

Avondale University

ResearchOnline@Avondale

---

Education Papers and Journal Articles

School of Education and Science

---

9-1-2018

## Combining Lifestyle Medicine and Positive Psychology to Improve Mental Health and Emotional Well-being

Darren Morton

Avondale College of Higher Education, [darren.morton@avondale.edu.au](mailto:darren.morton@avondale.edu.au)

Follow this and additional works at: [https://research.avondale.edu.au/edu\\_papers](https://research.avondale.edu.au/edu_papers)



Part of the [Medicine and Health Sciences Commons](#)

---

### Recommended Citation

Morton, D. (2018). Combining lifestyle medicine and positive psychology to improve mental health and emotional well-being. *American Journal of Lifestyle Medicine*, 12(5), 370-374. doi: 10.1177/1559827618766482

This Article is brought to you for free and open access by the School of Education and Science at ResearchOnline@Avondale. It has been accepted for inclusion in Education Papers and Journal Articles by an authorized administrator of ResearchOnline@Avondale. For more information, please contact [alicia.starr@avondale.edu.au](mailto:alicia.starr@avondale.edu.au).

# Combining Lifestyle Medicine and Positive Psychology to Improve Mental Health and Emotional Well-being

## Introduction

Historically, lifestyle medicine has focused on the prevention, management, and treatment of physical ailments such as heart disease and diabetes, but there is growing evidence that lifestyle-based strategies can effectively improve mental health and emotional well-being, often at levels comparable to pharmacological intervention. Accordingly, there is an increasing call from outside the lifestyle medicine community to use lifestyle-based strategies for the prevention, management, and treatment of mental health conditions.<sup>1</sup> It is important that lifestyle medicine respond to this call because mental health is one of the major health challenges of our time, evidenced by approximately 1 in 5 people suffering a mental health episode each year<sup>2</sup> and 1 in 8 adults in the United States taking antidepressant medication each day.<sup>3</sup>

This article presents the evidence for a variety of lifestyle-based and nonpharmacological approaches for improving mental health and emotional well-being. The strategies presented arise from the lifestyle medicine literature as well as the complementary discipline of

positive psychology, which is a branch of psychology that adopts a strengths-based approach to helping individuals to flourish.<sup>4</sup>

## Food Feeds Mood

The symptoms of depression, including low mood with associated low energy levels and a tendency toward social isolation, may be a natural and helpful response to pathogenic exposure as the body responds to “foreign invaders,”

“food-like substances” may evoke depressive symptoms.<sup>5</sup> Certainly, there is increasing evidence showing a link between diet quality and mental health.<sup>6-9</sup>

In a study of more than 80 000 individuals from Great Britain, a dose-response relationship was observed between the consumption of fruits and vegetables and happiness, even after controlling for numerous personal, social, and economic factors known to influence emotional well-being.<sup>10</sup> In the

**... mental health is one of the major health challenges of our time, evidenced by approximately 1 in 5 people suffering a mental health episode each year ...**

such as harmful bacteria and viruses.<sup>5</sup> It has been hypothesized that highly processed foods may also be recognized by the human body as a foreign invader, and as a consequence, the ingestion of

study, consuming approximately 7 to 8 servings of fruits and vegetables a day conferred optimal happiness benefits. To elucidate causality, New Zealand researchers tracked individuals' fruit and

DOI: 10.1177/1559827618766482. From Lifestyle Research Centre, Avondale College of Higher Education, Cooranbong, NSW, Australia. Address correspondence to: Darren P. Morton, Lifestyle Research Centre, Avondale College of Higher Education, Cooranbong, NSW, Australia; e-mail: darren.morton@avondale.edu.au.

For reprints and permissions queries, please visit SAGE's Web site at <http://www.sagepub.com/journalsPermissions.nav>.

Copyright © 2018 The Author(s)

vegetable consumption and emotional well-being.<sup>11</sup> Once again, they found that individuals who ate the most fruit and vegetables reported the highest levels of subjective personal well-being, with about 8 servings daily being ideal. Noteworthy, a causal effect was observed, whereby participants in the study reported feeling happier the day after they consumed higher levels of fruits and vegetables.

