SleepScore Labs™

Use of a Memory Foam Mattress Improves Sleep Quality and Consistency

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Introduction

- This study compared sleep on a memory foam mattress to participants' prior sleep on their original mattress (no more than 8 years old).
- Previous research has shown that comfort, including comfort of the sleep surface, is essential to sleep quality.
- More empirical research is needed to establish the impact of mattresses on both objective and self-reported measures of sleep.

Materials & Method

Sample & Design

- 25 healthy adults (65% female, ages 24-59).
- 10-week field study, within subjects, pre-post.

Intervention & Measures

- Sleepy's Memory Foam mattress used for 6 weeks, including a 2-week adjustment period.
- SleepScore Max (RF tech, based on full motion and respiratory signals; validated against PSG) used nightly.
- Pre-post self-report.

Analyses

- Multilevel regression accounting for nested data (nights within subjects) and paired t-tests.

Conclusion

- Objectively-measured sleep and perceived sleep improved in quality and consistency on the memory foam mattress compared to healthy adults' original mattresses.
- Qualitative and quantitative self-report results suggested that the intervention was perceived as comfortable.

Results

Objective Results (n = 1053 nights)

	Observed		Estimated		
	Original Mattress	Memory Foam Mattress	Constant	beta	p-value
SleepScore (0-100)	**79.07**	**80.79**	**79.02**	**1.79**	**0.008**
BodyScore (0-100)	78.57	79.25	78.56	1.19	0.083
MindScore (0-100)	77.18	79.38	77.18	1.72	0.052
Total Sleep Time (min)	395.04	398.95	394.85	5.78	0.226
Sleep Onset Latency (min)	21.55	21.41	21.59	-0.11	0.928
Number of Awakenings	**5.65**	**5.17**	**5.68**	**-0.49**	**0.002**
Wake After Sleep Onset (min)	**50.17**	**43.49**	**50.47**	**-6.79**	**<0.001**
Time in Bed (min)	474.13	468.97	474.34	-3.27	0.510
Sleep Efficiency	**0.83**	**0.85**	**0.83**	**0.02**	**<0.001**
Sleep Maintenance	**0.89**	**0.90**	**0.89**	**0.02**	**<0.001**
Light (min)	251.89	252.99	251.75	2.36	0.524
Deep (min)	68.04	69.15	68.04	2.29	0.163
REM (min)	75.10	76.81	75.08	1.32	0.495
% Light Sleep	56%	57%	56%	0.61	0.178
% Deep Sleep	17%	17%	16%	0.54	0.157
% REM Sleep	16%	16%	17%	0.48	0.205
% Wake After Sleep Onset	**11%**	**10%**	**11%**	**-1.58**	**<0.001**

Objective sleep measurements showed decreased WASO, both in duration and as a proportion of the night; fewer awakenings; and better sleep efficiency and sleep maintenance. Better overall sleep quality was indicated by improvement in SleepScore.

Self-Report Results (n = 1453 nights)

	Observed		Estimated		
	Original Mattress	Memory Foam Mattress	Constant	Beta	p-value
Comfort in Bed (0-100)	60.42	76.48	60.61	16.09	<0.001
Perceived Time to Fall Asleep (min)	21.31	15.99	21.25	-5.41	<0.001
Perceived # Times Woke Up	2.31	2.08	2.31	-0.26	0.002
Perceived Time Awake After Falling Asleep (min)	28.24	18.66	28.36	-10.25	<0.001
Perceived Sleep Quality (0-100)	59.10	74.84	59.30	15.79	<0.001
Feeling Well-Rested in the Morning	57.58	73.49	57.92	15.72	<0.001

Daily self-report showed greater comfort, as well as improvement in a variety of perceived sleep outcomes including falling asleep faster, waking up less often, spending less time awake after initially falling asleep, better sleep quality, and feeling more rested in the morning. Pre-post self-report also showed longer perceived duration of sleep.