Supplementary Information

Integrative Neuromuscular Training on Static and Dynamic Balance in Team Sport Athletes: A Systematic Review and Meta-analysis

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Table S1 Searching strateg

Database name	**Pubmed(Medline)**
Full search strategies	("integrative neuromuscular training" OR "neuromuscular training" OR "proprioceptive training" OR "functional training" OR "sensorimotor training" OR "kinaesthetic training" OR "coordination training" OR "balance training" OR "instability training") AND("balance performance" OR "balance test" OR "static balance" OR "dynamic balance" OR "postural balance" OR "postural stability" OR "postural control" OR "Y-Balance Test" OR "Star Excursion Balance Test" OR "single-leg balance") AND (athlete* OR player* OR sport* OR "team sport*" OR "court sport*") AND (intervention* OR training OR program* OR random* OR trial* OR "randomized controlled trial" OR "pre-post" OR "before and after" OR "pretest" OR "posttest" OR "quasi-experimental" OR longitudinal)
Limits and restrictions	Full text, Humans
Dates of searches	03/03/2025
hits	544
Database name	**Scopus**
Full search strategies	("integrative neuromuscular training" OR "neuromuscular training" OR "proprioceptive training" OR "functional training" OR "sensorimotor training" OR "kinaesthetic training" OR "coordination training" OR "balance training" OR "instability training") AND ("balance performance" OR "balance test" OR "static balance" OR "dynamic balance" OR "postural balance" OR "postural stability" OR "postural control" OR "Y-Balance Test" OR "Star Excursion Balance Test" OR "single-leg balance") AND (athlete* OR player* OR sport* OR "team sport*" OR "court sport*")
Limits and restrictions	Humans
Dates of searches	03/03/2025
Hits	346
Database name	**SPORTDiscus**
Full search strategies	("integrative neuromuscular training" OR "neuromuscular training" OR "proprioceptive training" OR "functional training" OR "sensorimotor training" OR "kinaesthetic training" OR "coordination training" OR "balance training" OR "instability training") AND ("balance performance" OR "balance test" OR "static balance" OR "dynamic balance" OR "postural balance" OR "postural stability" OR "postural control" OR "Y-Balance Test" OR "Star Excursion Balance

	Test" OR "single-leg balance") AND (athlete* OR player* OR sport* OR "team sport*" OR "court sport*")
Limits and restrictions	Full Tex
Dates of searches	03/03/2025
hits	539
Database name	**Web of Science**
Full search strategies	("integrative neuromuscular training" OR "neuromuscular training" OR "proprioceptive training" OR "functional training" OR "sensorimotor training" OR "kinaesthetic training" OR "coordination training" OR "balance training" OR "instability training") AND ("balance performance" OR "balance test" OR "static balance" OR "dynamic balance" OR "postural balance" OR "postural stability" OR "postural control" OR "Y-Balance Test" OR "Star Excursion Balance Test" OR "single-leg balance") AND (athlete* OR player* OR sport* OR "team sport*" OR "court sport*")
Limits and restrictions	Article, Clinical Trial, Early Access
Dates of searches	03/03/2025
hits	529

