



THE GREAT OUTDOORS

Engaging with Nature for Mental Health

Clinician Manual

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INTRODUCTION

TO THE MANUAL AND INTERVENTION

Across the globe, urbanization is leading more and more people to live in cities as opposed to rural or suburban areas. This trend offers a mix of benefits, such as access to employment and quality healthcare (Caldwell et al., 2016; United Nations Department of Economic and Social Affairs, 2020) and drawbacks, including pollution and lack of access to nature (Wolch et al., 2014; World Health Organization, 2016). Partly driven by this urbanization process, people are spending less time in natural environments than previous generations (Larson et al., 2019; Pergams & Zaradic, 2008). Scholars from various backgrounds have argued that a lack of engagement with natural environments, due to a combination of access and lifestyle choices, has negative impacts on people across the lifespan (Bratman et al., 2019; Engemann et al., 2019; Hartig et al., 2014). Some clinicians have attempted to increase the amount of time people spend in nature (Müller-Riemenschneider et al., 2020). For example, the Parks RX program is used by clinicians to encourage parents to help their children spend more time in nearby parks for physical and mental health (<https://parkrxamerica.org>).

Scholars and clinicians have implemented nature-based programming for Veterans to support their reintegration, recreation, healing, and skill building (Anderson et al., 2018; Bennett et al., 2017; Bettmann et al., 2019). While these efforts are important, many of the interventions are intensive with respect to time commitments and/or physical abilities. Part of the reason this manual was created was to help veterans who cannot go on those types of trips. This manual focuses on helping more Veterans have positive, healthy experiences in nature that are low cost, local, and accessible. Challenging nature trips can be a great way to engage with nature for many Veterans but, at the same time, all Veterans would likely benefit from more everyday nature experiences.

This manual has two main goals, which are accomplished by delivering components of various evidence-based cognitive behavioral and mindfulness-based treatments. First, is to increase the quantity of time that Veterans spend doing positive activities in nature. This will be accomplished by sharing the benefits of spending time in nature with Veterans, reviewing the Veterans' motivations and values, setting goals, and getting active in nature. The core component of this intervention is behavioral activation (Lejuez et al., 2011), but with a focus on engaging in positive nature-focused activities. The theories underlying behavioral activation argue that psychological distress is due to a lack of engagement in and/or avoidance of reinforcing activities and relationships (Boswell et al., 2017; Jacobson et al., 2001). Thus, the intervention focuses on identifying and scheduling positive and meaningful nature-based activities. The second goal is to increase the quality of Veterans' time in nature and to build their sense of connection to nature. This will involve a variety of psychological exercises that they can try, including mindfulness, savoring, and guided imagery exercises. If the goals of the manual are met, the Veterans will learn new strategies to manage their psychological distress and improve their well-being. Ideally, the Veterans will find the activities to be meaningful contributors to their health and well-being, increasing their ability to accomplish their personal goals and function in their important life roles.

This manual is designed to give you the knowledge and tools to help Veterans use nearby natural environments to improve their mental health and well-being. It is designed to be implemented as a brief (one to five-session) behavioral intervention by a variety of clinicians, in various settings. Primary care may be a particularly well-suited environment, with its emphasis on prevention and short-term treatments. Designed with rural Veterans in mind, this intervention also attempts to leverage what, for many rural Veterans, might be an abundant resource (nearby nature environments), despite being an otherwise underserved population, to improve their mental health and well-being. However, Veterans who live in more urban areas may also benefit from the intervention as it will help them discover new ways to engage with nature.

Where This Treatment Fits

This intervention fits within a lifestyle medicine approach to health care (Egger, 2018; Egger et al., 2019; Sarris et al., 2014). Lifestyle medicine emphasizes that changes in lifestyle behaviors (e.g., diet, physical activity, sleep, and social interaction) can have both direct and indirect effects on health and well-being. Direct benefits come from carrying out a given healthy behavior. For example, eating healthier can provide the body with important nutrients and encourage weight loss. Indirect benefits occur as engagement in one healthy behavior tends to involve positive changes in other behaviors. For example, engaging with nature is also often accompanied by physical activity and social interaction (e.g. Anderson & Fowers, 2020). The links between nature engagement and other important healthy behaviors indicate that nature engagement may impact a broad range of mental and physical health outcomes.

The intervention also aligns well with the Department of Veterans' Affairs (VA) Whole Health Approach to care, with its emphasis on changing lifestyle behaviors, focusing on broadly improving health and well-being, and prevention. The intervention also targets some components of the Whole Health Circle of Health, including Surroundings, Working Your Body; Recharge; Spirit & Soul; and Family, Friends & Coworkers (<https://www.va.gov/WHOLEHEALTH/index.asp>).

It is important to note that this specific manualized intervention has not been empirically tested. Future research could help clarify whether a nature-focused behavioral intervention has any advantages over a traditional behavioral activation treatment. As this manual follows empirically informed and theoretically guided principles of mental health treatment, it should provide another option for clinicians who seek to give Veterans personalized care for improving functioning and well-being.

Structure of the Intervention

In terms of structure, below is a summary of the different sections of the manual.

- **The “Great Outdoors” and What Makes it Great** – Learn about the scientific findings that support the benefits of engaging in nature for health and well-being. Review the

different mechanisms by which being in nature can be helpful.

