

Best Evidence Summaries of Topics in Mental Healthcare

BEST in MH *clinical question-answering service*

Question

For people with seasonal or non-seasonal depression, how effective is light therapy compared with any other or no intervention in improving all patient outcomes?

Clarification of question using *PICO* structure

Patients: People with seasonal or non-seasonal depression
Intervention: Light therapy
Comparator: Any other or no intervention
Outcome: All patient outcomes

Plain language summary

Bright white light therapy shows promise for people with seasonal depression but we don't have enough high-quality evidence to advise its use as standard. For people with non-seasonal depression, there is stronger evidence for using light therapy alongside antidepressant medication than by itself, but again more evidence is needed before recommending it as a treatment.

Clinical and research implications

No definite clinical implications may be made based on the evidence included in this BEST summary. In terms of further research directions, in one of the reviews included in this summary, it was suggested that there is a need to identify subgroups of non-seasonal depressed patients who may respond to light therapy better than others; the selection of these subgroups could be based on studies of patients with seasonal affective disorder, or by their daily cyclical (chronobiological) characteristics.

What does the evidence say?

Number of included studies/reviews (number of participants)

Two systematic reviews (SRs) met the inclusion criteria for this BEST summary (Even et al. 2008; Mårtensson et al. 2015).

Main findings

The SR by Mårtensson et al. (2015) evaluated the effectiveness of morning bright white light therapy versus placebo in adults with seasonal affective disorder (SAD) (n=8 randomised controlled trials [RCTs]) or non-seasonal major depression (n=2 RCTs). A meta-analysis of the trials demonstrated a significant effect in favour of bright light therapy compared with placebo for SAD (SMD -0.54 [95% CI: -0.95 to -0.13]). The authors noted, however, that this significant result was largely due to the inclusion of one study that only analysed participants who completed the full study. A meta-analysis of the two trials that evaluated non-seasonal depression was not conducted due to differences in the characteristics of the two samples. However, the authors did not even report the results of either of these studies.

A SR by Even et al. (2008) evaluated the effectiveness of bright white therapy in adults with non-seasonal depression. In this review, the authors included separate analyses of participants who were or were not taking antidepressants. In those participants who were not taking antidepressants (n=7 RCTs), the authors found inconsistent results for the effectiveness of bright white light therapy compared to a placebo low-intensity light condition or to a sham air ionization device. In those participants who were taking antidepressants (n=5 RCTs), the authors found positive results in four of the studies in favour of bright white light therapy compared to a placebo low-intensity light condition or antidepressants only. As both intervention and comparator groups received antidepressants in this latter group, these studies suggested that bright white therapy provides benefit as an augment to antidepressant medication.

Authors conclusions

Mårtensson et al. (2015) suggested that the evidence was not robust enough to make clear conclusions. The authors noted that the results of previously published meta-analyses are highly dependent on the study selection.

Even et al. (2008) reported that bright light therapy alone (without concomitant medication) for the treatment of non-seasonal depression yielded inconsistent results. They also concluded that bright light therapy could be considered as an adjuvant therapy to antidepressant medication.

Reliability of conclusions/Strength of evidence

Most aspects of the SR by Mårtensson et al. (2015) were very well conducted, but no results were presented for the trials that evaluated non-seasonal depression, and it is not clear how much statistical heterogeneity was present in the meta-analyses. The authors' conclusions are, however, appropriate given the methodological limitations of the included studies.

Given the methodological limitations and uncertainties of the SR by Even et al. (2008), and of the included studies, the results and review conclusions should be treated with caution.

What do guidelines say?

The Scottish Intercollegiate Guidance Network guidelines, 'Non-pharmaceutical management of depression in adults' (2010) make the following comments on the use of light therapy for non-seasonal depression:

"A Cochrane review [2004] of light therapy for non-seasonal depression identified 20 RCTs comparing bright light with inactive placebo treatments for non-seasonal depression. The review found that bright light may confer modest benefits on severity of depression symptoms in the very early stages of treatment of people with depressive disorder in hospital and long term care settings. A subsequent good quality systematic review reported that trials evaluating light therapy as a stand-alone intervention in non-seasonal depression had inconsistent results. There is insufficient consistent evidence on which to base a recommendation." (p.14)

