

Research

iRest Meditation for Older Adults with Depression Symptoms: 6-Month and 1-Year Follow-up

Helané Wahbeh, ND, MCR,¹ Nina Fry, MA¹

1. Institute of Noetic Sciences, Petaluma, Calif.

Correspondence: hwahbeh@noetic.org

Abstract

Preliminary positive evidence supports the use of iRest (Integrative Restoration) in older adults with depression symptoms. No long-term follow-up measures have been reported on whether the preliminary effects continue beyond initial iRest trainings. The growing population of older adults with depression symptoms is a serious public health issue, and effective interventions to support this vulnerable population are warranted. The objectives of this study were to evaluate the depression and depression-related symptoms 6 and 12 months after an iRest intervention. All study measures were collected online. Twenty-five of the original participants completed the 6- and 12-month surveys. Of those, nine stated that they still practiced the guided meditations at the time of the 12-month follow-up (five iRest and four vacation participants). Both groups had improvements in depression scores from baseline (week 0) to the 12-month follow-up. There were no differences between groups on depression symptoms or other measures except for negative mood and perceived stress, which were improved in the vacation group compared to the iRest group. Meditation practice was not a significant predictor of depression score improvement. *Wahbeh & Fry. Int J Yoga Therapy 2019(29). doi: 10.17761/2019-00029.*

Keywords: Integrative Restoration (iRest), meditation, yoga, yoga nidra, older adults, depression

Introduction

An estimated 16.2 million adults had at least one major depressive episode in the past year in the United States,¹ and depression is one of the leading causes of disease burden globally.² Older adults are especially at risk for depression because they have fewer physiological reserves. This is a serious public health issue, as the number of elders continues to rise. In the United States, the population aged 65 and older

is projected to reach 83.7 million in 2050, almost double the 2012 level of 43.1 million.³ Late-life depression has devastating consequences—such as increased risk of morbidity and suicide; decreased physical, cognitive, and social functioning; and greater self-neglect—all of which are in turn associated with increased mortality.⁴

These staggering statistics motivate the development and testing of therapies that address depression symptoms in accessible and effective ways. Large systematic reviews provide growing evidence that meditation therapy has benefits to treat depression symptoms.^{5,6} Meditation is an appealing therapy because of the relatively low cost, low physical and emotional risk, accessibility, ease of implementation, and possibility for patients to take a more active role in their treatment.⁷

Integrative Restoration (iRest) is one such meditation program. iRest is based on Yoga Nidra (or “yogic sleep”), which is a form of meditation that guides the mind and body to a state of consciousness between waking and sleeping. In this state, the body is completely relaxed and the meditator becomes systematically and increasingly aware of their inner, sensory world by following a set of verbal instructions. The goal of this type of meditation is to observe sensations without responding to them.⁸ The practice begins with a body scan that can be done sitting, lying down, or standing. Meditators are encouraged to explore sensations, emotions, and thought patterns, moving back and forth between feeling and witnessing, allowing both to reside simultaneously in awareness.⁸ One of iRest’s hallmarks in helping people with depression is that it focuses on emotional regulation in the present moment, teaching the skill of being more comfortable with emotions. iRest also incorporates a technique to reconcile opposing emotions, allowing participants to become more comfortable with the full range of human emotions, even those that can be uncomfortable. iRest can also promote the direct experience of positive emotions during the guided meditations, nurturing the practitioner’s ability to recall positive experiences at

will, even in times of stress. iRest also offers an approach to enhance the quality of late life by easing the associated suffering and addressing the root causes of suffering as opposed to superficial palliation of depressive symptoms through medication.

