

Online resource 2 Key characteristics of studies examining the effect of resistance training on cognition and academic outcomes.

Author (year) Country	Study design	Sample size	Age (mean)	Control group / comparator	Duration	Frequency	Intervention description	Type	Cognition outcome/s	Outcome method of measurement	Acute/ Chronic
Costigan (2016) Australia	Individually-randomized parallel-group trial	n = NR (m) n = NR (f) N = 44 (m/f)	15.8 years	No exercise	8 weeks	3 x 10 minute sessions per week Total 24 sessions	HIIT 50% CVT, 50% RT	CT	Cognitive flexibility	Trail making test	Chronic
Han-Byul (2015) Korea	Individually-randomized parallel-group trial	n = 8 (m) n = 12 (f) N = 20 (m/f)	8.75 years	No exercise	16 weeks	2 x 90 minute sessions per week Total 32 sessions	Warm up, RT, CVT, Cool down	CT	Inhibitory control	Stroop test	Chronic
Harveson (2016) USA	Individually randomized cross-over trial	n = 48 (m) n = 46 (f) N = 94 (m/f)	(m)16.01 years (f)16.14 years	No exercise	1 session	30 minutes	Weight machines 2 x 15 reps 6 exercises	RT	Inhibitory control Cognitive flexibility	Stroop dot, Stroop colour, Stroop word. Trail making test	Acute
Harveson (2018) USA	Individually randomized cross-over trial	n = 63(m) n = 28 (f) N = 91 (m/f)	15.89 years	No exercise	1 session	30 minutes	Weight machines 2 x 15 reps 6 exercises	RT	Maths Inhibitory control	10-question math tests Stroop dot, Stroop colour, Stroop word.	Acute
Harveson (2019) USA	Individually randomized cross-over trial	n = 57 (m) n = 6 (f) N = 63 (m/f)	13.7 years	No exercise	1 session	20 minutes	Weight machines 2 x 15 reps 6 exercises	RT	Maths Inhibitory control	10-question math tests Stroop dot, Stroop colour, Stroop word.	Acute
Leahy (2020) Australia	Cluster-randomized parallel-group trial	n = 32 (m) n = 30 (f) N = 62 (m/f)	16.2 years	No exercise	14 weeks	3 x 12-20 min Total 42 sessions	HIIT 50% CVT, 50% RT	CT	Inhibitory control Working memory	Modified flanker task Serial n-back task	Chronic
Lubans (2020) Australia	Cluster-randomized parallel-group trial	n = 371 (m) n = 299 (f) N = 670 (m/f)	16.0 years	No exercise	1 year	2 x 8-20 minute teacher led session each week for 10 weeks	HIIT 50% CVT, 50% RT	CT	Inhibitory control Working memory	Eriksen Flanker Serial n-back task	Chronic

Student then encouraged to complete sessions in their own time.

Robinson (2021) Australia	Cluster-randomized parallel-group trial	n = 45 (m) n = 31 (f) N = 76 (m/f)	15.78 years	No exercise	4 weeks	3 x 8 min Total 12 session	Tabata program of body weight resistance training in classroom	RT	Inhibitory control Cognitive flexibility On-task behaviour	Eriksen Flanker Dimensional Change Card Sort Test Adapted momentary time sampling procedure	Chronic
Wade (2020) Newcastle	Cluster-randomized parallel-group trial	n = 52 (m) n = 38 (f) N = 90 (m/f)	14.3 years	No exercise	1 session only	21 minutes	Six circuit stations including aerobic and resistance training activities.	CT	Attention Working memory	Rapid Visual Information Processing (RVP) test. Spatial working memory test	Acute
Yargic (2020) Turkey	Experimental	N = 25 (f)	16.4 years	No control	1 session	90 minutes	Weightlifting session weights >70% RM	RT	Attention	Finger tapping tests	Acute

Abbreviations: RT = Resistance training, CT = Concurrent training, HIIT = High intensity interval training, CVT = Cardiovascular training