The evidence suggests that whole, plant-based foods are most beneficial for promoting positive emotional well-being. Beezhold and Johnston<sup>12</sup> randomized omnivores to a control group (no change in diet), a pescovegetarian diet, or total vegetarian diet for 2 weeks. Only the total vegetarian group (ie, plant-based diet) recorded a significant improvement in their mood. More recently, intervention studies led by Australian researchers have shown a reduction in depressive symptoms through the adoption of a Mediterranean-style eating pattern that emphasized plant foods.<sup>13,14</sup>

### Motion Creates Emotion

Physical activity is arguably the most efficacious and yet underutilized antidepressant. To date, more than 25 studies have concluded that regular physical activity is associated with better mood and the prevention of depression.<sup>15</sup> A recent study involving 15 European countries found a positive association between physical activity level and self-reported happiness,<sup>16</sup> which suggests a dose-response relationship. Furthermore, a study by Cambridge researchers involving more than 10 000 individuals found that not only were more physically active people happier, but they also reported being happier in the moments they were more physically active.<sup>17</sup>

Several studies have even shown that exercise is comparable to antidepressant medication for relieving depression.<sup>18-20</sup> Whereas more intense exercise, which includes resistance exercise, seems to be particularly effective for improving mood,<sup>21,22</sup> improvement in mood may be

achieved through a single bout of exercise<sup>23</sup> and within 10 minutes.<sup>24</sup>

The mood-enhancing properties of physical activity may be mediated through several mechanisms, including the release of  $\beta$ -endorphins<sup>25</sup> and neurogenesis within the limbic region of the brain, which is involved in emotion.<sup>26</sup> Regardless of the mechanism, physical activity is one of the most evidence-based and effective methods available for promoting and enhancing emotional well-being.

### Blue and Green Should Often Be Seen

In a meta-analysis of more than 30 studies, McMahon and Estes<sup>27</sup> concluded that exposure to natural environments—blue and green spaces—promotes mental health and emotional well-being. For example, a study conducted in New Zealand found that every 1% increase in the amount of green space within 2 miles (3 km) of an individual's home was associated with a 4% lower prevalence of anxiety and mood disorders.<sup>28</sup>

The therapeutic benefits of natural landscapes have long been recognized. In 1984, Ulrich observed that hospital patients who had a view of a natural landscape tended to consume less painkilling medication and have shorter hospital stays.<sup>29</sup> Subsequently, exposure to green areas has been associated with less aggression and even just a window view of nature is significantly correlated to lower levels of domestic violence.<sup>30</sup> Indeed, studies consistently show that people who are more connected to nature suffer less anxiety and anger, and enjoy more vitality and happiness.<sup>31</sup>

With regard to the promotion of mental health, a particularly beneficial aspect of natural environments might be the intensity of light that individuals are exposed to in these spaces.<sup>32,33</sup> It is well documented that depression is exacerbated in countries of high latitude where there are extended periods of low lighting during the winter months—a condition referred to as seasonal affective disorder, abbreviated SAD.<sup>34</sup> Conversely, exposure to bright light is increasingly

being used as a treatment for depression,<sup>35</sup> with a recent study reporting light therapy to be more effective for relieving depression than antidepressant medications.<sup>32</sup>

Many people today may be exposed to inadequate light illuminance as a result of mostly inhabiting indoor environments, which have comparatively low lighting. Researchers from the University of Colorado reported that, on average, during waking hours individuals were exposed to 13 times greater luminance when winter camping (over 10 000 Lux) as compared with living a typical modern lifestyle that relies mostly on artificial lighting (approximately 750 Lux).<sup>36</sup> Protocols for using light therapy for the treatment of depression involve 10 000 Lux for 30 minutes each day, suggesting that these levels are necessary for robust mental health.<sup>32,33</sup>

### Rest to Feel Best

The average person sleeps approximately one-third of their life; however, in modern times, many people have adopted the mandate of Sir Henry Norman, who advised that “the very best way to lengthen the day is to steal a few hours from the night.”

Inadequate sleep is linked to low mood and depression,<sup>37</sup> and several studies suggest that inadequate sleep is causal of affective disorders.<sup>38</sup> Yoo et al<sup>38</sup> showed using functional magnetic resonance imaging that sleep-deprived individuals experience greater activity in limbic regions of the brain when they were shown aversive images, indicating increased emotional reactivity. Similarly, when shown a list of arbitrary words, sleep-deprived individuals were more than twice as likely to remember those words with negative connotations,<sup>39</sup> suggesting that the human brain is negatively orientated when sleep deprived.

