs) male elite soccer players (141 injuries) | Age, height weight, BMI, and previous hamstring injury. | Acute or recurrent hamstring injury diagnosed by club medical staff. | 80 weeks, 2 seasons |
| Henderson et al. (2010) | Prospective cohort study | 36 male professional soccer players from and English Premier League Club (12 injuries) | Isokinetic strength for concentric knee flexion and extension, peak torque at different angular velocities, anaerobic fitness, aerobic fitness, explosive leg power, active and passive hip flexion ROM. | Hamstring injury diagnosed by doctor, physiotherapist and sports therapist at the club and confirmed by MRI. | 45 weeks |
| Koulouris et al. (2007) | Prospective cohort study | 41 male professional AFL players with a history of hamstring injury (10 reinjuries) | Injury location, length, cross sectional area, age, height, weight, history of hamstring injury. | Hamstring injury diagnosed by MRI | 25 weeks |

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| Malliaropoulos et al. (2011) | Prospective cohort study | 165 elite track and field athletes with a hamstring muscle strain | AROM knee extension deficit compared to uninjured limb | Hamstring recurrence diagnosed by sports medicine physician | 24 months |
| Orchard et al. (1997) | Prospective cohort study | 37 male professional football players from the AFL (6 injuries) | Quadriceps and hamstring muscle function, aerobic and anaerobic fitness, running speed, lower body explosive strength, body composition, flexibility, abdominal strength, peak torque relative to body weight, side-to-side comparisons, and H/Q ratios. | Acute hamstring muscle injury. Method of diagnosis not reported. | 22 weeks |
| Orchard, J. (2001) | Prospective cohort study | 1607 professional AFL players (672 injuries over 8 years) | History of injury to the hamstring, calf, and quadriceps muscles; age, height, weight, body mass index, and race. Extrinsic variables considered for inclusion were grade of match, time of match (day or night), month, maximum and minimum temperatures on the day of the match, maximum wind speed on the day of the match, and rainfall and evaporation measures. | Acute hamstring strain diagnosed by club medical staff. | 8 years, 2255 matches |
| Prior et al. (2009) | Systematic review | Professional or amateur athletes older than 18 | | | |

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| Rolls & George, (2004) | Prospective cohort study | 93 male Chelsea Football Club Academy players between 9 and 19 years old (16 players, 20 injuries) | Age, height, dominant leg, history of previous hamstring injury, flexibility and ROM (modified sit and reach test, straight leg raise test, active knee extension test, passive knee extension test, seated knee extension test). | Acute hamstring strain diagnosed by clubs medical doctor. | 44 weeks |
| Sugiura et al. (2008) | Prospective cohort study | 30 male elite sprinters from a track and field team (6 injuries) | Muscle strength using isokinetic dynamometers. | Acute hamstring injury diagnosed by a sports doctor. | 52 weeks |
| Verrall et al. (2001) | Prospective cohort study | 114 male elite AFL players (34 injuries) | Age, height, weight, Aboriginal descent, past history of severe injury. | Acute hamstring injury diagnosed MRI. | 25 weeks |
| Verrall et al. (2006) | Prospective cohort study | 162 male elite AFL players (37 injuries) | Age, height, BMI, cross sectional area and volume of injured muscle and risk of recurrence in subsequent season (after initial injury). | Hamstring muscle strain injury and recurrences diagnosed by team physician and confirmed by MRI. | ≈ 50 weeks over 2 playing seasons |
| Warren et al. (2010) | Prospective cohort study | 59 male elite level AFL players with a previous hamstring injury within 12 months (9 recurrences) | Demographic information, functional progression (including time taken to walk and ascend stairs pain-free), use of anti inflammatory medication (NSAID's), mechanism and timing of injury and past history of hamstring injury in the previous 12 months, hamstring flexibility, neural mobility, pain provocation and site of the injury. | Hamstring strain injury recurrence. | 3 weeks |

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| Watsford et al. (2010) | Prospective case-control study | 136 elite level AFL players | Unilateral hamstring and leg stiffness | Hamstring strain injury diagnosed by medical personnel | ≈ 25 weeks from ending preseason and one playing season |
| Witvrouw et al. (2003) | Prospective cohort study | 146 male professional soccer players (31 hamstring injuries) | Flexibility of the hamstring, quadriceps, adductor, and gastrocnemius muscles. | Hamstring muscle injury diagnosed by team physician. | 40 weeks |
| Woods et al. (2004) | Prospective cohort study | 2376 male English Football League (soccer) players (796 injuries) | Incidence, nature, mechanism of injury, age, position and ethnic origin of players. | Acute hamstring injury diagnosed by club physiotherapist and/or doctor. | 100 weeks |
| Yamada & Mastumoto, (2009) | Prospective cohort study | 21 university level rugby players (6 players 7 injuries) | Mental rotation, motor function- H/Q ratio, straight leg raise angle, centre of gravity agitation in one leg standing position and during a perpendicular jump. Flexion and extension peak power. | Acute hamstring injury diagnosed by medical doctor. | 26 weeks |
| Yamamoto, T. (1993) | Prospective cohort study | 64 male track and field athletes from a college team (26 injuries) | Isometric maximum voluntary contraction of hip and knee flexion/extension. | Acute hamstring strain. Method of diagnosis not reported. | 104 weeks |

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| Yeung et al. (2009) | Prospective cohort study | 44 male and female (35 M, 9 F) track and field sprinting athletes (12 injuries) | Previous history of hamstring injury, hamstring flexibility, peak torque angle and peak torque normalised to body mass, hamstring to quadriceps ratio, functional hamstring to quadriceps ratio and hamstring to opposite hamstring ratio. | Acute or recurrent hamstring injury diagnosed by physiotherapist. | 52 weeks |
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a BMI= body mass index. ROM= range of motion. Flx= flexion. Ext= extension. H/Q ratio= hamstrings to quadriceps ratio. AROM= active range of motion. NSAIDS= non steroidal anti inflammatory drugs. MRI= magnetic resonance imaging. AFL= Australian Football league