- **Phase O. Identifying Veterans for a Brief Nature-focused Intervention** – Learn about whom this intervention might benefit and how to align the intervention with Veteran preferences. Understand the flexible nature of the intervention.
- **Phase 1. A review of Veterans' Nature Engagement** – This section emphasizes learning about Veterans' engagement with nature and teaching them about the benefits of being in nature.
 - » Step 1. Review the Veterans' past and current nature engagement* – Using various questions, learn about how Veterans have engaged in nature in the past. Review their current nature engagement. Examine their attitudes toward nature engagement.
 - » Step 2. Provide psychoeducation about the benefits of engaging with nature* – Relying on the scientific findings described in the manual, help Veterans understand why nature engagement might benefit them.
- **Phase 2. Behavioral Activation** – This section focuses on how to use behavioral activation principles to help Veterans spend more time in healthy nature-based activities.
 - » Step 3. Conduct the motivational assessment and interview – Using questions, affirmation, reflective listening, and summarizations, assess Veterans' current level of motivation to engage in nature. Attempt to resolve ambivalence, using relevant tools.
 - » Step 4. Perform a values assessment – Explore what is important to Veterans. Help them identify areas of their lives that they have been neglecting, which might deserve some extra attention
 - » Step 5. Introduce and explain behavior planning* – Work with Veterans to identify and plan nature-based activities. Emphasize nature activities that can be linked to the Veterans' values.
 - » Step 6. Introduce and explain behavior monitoring – Explain the role of behavior monitoring to Veterans and, as appropriate, follow-up on their behavior goals. Problem solve any difficulties they run into.
- **Phase 3. Positive Psychological and Behavioral Activities** – These audio-recorded activities can be used by Veterans to enhance their time spent in nature or increase their sense of connectedness to nature.
 - » Step 7a. Perform mindfulness in nature exercises.*
 - » Step 7b. Perform savoring activities.*
 - » Step 7c. Perform guided imagery exercises.*

Delivering the Intervention

The manual could be implemented as either a very brief (one- to two- session) intervention or a brief (three- to five-session) intervention. Of note, this manual has a companion Veteran guide, which covers much of the same content and includes relevant worksheets. That guide can be used by Veterans who are receiving the intervention from a clinician, or as a self-help version of this intervention. You and the Veteran can discuss which approach seems appropriate for the Veteran's situation.

If delivered as a very brief (one- to two-session) intervention, not all treatment components may be covered in-session. In that case, it might be most helpful to emphasize a few central components of the treatment: review the Veteran's history and interest in engaging with nature (Step 1), provide the rationale for a nature-based intervention (Step 2), identify and schedule one or two easily implemented nature-based activities (Step 5), and invite the Veteran to review and try one of the guided audio exercises (Step 7a, 7b, or 7c). These essential components are marked with an asterisk (*) to indicate that they are high-priority topics for every first session, despite the length.

When delivered as a brief (three- to five- session) intervention, you can spend more time on each step. However, by the end of the first session, the Veteran should have at least one nature-focused activity scheduled for the coming weeks. In subsequent sessions, you can collaboratively review the Veteran's goals and values, problem solve any challenges, help them plan more extensive nature-based activities. You can also deliver the audio exercises in-session, which could involve your participation alongside the Veteran by using the prerecorded versions. Alternatively, you could guide the Veteran by reading the exercises out loud in-session.

The intervention is made up of steps and, in an ideal world, we might follow those steps in order. However, due to a variety of personal, interpersonal, and environmental factors, the intervention will not always proceed in that sequence. For example, motivational interviewing (Step 3) might be used for the first time in the second session when a Veteran reports failure to meet a goal (Step 6). Or a guided imagery exercise (Step 7c) might be used within the first 15 minutes of a first session if the Veteran is highly activated and would benefit from some relaxation. So, while the sequence of steps should be generally followed, the components of the treatment can be used flexibly to meet the needs of the Veteran.

At the end of each step in the manual is a "Treatment Checkpoint." You can assess whether you addressed the purpose of each step by seeing if you can check off each item from the Treatment Checkpoint check list.

THE “THE GREAT OUTDOORS” AND WHAT MAKES IT GREAT

People are not spending as much time outdoors or in nature as they used to (Larson et al., 2019; Pergams & Zaradic, 2008). This is partly driven by processes of urbanization and also by lifestyle choices. Modern conveniences such as air conditioning and endless digital media make it easy and comfortable to stay inside. Other environmental factors, such as reduced access to safe natural spaces, may also contribute (Jones et al., 2009). While there are many reasons why we spend less time in nature, the overall trend is clear.

Research has begun to synthesize the many benefits of engaging in natural environments. Proximity to nature and nature engagement have been linked to improved immunity function, restoration of attention, relaxation, psychological well-being, and reduced blood pressure (Bratman et al., 2019; Pritchard et al., 2020; Twohig-Bennett & Jones, 2018). In a meta-analytic review of over 140 studies, Twohig-Bennett and Jones (2018) found that greenspace exposure was associated with a wide number of health outcomes, ranging from heart rate, blood pressure, preterm births, diabetes, mortality, stroke, asthma, and heart disease. Some of that research also indicated that those who were of a lower socioeconomic status seemed to disproportionately benefit from greenspace exposure, indicating that engaging with natural spaces may be one means of reducing disparities in health. Other meta-analyses show a relationship between a sense of connectedness to the natural world and various types of well-being (Capaldi et al., 2014; Pritchard et al., 2020). A very impressive study involving the whole Danish population found that neighborhood greenspace at age 10 predicted fewer later psychiatric diagnoses from adolescence into adulthood, even controlling for a wide variety of potential confounding factors (Engemann et al., 2019). One intervention study found that smartphone prompts to pay attention to the natural environment predicted improved well-being relative to those who were encouraged to notice aspects of their nearby built spaces (McEwan et al., 2019). In light of all of this research, some scholars have argued that connection to nature is a basic human psychological need, along the same lines as a sense of belonging, meaningful work, and social status (Baxter & Pelletier, 2019).

Interestingly, even Disney films are less nature focused than they used to be (Prévot-Julliard et al., 2015). Scholars found that natural environments are used less in newer Disney films and, when they are shown, they have less biodiversity (variety of plants and animals) in the scenes. So there are interesting shifts in our society's relationship to nature, as seen in the products of our culture (Kesebir & Kesebir, 2017).