The deleterious effects of sleep deprivation on mental health are intuitive; yet despite the United States National Sleep Foundation recommending that adults sleep 7 to 9 hours per night,<sup>40</sup> 30% sleep 6 hours or

less.<sup>41</sup> Arguably, the single biggest contributor to inadequate sleep time is night light pollution, experienced by more than 99% of people living in developed countries; it is noteworthy that the increasing rate of depression over the past few decades parallels the increased exposure of individuals to artificial light at night.<sup>42</sup>

Prioritizing adequate sleep is important for emotional well-being; however, another important aspect of “rest” is attending to work-life balance. There is evidence that humans display circaseptan (weekly) rhythms in a number of physical and psychological parameters and, as such, may benefit from adhering to a day of rest each week.<sup>43-45</sup> For example, in a 10-year prospective study of a Jewish cohort, Anson and Anson<sup>43</sup> found a predictable reduction in mortality on Saturdays, which is the Jewish Sabbath day of rest. The principle of taking a weekly rest day has been an integral component of several faith traditions for thousands of years and may be beneficial in modern times for managing work-life balance and associated well-being. A practice that has been promoted is the observance of a digital Sabbath in which people go offline for a day a week to prioritize real as compared to virtual interaction with others and the environment.<sup>46</sup>

### Feelings Follow Focus

Complex neuronal pathways connecting the prefrontal cortex and limbic structures predispose the emotional state of humans to be influenced by what they give their attention to and focus on.<sup>47</sup> Accordingly, it is unremarkable that ruminating on negative thoughts cultivates anxiety and depression.<sup>48</sup> Encouragingly, there is growing evidence that exercises that activate positive thought processes about the past, present, and/or future can improve mental health and happiness. Given that at least a third of thought flow during waking hours is undirected,<sup>49</sup> the importance of intentionally activating positive thought processes is evident.

Within the positive psychology literature, practicing gratitude is one of the most robust strategies used for increasing happiness,<sup>50</sup> and it has been demonstrated to elicit meaningful improvements in the emotional well-being of children, early adolescents, college students, middle-aged adults, and older adults.<sup>50-52</sup> Seligman et al<sup>50</sup> reported improvements in the subjective personal well-being of individuals for 1 month after they participated in a gratitude visit, which involved writing and delivering a letter of gratitude to someone who was especially significant to them.

The benefits of expressing gratitude have been attributed to amplification of positive memories, and hence positive thought processes, about the past. However, exercises inducing positive reflections about the present have also been shown to significantly increase emotional well-being in the long term. For example, in a study in which individuals were instructed to record 3 things that went well at the end of each day, levels of self-reported happiness progressively increased over a 6-month follow-up.<sup>50</sup>

Finally, engaging in positive thought processes about the future can improve mental health. In a meta-analysis conducted by Alarcon et al,<sup>53</sup> it was concluded that having positive expectations about the future—namely, having hope—is protective against depression and stress and promotes happiness.

### Giving Is Living

In his book *Darkness Visible*, Styron described severely depressed people as having “their minds turned agonizingly inward.”<sup>54</sup> In acknowledgement of this observation, it is intriguing that the act of turning the mind outward by intentionally serving the needs of others has been consistently shown to improve happiness, health, and even lifespan.<sup>55</sup> Indeed, service has even been described as enlightened self-interest, as compared to self-sacrifice, because of the rewards conferred to the giver.<sup>56</sup> Martin Seligman, a pioneering positive psychology

researcher, has asserted that “doing a kindness produces the single most reliable increase in well-being of any exercise we have tested.”<sup>57</sup>

A study conducted in the United States indicated that volunteering once per week increased the likelihood of people being “very happy” with their lives by the same amount as moving from a personal income bracket of less than \$20 000 to more than \$75 000 per annum.<sup>58</sup> In another study conducted by Canadian researchers, participants were given money to spend, and the impact on their happiness was recorded.<sup>59</sup> Intriguingly, a long-term increase in happiness was only observed among those participants who were instructed to spend the money on someone else as compared to themselves. Similarly, service-oriented lawyers report higher levels of happiness than money-oriented lawyers, despite having a much lower income.<sup>60</sup>

Scientists from various fields are converging on the fact that with regard to human well-being, by giving we receive. In an article published in *Scientific American Mind*, the authors concluded, “Our species is apparently the only one with a genetic makeup that promotes selflessness and true altruistic behavior.”<sup>61</sup>

