

ONLINE SUPPLEMENTARY S3

Study characteristics (sorted alphabetically by sport): Study design, sport, level of training (category), number of participants, age (years) and gender (♀, female; ♂, male - reported separately where specified) and period of study (duration).

Study	Study design	Sport	Category	Participants	Age (years)	Period
<i>Fahlman</i> ²⁷	Prospective study Longitudinal cohort	American Football	Trained	75	♂ 20.5 ± 1.5	12 months
<i>Edouard et al.</i> ²⁸	Prospective study	Athletics	Elite	12594	-	11 competitions (59 days)
<i>Mathews et al.</i> ²⁹	Prospective study Longitudinal cohort	Athletics (Endurance)	Elite	12	31.8 ± 4.0	31 days
<i>Fricke et al.</i> ³⁰	Prospective study Longitudinal cohort	Athletics (Endurance)	Elite	20	♂ 24.2 ± 3.1	4 months
<i>Cox et al.</i> ³¹	Prospective study Longitudinal cohort	Athletics (Endurance)	Well trained	18	♂ 31.2 ± 8.2	3 sessions (3 days)
<i>Ihalainen et al.</i> ³²	Prospective study	Athletics (Endurance)	Trained	25	♂ 34.6 ± 1.3	12 weeks
<i>Ansley et al.</i> ³³	Prospective study	Athletics (Endurance)	Recreational	201	♂ 37.4 ± 9.6; ♀ 40.3 ± 10.9	1 day (in-competition)
<i>Moreira et al.</i> ³⁴	Prospective study Longitudinal cohort	Basketball	Elite	15	♂ 19.0 ± 0.6	4 weeks
<i>Svendsen et al.</i> ³⁵	Retrospective study	Cross-country skiers	Elite	39	-	8 seasons (2007 – 2015)
<i>Dressendorfer et al.</i> ³⁶	Prospective study Longitudinal cohort	Cycling	Competitive	9	♂ 24.7 ± 2.1	14 weeks
<i>Spence et al.</i> ¹⁰	Prospective study Longitudinal cohort	Cycling / Triathlon	Elite and Competitive	63	Elite: 22.5 ± 3.8 Recreational: 25.2±3.6	4 months
<i>Hanstock et al.</i> ³⁷	Prospective study Randomised control trial	Cycling / Triathlon	Trained	27	♂ 29.9 ± 9.1	4 weeks
<i>Schwellnus et al.</i> ³⁸	Prospective study	Paralympic athletes	Elite	3565	30.9 ± 9.2 (13 to 61)	14 days
<i>Leicht et al.</i> ³⁹	Prospective study Longitudinal cohort	Paralympic athletes (tetraplegic)	Elite	14	33 ± 5	4 months
<i>Furusawa et al.</i> ⁴⁰	Prospective study Longitudinal cohort	Paralympic athletes (Endurance)	Trained	21	42.0 ± 1.7	6 weeks
<i>Fowler et al.</i> ⁴¹	Prospective study	Rugby League	Elite	18	♂ 24.2 ± 3.3	10 days
<i>Thornton et al.</i> ⁴²	Prospective study	Rugby League	Professional	32	26.0 ± 4.8	29 weeks (14-18 competitions)
<i>Cunniffe et al.</i> ⁴³	Prospective study	Rugby Union	Elite	31	♂ 26.8 ± 0.9	11 months
<i>Schwellnus et al.</i> ⁴⁴	Prospective study	Rugby Union	Elite	259	-	16 weeks
<i>Schwellnus et al.</i> ⁴⁵	Prospective study	Rugby Union	Elite	259	-	16 weeks
<i>Tiernan et al.</i> ⁴⁶	Prospective study	Rugby Union	Elite	19	♂ 19.7 ± 1.1	10 weeks
<i>Yamauchi et al.</i> ⁴⁷	Prospective study	Rugby Union	Trained	32	♂ 20.4 ± 1.4	7 weeks
<i>Neville et al.</i> ⁴⁸	Prospective study Longitudinal cohort	Sailors	Elite	38	♂ 36 ± 7	18 months
<i>Nakamura et al.</i> ⁴⁹	Prospective study	Soccer	Well trained	12	♂ 19 to 21	33 days
<i>Milanez et al.</i> ⁵⁰	Prospective study	Soccer (Futsal)	Elite and Competitive	13	♀ 22.1 ± 4.2	5 weeks
<i>Gleeson et al.</i> ⁵¹	Prospective study Longitudinal cohort	Swimmers	Elite	25	16 to 24	7 months
<i>Hellard et al.</i> ¹³	Prospective study Longitudinal cohort	Swimmers	Elite	28	16 to 30	4 years
<i>Gleeson et al.</i> ⁵²	Prospective study Longitudinal cohort	Swimmers	Elite	25	16 to 24	7 months
<i>Gleeson et al.</i> ⁵³	Prospective study Longitudinal cohort	Swimmers	Elite	14	♂ 21.4 ± 2.3	30 days
<i>Rama et al.</i> ⁵⁴	Prospective study Longitudinal cohort	Swimmers	Elite	19	♂: 17.2 ± 1.8 ♀: 15.8 ± 0.8	13 weeks
<i>Hellard et al.</i> ⁵⁵	Prospective study Longitudinal cohort	Swimmers	Elite	18	19 to 30	2 years
<i>Brisola et al.</i> ⁵⁶	Prospective study Longitudinal cohort	Swimmers (Water polo)	Elite	25	♀ 15.7 ± 1.3	15 weeks
<i>Novas et al.</i> ⁵⁷	Prospective study Longitudinal cohort	Tennis	Elite	17	♀ 14 to 21	12 weeks