The National Institute for Health and Clinical Excellence guidelines, 'Depression in adults' (2009), make the following comments on the use of light therapy for seasonal depression:

"1.6.1.2 Advise people with winter depression that follows a seasonal pattern and who wish to try light therapy in preference to antidepressant or psychological treatment that the evidence for the efficacy of light therapy is uncertain." (p.28)

Date question received: 21/08/2015

Date searches conducted: 25/08/2015

Date answer completed: 03/09/2015

References

Systematic reviews

Even, C., Schröder, C. M., Friedman, S., & Rouillon, F. (2008). Efficacy of light therapy in nonseasonal depression: a systematic review. *Journal of Affective Disorders*, 108(1), 11-23.

Mårtensson, B., Pettersson, A., Berglund, L., & Ekselius, L. (2015). Bright white light therapy in depression: A Critical Review of the Evidence. *Journal of Affective Disorders*, 182, 1-7.

Guidelines

The National Institute for Health and Clinical Excellence (2009). *Depression in adults: The treatment and management of depression in adults*. NICE clinical guidelines 90. DOI: <http://www.nice.org.uk/guidance/cg90>

The Scottish Intercollegiate Guidance Network. (2010). *Non-pharmaceutical management of depression in adults*. SIGN 141. DOI: <http://www.sign.ac.uk/pdf/sign114.pdf>

Results











Systematic reviews


Author (year)	Search date	Inclusion criteria	Number of included studies	Summary of results	Risk of bias
Mårten-sson et al. (2015)	June 2014	<p>Participants: Adults with a diagnosis of seasonal affective disorder (SAD; 8 studies) or major depression (2 studies); as assessed by Diagnostic and Statistical Manual of Mental Illness (DSM), version III, III-R or IV; or research diagnostic criteria (RDC).</p> <p>Intervention: Morning bright white light (BWL)</p> <p>Comparator: Placebo condition, typically red low-intensity light</p> <p>Outcome: Depression symptoms, as measured by Hamilton Rating Scale for Depression (HAM-D/HRSD); Structured Interview Guide for the Hamilton Depression Rating Scale, Seasonal Version (SIGH-SAD); or SIGH-SAD self-report version.</p> <p>Study design: Systematic review of RCTs on light therapy for adults with SAD or major depression, and meta-analysis of light therapy for adults with SAD (8 studies).</p>	10 RCTs (8 studies on adults with SAD; 2 studies on adults with major depression)	<p>SAD: A meta-analysis of the 8 trials demonstrated a significant effect in favour of morning bright light therapy compared with placebo for SAD (SMD -0.54 [95% CI: -0.95 to -0.13]). No results for heterogeneity were described. The authors also conducted meta-analysis by duration of treatment – ranging from one week to 6 weeks. Only results from weeks 2 and 3 were significant in these meta-analyses (SMD -0.50 [95% CI: -0.94 to -0.05], 7 trials, and (SMD -0.31 [95% CI: -0.59 to -0.03], 4 trials respectively).</p> <p>Non-seasonal depression: Due to different study populations, the authors did not combine these two studies in a meta-analysis. No clear results were presented for these studies.</p>	High
Even et al. (2008)	June 2006	<p>Participants: (i). Adults with non-seasonal depression (12 studies); (ii). Adults with seasonal affective disorder (SAD) & adults with non-seasonal</p>	15 trials with a 'controlled	Light therapy in seasonal vs. non-seasonal depressed people: All 3 studies report significant results in with favour of those	High


		<p>depression (3 studies). Various measures were used to check this criteria, including informal interviews.</p> <p>Intervention & Comparator: For all studies: Light therapy involving a minimum total daily exposure of 5000 lux (measure of brightness intensity), given for at least one week.</p> <p>(i). Three studies compared light therapy for adults with seasonal vs non-seasonal depression; (ii). Seven studies compared light therapy alone to placebo low-intensity light alone for adults with non-seasonal depression; (iii). Five studies compared light therapy to placebo low-intensity light in addition to antidepressant medication.</p> <p>Outcome: Depression symptoms, measured by HAM-D/HRSD & SIGH-SAD.</p> <p>Study design: Systematic review and narrative analysis of studies that used a 'controlled parallel group design', grouped into the three categories outlined in 'Intervention & Comparator' section above.</p>	<p>parallel group design' ((i). 3 studies: SAD vs non-seasonal depression; (ii). 7 studies: non-seasonal depression & no meds; (iii). 5 studies: non-seasonal depression & meds).</p>	<p>with seasonal depression.</p> <p>Light therapy vs. placebo in people with non-seasonal depression without antidepressants: The seven studies reported inconsistent results.</p> <p>Light therapy vs. placebo in people with non-seasonal depression who were also taking antidepressant medication: Four out of five studies reported positive results in favour of light therapy.</p>	
--	--	--	--	---	--