### A Call to Action

The evidence, based on the strategies presented above, highlights the value of utilizing nonpharmacological approaches for the promotion of mental health and emotional well-being. Recent studies of the effectiveness of a multimodal lifestyle intervention (the Lift Project) that combines the above strategies with other additional lifestyle-based approaches have indicated that, on average, participants experience a 20% improvement in overall mental health in association with a 30% reduction in depressive symptoms, anxiety, and stress.<sup>62,63</sup> Furthermore, the greatest benefits of the intervention were observed among the participants with the poorest mental health scores at baseline, indicating that the strategies are beneficial even for clinical cohorts.<sup>62</sup> Whereas

structured interventions like the Lift Project might be the most efficacious method for engaging individuals with the strategies described above, these approaches can also be easily utilized as prescriptions by health professionals and clinicians who treat patients with affective disorders.

In conclusion, many developing countries are facing an escalating rise in affective disorders, and the current treatment paradigm, focusing on pharmacological intervention, is inadequate. In accordance with the mandate of lifestyle medicine to “treat the cause,” there is a need for providers and patients alike to recognize that, as with physical ailments such as heart disease and diabetes, the underlying causation of affective disorders such as depression and anxiety may be lifestyle related. Hence, evidence-based strategies from the fields of lifestyle medicine and positive psychology, including proper nutrition, physical activity, exposure to nature, adequate rest, activating positive thought processes, and engaging in service activities, should be considered frontline therapies for improving mental health and emotional well-being.

### Acknowledgment

This work was presented at Lifestyle Medicine 2017, October 22-25, Tucson, AZ.

### Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

### Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

### Ethical Approval

Not applicable, because this article does not contain any studies with human or animal subjects.

### Informed Consent

Not applicable, because this article does not contain any studies with human or animal subjects.

### Trial Registration

Not applicable, because this article does not contain any clinical trials. **AJLM**

### References

- Davey CG, Chanen AM. The unfulfilled promise of the antidepressant medications. *Med J Aust.* 2016;204:348-350.
- National Institute of Mental Health. Mental illness. <https://www.nimh.nih.gov/health/statistics/prevalence/any-mental-illness-among-us-adults.shtml>. Accessed January 4, 2018.
- Kantor ED, Rehm CD, Haas JS, Chan AT, Giovannucci EL. Trends in prescription drug use among adults in the United States from 1999-2012. *JAMA.* 2015;314:1818-1831.
- Seligman ME, Csikszentmihalyi M. Positive psychology: an introduction. *Am Psychol.* 2000;55:5-14.
- Anders S, Tanaka M, Kinney DK. Depression as an evolutionary strategy for defense against infection. *Brain Behav Immun.* 2013;31:9-22.
- Beezhold BL, Johnston CS, Daigle DR. Vegetarian diets are associated with healthy mood states: a cross-sectional study in Seventh Day Adventist adults. *Nutr J.* 2010;9:26.
- Lai JS, Hiles S, Bisquera A, Hure AJ, McEvoy M, Attia J. A systematic review and meta-analysis of dietary patterns and depression in community-dwelling adults. *Am J Clin Nutr.* 2014;99:181-197.
- McMartin SE, Jacka FN, Colman I. The association between fruit and vegetable consumption and mental health disorders: evidence from five waves of a national survey of Canadians. *Prev Med.* 2013;56:225-230.
- Payne ME, Steck SE, George RR, Steffens DC. Fruit, vegetable, and antioxidant intakes are lower in older adults with depression. *J Acad Nutr Diet.* 2012;112:2022-2027.
- Blanchflower DG, Oswald AJ, Stewart-Brown S. Is psychological wellbeing linked to the consumption of fruit and vegetables? *Soc Indic Res.* 2013;114:785-801.
- White BA, Horwath CC, Conner TS. Many apples a day keep the blues away—daily experiences of negative and positive affect and food consumption in young adults. *Br J Health Psychol.* 2013;18:782-798.
- Beezhold BL, Johnston CS. Restriction of meat, fish, and poultry in omnivores improves mood: a pilot randomized controlled trial. *Nutr J.* 2012;11:9.
- Jacka FN, O'Neil A, Opie R, et al. A randomized controlled trial of dietary improvement for adults with major depression (the “SMILES” trial). *BMC Med.* 2017;15:23.
- Parletta N, Zarnowiecki D, Cho J, et al. A Mediterranean-style dietary intervention supplemented with fish oil improves diet quality and mental health in people with depression: a randomized controlled trial (HELFI-MED). *Nutr Neurosci.* 2017:1-14.
- Mammen G, Faulkner G. Physical activity and the prevention of depression: a systematic review of prospective studies. *Am J Prev Med.* 2013;45:649-657.
- Richards J, Jiang X, Kelly P, Chau J, Bauman A, Ding D. Don't worry, be happy: cross-sectional associations between physical activity and happiness in 15 European countries. *BMC Public Health.* 2015;15:53.
- Lathia N, Sandstrom GM, Mascolo C, Rentfrow PJ. Happier people live more active lives: using smartphones to link happiness and physical activity. *PLoS One.* 2017;12:e0160589.
- Blumenthal JA, Babyak MA, Moore KA, et al. Effects of exercise training on older patients with major depression. *Arch Intern Med.* 1999;159:2349-2356.
- Blumenthal JA, Babyak MA, Doraiswamy PM, et al. Exercise and pharmacotherapy in the treatment of major depressive disorder. *Psychosom Med.* 2007;69:587-596.
- Stathopoulou G, Powers MB, Berry AC, Smits JA, Otto MW. Exercise interventions for mental health: a quantitative and qualitative review. *Clin Psychol.* 2006;13:179-193.
- Singh NA, Stavrinou TM, Scarbek Y, Galambos G, Liber C, Fiatarone Singh MA. A randomized controlled trial of high versus low intensity weight training versus general practitioner care for clinical depression in older adults. *J Gerontol A Biol Sci Med Sci.* 2005;60:768-776.
- Stanton R, Reaburn P, Happell B. Is cardiovascular or resistance exercise better to treat patients with depression? A narrative review. *Issues Ment Health Nurs.* 2013;34:531-538.
- Yeung RR. The acute effects of exercise on mood state. *J Psychosom Res.* 1996;40:123-141.
- Hansen CJ, Stevens LC, Coast JR. Exercise duration and mood state: how much is enough to feel better? *Health Psychol.* 2001;20:267-275.
- Boecker H, Sprenger T, Spilker ME, et al. The runner's high: opioidergic mechanisms