Some studies have shown that iRest is feasible in different populations,^{9–11} including older adults with depression symptoms.¹² Preliminary evidence shows that iRest improves anxiety, hostility,¹³ and stress¹⁴ in participants with chronic illness; it reduces stress and fatigue in school counselors¹⁰; and it reduces perceived stress, worry, and depression in college students (age range 18–56).¹¹ Other pilot studies, with veterans, have shown reduced rage, anxiety, and emotional reactivity; increased feelings of relaxation, peace, self-awareness, and self-efficacy¹⁵; and significant decreases in depression, increased feelings of joy, and improved quality of sleep and ability to manage stress.¹⁶

In a 2017 pilot study, we evaluated iRest for older adults with depression.¹² In a controlled trial, generally healthy adults, aged 55–90, with depression symptoms were randomized to receive a 2-day retreat of either iRest meditation training or vacation at EarthRise Retreat Center in Petaluma, California. After the retreat, participants were asked to complete 20 minutes of home practice per day for 6 weeks; this consisted of either guided meditations (iRest) or music (Vacation). Measures included expectancy, depression-related variables (depression symptoms, perceived stress, resilience, pain, sleep quality, and spirituality), and biomarkers (voice stress analysis, heart rate, and heart rate variability) and were collected pre- and post-retreat and then 6 weeks later. iRest was found to be feasible and acceptable for this population. The 6-week preliminary results showed sleep improvements compared to the control group and promising trends for depression symptom and pain severity improvements.¹²

This study builds upon the previous work by collecting 6- and 12-month follow-up data on the same participants from the original study. The objectives of this study were to evaluate the longer term effects of the iRest intensive retreat compared to the control group, who received access to the iRest information and guided meditations but not the formal training.

Methods

Study Overview

We have already reported the immediate effects of iRest as assessed with a randomized controlled trial of older adults with depression symptoms.¹² In the initial study, participants were randomized to receive a 2-day intensive iRest training or an active time and attention control (Vacation). This follow-up study assessed the same participants 6 and 12 months later. At the end of the original study, all partic-

ipants received access to the written material and guided meditations introduced in the course. Thus, the present study is evaluating the effects of an intensive iRest training with access to the materials compared to materials access alone. The study was approved by the Institute of Noetic Sciences Institutional Review Board.

Participants

Participants were recruited and screened in the original study with the following inclusion/exclusion criteria.¹² Inclusion criteria were age 55–90 years old, baseline Center for Epidemiologic Studies Depression (CESD)-5 score ≥ 4 ,¹⁷ stable on medications 6 weeks prior to and during study, willing to learn and use study technology, ability to hear and understand instructions, and willing to accept randomization scheme and agree to follow the study protocol. Exclusion criteria were cognitive impairment limiting the ability to give consent or follow the study protocol (≤ 30 on the Modified Telephone Interview for Cognitive Status [mTICS]),¹⁸ significant acute medical illness that would decrease likelihood of study completion (self-report), significant untreated depression as assessed by CESD-5 > 32 and interview (at the principal investigator's discretion, stable participants under the current care of a mental health professional could be enrolled in the study), and current daily meditation practice (≥ 5 min/day daily for at least 30 days in the previous 6 months; past practice was not exclusionary but was recorded).

Study Procedures

All participants from the original study were contacted at 6 and 12 months after the study and asked to complete an online survey through Survey Monkey. Participants were compensated \$50 for their time and effort for completing the 6-month survey and \$50 for completing the 12-month survey.

Measures

The survey included the same measures used in the original study.

- **Depression:** The CESD-5 was used for the screening. The CESD full version was used as the primary outcome.¹⁹ The Positive and Negative Affect Schedule-10²⁰ was also used to assess positive and negative aspects of mood.
- **Sleep quality:** The Pittsburgh Sleep Quality Index²¹ was administered because mind-body therapies improve sleep function²² and may mediate stress effects on cognition.²³
- **Pain:** The Brief Pain Inventory, a 9-item pain scale that results in a pain severity and interference measure, was used.²⁴

- **Perceived stress:** Perceived Stress Scale.²⁵
- **Resilience:** Brief Resilience Scale.^{26,27}
- **Spirituality:** Spiritual Involvement and Beliefs Scale.²⁸
- **Mindfulness:** Five-Factor Mindfulness Questionnaire²⁹ and Applied Mindfulness Process Scale.³⁰
- **Adherence:** The number of times per week the participants used the meditations was collected via self-report. The objective adherence program iMINDr was not used in the follow-up study because it required the use of a study Apple iPod the participants had already returned.