Risk of bias

Systematic reviews

Author (year)	RISK OF BIAS				
	Inclusion criteria	Searches	Review process	Quality assessment	Synthesis
Mårtensson et al. (2015)					
Even et al. (2008)					

 Low risk

 High risk

 Unclear risk

Search details

Source	Search Strategy	Number of hits	Relevant evidence identified
<i>Guidelines</i>			
NICE	"light therapy" "light therapy" seasonal	9 2	1 1
<i>Systematic Reviews</i>			
MEDLINE	14. Medline; exp MAJOR DEPRESSION/; 0 results. 15. Medline; depression.ti,ab; 231895 results. 16. Medline; SEASONAL AFFECTIVE DISORDER/; 1089 results. 17. Medline; "seasonal affective disorder".ti,ab; 1039 results. 18. Medline; SAD.ti,ab; 6674 results. 19. Medline; 14 OR 15 OR 16 OR 17 OR 18; 237860 results. 20. Medline; PHOTOTHERAPY/; 5906 results. 21. Medline; phototherapy.ti,ab; 5551 results. 22. Medline; "light therapy".ti,ab; 1245 results. 23. Medline; heliotherapy.ti,ab; 126 results. 24. Medline; 20 OR 21 OR 22 OR 23; 9845 results. 25. Medline; 19 AND 24; 990 results. 26-46. Medline; Systematic Review Filter 47. Medline; 25 AND 46 [Limit to: Publication Year 2010-2015]; 20 results.	20	1
EMBASE	14. EMBASE; exp MAJOR DEPRESSION/; 41878 results. 15. EMBASE; depression.ti,ab; 305303 results. 16. EMBASE; SEASONAL AFFECTIVE DISORDER/; 1030 results. 17. EMBASE; "seasonal affective disorder".ti,ab; 1251 results. 18. EMBASE; SAD.ti,ab; 8838 results. 19. EMBASE; 14 OR 15 OR 16 OR 17 OR 18; 327340 results. 20. EMBASE; PHOTOTHERAPY/; 17278 results. 21. EMBASE; phototherapy.ti,ab; 7515 results. 22. EMBASE; "light therapy".ti,ab; 1684 results. 23. EMBASE; heliotherapy.ti,ab; 131 results.	52	1

	24. EMBASE; 20 OR 21 OR 22 OR 23; 19269 results. 25. EMBASE; 19 AND 24; 1452 results. 26-51:EMBASE Systematic Review Filter 52. EMBASE; 25 AND 51 [Limit to: Publication Year 2010-2015]; 52 results.		
PsycINFO	1. PsycInfo; exp MAJOR DEPRESSION/; 101943 results. 3. PsycInfo; depression.ti,ab; 184441 results. 4. PsycInfo; SEASONAL AFFECTIVE DISORDER/; 954 results. 5. PsycInfo; "seasonal affective disorder".ti,ab; 1010 results. 6. PsycInfo; SAD.ti,ab; 6350 results. 7. PsycInfo; 1 OR 3 OR 4 OR 5 OR 6; 205769 results. 8. PsycInfo; PHOTOTHERAPY/; 772 results. 9. PsycInfo; phototherapy.ti,ab; 270 results. 10. PsycInfo; "light therapy".ti,ab; 657 results. 11. PsycInfo; heliotherapy.ti,ab; 4 results. 12. PsycInfo; 8 OR 9 OR 10 OR 11; 1144 results. 13. PsycInfo; 7 AND 12; 726 results. 14.-35. PsycInfo; Systematic Review Filter 36. PsycInfo; 13 AND 35 [Limit to: Publication Year 2010-2015]; 16 results.	16	1
<i>Primary Studies</i>			
MEDLINE	14. Medline; exp MAJOR DEPRESSION/; 0 results. 15. Medline; depression.ti,ab; 231895 results. 16. Medline; SEASONAL AFFECTIVE DISORDER/; 1089 results. 17. Medline; "seasonal affective disorder".ti,ab; 1039 results. 18. Medline; SAD.ti,ab; 6674 results. 19. Medline; 14 OR 15 OR 16 OR 17 OR 18; 237860 results. 20. Medline; PHOTOTHERAPY/; 5906 results. 21. Medline; phototherapy.ti,ab; 5551 results. 22. Medline; "light therapy".ti,ab; 1245 results. 23. Medline; heliotherapy.ti,ab; 126 results. 24. Medline; 20 OR 21 OR 22 OR 23; 9845 results. 25. Medline; 19 AND 24; 990 results. 26-33. Medline; RCT filter 34. Medline; 25 AND 33; 317 results.		
EMBASE	14. EMBASE; exp MAJOR DEPRESSION/; 41878 results.	347	0