- in the human brain. *Cereb Cortex*. 2008;18:2523-2531.
26. Ernst C, Olson AK, Pinel JP, Lam RW, Christie BR. Antidepressant effects of exercise: evidence for an adult-neurogenesis hypothesis? *J Psychiatry Neurosci*. 2006;31:84-92.
  27. McMahon E, Estes D. The effect of contact with natural environments on positive and negative affect: a meta-analysis. *J Posit Psychol*. 2015;10:507-519.
  28. Nutsford D, Pearson AL, Kingham S. An ecological study investigating the association between access to urban green space and mental health. *Public Health*. 2013;127:1005-1011.
  29. Ulrich RS. View through a window may influence recovery from surgery. *Science*. 1984;224:420-421.
  30. Kuo FE, Sullivan WC. Aggression and violence in the inner city: effects of environment via mental fatigue. *Environ Behav*. 2001;33:543-571.
  31. Mantler A, Logan AC. Natural environments and mental health. *Adv Integr Med*. 2015;2:5-12.
  32. Lam RW, Levitt AJ, Levitan RD, et al. Efficacy of bright light treatment, fluoxetine, and the combination in patients with nonseasonal major depressive disorder: a randomized clinical trial. *JAMA Psychiatry*. 2016;73:56-63.
  33. Terman JS, Terman M, Lo ES, Cooper TB. Circadian time of morning light administration and therapeutic response in winter depression. *Arch Gen Psychiatry*. 2001;58:69-75.
  34. Vyssoki B, Praszak-Rieder N, Sonneck G, et al. Effects of sunshine on suicide rates. *Compr Psychiatry*. 2012;53:535-539.
  35. Tuunainen A, Kripke DF, Endo T. Light therapy for non-seasonal depression. *Cochrane Database Syst Rev*. 2004;(2):CD004050.
  36. Stothard ER, McHill AW, Depner CM, et al. Circadian entrainment to the natural light-dark cycle across seasons and the weekend. *Curr Biol*. 2017;27:508-513.
  37. Neckelmann D, Mykletun A, Dahl AA. Chronic insomnia as a risk factor for developing anxiety and depression. *Sleep*. 2007;30:873-880.
  38. Yoo SS, Gujar N, Hu P, Jolesz FA, Walker MP. The human emotional brain without sleep—a prefrontal amygdala disconnect. *Curr Biol*. 2007;17:R877-R878.
  39. Stickgold R, Ellenbogen JM. Sleep on it: how snoozing makes you smarter. *Sci Am*. 2015; 313:52-57.
  40. Hirshkowitz M, Whiton K, Albert SM, et al. National Sleep Foundation's updated sleep duration recommendations: final report. *Sleep Health*. 2015;1:233-243.
  41. Schoenborn CA, Adams PE. Health behaviors of adults: United States, 2005-2007. *Vital Health Stat*. 2010;10:1-132.
  42. Bedrosian TA, Nelson RJ. Influence of the modern light environment on mood. *Mol Psychiatry*. 2013;18:751-757.
  43. Anson J, Anson O. Death rests a while: holy day and Sabbath effects on Jewish mortality in Israel. *Soc Sci Med*. 2001;52: 83-97.
  44. Cornelissen G, Watson D, Mitsutake G, et al. Mapping of circaseptan and circadian changes in mood. *Scr Med (Bmo)*. 2005;78:89-98.