Table S2 Characteristics of the included studies

Study ID	First author, year	Sets × Reps	Intervention (INT) description	Control group description	Measure	Main findings
1	Bieniec et al., 2024	(a) Preparatory Phase: Breathing exercises (3–4 min), Mobilization and stabilization (1 × 6–8 reps); (b) Strength Phase: Loaded strength exercises (3–4 × 6–8 reps); (c) Power and Coordination Phase: Plyometric and agility drills (6–8 × 4–6 reps).	(a) Breathing (3–4 min), myofascial release, and joint mobilization (thoracic spine, hips, shoulders, ankles) (b) Core and glute activation with static/dynamic balance training (Weeks 1–12) (c) Loaded movement patterns (e.g., squats, hip thrusts, deadlifts, push/pull, rotation; 3–4 × 6–8 reps; from Week 4) (d) Agility and plyometric drills (e.g., ladder, skips, vertical/horizontal jumps; 6–8 × 4–6 reps; from Week 6).	Weekly team sport and swimming (2 × 60 min); no functional training applied.	Y-Balance Test	INT v.s. CON: Dynamic balance↑ Reduced asymmetry↓
2	Gong et al., 2024	3 sets × 10–15 reps or 30s holds, with 30–60s rest.	A 10-week Core Stability Training (CST) program (3 sessions/week) including: (a) Isostatic and dynamic core drills (e.g., shoulder taps, V-sits, planks); (b) Suspension-based strength and rotation exercises; (c) Anti-rotation and unilateral tasks (e.g., farmer's walk); (d) Load progression guided by heart rate (70–80% HRmax).	Bodyweight and resistance exercises (e.g., squats, push-ups, sled pushes); no core-specific or unstable surface training; intensity matched (70–80% HRmax).	Star Excursion Balance Test	INT v.s. CON: Dynamic balance↑ Static balance↑

3	Guo et al., 2023	Not specified; intensity progressed through unstable task complexity within each 60-minute session.	A 6-week instability training program (3 sessions/week, 60 min/session) incorporating suspension drills and unstable surface tasks to enhance coordination under game-like conditions.	Received traditional coordination training without unstable components; training duration and frequency matched.	Y-Balance Test	INT v.s. CON: Dynamic balance↑
4	Lin et al., 2023	Not specified; time-based sessions.	An 8-week balance training program (3 sessions/week, 15 min/session) integrated into regular basketball practice, using both ball-assisted and unassisted dynamic balance tasks.	Received regular basketball training only; no balance-specific tasks.	Platform Dynamic Balance Test	INT v.s. CON: Dynamic balance↑ Gait stability↑
5	Hammami et al., 2023	Each session included 5 exercises with 2–3 sets; rest intervals of 60–120s; difficulty progressed bi-weekly based on performance.	An 8-week INT program (2×/week, 15 min/session) combining balance on unstable surfaces, strength, plyometric, sprint, and change of direction exercises, with progressive difficulty every two weeks.	Performed standard pre-season soccer training plus 15 minutes of passing drills (matched time exposure); no INT elements.	Y-Balance Test	INT v.s. CON: Dynamic balance↑
6	Mitrousis et al., 2023	Not specified; each session performed immediately after soccer practice, intensity increased biweekly by task complexity.	An 8-week balance training program (3 sessions/week, 24 total sessions) added to regular soccer training. Exercises progressed every two weeks in difficulty (e.g., eyes closed, complex tasks), using BOSU balls, trampolines, wobble boards, balance beams, agility ladders, and hoops.	Followed a placebo-training program focused on upper-limb reaction tasks, matched in time and frequency with the INT group; no balance-related exercises included.	Platform Static Balance Test, Platform Dynamic Balance Test	INT v.s. CON: Dynamic balance↑ Static balance↑

