

TABLE E-1 Overview of Studies*

Study	Design	No. of Athletes	Sport	Intervention	Training Sessions	Clinically Significant Improvement
Hewett et al. ⁵³	Prospective, nonrandomized	1263 Total, 366 trained F, 463 control F, 434 control M	High school: soccer, volleyball, basketball	Sportsmetrics program: plyometrics, flexibility, strengthening	Preseason: 60 to 90 min, 3× per wk for 6 wk	Yes; p = 0.05
Mandelbaum et al. ⁵⁴	Prospective, nonrandomized	2946 Total, 1041 trained F, 1905 control F	Youth (14 to 18 yr old) soccer	PEP program (plyometrics, stretching, strengthening, soccer-specific)	20 min replacing normal warm-up	Yes; p < 0.0001 over two years; 88% reduction in Year 1; 74% in Year 2
Gilchrist et al. ⁵⁵	RCT (cluster randomization)	1435 Total, 583 trained F, 852 control F	NCAA Division-I Soccer	PEP program (plyometrics, stretching, strengthening, soccer-specific)	20 min replacing normal warm-up, 3× per wk	Trend; p = 0.066; 70% reduction
Olsen et al. ⁵⁶	RCT (cluster randomization)	1837 Total, 958 trained (808 F, 150 M), 879 control (778 F, 101 M)	Youth (15 to 17 yr old) team handball	Balance training, plyometrics, technique (handball-specific)	15 min prior to practice for 15 straight sessions, then weekly	Yes; p = 0.03 for all ligament injuries; 1 vs. 5 for ACL
Pfeiffer et al. ⁵⁷	Prospective, nonrandomized	1439 Total, 577 trained F, 862 control F	High-school: soccer, basketball, volleyball	Knee Ligament Injury Prevention (KLIP) program: jump-landing and running-deceleration techniques	20 min before or after practice; 2× per wk	No; 0.167 incidence in intervention group vs. 0.078 in control group
Caraffa et al. ⁵⁸	Prospective, nonrandomized	600 Total, 300 trained M, 300 control M	Semiprofessional and amateur soccer	Proprioceptive training	Preseason × 30 days, 3× per wk in season; 20 min per session	Yes; p < 0.001 (all ACL injuries)

Myklebust et al. ⁵⁹	Prospective, nonrandomized	1792 Total, 850 trained F, 942 control F	Team handball	Balance and planting and/or landing skills	15 min, 3× per wk preseason; 1× per wk in season	Trend; p = 0.15; elite group p = 0.06
Petersen et al. ⁶⁰	Prospective, nonrandomized	276 Total, 134 trained F, 142 control F	Team handball	Balance and jump training	10 min, 3× per wk × 8 wk; 1× per wk in season	Trend; 5 injuries vs. 1; OR of 0.17, but CI = 0.02 to 1.5
Steffen et al. ⁶²	RCT (cluster-randomization)	2092 Total, 1091 trained F, 1001 control F	Youth soccer	The “11”: core stability, balance, dynamic stabilization agility	15 min prior to practice for 15 sessions, then 1× per wk	No; p = 0.94; compliance 24%
Söderman et al. ⁶³	RCT (cluster-randomization)	140 Total, 62 trained F, 78 control F	Semi-pro soccer	Balance board training	10 to 15 min at home for 30 days, then 3× per wk	No; more injuries in the intervention group

*F = female, M = male, PEP = Prevent injury and Enhance Performance, RCT = randomized controlled trial, NCAA = National Collegiate Athletic Association, ACL = anterior cruciate ligament, OR = odds ratio, and CI = confidence interval.