  45. Superville DJ, Pargament KI, Lee JW. Sabbath keeping and its relationships to health and well-being: a mediational analysis. *Int J Psychol Relig*. 2014;24:241-256.
  46. Morton D. *Live More: Happy. Scientifically Proven Ways to Lift Your Mood and Your Life*. Warburton, Australia: Signs; 2017.
  47. Garland EL, Fredrickson B, Kring AM, Johnson DP, Meyer PS, Penn DL. Upward spirals of positive emotions counter downward spirals of negativity: insights from the broaden-and-build theory and affective neuroscience on the treatment of emotion dysfunctions and deficits in psychopathology. *Clin Psychol Rev*. 2010;30:849-864.
  48. McEvoy PM, Watson H, Watkins ER, Nathan P. The relationship between worry, rumination, and comorbidity: evidence for repetitive negative thinking as a transdiagnostic construct. *J Affect Disord*. 2013;151:313-320.
  49. Kilger E, Cox W. Dimensions of thought flow in everyday life. *Imagin Cogn Pers*. 1987;7:105-128.
  50. Seligman ME, Steen TA, Park N, Peterson C. Positive psychology progress: empirical validation of interventions. *Am Psychol*. 2005;60:410-421.
  51. Froh JJ, Kashdan TB, Ozimkowska KM, Miller N. Who benefits the most from a gratitude intervention in children and adolescents? Examining positive affect as a moderator. *J Posit Psychol*. 2009;4:408-422.
  52. Sheldon KM, Lyubomirsky S. How to increase and sustain positive emotion: the effects of expressing gratitude and visualizing best possible selves. *J Posit Psychol*. 2006;1:73-82.
  53. Alarcon GM, Bowling NA, Khazon S. Great expectations: a meta-analytic examination of optimism and hope. *Pers Individ Dif*. 2013;54:821-827.
  54. Styron W. *Darkness Visible: A Memoir of Madness*. New York, NY: Vintage; 1992.
  55. Post SG. Altruism, happiness, and health: it's good to be good. *Int J Behav Med*. 2005;12:66-77.
  56. Walsh R. *Essential Spirituality. the Seven Central Practices to Awaken Heart and Mind*. Hoboken, NJ: Wiley; 1999.
  57. Seligman ME. *Flourish: A Visionary New Understanding of Happiness and Well-Being*. New York, NY: Atria Books; 2011.
  58. Borgonovi F. Doing well by doing good. The relationship between formal volunteering and self-reported health and happiness. *Soc Sci Med*. 2008;66:2321-2334.
  59. Dunn EW, Aknin LB, Norton MI. Spending money on others promotes happiness. *Science*. 2008;319:1687-1688.
  60. Sheldon KM, Krieger LK. Service job lawyers are happier than money job lawyers, despite their lower income. *J Posit Psychol*. 2014;9:219-226.
  61. Fehr E, Renninger S. The Samaritan Paradox: if we live in a world of dog eat dog, then why are we frequently so good to each other? *Sci Am Mind*. 2004;14:15-21.
  62. Morton PD, Hinze J, Craig B, et al. A multimodal intervention for improving the mental health and emotional well-being of college students [published online October 4, 2017]. *Am J Lifestyle Med*. doi:10.1177/1559827617733941.
  63. Hinze J, Morton D. Wellbeing education for educators. *Teach*. 2017;11:9.