

The Use of Lavender in Sleep

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Question

Does the use of lavender before bedtime affect sleep quality in adults?



Evidence-based Answer

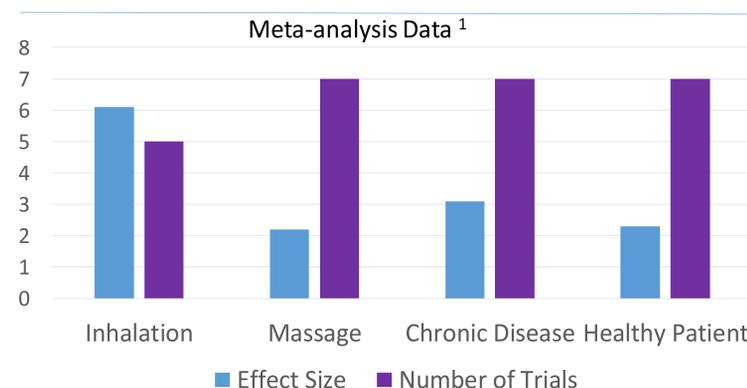
The use of lavender oil aromatherapy moderately improves sleep quality when used before bedtime and was more affective via inhalation when compared to massage, and in patients with chronic disease when compared to healthy individuals. (SOR: A, systematic review and meta-analysis). Inhaled lavender with sleep hygiene practices minimally improves sleep quality compared to sleep hygiene practices alone (SOR: B, small randomized controlled trial [RCT]).

Summarized Data Review

A 2015 systematic review and meta-analysis of 13 RCTs and non-randomized experimental trials (N=704) evaluated the effects of aromatherapy on sleep improvement.¹ Four papers reported lavender oil as an aromatherapy used in their studies of sleep quality.

The lavender was delivered by inhalation daily for two to three weeks, twice weekly massage for six weeks, or warm packets applied three times a day for three weeks with each study including a control group. Sleep quality and efficiency were measured using a numeric rating scale for participant's perceived quality of sleep. Findings included:

- Compared to controls, lavender showed improved sleep overall
 - 12 trials, N=659
 - Effect size 3.7
- Inhalation therapy improved sleep better than aromatherapy via massage
- Participants with chronic disease experienced improved sleep quality compared to healthy individuals



A 2015 double-blinded RCT (N=79) of college students with self-reported sleep issues examined the efficacy of lavender plus sleep hygiene compared to sleep hygiene alone on sleep quality and quantity.² The trial included participants older than 18 years old who experienced difficulty falling and staying asleep, or daytime sleepiness. Participants received a patch containing 55 µl of lavender oil (n=39) or a placebo patch with a blank disc (n=40). Both groups wore a new patch on their chest during sleep each night for five nights. Each received a list of sleep practices based on NIH recommendations and completed sleep hygiene surveys (SHS) during the study.

The Pittsburgh Sleep Quality Index (PSQI) along with the NIH Patient Reported Outcomes Measurement Information System (PROMIS) were used to measure sleep quality. Findings from the study included:

- Lavender plus sleep hygiene resulted in better sleep quality immediately post-intervention using ≥ 3 = clinical significance
 - Lavender plus sleep hygiene-PSQI score of 8.2 initially vs 4.9 post (difference= 3.3)
 - Sleep hygiene alone group-PSQI score of 8.7 initially vs 6.5 post (difference=2.2)
- PROMIS demonstrated improved sleep quality with lavender plus sleep hygiene at the two week follow-up
 - PROMIS score difference not available but reported $p < .03$
- Sleep quantity did not differ between the two groups.
- Sleep hygiene improved in both groups

TABLE 2. SHS FREQUENCIES AND MEANS: BETTER SLEEP HYGIENE SCORES POSTTREATMENT AND NO DIFFERENCES BETWEEN GROUPS

Group	Assessment	Mean SHS score	SD	Minimum SHS score	Maximum SHS score	N	p-Value between group differences
LSH group	Pre	42.72	11.54	20	76	39	
	Post	23.16	11.88	4	45	38	
	Follow-up	31.47	11.07	7	57	36	
SH group	Pre	41.53	10.79	22	66	40	
	Post	21.39	11.34	0	54	38	
	Follow-up	32.23	12.53	3	58	35	
Total	Pre	42.11	11.12	20	76	79	0.64
	Post	22.28	11.57	0	54	76	0.51
	Follow-up	31.85	11.73	3	58	71	0.79

SHS score range is 0-112, with lower scores indicating better sleep hygiene.
LSH group, lavender plus sleep hygiene group; SH group, sleep-hygiene-only group; SHS, sleep hygiene survey.

References

1. Hwang E, Shin S. The Effects of Aromatherapy on Sleep Improvement: A Systematic Literature Review and Meta-Analysis. *The Journal of Alternative and Complementary Medicine*. 2015;21(2):1-8. [STEP 2]
2. Lillehei AS, Halcón LL, Savik K, Reis R. Effect of Inhaled Lavender and Sleep Hygiene on Self-Reported Sleep Issues: A Randomized Controlled Trial. *The Journal of Alternative and Complementary Medicine*. 2015;21(7):430-438. [STEP 2]