7	Aloui et al., 2021	3–6 reps × 4 drills (72–144 contacts/session); 90s rest between drills.	8-week plyometric and CoD sprint program (2×/week, 4 drills/session), with progressive reps; targeted explosive power, balance, and stability.	Regular soccer training (5×/week) with technical–tactical and physical components; no plyometric or CoD-specific work.	Stork Balance Test	INT v.s. CON: Static balance↑
8	Bouteraa et al., 2020	Balance: 6–10 sets × 20–30s; Plyometrics: 2–3 sets × 10–15 reps/drill; Total volume progressed weekly from 80 to 120 contacts.	8-week combined balance and plyometric training (2×/week) with progressive load (80–120 contacts/week) and task complexity.	Continued regular in-season basketball training without additional balance or plyometric components.	Stork Balance Test, Y-Balance Test	INT v.s. CON: Dynamic balance↑ Static balance↑
9	Zachrarkis et al., 2020	Weeks 1–2: 30s work/rest; Weeks 3–4: 45s work/rest; Weeks 5–6: 60s work/rest; Each session: 2 sets of 6 exercises, with 2-min rest between sets; progressed by volume and difficulty.	8-week circuit-based balance/proprioceptive training (3×/week), progressed biweekly with varied unstable equipment.	Regular basketball training only; no additional balance or proprioceptive intervention.	Platform Static Balance Test, Platform Dynamic Balance Test	INT v.s. CON: Dynamic balance↑ Static balance↑
10	Bonato et al., 2018	Strength/balance: 2–3 sets × 5–12 reps or 30s; Plyometric/agility: drill-based, progressively intensified biweekly.	A bodyweight neuromuscular warm-up program (4×/week, 30 min/session, ~8 months), based on the “Italian Basketball Injury Prevention Program,” comprising: (a) Activation – low-speed running with ball;	Standard basketball warm-up (light aerobic, team drills, and dynamic stretching); no neuromuscular content.	Y-Balance Test	INT v.s. CON: Dynamic balance↑

			(b) Mobility – leg swings, lunges; (c) Strength – Nordic hamstrings, lateral bridge; (d) Balance/plyometrics – single-leg hops, vertical jumps; (e) Agility – sprints and zigzag drills with ball.			
11	Hopper et al., 2017	Weeks 1–3: 3 sets × 5 reps; Weeks 4–6: 3 sets × 8 reps; Exercises progressed in complexity and intensity using RPE targets (Block 1: 3–8).	A 6-week neuromuscular training program (3×/week, 60 min) combining dynamic warm-up, plyometrics (e.g., jumps, bounds), and resistance training (e.g., squats, lunges), with progressive overload from Week 4.	No NMT intervention; continued regular netball training and games only.	Star Excursion Balance Test	INT v.s. CON: Dynamic balance↑
12	Ondra et al., 2017	Battery 1: 5 isometric holds + paired dynamic drills (e.g., 15s hold + 6 reps); Battery 2: 6-station whole-body circuit (2 rounds, 30s/station); progressed in intensity biweekly.	A 20-week proprioceptive neuromuscular program (3×/week, 20 min) integrated into basketball training, combining warm-up and two exercise batteries targeting strength, balance, plyometrics, and agility using unstable surfaces (e.g., BOSU, Swiss ball, kettlebells).	Received conventional basketball warm-up and training only; no proprioceptive neuromuscular components.	Dynamic Balance Test	INT v.s. CON: Static balance↑
13	Benis et al., 2016	10 exercises/session in circuit format; Typical: isometric holds (30s), dynamic drills (10–20 reps);	An 8-week bodyweight neuromuscular training program (2×/week, 30 min/session) conducted during	Standard tactical-technical warm-up (e.g., aerobic	Y-Balance Test	INT v.s. CON: Dynamic balance↑

		Intensity and complexity progressed through 3 phases across 8 weeks.	warm-up, using a 3-phase progressive circuit model. Exercises included core, plyometric, balance, and lower-limb strength drills (e.g., planks, lunges, tuck jumps, lateral hops), performed on stable/unstable surfaces.	movement, ball drills, dynamic stretching); no neuromuscular components.		
14	Steib et al., 2016	Warm-up + 2–3 sets of strength, balance, plyometric tasks (20–30s per exercise); Progressed via reduced support base, dual tasks, and movement intensity/duration.	An 11-week neuromuscular warm-up program (3×/week, 15 min) combining running, agility, balance, strength, and plyometric drills using bodyweight and task variation (e.g., single-leg stance, directional cuts), progressed at Weeks 3 and 6.	Performed team's usual 15-min warm-up (e.g., jogging, basic drills); no balance, strength, or plyometric components included.	Star Excursion Balance Test	INT v.s. CON: Dynamic balance↑ Static balance -
15	Zech et al., 2014	Warm-up + 3 sets per exercise; 20–30s (static holds) or 5–15 reps (dynamic); progressed biweekly with added instability and dual-task conditions.	A 10-week neuromuscular warm-up (2×/week, 20 min) combining running, agility, balance, strength, and plyometric drills (e.g., Nordic hamstrings, planks, single-leg stance), with progression at Weeks 3 and 6 via instability and task complexity.	Received standard 20-min warm-up (e.g., jogging, stretching, sprints); no balance, strength, or plyometric content.	Star Excursion Balance Test, Balance Error Scoring System	INT v.s. CON: Dynamic balance- Static balance ↑