Of particular interest for VA clinicians is that there is a long history of using nature-focused interventions and activities for Veterans (Poulsen et al., 2015). There is also emerging evidence that nature-based interventions are effective for treating various psychiatric symptoms and improving well-being in Veterans (Anderson et al., 2018; Bettmann et al., 2019; Poulsen, 2017). The nature-based activities in these studies tend to involve

excursions of high intensity, in terms of time and/or physical ability; but research in the wider public shows benefits of milder and briefer experiences (Tyrväinen et al., 2014), including when people simply paid more attention to the natural environments they were already in (McEwan et al., 2019). Veterans with a wide range of disabilities or injuries will find, with your help, that they can engage in nature in meaningful ways.

Overall, there seems to be solid evidence supporting the benefits of engaging with nature across the lifespan. Yet, the exact mechanisms by which individuals benefit from nature engagement is not clear. Scholars have identified a wide range of potential mechanisms by which engaging with nature or being in natural environments would contribute to health and well-being (e.g., Hartig et al., 2014; Kuo, 2015). One way to better understand these mechanisms is to break them up into two categories: direct benefits of engaging with nature and indirect benefits. Direct benefits are those that can be attributed to engaging with the natural environment, while indirect benefits are those that can be attributed to related factors such as how engagement in nature is often accompanied by physical activity.

Direct Benefits

Direct benefits refer to the ways in which the natural environment itself contributes to mental health and well-being. A prime example is Vitamin D synthesis, which is supported by moderate exposure to the sun. Some direct benefits of spending time in nature are described below.

Attention restoration. Some have argued that our ability to keep our attention on our daily tasks can wear down over the day. This can result in fatigue and impaired cognitive performance and energy. Spending time in natural environments has been linked to a restoration of attention, akin to letting a physical muscle rest after overuse (Berman et al., 2008; Sianoja et al., 2018). Scholars think that natural environments contribute to restoration of attention because they are often naturally interesting, peaceful, or fascinating and require little effort to observe and enjoy (Bratman et al., 2012).

Natural affinity toward nature and positive mood. Another popular theory among researchers is the biophilia hypothesis (Kellert & Wilson, 1993). This hypothesis argues that, due to our evolutionary past, we are predisposed to be interested in life and lifelike processes. This results in our having positive emotional states when engaging with nature (Gullone, 2000). Although the biophilia hypothesis itself is still being studied, the research generally indicates that being in nature brings about positive mood (e.g., Anderson, 2020; McEwan et al., 2019; Tyrväinen et al., 2014). Further, some research found that individuals prefer for images of nature over other images, which can impact mood (Meidenbauer et al., 2020). Thus, activities that involve only viewing nature may support well-being. This creates more chances to engage with nature when the Veteran's mobility or access to nature is limited.

Connection to nature. Related to the biophilia hypothesis is connectedness to nature. This concept is understood as feeling one with nature and having a kinship with plants and animals (Mayer & Frantz, 2004). One study showed that spending time in nature predicts

nature connectedness, which in turn predicts positive affect (Mayer et al., 2009). Two meta-analyses also show a consistent positive relationship between nature-connectedness and well-being (Capaldi et al., 2014; Pritchard et al., 2020).

Savoring. Some research has shown that being in nature often leads to the experience of savoring (Sato et al., 2018). While the term savoring is traditionally reserved for heightening one's experience related to food and drink, it can also be applied to other enjoyable experiences. Savoring, which is associated with positive emotions, often consists of being more absorbed by experiences, focusing on senses, and sharing those experiences with others (Bryant & Veroff, 2017). Savoring daily events tends to predict greater momentary happy mood (Jose et al., 2012). Thus, being in nature might be a positive way to promote savoring and subsequent positive emotions.

Stress reduction. Nature-based experiences have been linked to reduced perceived levels of stress (Corazon et al., 2019). There is also evidence for the impact of being in nature or the outdoors on physiological outcomes such as heart rate and blood pressure (Kondo et al., 2018). Natural environments may function as an environmental stress reduction resource during times of emotional distress.

Inhibition of rumination. Nature engagement may be beneficial because viewing nature images has been shown to reduce rumination (Bratman et al., 2015), which contributes to many types of emotional distress (Morrison & O'Connor, 2008). Bratman and colleagues (2015) argue that, because natural environments are engrossing and usually either positive or neutral, they tend to be effective at reducing unhelpful patterns of thinking.

Exposure to biodiversity. Some research has begun to examine how exposure to biodiversity can potentially have benefits to mental and physical health. There is evidence that biodiversity can reduce risk of infectious diseases and improve immune functioning (Keesing et al., 2010; Prescott et al., 2016). This is supported by the World Health Organization (2015), which stated that "Reduced contact of people with the natural environment and biodiversity, and biodiversity loss in the wider environment, leads to reduced diversity in the human microbiota, which itself can lead to immune dysfunction and disease."

Sunlight and Vitamin D. Vitamin D is essential to healthy functioning and, throughout human history, the UVB rays emitted from the sun have interacted with human skin to produce it (Wacker & Holick, 2013). Some foods naturally have Vitamin D, such as fish, and Vitamin D has been added to some foods (e.g., milk, juice); yet many Americans have a Vitamin D deficiency (~41%, with higher rates in racial and ethnic minorities; Forrest & Stuhldreher, 2011). Although it has been linked to a variety of health outcomes including bone weakness, cancers, diabetes, multiple sclerosis, and heart disease, of particular interest for this manual is the link between vitamin D deficiency and depression (Parker et al., 2017). Sensible exposure to direct sunlight can increase levels of Vitamin D. Sensible exposure means not getting so much sunlight that you get a sunburn (Holick, 2017). After that level of exposure has been reached, sunscreen and protective clothing should be used. The face/head can always be covered because that area of the body produces little Vitamin D and is prone to skin cancer (Cleaver & Crowley, 2002; Hollis, 2005). The amount

of sun exposure required for Vitamin D synthesis depends highly on skin pigmentation and geographical latitude (Hollis, 2005), so decisions about levels of direct sunlight exposure should be individualized under the direction of a physician.

