

# FrontMatter

## Study: New mattress reduces stress

### Both physical & emotional reactions show improvement

**A** new study shows that people sleep better, suffer less back pain and experience fewer symptoms of stress when sleeping on new beds.

The study findings from Oklahoma State University—“Back Pain, Sleep Quality and Perceived Stress Following Introduction of New Bedding Systems”—are published in the Winter 2009 *Journal of Chiropractic Medicine*.

Bert Jacobson, lead researcher and head of the university’s School of Educational Studies, conducted earlier research on the relationship between new mattresses, back pain, sleep quality and sleep efficiency. That first study was published in the Winter 2006 *Journal of Chiropractic Medicine*.

In the studies, 59 healthy subjects recorded back discomfort and sleep quality upon waking in their own beds for 28 consecutive days and then upon waking on a new mattress set for 28 consecutive days.

The earlier study found that the comfort and support of the sleep surface is related to problems of sleep quality and efficiency. Specifically, Jacobson and associates found that replacing old mattresses with new, medium-firm mattresses reduced clinically diagnosed back pain, shoulder pain and spine stiffness and positively affected sleep quality.

The new study—funded by the Better Sleep Council, the International Sleep Products Association’s consumer education arm—went a step further and examined a set of stress-related factors, revealing that the improvements in sleep and back discomfort associated with sleeping on new mattresses were paralleled by a significant decrease in stress.

#### Study specifics

The study included 30 women and 29 men with minor musculoskeletal sleep-related pain and compromised sleep, but with no clinical history of disturbed sleep. They owned and slept on commercially made innerspring mattresses that were at least 5 years old. The average mattress age was 9.5 years.

During the first 28-day period, participants slept in their own beds and rated their sleep each morning to establish a baseline. The next 28-day phase began with the delivery of new bed sets, which were unlabeled and made exclusively for the study. The mattresses were described as “medium-firm” with a “foam-encased Bonnell spring unit, densified fiber pad, super-soft foam, damask cover, semiflex foundation and slick fiber.” The new beds were the same

size as the participants’ original beds. To provide the most natural environment during both phases, participants slept in their own bedrooms and used their own linen and pillows.

Visual analog scales, completed every morning, were used to assess the participants’ perception of sleep quality and lower back pain. Stress was assessed at the end of each 28-day period using a questionnaire containing 32 stress-related symptoms and behaviors. It included physical reactions such as trembling/ticks, dry mouth, cold hands, stomachache, grinding teeth, tightness in the chest, and psychological/perceptual feelings such as tension, forgetfulness, irritability, mind going blank, nervousness and worrying. Responses ranged from “never” to “nearly every day.”