Statistical Analysis

Means and standard deviations were reported for each measure. Preliminary effects of iRest were evaluated with a repeated-measures analysis of variance conducted with each measure as the dependent variable, group assignment as the independent variable, and visit number (6-week, 6-month, 12-month) as the repeated-measures variable. Because this was a pilot study and not powered to detect group differences, within-group comparisons of baseline (week 0) and 12-month follow-up scores were also evaluated for the primary depression outcome. The participants and research assistants collecting the data were blinded to assignment at the baseline measure. The analysis was conducted using blinded methods. As with most mind-body trials, the participants were not blinded to their assignment after randomization.

Results

Recruitment of the participants proceeded easily. Ninety-three percent of the iRest participants and 79% of the Vacation participants completed the 12-month follow-up. Of the 15 iRest participants in the original study, 15, 13, and 14, respectively, participated in the 6-week, 6-month, and 12-month follow-ups; of the 14 original Vacation participants, 13, 12, and 11, respectively, participated in the 6-week, 6-month, and 12-month follow-ups. Participants were generally college-educated, Caucasian females in a relationship, with a mean age of 65. Participants were well-matched on important demographics (see Wahbeh and Nelson¹² for additional data on participant demographics and recruitment).

Of the participants who completed the follow-ups, five of the iRest participants continued practicing their meditations, and four of the Vacation participants took advantage of having access to the iRest materials and used the guided meditations. At the 6-month follow up, five participants practiced once/week, two practiced two to three

times/week, and one practiced four to five times/week. At the 12-month follow-up, seven participants practiced once/week, one practiced two to three times/week, and one practiced four to five times/week. Meditation practice was not a significant predictor of depression scores over time after the retreat ($F(49) = 0.02, p = 0.89$).

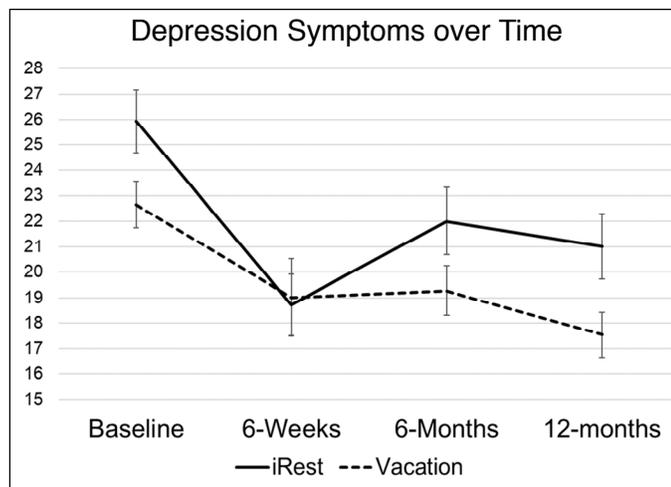
Means, standard deviations, and change scores for 6-week, 6-month, and 12-month time points are listed in Table 1. There continued to be no group difference in depression symptoms as measured by the CESD-20 scale with the repeated-measures model between the 6-week, 6-month, and 12-month time points ($F(26) = 0.16, p = 0.85$; Fig. 1). Both groups had a comparable and significant decrease in depression symptom scores from the baseline (week 0) to the 12-month follow-up (iRest baseline 25.9 (9.4), 12-month 21.0 (9.6), $t(12) = 1.97, p = 0.04$; Vacation baseline 22.6 (6.8), 12-month 17.6 (6.7); $t(11) = 3.35, p = 0.004$). There were also no group differences in positive mood, pain interference or severity, sleep impairment, resilience, applied mindfulness, mindfulness, or spirituality.