<i>Novas et al.</i> ⁵⁸	Prospective study Longitudinal cohort	Tennis	Elite, Trained and Recreational	31	♀ 16 ± 2	12 weeks
<i>He et al.</i> ⁵⁹	Prospective study Longitudinal cohort	Triathlon	Recreational to Elite	225	♂ 22 ± 3	4 months (winter)
<i>Hauswirth et al.</i> ⁶⁰	Prospective study Randomized control trial	Triathlon	Trained	27	37 ± 6	6 weeks
<i>Zehsaz et al.</i> ⁶¹	Retrospective study	Various (Endurance)	Elite	100	♂ 24.0 ± 5.9	2 years
<i>Reid et al.</i> ⁶²	Prospective study	Various (Endurance)	Elite and Competitive	41	12 to 56	12 months URS (Clinical study)
<i>Gleeson et al.</i> ⁶³	Prospective study Longitudinal cohort	Various (Endurance)	Highly trained	16	♂ 32.5 ± 8.1	9 months
<i>Gleeson et al.</i> ⁹	Prospective study Longitudinal cohort	Various (Endurance)	Trained	75	22.5 ± 4.0	4 months
<i>He et al.</i> ⁶⁴	Prospective study Longitudinal cohort	Various (Endurance)	Recreational	210	21 ± 3	16 weeks (winter)
<i>Gleeson et al.</i> ⁶⁵	Prospective study Longitudinal cohort	Various (Endurance)	Recreational to Elite	80	♂ -22.5 ± 4.0	4 months (winter)
<i>Ikonen et al.</i> ⁶⁶	Prospective study Longitudinal cohort	Various (Military)	Highly trained	53	♂ 19.6 ± 0.3	8 weeks
<i>Scullion et al.</i> ⁶⁷	Prospective study Cross sectional	Various (Rugby/Rowing)	Elite	53	22.9 ± 3.2	6 months
<i>Blume et al.</i> ⁶⁸	Prospective study Longitudinal cohort	Various (Youth)	Trained	274	13.8 ± 1.5	4 years
<i>Cox et al.</i> ⁶⁹	Prospective study	Various	Elite	70	19.3 ± 2.6	Single session (Clinical study)
<i>Cox et al.</i> ⁷⁰	Retrospective study	Various	Elite	170	25.4 ± 8.6	12 months URS
<i>Hanstock et al.</i> ⁷¹	Prospective studyRepeated measures crossover trial	Various	Recreational	40 (sub-cohort: n=13)	♂: 22 ± 4; ♀: 22 ± 6; ♂ sub-cohort: 24 ± 4	3 weeks (winter)