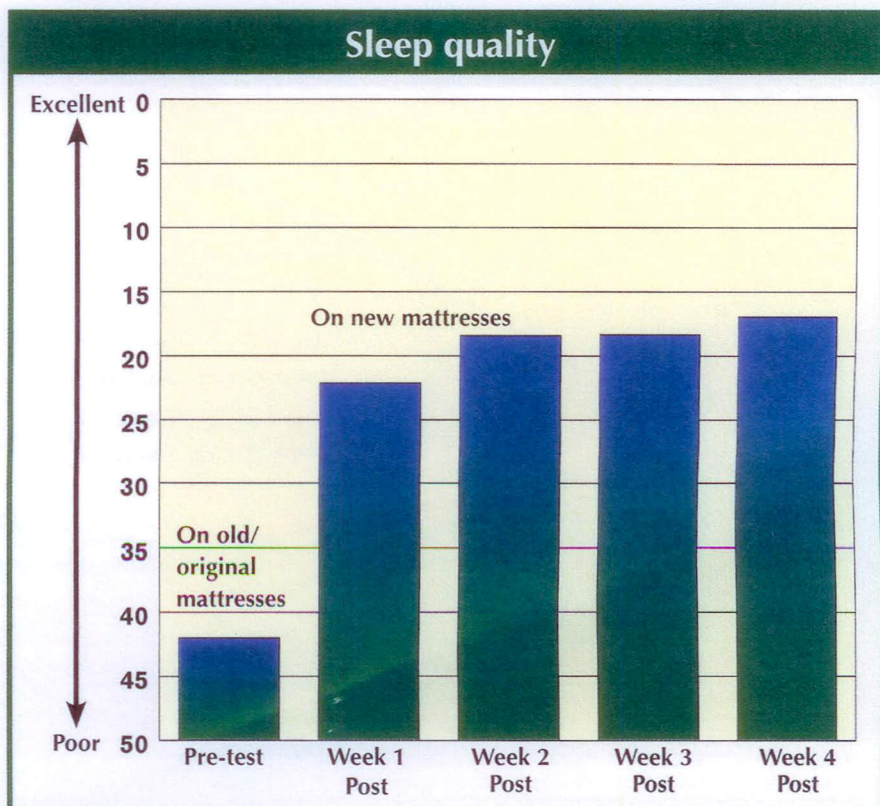


Figure 1



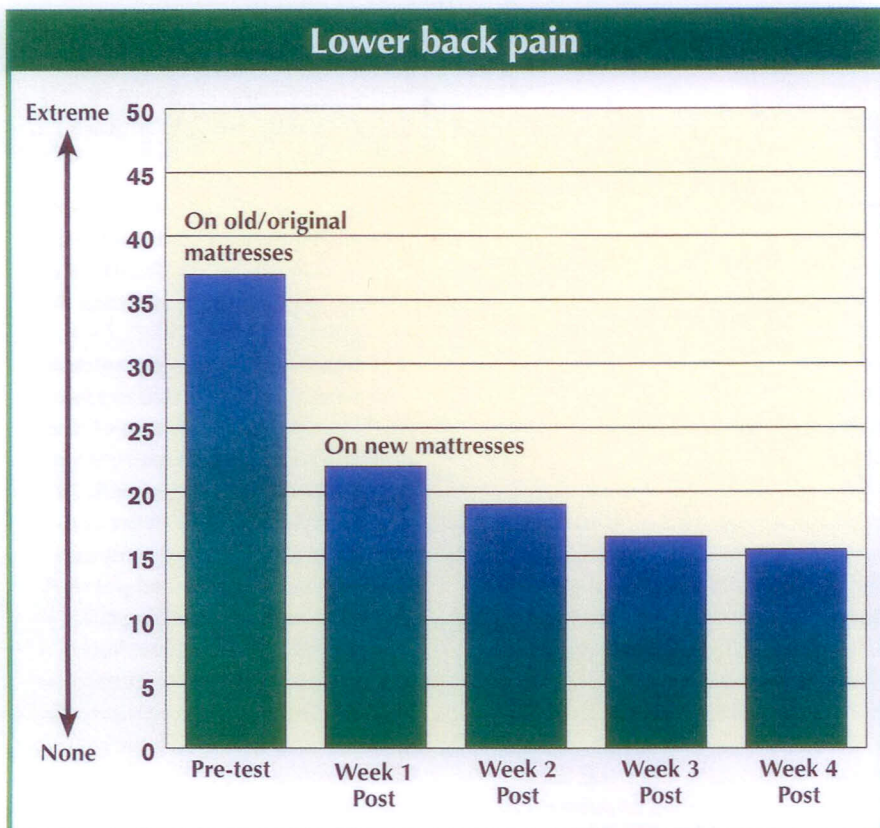


Figure 2

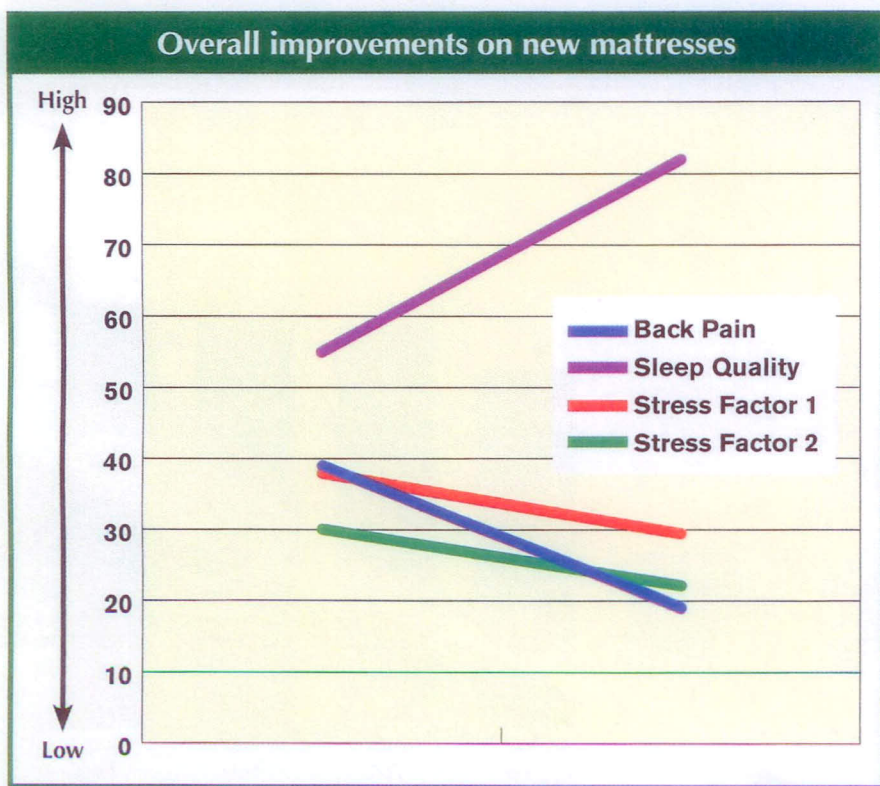


Figure 3

**The findings**

Analysis revealed that sleep quality and lower back pain improved significantly and consistently over each of the four weeks that participants slept on the new beds. In addition, the stress analysis of both behavioral reactions (grouped as Factor 1 in the study) and physical symptoms (Factor 2) yielded significant improvements after sleeping on the new beds.

During the second 28-day period, sleep on the new beds reduced back pain approximately 48% and improved sleep quality by 55%. The researchers noted that even greater improvement would have resulted if only the final week were used for the analysis because participants reported additional improvement each week. For example, improvement in sleep quality increased 24.2% from week 1 to week 4.

Most importantly for the purposes of this study, the significant improvements in sleep quality and reduction in pain that participants experienced on the new beds were paralleled by a marked decrease in stress. Behavioral reactions (Factor 1) decreased by 21.5% and physical symptoms (Factor 2) abated by 19.5% after four weeks on the new beds.

The subjects were told that they could keep the new beds. Not surprisingly, all of them decided to do so.

Jacobson advises caution in generalizing the results. Stress stems from many sources and reducing it can be difficult. Additionally, while the results agree with other researchers who have concluded that sleep quality is associated with stress, it would be an oversimplification to suggest that a new bed is a panacea for stress. Jacobson points to the wide range of variables in mattress firmness and support, together with the variations in the human body.

All that being said, Jacobson concludes, "The life of the support, structure and comfort of the mattress as it relates to sleep quality may be considerably less (in years) than commonly assumed." BT