Sleep-wake cycle. The human sleep-wake cycle is tied to physical and mental health. One of the primary regulators of the sleep-wake cycle is exposure to light and darkness (Dumont & Beaulieu, 2007). Importantly, dysregulation in this cycle has strong associations with mood disorders (Germain & Kupfer, 2008). Some initial research shows that sunlight might be helpful for making healthy changes in sleeping patterns (Alessi et al., 2005). In fact, even on cloudy days, time spent outside can be helpful in shifting the circadian rhythm as needed (morning light for those having delayed sleep and evening light for those having early awakenings; Schenck et al., 2003).

Indirect Benefits

Indirect benefits are those that occur more or less as a side-effect from a person's decision to engage with nature. In other words, when people spend time in nature, they also receive benefits that are not necessarily unique to the natural environment but rather stem from other behaviors that correlate with engagement with nature. Some research indicates that, in terms of day-to-day well-being, other important lifestyle behaviors associated with nature play a major role in explaining the benefits of being in nature (Anderson & Fowers, 2020).

Physical activity. Researchers have explored whether time spent in nature or living near nature impacts levels of physical activity (Markevych et al., 2017). While the evidence is not perfectly consistent, it does appear that living by greenspace predicts more physical activity. Further, spending time enjoying nature is associated with increased physical activity. In general, physical activity is an effective intervention for treating depression and anxiety for many individuals and a supportive intervention for those with posttraumatic stress disorder, substance use disorders and eating disorders (Ashdown-Franks et al., 2020; Morres et al., 2019; Schuch et al., 2018). It can also improve cognitive functioning and depression for those with brain disorders (e.g., Alzheimer's disease, Parkinson's disease, Huntingdon's disease; Dauwan et al., 2019). Further, it consistently predicts happiness and positive affect (Buecker et al., 2020). This intervention, which primarily focuses on nature engagement, may also incidentally bring about positive changes in physical activity.

Social engagement. Scholars also point to improved social cohesion and social interactions as one benefit of nearby nature and nature engagement (Hartig et al., 2014; Markevych et al., 2017). For example, nearby greenspace, based on satellite imagery, has been shown to predict social cohesion (Orban et al., 2017). Many aspects of physical and mental health are strongly linked with social relationships, or lack thereof (Holt-Lunstad et al., 2015; Leigh-Hunt et al., 2017). In fact, Cruwys and colleagues (2014) argue that "depression is a fundamentally social disorder" (pg. 215), highlighting the strong evidence linking social functioning to mental health. As such, encouraging Veterans to spend time in nature may increase the positive social interactions they have and their subsequent health and well-being.

Spirituality. Many people identify nature as a means to spiritual experience and development. Many of the world's religious and spiritual traditions emphasize stories of going into nature, whether going up a mountain, going into the forest wilderness, spending time in a garden, or going out onto a lake. Others may identify engaging with nature itself as a meaningful spiritual experience, free from past traditions (Taylor, 2009). Thus, Veterans could be encouraged to incorporate positive spiritual practices into their time spent in nature, as spirituality and religiousness have been shown to predict health behaviors, mental health, and physical health (Koenig, 2012).

Caveats: This area of research is not without its limitations. Some studies provide only tentative findings due to research designs that do not meet the most rigorous standards of evidence. Further, as of March 2022, this specific manual has not yet been empirically tested and, thus, should not be relied upon alone for use in treating severe mental illness, suicidality, or substance use issues. Despite these failings, the manual components include approaches such as motivational interviewing, behavioral activation, physical activity, mindfulness, and positive psychology exercises, all of which also have empirical support. By relying on the available evidence, this manual represents a science-informed brief intervention focused on helping Veterans be more actively engaged in meaningful activities and more emotionally balanced.



PHASE 0.

IDENTIFYING VETERANS FOR A BRIEF NATURE-FOCUSED INTERVENTION.

As a behavioral activation-based approach to nature engagement, this intervention should be acceptable to many Veterans. As with all clinical work with Veterans, their preferences should be accounted for in introducing and applying this program. If, for example, a Veteran expresses strong opposition to spending time in natural environments for various reasons (e.g., temperature, sun exposure, allergies, pests/insects, etc.), then you should be thoughtful about proceeding. Veterans may benefit from certain aspects of the intervention that could help them better understand the benefits of spending time in nature (Step 2), help them reflect on their ambivalence (Step 3), or consider how nature engagement might help them live out their values (Step 5). On the other hand, it might be more appropriate to choose a different intervention. Other Veterans may be very excited to spend time in natural environments. In fact, some may be overeager and would benefit from a discussion about how to do so in a safe and healthy way. This could include taking appropriate precautions related to having adequate supplies for the selected activity and choosing activities that are appropriate for their physical condition.

