Evidence Table

	Azadinia 2017[9]	**Samani 2019[6]**	**Azadinia 2019[8]**	**Annaswamy 2021[10]**	**Lee 2022[7]**
Population	41 adults (20 LSO, 21 CTL) with nonspecific CLBP, 20–55 y, ≥ 12 mo history, ODI > 6; mean ≈ 27 y	42 adults (13 high-P, 14 norm-P, 15 CTL) with chronic nonspecific LBP, 25–55 y, ≥ 3 mo, VAS ≥ 4/10, ODI ≥ 20/100	44 adults (22 LSO, 22 CTL) with nonspecific CLBP, 20–55 y, ≥ 1 y history or recent episode, ODI ≥ 6; mean ≈ 27 y	59 adults (34 CTL, 25 brace) with uncomplicated CLBP > 12 wk with degenerative spondylosis, 18–85 y; mean 48.9 y; 18.7% female	30 adults (16 experimental, 14 CTL) with subacute or chronic nonspecific LBP > 1 mo, 18–65 y; mean 57.0 y (22–88); 23 female
Study Design	RCT, single-blind (data analyst); 4 wk	RCT, single-blind (statistician); 4 wk	Parallel-group RCT, single-blind (assessor); 4 wk	Prospective unblinded RCT; halted early (61 of 120 planned)	Prospective randomized crossover, single-blind; 2 wk
Intervention	Non-extensible LSO (QuikDraw) + routine PT; worn all day except sleep	High-pressure soft LSO (50% above normal) + NSAID, 4 h/day	Non-extensible LSO (QuikDraw) + routine PT; worn all day (mean 7.21 h/day)	Semi-rigid brace (Horizon 627) + Back-School education and exercise; brace ≤ 4 h/day	Week 1 sacroiliac belt then Week 2 LSO (experimental sequence)
Comparison	Routine PT only	NSAID only (CTL) and normal-pressure LSO + NSAID	Routine PT only	Back-School education and exercise only	Crossover sequence reversed
Methodology	8 PT sessions (twice/wk × 4 wk); VAS, ODI, TSK, COP	All groups received NSAID for 4 wk; FSR pressure monitoring; pre/post strength, endurance, proprioception, EMG (RA/EO/IO/TA/LES), VAS, modified ODI	8 PT sessions; ultrasound imaging of TrA, IO, LM pre/post	Assessments at 0, 6, 12 wk, and 6 mo: NRS, PDQ, PROMIS, EQ-5D; self-reported adherence	Each brace worn 1 wk; daily NRS, analgesic use, wear hours; ODI on days 0, 7, 14; QUEST 2.0 on days 7, 14
Outcomes	Pain, disability, kinesiophobia, postural sway	Motor function, pain, disability, proprioception	Thickness of deep trunk muscles	Pain, disability, function, quality of life	User satisfaction, pain, disability, analgesic use

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Key Findings	LSO + PT reduced pain and disability compared with PT alone; no additional benefit for postural stability; no change in TSK	No adverse motor effects; pain decreased in all groups; disability and proprioception improved in LSO groups; high-pressure group showed greater improvement than normal pressure	No change in TrA, IO, or LM thickness; muscle thickness varied by position; findings do not support LSO-induced atrophy	Brace provided no extra pain relief; brace group worsened on PDQ, PROMIS, and EQ-5D, leading to early termination	Sacroiliac belt produced higher satisfaction ($p = 0.0375$); pain and disability similar between devices; satisfaction inversely related to pain and disability
Study Limitations	Participants and assessor unblinded; no no-treatment arm; uncertain brace compliance; young sample	Four-week duration; assessors unblinded; small sample; NSAID confounding; younger cohort	Four-week duration; adherence unclear; no no-treatment arm; right-side imaging only; daily-activity performance not assessed	Unblinded design; early stop; self-reported adherence; specific inclusion criteria; wide age range	Short study; no washout period; small sample; female-skewed population

Abbreviations: CLBP: chronic low back pain; LBP: low back pain; LSO: lumbosacral orthosis; SI: sacroiliac; PT: physical therapy; RCT: randomized controlled trial; CTL: control group; VAS/NRS: Visual/Numerical Rating Scale; ODI: Oswestry Disability Index; TSK: Tampa Scale for Kinesiophobia; COP: center-of-pressure; QUEST: Quebec User Evaluation of Satisfaction with Assistive Technology; NSAID: non-steroidal anti-inflammatory drug; FSR: force-sensing resistor; RA/EO/IO/TA/LES: rectus abdominis / external oblique / internal oblique / transversus abdominis / lumbar erector spinae; TrA/IO/LM: transversus abdominis / obliquus internus / lumbar multifidus; PDQ: Pain Disability Questionnaire; PROMIS: Patient-Reported Outcomes Measurement Information System; EQ-5D: EuroQol 5-Dimension.