

Yoga improved function and reduced symptoms of chronic low-back pain more than a self-care book

Sherman KJ, Cherkin DC, Erro J, Miglioretti DL, Deyo RA. Comparing yoga, exercise, and a self-care book for chronic low back pain: a randomized, controlled trial. *Ann Intern Med.* 2005;143:849-56.

Clinical impact ratings: GIM/FP/GP ★★★★★☆☆ Phys Med & Rehab ★★★★★★★ Rheumatology ★★★★★☆☆

QUESTION

What is the relative effectiveness of yoga classes, exercise classes, and a self-care book for chronic low-back pain (LBP)?

METHODS

Design: Randomized controlled trial.
Allocation: {Concealed}†.*
Blinding: Blinded (data collectors).
Follow-up period: 12 and 26 weeks.
Setting: A nonprofit, integrated health care system in Washington and Idaho, USA.
Patients: 101 patients 20 to 64 years of age (mean age 44 y, 66% women) who had visited a primary care provider for LBP in the past 3 to 15 months. Exclusion criteria included complicated LBP, pain attributable to specific underlying diseases or conditions (e.g., pregnancy), pain ratings < 3 on a “bothersomeness” scale of 0 to 10, receipt of other LBP treatments, participation in yoga or exercise for LBP in the past year, potential disincentives to improvement (e.g., workers’ compensation claim), unstable medical or severe psychiatric conditions or dementia, unwillingness to practice at home, or inability to speak or understand English.
Intervention: Yoga classes (*n* = 36), exercise classes (*n* = 35), or a self-care book (*n* = 30). Yoga and exercise classes comprised 12 weekly 75-minute classes. Yoga classes were based on viniyoga and focused on relaxation, strength-building, flexibility, asymmetric poses, and breathing exercises. Exercise classes included warm-ups to increase heart

rate; repetitions of 7 aerobic and 10 strengthening exercises; and unguided slow, deep breathing. The self-care book emphasized such strategies as adoption of a comprehensive fitness and strength program, lifestyle modification, and management of flare-ups.
Outcomes: Back-related dysfunction (Roland Disability Scale) and symptoms (11-point bothersomeness scale).
Patient follow-up: 95% at 12 weeks and 94% at 26 weeks (intention-to-treat analysis).

MAIN RESULTS

At 12 weeks, the yoga group had greater improvement in functioning than the exercise (mean score difference [MSD] -1.8, 95% CI -3.5 to -0.1) and book groups (MSD -3.4, CI -5.1 to -1.6). The exercise and book groups did not differ (*P* = 0.12). However, in analyses of the proportion of patients who had Roland score reductions of ≥ 2 points or ≥ 50%, the yoga group did not differ from the exercise group (Table). At 26 weeks, the yoga and exercise groups had greater improvements in functioning than the book group (MSD -3.6, CI -5.4 to -1.8

and -2.1, CI -4.1 to -0.1, respectively), but the yoga and exercise groups did not differ (*P* = 0.092). The 3 groups did not differ for bothersomeness of symptoms at 12 weeks (*P* = 0.135), but the yoga group had greater reductions in symptoms than the exercise (MSD -1.4, CI -2.5 to -0.2) and book groups (MSD -2.2, CI -3.2 to -1.2) at 26 weeks.

CONCLUSION

Yoga improved function and reduced symptoms in chronic low-back pain more than a self-care book at 26 weeks; yoga reduced symptoms, but did not improve function more than exercise.

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*See Glossary.

†Information provided by author.

Yoga vs exercise or a self-care book for chronic low-back pain‡

Outcomes at 12 wk	Comparisons	Event rates	RBI (95% CI)	NNT (CI)
≥ 2 point reduction in Roland score	Yoga vs exercise	78% vs 63%	20% (-11 to 70)	Not significant
	Yoga vs book	78% vs 47%	70% (10 to 150)	3 (2 to 22)
≥ 50% reduction in Roland score	Yoga vs exercise	69% vs 50%	40% (-9 to 110)	Not significant
	Yoga vs book	69% vs 30%	130% (30 to 320)	3 (1 to 12)

‡Abbreviations defined in Glossary; NNT calculated from data in article.

COMMENTARY

Neither time nor interventional inventiveness has proved to be a reliable salve for chronic LBP. Into this breach, Sherman and colleagues have ventured, comparing viniyoga, exercise, and a self-care book. A senior teacher of viniyoga conducted sessions that emphasized breathing and postures tailored to people with back pain. Any difference in biomechanical exposure between the yoga and exercise groups surely pales next to the difference in therapeutic context. Only the yoga group learned a new idiom to incorporate into their illness narratives, “reframing” their suffering. However, it is remarkable how little this reframing proved salutary. The differences in outcomes between the yoga and self-care book groups were very modest and could easily be attributed to differences in participants’ expectations of success—the placebo effect. Sherman and colleagues measured expectations at the beginning of the study, and most participants expected yoga to work better than the self-help book and expected exercise to come in a close second to yoga. We know from the investigators’ earlier work on acupuncture and massage for LBP (1) that expectations can explain important changes in Roland disability scores in the absence of any specific treatment effect.

We also know that effects from placebos vary. For example, sham acupuncture is superior to placebo pills for relieving chronic arm pain, a differential “benefit” that can persist for months (2).

Are patients really better off if the results are attributable to nonspecific placebo effects? Should physicians avail themselves of any possible therapeutic advantage and prescribe yoga for their patients with high expectations? What does the principle of informed consent demand? These are important questions for interpretation of the evidence presented by Sherman and colleagues.

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