Table 1. Mean (Standard Deviation) Depression and Depression-Related Measures

Measure		6-Week Follow-up	6-Month Follow-up	12-Month Follow-up	F Statistic, p Value
Depression	iRest	18.7 (8.9)	22.0 (9.9)	21.0 (9.6)	0.16, 0.85
	Vacation	19.0 (11.3)	19.3 (7.2)	17.5 (6.7)	
Negative mood	iRest	10.4 (3.9)	10.29 (2.9)	11.23 (3.8)	3.79, 0.03*
	Vacation	11.0 (5.8)	10.0 (3.1)	7.8 (2.7)	
Positive mood	iRest	18.3 (3.8)	17.6 (3.5)	17.5 (4.0)	1.02, 0.37
	Vacation	17.2 (4.9)	16.8 (4.3)	16.0 (3.5)	
Pain interference	iRest	2.4 (1.7)	2.8 (1.8)	2.8 (2.1)	0.33, 0.72
	Vacation	3.4 (3.0)	3.5 (2.7)	2.7 (2.3)	
Pain severity	iRest	2.7 (1.9)	2.6 (1.3)	2.5 (1.6)	0.15, 0.86
	Vacation	3.3 (2.6)	2.9 (1.4)	2.5 (1.4)	
Sleep impairment	iRest	7.8 (3.7)	7.8 (2.5)	7.9 (3.0)	0.29, 0.75
	Vacation	7.6 (3.5)	6.8 (2.6)	7.8 (2.7)	
Perceived stress	iRest	14.4 (8.7)	18.4 (7.8)	18.5 (10.6)	4.55, 0.02*
	Vacation	18.9 (7.2)	17.9 (8.7)	14.3 (5.7)	
Resilience	iRest	3.0 (0.2)	3.0 (0.2)	3.1 (0.2)	1.29, 0.28
	Vacation	2.9 (0.2)	3.1 (0.4)	2.9 (0.3)	
Applied mindfulness	iRest	39.9 (9.9)	35.9 (13.0)	36.8 (13.9)	2.14, 0.13
	Vacation	35.4 (12.1)	38.3 (7.6)	39.3 (5.9)	
Mindfulness	iRest	3.54 (0.7)	3.5 (0.7)	3.36 (0.8)	0.83, 0.44
	Vacation	3.6 (0.6)	3.3 (0.6)	3.5 (0.5)	
Spirituality	iRest	88.1 (21.4)	69.4 (4.6)	67.9 (8.2)	0.60, 0.56
	Vacation	89.3 (15.6)	63.6 (6.1)	64.5 (6.0)	

*Statistically significant value.

Figure 1. Depression Scores in the iRest and Vacation Groups



Participants were also asked, “Did you experience any unusual or stressful events during the course of the study?” This statement was endorsed by 20 participants at the 6-month data collection and by 17 participants at the 12-month collection. Descriptive answers varied; examples of responses include physical assault, cancer diagnoses, deaths or serious injuries of close friends or family members, and repercussions of the Sonoma County fires of October 2017. Participants were also asked, “Have you experienced any significant changes in your medical history in the last 6 months?” This statement was endorsed by 8 participants at the 6-month collection and by 11 participants at the 12-month collection. Some health changes included memory issues, cancer diagnosis and/or relapse, changes in medication, surgery, and injuries. Stress events and health changes were not significant when tested as predictors for any changes in depression symptoms.

Discussion

A high percentage of the original participants completed the follow-up surveys despite the numerous stressors they experienced during the study period. Compensation likely assisted in successful recruitment for the follow-up collections. Approximately 30% of each group continued practicing the guided meditations at some level. One participant continued with daily practice. Interestingly, meditation practice was not a predictor of depression score improvement, contrary to the findings of other studies.³¹ There were no reminders by study staff for participants to continue using their guided meditations; thus, one could consider this study to represent the lowest “dose” possible for iRest intervention.

