Medium firm mattresses reduced pain related disability more than firm mattresses in chronic, non-specific low back pain


Clinical impact ratings GP/FP/Primary care

What is the effect of different firmnesses of mattresses on the clinical course of chronic, non-specific, low back pain and disability?

METHODS

- Design: randomised controlled trial.
- Allocation: concealed.*
- Blinding: [patients, clinicians, data collectors, outcome assessors, data analysts, and monitoring committee].*
- Follow up period: 90 days.
- Setting: Spain.
- Patients: 313 adults who were ≥18 years of age (73% women), had ≥3 months of chronic low back pain, and had pain while lying in bed or on rising. Exclusion criteria: referred pain; habitual prostration; possible systemic disease; inflammatory disease, or cancer; diagnosis or suspicion of fibromyalgia; pregnancy; habitually sleeping in a different bed ≥2 nights/week; use of anti-inflammatory medication with a 24 hour effect; or use of hypnotic analgesic, anti-inflammatory, or relaxant medication from 1700 hours to the time at which pain on rising was assessed.
- Interventions: 155 patients were allocated to medium firm mattresses (European Committee for Standardization scale firmness rating 5.6 [1.0 = firmest and 10.0 = softest], and 158 patients were allocated to firm mattresses [firmness rating 2.3].
- Outcomes: self-reported pain intensity while lying in bed and on rising (visual analogue scale) and degree of disability (Roland Morris questionnaire).
- Patient follow up: 310 patients (99%) completed follow up (intention to treat analysis).

Main results

Patients who used medium firm mattresses were more likely to have improvements in pain related disability than were patients who used firm mattresses (table). The groups did not differ for improvement in pain while lying in bed or improvement in pain on rising (table).

Conclusion

In patients with chronic, non-specific low back pain, medium firm mattresses reduced pain related disability more than firm mattresses, but did not affect pain while lying in bed or on rising.

Abstract and commentary also appear in ACP Journal Club.

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Sources of funding: Kovacs Foundation. Mattresses were provided by FLEX.

| Medium firm mattress v firm mattress for chronic, non-specific low back pain* |
|----------------------------------|-----------------|-----------------|-----------------|-----------------|
| Outcomes at 90 days              | Medium firm mattress | Firm mattress | RBI (95% CI) | NNT (CI) |
| Improvement in pain while lying in bed | 83% | 78% | 6.1% (6 to 15) | Not significant |
| Improvement in pain on rising Improvement in pain related disability |
| 86% | 80% | 6.8% (4 to 20) | Not significant |
| 82% | 68% | 8 (5 to 23) |

*Abbreviations defined in glossary. RBI, NNT, and CI calculated from control event rates and unadjusted odds ratios in article. Improvement = a positive change in pain intensity between baseline and 90 days.

Commentary

Don’t recommend a firm mattress for someone with chronic low back pain. And, despite the findings of Kovacs et al, don’t recommend a medium firm mattress either. The ideal mattress, if such exists, is still unknown. Advice to sleep on a firm mattress to palliate persistent regional backache exits the ranks of the unproven and joins the ever growing ranks of the disproved. Hundreds of other methods have suffered this fate. Based on the evidence, little more than over the counter analgesics1 and advice to stay active2 should be offered.

The firmer mattress has now lost its competitive edge, thanks to the findings of the trial by Kovacs et al. The between group differences are persuasive but must be interpreted cautiously because most study patients correctly perceived the firmness of their new mattress, meaning that blinding was unsuccessful. More impressive is that~70% of patients had improvement in back pain regardless of the type of new mattress they received. This trial of a treatment method was itself a treatment. The non-specific (Hawthorne and placebo) effects dwarfed the small between group differences.

How is it that simply participating in the trial could be palliative? Clearly, participation overcame whatever thwarted recovery from many months of back pain. The context of the trial must have engendered a positive change in pain intensity between baseline and 90 days.