Table S3 List of studies excluded at the full-text screening stage, with reasons

Study ID	First author, year	Title	Reason for Exclusion	Notes
1	Gable et al., 2023	Efficacy of Balance Training to Improve Balance of Young Female Gymnasts	Without a true INT intervention.	Balance-only program; non-integrative INT.
2	Guo et al., 2023	Balance Training and Physical Ability of Basketball Players	without a true INT intervention.	Balance-only program; not integrative INT.
3	Ma et al., 2023	Effects of Postural Balance Training on Stability in Swimmers	Without a true INT intervention.	Balance-only program; non-integrative INT.
4	Ren et al., 2023	Effect of Balance Training on the Physical Fitness of Marathon Runners	without a true INT intervention.	Balance-only; also non–court sport population.
5	Roso-Moliner et al., 2023	Effects of a neuromuscular training program on physical performance and asymmetries in female soccer	without balance measure.	No balance outcomes; only speed/jump/COD/ROM.
6	Achilleopoulos et al., 2022	The effect of a proprioception and balance training program on balance and technical skills in youth female volleyball players	Without a true INT intervention.	Balance/proprioception only; not integrative INT.
7	Bauer et al., 2022	Effects of a 6 week core strengthening training on measures of physical and athletic performance in adolescent male sub-elite handball players	Without a true INT intervention.	Core-only (upper-quarter); not integrative INT.
8	Belli et al., 2022	Effects of Eight-Week Circuit Training with Core Exercises on Performance in Adult Male Soccer Players	Population: not in scope (non-court sport).	Soccer; outside court-sport scope; core-only program.
9	Gidu et al., 2022	The Effects of Proprioceptive Training on Balance, Strength, Agility and Dribbling in Adolescent Male Soccer Players	non-RCT	Quasi-experimental; purposive sampling
10	Ling et al., 2022	A Controlled Trial of the Effects of Neuromuscular Training on Physical Performance in Male and Female High School	without balance measure.	No BESS/SEBT/YBT/COP outcomes.

		Athletes		
11	Ling et al., 2022	A Controlled Trial of the Effects of Neuromuscular Training on Physical Performance in Male and Female High School Athletes	without balance measure.	No BESS/SEBT/YBT/COP balance outcomes.
12	Lu et al., 2022	The Effect of 6-Week Combined Balance and Plyometric Training on Dynamic Balance and Quickness Performance of Elite Badminton Players	Without a control group.	Active comparator only (plyometric); no non-INT control.
13	Lu et al., 2022	The Effect of 6-Week Combined Balance and Plyometric Training on Dynamic Balance and Quickness Performance of Elite Badminton Players	Without a control group.	Active comparator only (plyometric); no non-INT control.
14	Menezes et al., 2022	Effects of Integrative Neuromuscular Training on Motor Performance in Prepubertal Soccer Players	non-RCT	Quasi-experimental; purposive sampling
15	Mueller et al., 2022	Effect of Six-Week Resistance and Sensorimotor Training on Trunk Strength and Stability in Elite Adolescent Athletes: A Randomized Controlled Pilot Trial	Population: not in scope (non-court sport).	Triathlon/rowing/canoeing athletes; not court sports.
16	Souglis et al., 2022	The effect of proprioceptive training on technical soccer skills in female soccer	Without balance measure	INT program (balance/agility) was used, but outcomes were only technical skills (dribbling, shooting) and VO2max.
17	Chaabene et al., 2021	The Effects of Combined Balance and Complex Training Versus Complex Training Only on Measures of Physical Fitness in Young Female Handball Players	non-RCT.	unclear randomization
18	Freitas et al., 2021	Effects of sensorimotor training on pelvic stability and balance in runners	Population: not in scope (non-court sport).	Runners; outside court-sport scope.