The flexible nature of this intervention is in part driven by the inclusive term of nature engagement. Many services that have been made available for Veterans (such as equine therapy, week-long adventure excursions, and fly-fishing experiences) require substantial levels of structural support in terms of equipment, staff, time, and transportation. The hope with this intervention is that it will highlight more widely available nature engagement experiences for those who cannot engage in intensive activities or as a supplement to those activities. Examples of simple activities include sitting on a porch or by a window watching the weather change, going on a walk at a nearby park, playing on a playground with children or grandchildren, gardening, or even engaging in a nature-focused guided imagery experience while inside (Step 7c). While ambitious nature experiences may have a more acute positive impact on Veterans' health and well-being, this approach may produce long-term benefits for health and well-being by emphasizing lifestyle changes that can be integrated into daily life. Another benefit of this approach is the emphasis on nature experiences that can be available to people spanning a wide range of ability levels and geography. At the same time, it is important to recognize that even an intervention that emphasizes nearby nature experiences may not benefit all Veterans equally due to disparities in access to safe or enjoyable natural environments. This intervention may require creativity on your part and the part of the Veteran as you attempt to problem solve around these challenges.

Intervention intensity. The intensity of this intervention can be modified for each Veteran. Highly motivated Veterans that are seeking improved mood and increased well-being, meaning, energy, and vitality may need only to be provided with the self-help guide and encouraged to apply it in their daily lives. Occasional follow-up may support their ability to complete their goals. Veterans who are less motivated or dealing with higher levels of stress or mood symptoms may benefit from a more structured intervention with a combination of self-help and clinician-delivered components.

Initial description for Veterans. For Veterans who might benefit from a nature-focused lifestyle intervention, you can let them know that you are recommending to many Veterans that they explore how they can spend more time in natural environments because the research indicates that doing so may help them with their presenting concern(s) or goal(s). You can elaborate how this aligns with what theory and research have shown about the role of avoidance and how lack of engagement in positive activities is associated with emotional distress (Boswell et al., 2017; Jacobson et al., 2001). You can explain that this treatment would include scheduling positive activities and using relaxation or other exercises that can improve well-being. Ask Veterans if they would be interested in learning more about it and/or trying it out. If they are amenable, you can continue with Phase 1, Step 1. If they appear ambivalent, you could ask for a few minutes to briefly explore their past and current nature engagement (Step 1), explain the benefits of nature engagement (Step 2), and/or address their ambivalence (Step 3). If they appear, at this point or any other point, completely disinterested in a nature-focused approach, feel free to offer other treatments.



PHASE 1.

A REVIEW OF THE VETERAN'S NATURE ENGAGEMENT

STEP 1. Review Veterans' nature engagement.

After completing an intake evaluation with Veterans to clarify their presenting concern and determining that a nature-focused behavioral intervention could help manage their psychological distress, begin exploring the Veterans' past and current involvement in nature-based activities. A list of example questions is provided below to guide the discussion. Veterans completing the treatment independently have a section in their workbook to answer similar questions. Recognize that **the main goals** of this assessment are to understand what role the natural environment has (or has not) played in the life of the Veteran, assess the Veteran's attitude toward spending time in nature, and identify potential activities that might be scheduled later in the behavioral activation step. Depending on session length or number of sessions, this assessment can rely on one or two relevant questions; or it can involve a more thorough assessment. This information will be used to personalize the other intervention components for the Veteran.

Example questions:

- What nature activities do you engage in during the week? Activities can occur in a variety of places (e.g., parks, fields, yards, rivers, lakes, mountains, beaches, forests).
 - » *If no response, prompt:* These can be brief/simple activities (e.g., gardening, watering the lawn, sitting on a porch, walking the dog, going for a drive in nature).
 - » Do you engage in any nature activities at least partly for leisure or for fun (as opposed to work/chores only)? What are they?
 - » What would you say are the regular activities that you most enjoy in nature?
 - » How long have you been doing these activities?
 - » How often do you do these while alone? How often with others?
 - » *If not clear from previous responses:* Are you physically active during any of these activities?
- How would you describe your relationship to nature? Do you feel close to nature?
- What thoughts and feelings come up when you think about being in nature?
- Has your attitude toward being in nature changed over your life?
- Do you wish you were spending more/less time in natural settings?

- » If “Yes”: Can you say why? What would you like to be doing?
- » If “No”: Can you help me understand why?
- From your personal experience, how, if at all, does spending time in nature benefit you? Consider physically, mentally, emotionally, socially, spiritually or any other area of functioning.

Treatment Checkpoint:

- [] I have a sense of the Veteran’s history of nature engagement and the current levels of nature engagement.
- [] I understand how the Veteran feels about spending time in nature.

STEP 2. Psychoeducation about the benefits of engaging with nature.

Now that you have explored the Veterans’ past and current engagement with nature and their attitudes toward spending time in nature, you can move to Step 2. This part of the intervention involves providing psychoeducation about the benefits of engaging with nature. You can ask Veterans if you can share some information about mental health and the role that nature engagement can play in improving it. If they agree, you can explain that a lack of engagement in positive activities is a factor that underlies various components of psychological distress. Individuals who experience depression and anxiety often withdraw from such positive activities. With behavioral activation as the core of this intervention, Veterans can be told how withdrawal from positive activities can lead to worsened mood, while scheduling positive activities can improve mood (Jacobson et al., 2001). Behavioral activation is commonly used to treat depression and has been shown to be beneficial for other disorders as well (Fernández-Rodríguez et al., 2020; Plagge et al., 2013). As an enjoyable activity, spending time in nature can be one tool to reduce distress and improve engagement in life. Further, some unique characteristics of nature environments may make nature activities especially beneficial.

Using the information from the section “The Great Outdoors” and What Makes It Great’ you can share why spending time in nature might support Veteran health. Veterans will also have information about the benefits of nature engagement available to them in the Veterans guide, which you can point out to them during the session. As you describe various benefits, check in with Veterans and see if they identify with some of them. For example, you can ask them if, while in nature, they find that they notice less negative thinking, or a feeling of relaxation, or an experience of savoring. Helping Veterans reflect on the enjoyable aspects of being in nature from their own experience may increase their motivation and “buy-in” to the intervention. See if you can emphasize benefits

of being in nature that would address the Veterans presenting concerns and interests. These might include potential improved mental health, well-being, engagement in other lifestyle behaviors, or physical health.