There were no group differences in depression from after 6 weeks to the 12-month assessment, although within-

group analysis showed significant improvements in depression scores for both groups from baseline. Both groups began at moderate to severe depression symptomology and ended the study with moderate depressive symptomology clinically.¹⁹ Thus, participating in the study, regardless of original randomization and receiving access to the iRest materials and guided meditations, supported the older adults with depression symptoms in this study. Perhaps the attention or participation from the study on its own is therapeutic on some level, especially considering the low adherence levels to practice. The other depression-related symptoms—positive mood, pain interference or severity, sleep impairment, resilience, applied mindfulness, mindfulness, and spirituality—did not show any differences between groups; within-group analyses were not conducted, as they were secondary measures. The sleep impairment improvement seen in the original study¹² was not observed in this follow-up study. The practice levels of the iRest group during the first 6 weeks of the study were higher than during the follow-up period. Future studies should consider various ways to motivate practice in the person’s daily life. Other meditation studies have shown that home practice levels are related to improvements in outcomes.^{31,32} Negative mood and perceived stress were improved in the Vacation group compared to the iRest group, again highlighting that initial randomization did not affect longer term effects of exposure to iRest. Whether these improvements were a direct result of the intervention or of some other factor in participants’ lives is unknown.

These preliminary results suggest the need for further research to assess iRest as an intervention to improve depression symptoms in older adults. The study also highlights the importance of low-dose interventions as a beneficial, low-cost, low-resource option for older adults with depression. Future studies could consider this lower dose (i.e., materials + guided meditations) in addition to reminders and outreach calls from study or clinical staff to support participants in using the materials.

What is perhaps most striking about this study is the number of additional stressors and health issues the participants faced during its course. We know that this population is more vulnerable to stress effects that may contribute to cognitive decline, adverse effects in the hippocampus and prefrontal cortex, and neurodegenerative diseases either directly or through other stress mediators assessed by allostatic load.^{33,34} Certainly, any therapy that may help this population cope effectively with their stress would be warranted. iRest aims to address the root causes of suffering rather than palliating the symptoms superficially, which may be especially relevant when older adults face additional stressors beyond the common suffering of *abhinivesha* (clinging to life because of a fear of death). Although stress

and health changes were not significant predictors in this pilot study, these should be evaluated in future larger studies.

Limitations

A number of limitations of this study should be considered when reviewing the results. First, this and the original study were not powered to discover definitive differences between groups. Thus, the results of effect on depression and depression-related symptoms should be considered with this in mind. In addition, we were unable to evaluate adherence objectively during this follow-up phase of the study because iMINDr required a study iPod Touch, which the participants returned after the original study. iMINDr is now available as an application that can be installed on Android and iOS devices, so future studies can incorporate adherence measures of home practice beyond self-report. Additionally, a number of factors could influence the results, including passage of time, time of year, number of stressors, and other life or health events that could influence the changes in measures, especially considering the low use of the guided meditations.

Conclusions

iRest may be beneficial for older adults with depression at a minimal dose (i.e., without intensive training), such as listening to the guided meditations and using reading material without any formal training. A minimal-dose iRest intervention could be helpful for older adults, especially in light of the considerable stress they experience and their reduced reserves to cope with that stress. Including additional reminders and support to use the meditation tools may be supportive but need further study.

Acknowledgments

The authors would like to thank the Mental Insight Foundation for generous support of this project. The authors would also like to thank the Institute of Noetic Sciences, the intervention teachers Michael Sapiro, PsyD, and Noëlle Poncelot, PhD, and the participants for their time and energy.

Conflict-of-Interest Statement

The authors have no financial relationships with entities that could be perceived to influence the content of the submitted work; no patents, copyrights, or royalties relevant to the submitted work; and no other relationships or activities that could have influenced the content of the submitted work.