19	Porrati-Paladino et al., 2021	Effectiveness of Plyometric and Eccentric Exercise for Jumping and Stability in Female Soccer Players—A Single-Blind, Randomized Controlled Pilot Study	non-RCT.	Soccer; not a court sport per protocol.
20	Puzi et al., 2021	The effect of six weeks CoBAgi training on coordination, dynamic balance & agility of adolescent handball players	non-RCT.	Quasi-experimental; allocation not clearly randomized.
21	Puzi et al., 2021	The effect of six weeks CoBAgi training on coordination, dynamic balance & agility of adolescent handball players	non-RCT	Quasi-experimental; purposive sampling
22	Zhao et al., 2021	Effect of Integrative Neuromuscular Training for Injury Prevention and Sports Performance of Female Badminton Players	without a control group.	Pre–post only; both groups received INT.
23	Rahlf et al., 2020	Effects of a 10 vs. 20-Min Injury Prevention Program on Neuromuscular and Functional Performance in Adolescent Football Players	non-RCT.	Football (soccer), outside court-sport scope.
24	Canlı et al., 2019	Effects of Neuromuscular Training on Motoric and Selected Basketball Skills in Pre-pubescent Basketball Players	non-RCT.	Groups formed by pretest; nonrandomized.
25	Cè et al., 2018	Evidence of balance training-induced improvement in soccer-specific skills in U11 soccer players	Without a true INT intervention.	Balance-only program; not integrative INT.
26	Deußen et al., 2018	The influence of sensorimotor training modalities on balance, strength, joint function, and plantar foot sensitivity in recreational athletes with a history of ankle sprain: A randomized controlled pilot study	without a true INT intervention.	Sensorimotor only; not integrative INT.
27	Garbenytė-Apolinskienė et al., 2018	The effect of integrated training program on functional movements patterns, dynamic stability, biomechanics, and muscle strength of lower limbs in elite young basketball players	without a control group.	Pre–post program; no comparator group.

28	Vitale et al., 2018	Effects of an 8-Week Body-Weight Neuromuscular Training on Dynamic Balance and Vertical Jump Performances in Elite Junior Skiing Athletes: A Randomized Controlled Trial	not in scope (non-court sport).	Skiing athletes; outside court-sport scope.
29	Yoo et al., 2018	Comparison of Proprioceptive Training and Muscular Strength Training to Improve Balance Ability of Taekwondo Poomsae Athletes: A Randomized Controlled Trials	without a true INT intervention.	Proprioception/strength only; not integrative INT.
30	Zemková et al., 2018	Sport-Specific Assessment of the Effectiveness of Neuromuscular Training in Young Athletes	without a true INT intervention.	Review article; no primary INT trial.
31	Deußen et al., 2017	The influence of sensorimotor training modalities on balance, strength, joint function and foot sensitivity in recreational athletes with a history of ankle sprain a randomized controlled pilot study	without a true INT intervention.	Sensorimotor only; not integrative INT.
32	Güler et al., 2017	The Effect of Soccer Specific Balance Training on Agility and Vertical Jump Performances in Young Soccer Players	Without a true INT intervention.	Balance-only program; not integrative INT.
33	Moreira et al., 2017	Effect of proprioceptive training and central stabilization in physical fitness in young soccer players	without a true INT intervention.	Proprioception/core only; not integrative INT.
34	Radenne et al., 2017	Impact of a plyometric versus proprioceptive exercise program on dynamic stability in recreational basketball players	without a true INT intervention.	Single-component (plyometric/proprioceptive), not INT.
35	Manolopoulos et al., 2016	Effect of Combined Sensorimotor-Resistance Training on Strength, Balance, and Jumping Performance of Soccer Players	non-RCT	Equally divided groups; allocation not randomized.
36	Pfile et al., 2016	Sustained Improvements in Dynamic Balance and Landing Mechanics After a 6-Week Neuromuscular Training Program in College Women's Basketball Players	without a control group.	Prospective case series; pre–post only.