Summarized from the introduction, the benefits of spending time in nature can be classified as direct and indirect benefits.

Direct:

- Attention restoration
- Positive mood
- Connection to nature
- Savoring
- Stress reduction
- Inhibition of rumination
- Exposure to biodiversity
- Sunlight and Vitamin D
- Sleep-wake cycle regulation

Indirect:

- Physical activity
- Social engagement
- Spirituality

Having described behavioral activation and the benefits of nature, you can also provide some information about the benefits of the various guided audio exercises included in the manual. These other exercises can be helpful for improving mental health and well-being. Mindfulness exercises, which are often delivered as components of other evidence-based treatments (e.g., Acceptance and Commitment Therapy; Mindfulness-based Cognitive Behavioral Therapy; Mindfulness-Based Stress Reduction), have been shown to be effective at reducing anxiety, depression, pain and stress (Goyal et al., 2014; Khoury et al., 2013, 2015) and improving well-being [pages 40-49]. They are theorized to help by supporting healthy engagement with emotions through nonjudgmental awareness and cognitive reappraisal (Chambers et al., 2009). Other exercises, such as guided imagery

and savoring activities, have also been shown to improve mood (Apóstolo & Kolcaba, 2009; Hurley & Kwon, 2012; Smith & Hanni, 2019). More information about these exercises is provided in the relevant chapter (Phase 3). You can review this information and let Veterans know that they have additional information in their guide as well.

Treatment Checkpoint:

At the end of this discussion, Veterans should understand a few basic principles:

- [] A lack of engagement in positive and meaningful activities fuels psychological distress.
- [] Identifying and scheduling positive activities can improve mental health.
- [] Nature-based activities may be particularly beneficial.



PHASE 2.

BEHAVIORAL ACTIVATION

STEP 3. Motivational assessment and interview.

This section aims to address any ambivalence Veterans may have about engaging in the intervention. At this point you should have a general sense of their understanding of the benefits of nature and their interest in increasing their engagement with nature. You can ask, “What do you think about spending more time enjoying natural settings?” or “If I were to recommend you spend more time outdoors, what would you think?” For those that express considerable willingness/interest in engaging with nature, you can proceed with Step 4 of the intervention. For those who express some ambivalence, you can use some tools in this section to help them resolve that ambivalence.

Some aspects of motivational interviewing may be beneficial to increase motivation. Motivational interviewing is an intervention that can be effective on its own for mild psychological distress (Hettema et al., 2005). However, in this nature-focused intervention, it is a means to increase motivation to engage in the rest of the nature-focused lifestyle change intervention. It can be used in this initial session and in subsequent sessions if a Veteran has difficulty carrying out the behavior change plan. Motivational interviewing can be used to help Veterans develop a more effective change plan (Arkowitz & Miller, 2008).

Although a complete application of all principles of motivational interviewing cannot be described here, a set of strategies and tools is listed below. One foundational set of tools that can be useful is summed up by the acronym **OARS (Ask Open-ended questions, Affirm, Listen Reflectively, and Summarize)**. Using these tools from a collaborative stance that emphasizes Veteran autonomy, you can explore Veterans’ ambivalence about spending time in nature in a helpful, encouraging way. The OARS tools are:

- Ask open-ended questions.
 - » Avoid questions that can be answered with a “yes” or “no.” Some that might encourage change talk would be, “What would be a nature-focused activity you would enjoy doing?”, “What activities that you used to do outdoors would you like to do more?”, “What steps do you think you would need to take to get out and enjoy nature?”, “You put down a 4 on the readiness to change ruler; why not a 2?”
- Affirm.
 - » Offer encouragement for Veterans as they express a willingness to talk about engaging with nature for mental health. When they commit to making changes and actually change their behaviors, share joy in their successes.

- Listen reflectively.
 - » Let Veterans express their thoughts and feelings. Avoid telling them what to do, but when they speak to you, see if you can reflect back to them what they have said to you to facilitate the conversation. [Veteran]: “My back pain just makes me want to sit in my recliner all day.” [You]: “You’re feeling like your pain limits the motivation you have to get outside and be active” [Veteran]: “Yes, and because of that, I don’t know if this plan of spending more time outside is going to work” [You]: “You’d like to go outside, but you’re uncertain about how to do it successfully” [Veteran]: “Yes, I would like to get outside, but I just don’t know how” [You]: “You definitely would like to spend some time in nature. That’s great, and I wonder if we could work together to figure out some options that would work, despite the pain you have. Would it be OK if I shared what some of these might be?”
- Summarize.
 - » Summarizations are aimed at capturing and reflecting all or part of a session, as a means of demonstrating interest and understanding and emphasizing the most important parts of the discussion for moving forward.

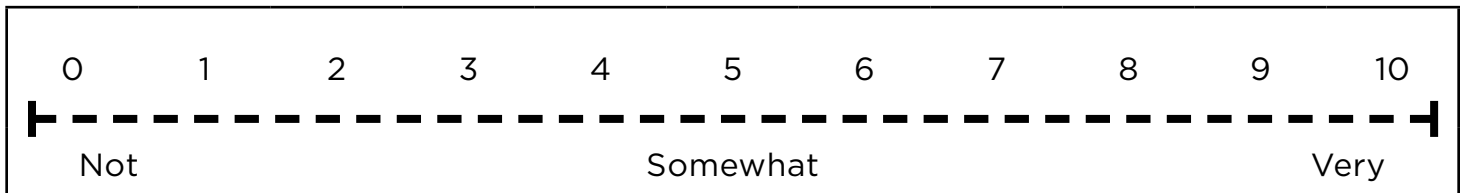
With the use of OARS, you can help increase Veterans’ use of “change talk.” Helping them talk about why they would like to change helps enhance their perceptions of the importance of the behavior change and their confidence in making the behavior change.