	15. EMBASE; depression.ti,ab; 305303 results. 16. EMBASE; SEASONAL AFFECTIVE DISORDER/; 1030 results. 17. EMBASE; "seasonal affective disorder".ti,ab; 1251 results. 18. EMBASE; SAD.ti,ab; 8838 results. 19. EMBASE; 14 OR 15 OR 16 OR 17 OR 18; 327340 results. 20. EMBASE; PHOTOTHERAPY/; 17278 results. 21. EMBASE; phototherapy.ti,ab; 7515 results. 22. EMBASE; "light therapy".ti,ab; 1684 results. 23. EMBASE; heliotherapy.ti,ab; 131 results. 24. EMBASE; 20 OR 21 OR 22 OR 23; 19269 results. 25. EMBASE; 19 AND 24; 1452 results. 26-39. EMBASE; RCT Filter. 40. EMBASE; 25 AND 39; 347 results.		
PsycINFO	1. PsycInfo; exp MAJOR DEPRESSION/; 101943 results. 3. PsycInfo; depression.ti,ab; 184441 results. 4. PsycInfo; SEASONAL AFFECTIVE DISORDER/; 954 results. 5. PsycInfo; "seasonal affective disorder".ti,ab; 1010 results. 6. PsycInfo; SAD.ti,ab; 6350 results. 7. PsycInfo; 1 OR 3 OR 4 OR 5 OR 6; 205769 results. 8. PsycInfo; PHOTOTHERAPY/; 772 results. 9. PsycInfo; phototherapy.ti,ab; 270 results. 10. PsycInfo; "light therapy".ti,ab; 657 results. 11. PsycInfo; heliotherapy.ti,ab; 4 results. 12. PsycInfo; 8 OR 9 OR 10 OR 11; 1144 results. 13. PsycInfo; 7 AND 12; 726 results. 14-23. PsycInfo; RCT Filter 24. PsycInfo; 13 AND 23; 255 results.	255	0
CENTRAL	#1 MeSH descriptor: [Depressive Disorder, Major] explode all trees 2512 #2 "clinical depress*" 267 #3 "clinically depress*" 112 #4 "major depress*" 7478 #5 MeSH descriptor: [Seasonal Affective Disorder] this term only 139 #6 "seasonal affective disorder" 309 #7 SAD 816	217	0

	#8	#1 or #2 or #3 or #4 or #5 or #6 or #7	9157		
	#9	MeSH descriptor: [Phototherapy] explode all trees	2283		
	#10	phototherapy	1739		
	#11	"light therapy"	450		
	#12	heliotherapy	21		
	#13	#9 or #10 or #11 or #12	3307		
	#14	#8 and #13	258		
		Central only	217		

Disclaimer

BEST in MH answers to clinical questions are for information purposes only. BEST in MH does not make recommendations. Individual health care providers are responsible for assessing the applicability of BEST in MH answers to their clinical practice. BEST in MH is not responsible or liable for, directly or indirectly, any form of damage resulting from the use/misuse of information contained in or implied by these documents. Links to other sites are provided for information purposes only. BEST in MH cannot accept responsibility for the content of linked sites.

© Best Evidence Summaries of Topics in Mental Health 2015