37	Asadi et al., 2015	The effects of plyometric type neuromuscular training on postural control performance of male team basketball players	Without a true INT intervention.	Plyometric-only; single-component, not integrative INT.
38	Kim et al., 2015	Effect of Functional Rehabilitation Exercise on Chronic Ankle Instability in Elite Athletes	without a control group.	Single-group pre–post rehabilitation; no comparator.
39	Kowalczyk et al., 2014	The Effect of Short-Time Pre-Season Intensive, Neuromuscular Training on Postural Stability on Elite Football Players	Without detailed results of balance measures.	Conference abstract; no mean/SD/N for balance.
40	Peres et al., 2014	Effects of Proprioceptive Training on the Stability of the Ankle in Volleyball Players	without detailed results of balance measures.	Single-session proprioception; non-integrative INT.
41	Romero-Franco et al., 2014	Short-term Effects of a Proprioceptive Training Session with Unstable Platforms on the Monopodal Stabilometry of Athletes	without a true INT intervention.	Abstract only; no mean/SD/N.
42	Pau et al., 2012	Does sensorimotor training improve the static balance of young volleyball players?	Without a true INT intervention.	Balance training only; not integrative neuromuscular (INT).
43	Barendrecht et al., 2011	Neuromuscular training improves knee kinematics··· adolescent team handball players of both sexes	non-RCT	NMT vs regular training; cohort repeated-measures.
44	Filipa et al., 2010	Neuromuscular Training Improves Performance on the Star Excursion Balance Test in Young Female Athletes	non-RCT	Team-allocated; nonrandomized comparison.
45	Zemková et al., 2010	The effect of 6-week combined agility-balance training on neuromuscular performance in basketball players	Without detailed results of balance measures.	No mean/SD/N for balance outcomes.
46	Valovich McLeod et al., 2009	Balance improvements in female high school basketball players after a 6-week neuromuscular-training program	non-RCT	Nonrandomized controlled; balance outcomes present.
47	Myer et al., 2005	Neuromuscular training improves performance and lower-extremity biomechanics in female athletes	without balance measure	No BESS/SEBT/COP; hop/jump biomech only.

48	Hewett et al., 2004	A Controlled Trial of the Effects of Neuromuscular Training on Physical Performance in Male and Female High School Athletes	without balance measure	Performance only (jump/speed); no balance outcome.
49	Paterno et al., 2004	Neuromuscular Training Improves Single-Limb Stability in Young Female Athletes	without a control group.	Single-group pre–post; no between-group comparator.

Table S4 Categorization of Balance Assessment Tools into Static and Dynamic Balance Measures

Balance Type	Assessment Tools	Outcome Metrics
Dynamic Balance	Y-Balance Test	Reach distance (anterior, posteromedial, posterolateral), composite score
	Platform Dynamic Balance Test	Center of pressure (COP) displacement, reaction time, stability index
	Star Excursion Balance Test	Maximum reach distance in eight directions, composite reach score
	Dynamic Balance Test	Time to stabilization, COP path length, sway velocity
Static Balance	Balance Error Scoring System	Number of balance errors during six stance conditions
	Platform Static Balance Test	COP sway area, COP velocity, postural stability index
	Stork Balance Test	Time maintained in single-leg stance without losing balance

Table S5 Recommendation, Assessment, Development and Evaluation tool for the assessment of certainty of evidence