The decisional balance form, on page 23 is a tool that can guide the conversation about Veterans’ quantity and quality of nature engagement. This form is also available in the Veteran guide. It will help them look at the positive and negative aspects of being in nature versus staying inside. Help them fill out the form, starting with the top left box and moving from #1 to #4 in a clockwise direction. They can start by listing the good things about staying inside. For example, “The temperature is comfortable,” and “I can watch TV.” Then write how important each of these reasons are, from a 0 (not important at all) to 10 (the most important).

Depending on time, this may also be completed as a homework assignment. If the form is being used as a homework assignment, it may be helpful to also provide Veterans with a behavior change assignment that they are ready to make (e.g., walking on treadmill inside, calling a friend, going to a café with a family member) to encourage positive behavior change from the first session. After they complete the form, review it with them. Ask them for any additions for each of the four categories.



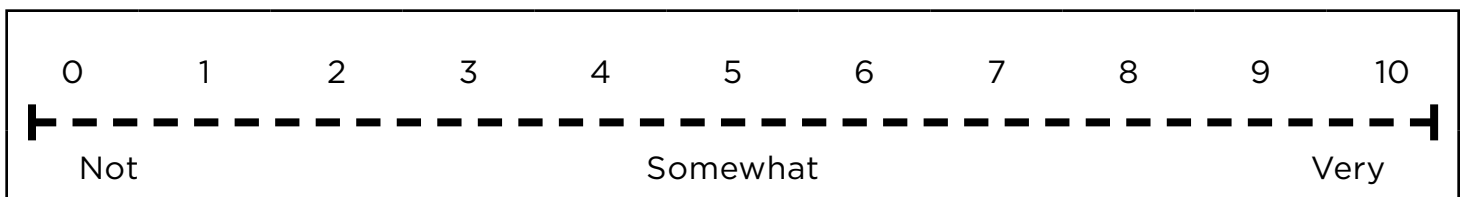
Readiness rulers are a motivational interviewing tool that can help facilitate change talk and increase motivation (<https://www.centerforebp.case.edu/client-files/pdf/readinessruler.pdf>). They can be used either alone or as a reflection exercise after completing the decisional balance form. Ask, **“How important is it for you to do more activities in nature to you right now?”** Have them circle or say the number that matches the level of importance to them.



One way to encourage change talk is, for whatever number they provide, whether it be a two, five, or eight, you can ask them, “Why didn’t you say a [respond with the number they provided, minus two or three]?” For example, if they said four, you could say, “Why didn’t you say a one?” In response to that question, they will likely consider and share the reasons they think it is important to make the change.

If the Veteran’s motivation seems limited, you could continue with the intervention to see if values clarification or other components help increase motivation. Alternatively, you could let them know that there are likely other behavior changes that would be good for them to make to improve their health and well-being. You could then proceed to help them make other relevant lifestyle changes. If, however, they do think an increase in positive nature-focused activities would be an important change, continue with the next readiness ruler.

Next, ask **“How confident are you that you will be able do more activities in nature?”** Have them circle or say the number that matches their level of confidence in making this change.



Do they have confidence in their ability to make changes in this area of their life? You can, again, ask the question, “Why didn’t you say a [enter the number they provided, minus two or three]?” If their confidence is somewhat low, tell them that the rest of this intervention is designed to help them make these changes. Let them know that you will be working alongside them and that you are strongly invested in their success. Describe how you will help them learn more about setting manageable goals, problem solving, and tracking their progress. If they do feel confident in their ability to make these changes, continue on to the next steps.

If desired, there are more motivational interviewing strategies in the relevant literature (Rollnick et al., 1992). The next step in the treatment process, which is values clarification, might also help improve motivation. The values assessment may provide you a way to link nature engagement to important areas of the Veteran’s life, which may subsequently increase motivation.

Treatment Checkpoint:

☐ The Veteran feels that having more positive activities in nature would be an important change to make.

☐ The Veteran is motivated to make lifestyle changes.



Decisional balance form

1. Good things about staying inside	Importance (0-10)	2. Not so good things about staying inside	Importance (0-10)
4. Good things about spending more time in nature	Importance (0-10)	3. Not so good things about spending more time in nature	Importance (0-10)



STEP 4. Values assessment.

One aspect of behavioral activation is exploring Veterans' values and then connecting those values to potential nature engagement activities. For example, if "learning new things" is a major value to Veterans, you can explore activities they can do in nature that would facilitate learning. They might try a new hobby such as birdwatching or gardening, or find an enjoyable outdoor location where they can sit and read a book or magazine. Similar connections can be made to other values as well. For more discussion about values in behavioral activation, see Lejuez et al., 2011.

A very simple way of getting at values is asking the Veteran, "What are the most important aspects of your life? – not necessarily those that other people say are important, but what do you really care about?" Other questions include: "What type of life do you want to live? What type of person do you want to be? What legacy do you want to leave behind?" Some Veterans may be able to identify which areas are most important to them. Others might benefit from seeing a list of potential life domains and marking down how much they value each one (see below). Either way, the hope is that you can work with Veterans to identify at least one value important to them, which might provide an anchor to which they can link various positive nature-based activities. You might also ask if there are areas that are important but have been neglected relative to other areas. These values are high priorities for treatment, as they are both important and not being lived out as well as Veterans would like. If they completed the Values Rating Form, they could put a star next to these values. Attempt to connect at least one of the initial nature activities to a high-priority value.

This intervention's central goals, which are increasing the quantity and quality of time spent in natural environments, can be linked to these values in meaningful ways. This is important because the inherent benefits of nature engagement might be enhanced if the relevant activities are oriented toward their values. And, at the same time, value-based activities (spending time with loved ones, relaxation, physical activity) might be enhanced by doing them in nature. Further, the *likelihood* of nature engagement might also be increased if nature engagement is linked to these values.