References

- National Institute of Mental Health. (2017). Major depression. Retrieved from <https://www.nimh.nih.gov/health/statistics/major-depression.shtml>
- Ferrari, A. J., Charlson, F. J., Norman, R. E., Patten, S. B., Freedman, G., Murray, C. J. L., . . . Whiteford, H. A. (2013). Burden of depressive disorders by country, sex, age, and year: Findings from the global burden of disease study 2010. *PLOS Medicine*, *10*(11), e1001547. doi: 10.1371/journal.pmed.1001547
- U.S. Census Bureau. (2014). Nation's older population to nearly double. Retrieved from <https://www.census.gov/newsroom/press-releases/2014/cb14-84.html>
- Blazer, D. G. (2003). Depression in late life: Review and commentary. *The Journals of Gerontology, Series A: Biological Sciences and Medical Sciences*, *58*(3), 249–265.
- Khoury, B., Sharma, M., Rush, S. E., & Fournier, C. (2015). Mindfulness-based stress reduction for healthy individuals: A meta-analysis. *Journal of Psychosomatic Research*, *78*(6), 519–528.
- Goyal, M., Singh, S., Sibinga, E. M., Gould, N. F., Rowland-Seymour, A., Sharma, R., . . . Haythornthwaite, J. A. (2014). Meditation programs for psychological stress and well-being: A systematic review and meta-analysis. *JAMA Internal Medicine*, *174*(3), 357–368.
- Wahbeh, H., Elsas, S. M., & Oken, B. S. (2008). Mind-body interventions: Applications in neurology. *Neurology*, *70*(24), 2321–2328.
- Miller, R. (2005). *Yoga nidra, the meditative heart of yoga*. Louisville, Colo.: Sounds True.
- Hull, A., Reinhard, M., McCarron, K., Allen, N., Jecmen, M. C., Akhter, J., . . . Soltes, K. (2014). Acupuncture and meditation for military veterans: First steps of quality management and future program development. *Global Advances in Health and Medicine*, *3*(4), 27–31.
- Birdsall, B., Pritchard, M., Elison-Bowers, P., & Spann, J. (2011). Does Integrative Restoration (iRest) meditation decrease perceived stress levels and negative moods in school counselors? Retrieved from https://www.counseling.org/docs/default-source/vistas/vistas_2011_article_84.pdf?sfvrsn=11
- Eastman-Mueller, H., Wilson, T., Jung, A. K., Kimura, A., & Tarrant, J. (2013). iRest yoga-nidra on the college campus: Changes in stress, depression, worry, and mindfulness. *International Journal of Yoga Therapy*, *23*, 15–24.
- Wahbeh, H., & Nelson, M. (2019). iRest meditation for older adults with depression symptoms: A pilot study. *International Journal of Yoga Therapy*, *29*. doi: 10.17761/2019-00036
- Bhushan, S., & Sinha, P. (2001). Yoga nidra and management of anxiety and hostility. *Journal of Indian Psychology*, *19*, 44–49.
- Pritchard, M. E., Elison-Bowers, P., & Birdsall, B. (2010). Impact of integrative restoration (iRest) meditation on perceived stress levels in multiple sclerosis and cancer outpatients. *Stress and Health*, *26*, 233–237.
- Stankovic, L. (2011). Transforming trauma: A qualitative feasibility study of integrative restoration (iRest) yoga Nidra on combat-related post-traumatic stress disorder. *International Journal of Yoga Therapy*, *21*, 23–37.
- Pence, P. G., Katz, L. S., Huffman, C., & Cojucar, G. (2014). Delivering Integrative Restoration-yoga nidra meditation (iRest) to women with sexual trauma at a veteran's medical center: A pilot study. *International Journal of Yoga Therapy*, *24*, 53–62.
- Kohout, F. J., Berkman, L. F., Evans, D. A., & Cornoni-Huntley, J. (1993). Two shorter forms of the CES-D (Center for Epidemiological Studies Depression) depression symptoms index. *Journal of Aging and Health*, *5*(2), 179–193.
- Welsh, K. A., Breitner, J. C., & Magruder, K. M. (1993). Detection of dementia in the elderly using telephone screening of cognitive status. *Neuropsychiatry, Neuropsychology, and Behavioral Neurology*, *6*, 103–110.
- Radloff, L. S. (1977). The CES-D scale: A self report depression scale for research in the general population. *Applied Psychological Measurements*, *1*, 385–401.