Outcome	Study design	Number of participants	Grade assessment					
			Risk of bias	Inconsistency	Indirectness	Imprecision	Publication bias	Certainty of evidence
Dynamic Balance	14 RCTs	576	Not serious	Serious[b]	Not serious	Not serious	Undetected	Moderate
Static Balance	4 RCTs	121	Not serious	Serious[b]	Not serious	Serious[cd]	Undetected	Low

a. High risk of bias with allocation concealment.

b. High heterogeneity.

c. The confidence intervals indicated the potential for important harm or benefit.

d. Sample size not more than 400.

Table S6 Sensitivity analysis results

Indicators	Dimension of the analysis	K	SMD	95%CI	Z	P	Heterogeneity
Dynamic Balance	NA	14	1.48	0.97; 1.99	5.69	<0.01	86.8%
	Bieniec, 2024	13	1.61	1.07; 2.15	5.87	<0.001	86.9%
	Gong, 2024	13	1.5	0.95; 2.06	5.34	<0.001	87.6%
	Guo,2023	13	1.49	0.93; 2.05	5.26	<0.001	87.5%
	Hammami, 2023	13	1.45	0.91; 1.98	5.31	<0.001	87.1%
	Lin, 2023	13	1.53	1.00; 2.06	5.64	<0.001	87%
	Mitrousis, 2023	13	1.52	0.98; 2.05	5.56	<0.001	87.1%
	Bouteraa, 2020	13	1.51	0.97; 2.05	5.5	<0.001	87.2%
	Zachrarkis, 2020	13	1.29	0.87; 1.71	6.05	<0.001	85.5%
	Bonato, 2018	13	1.31	0.87; 1.76	5.81	<0.001	75%
	Hopper, 2017	13	1.55	0.99; 2.11	5.45	<0.001	88.2%
	Ondra,2017	13	1.47	0.92; 2.02	5.22	<0.001	87.5%
	Benis,2016	13	1.47	0.90; 2.02	5.14	<0.001	88.3%
	Steib, 2016	13	1.52	0.99; 2.06	5.58	<0.001	87.1%
	Zech, 2014	13	1.48	0.94; 2.02	5.38	<0.001	97.2%
Static Balance	NA	4	0.89	0.32; 1.47	3.03	<0.01	51.2%
	Mitrousis, 2023	3	0.94	0.13; 1.75	2.27	<0.05	0%
	Aloui, 2021	3	0.74	0.00; 1.47	1.96	<0.05	62.8%
	Bouteraa, 2020	3	0.75	0.07; 1.42	2.17	<0.05	54.7%
	Zech, 2014	3	1.16	0.77; 1.54	5.91	<0.001	62.2%

K: Number of studies; in LOO rows, K is the number remaining after omitting the listed study.
SMD: Hedges' g (standardized mean difference) from a multilevel random-effects model fit with REML; 95% CI from the same model.
Z and P: Wald test of the pooled effect.
Heterogeneity: I^2 (percentage of total variability due to heterogeneity); τ^2 = between-study variance (REML).

Table S7 Sensitivity of pooled effects to the assumed pre–post correlation (r) used to impute SD of change.

Indicators	*r*	Pooled g	95% CI	95% PI
Dynamic Balance	0.3	1.28	0.83–1.74	−0.58–3.16
	0.5	1.48	0.97–1.99	−0.69–3.65
	0.7	1.82	1.20–2.44	−0.89–4.54
Static Balance	0.3	0.78	0.29–1.26	−0.06–1.61
	0.5	0.89	0.32–1.47	−0.19–1.97
	0.7	1.10	0.36–1.85	−0.40–2.60

Note： Pooled effects are Hedges' g from multilevel random-effects models fit with REML (metafor::rma.mv; random intercepts for study and within-study effects). CIs are 95% confidence intervals and 95% PI denotes the 95% prediction interval. The primary analysis used r = 0.50.