20. Thompson, E. R. (2007). Development and validation of an internationally reliable short-form of the positive and negative affect schedule (PANAS). *Journal of Cross-Cultural Psychology, 38*(2), 227–242.
21. Buysse, D. J., Reynolds, C. F., III, Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research, 28*(2), 193–213.
22. Neuendorf, R., Wahbeh, H., Chamine, I., Yu, J., Hutchison, K., & Oken, B. S. (2015). The effects of mind-body interventions on sleep quality: A systematic review. *Evidence-Based Complementary and Alternative Medicine, 2015*, 902708. doi: 10.1155/2015/902708
23. Oken, B. S., Fonareva, I., & Wahbeh, H. (2011). Stress-related cognitive dysfunction in dementia caregivers. *Journal of Geriatric Psychiatry and Neurology, 24*(4), 191–198.
24. Cleeland, C. S. (1991). *Brief Pain Inventory—Short Form*. Belmont, Mass.: Pain Research Group, Interactive Performance Technologies, LLC. Retrieved from: http://www.nprc.org/files/news/briefpain_short.pdf
25. Cohen, S., Kamarck, T., & Mermelstein R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior, 24*, 386–396.
26. Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine, 15*(3), 194–200.
27. Windle, G., Bennett, K. M., & Noyes, J. (2011). A methodological review of resilience measurement scales. *Health and Quality of Life Outcomes, 9*, 8. doi: 10.1186/1477-7525-9-8
28. Hatch, R. L., Burg, M. A., Naberhaus, D. S., & Hellmich, L. K. (1998). The Spiritual Involvement and Beliefs Scale. Development and testing of a new instrument. *Journal of Family Practice, 46*(6), 476–486.
29. Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., . . . Williams, J. M. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and nonmeditating samples. *Assessment, 15*(3), 329–342.
30. Li, M. J., Black, D. S., & Garland, E. L. (2016). The Applied Mindfulness Process Scale (AMPS): A process measure for evaluating mindfulness-based interventions. *Personality and Individual Differences, 93*, 6–15.
31. Parsons, C. E., Crane, C., Parsons, L. J., Fjorback, L. O., & Kuyken, W. (2017). Home practice in mindfulness-based cognitive therapy and mindfulness-based stress reduction: A systematic review and meta-analysis of participants' mindfulness practice and its association with outcomes. *Behaviour Research and Therapy, 95*, 29–41.
32. Crane, C., Crane, R. S., Eames, C., Fennell, M. J., Silverton, S., Williams, J. M., & Barnhofer, T. (2014). The effects of amount of home meditation practice in mindfulness based cognitive therapy on hazard of relapse to depression in the staying well after depression trial. *Behaviour Research and Therapy, 63*, 17–24.
33. Lupien, S. J., Schwartz, G., Ng, Y. K., Fiocco, A., Wan, N., Pruessner, J. C., . . . Nair, N. P. (2005). The Douglas Hospital longitudinal study of normal and pathological aging: Summary of findings. *Journal of Psychiatry & Neuroscience, 30*(5), 328–334.
34. McEwen, B. S. (2008). Central effects of stress hormones in health and disease: Understanding the protective and damaging effects of stress and stress mediators. *European Journal of Pharmacology, 583*(2-3), 174–185.