Values Rating Form

Values	How much do you value this (0 – not at all; 10 – the most you can value something)
Work	
Self-education/learning	
Volunteering	
Intimacy/romantic relations	
Family	
Friendship	
Religion/spirituality	
Entertainment/recreation	
Physical health/fitness/mental health	
Other: _____	
Other: _____	

Treatment Checkpoint:

- ☐ You and the Veteran were able to identify important values in their life.
- ☐ You and the Veteran have identified some high-priority values.



STEP 5. Behavior planning.

Once the Veteran appears willing and interested in engaging with nature, you can begin the process of activity scheduling. This section focuses on identifying and scheduling positive nature-focused activities that the Veteran can implement in daily life. If you are limited for time, you can just use the Behavior Scheduling and Monitoring Form (pg. 34 and in the Veteran guide). If you have more time to establish this aspect of the intervention, you can work with Veterans to list a wide range of short-term and future activities, ranking those activities based on how difficult they would be to carry out, and discuss the benefit of setting SMART goals as well.

Providing a rationale for activity scheduling can help Veterans understand why it is important. Explain that scheduling these activities makes it more likely that they will carry them out. Remind them that positive nature activities can have a direct impact on their mental health because they are enjoyable and meaningful. Engaging in these activities also decreases avoidance, which can maintain low mood and distress. There are also *indirect* benefits of being in nature (physical activity, social interaction, spirituality), which were described above.



Activity identification

Work with the Veteran to identify a variety of ways of engaging with nature in daily life. There are many types of nature-focused activities. They can vary greatly, depending on the required resources, time, and ability. The Veteran's personal interests will play a big role in selecting activities. Below is short list of example activities. Have them circle those that sound interesting or enjoyable. Reading through the list may also help them think of other activities that they have previously enjoyed or would like to try

Go on a bike ride

Sit on the shore and watch the water

Watch clouds float by (and look for shapes)

Swim in a natural body of water

Take a walk around your neighborhood

Go fishing

Go golfing

Listen to a body of water

Build sandcastles

Look for interesting rocks/shells

Watch birds or other wildlife

Warm your body in the sun (apply sunscreen and be careful to avoid sunburns)

Close your eyes and feel the breeze on your skin

Have a campfire

Go surfing/boogie boarding

Walk along a shoreline

Go on a hike

Go camping overnight

Have a picnic

Fly a kite

Play an outdoor sport

Watch long grass or trees blow in the wind

Plant/tend to a garden

Go geocaching

Visit an overlook to view the surrounding areas

Read a book outside

Go boating/kayaking

Take your dog on a walk or to a park

Examine/Explore plants

Visit a rose garden, arboretum, or tropical garden

Set up a bird feeder

Do a photo scavenger hunt

Go on a run

Close your eyes and listen to the sounds around you

Volunteer with the parks and recreation department

Clean up trash at a nearby park or body of water	Use outdoor exercise equipment
Enjoy a sunset or sunrise	Join an outdoor oriented club
Enjoy a playground with your young family members	Draw or paint a landscape
Go hunting	Watch the trees or weather from a window
	Watch a nature documentary

Use the Activity List to write down potential nature-focused activities. The activities can be classified by the level of difficulty in carrying them out. For example, one Veteran might identify easy activities (sitting on the front porch during sunset, viewing the trees through the window, playing with children in the back yard), moderately difficult activities (walking around the nearby park, doing light gardening/yard work, sitting by the nearby lake/river/ocean); and difficult activities (going to a trail for a hike/bike ride, doing intensive yard work, going on a camping trip). How the behaviors are categorized in terms of difficulty will vary for each Veteran, depending on their comfort with natural environments, physical capacity, access to transportation, mood symptoms, and level of motivation.

This handbook focuses on engaging with nearby nature environments. One way of finding nearby nature settings is by using www.google.com/maps. You can search *parks, trails, gardens*, or other related words, along with the name of their city/town to find nearby natural settings. This procedure can also be used to look for parks near other places that someone frequents (including the VA). One's own yard or property, or that of friends and family, can also provide excellent exposure to nature. Some nearby neighborhoods might also have nice natural elements. Ideally, the environment should be comfortable and provide interesting and stimulating features. Sitting by a parking lot that has some shrubs along the border may not have as great an impact as a park, forest, or lake front. When discussing nature activities, ensure that you and the Veteran both know where these activities would take place.

As you carry out this initial identification of activities, encourage Veterans to consider how they could spend time in a nature-based activity in a way that honors or helps them live out their high-priority values. For Veterans who value family highly, how can they involve their family members in positive nature-based activities? For Veterans who value personal growth, how can they use their time in nature to enhance their skills or resilience? Next to each activity is the space to enter one or more values that could be connected to this specific activity. This process will likely reveal ways to make the chosen activities even more beneficial for Veterans because, along with the various mechanisms identified earlier, the nature-based activities will involve the pursuit of important values.

Activity List

DIFFICULTY	ACTIVITY	VALUE(S)
Easy		
Medium		
Difficult		

Activity Scheduling

Using the list of identified activities, help Veterans select activities to schedule into their daily plans. Ensure, especially at the beginning stages of the intervention, that Veterans pick activities that are easier to carry out. At the same time, the activities should still increase their engagement with nature in a meaningful way. Once at least two or three easy, immediately available activities are identified, the Veteran can consider how to schedule these activities. This includes planning how often, for how long, and with whom will they complete the activity. The Behavior Scheduling and Monitoring Form can help the Veteran with activity scheduling. Some activities can be scheduled often (e.g., drink tea on the back porch every morning at 7am), and some can be done weekly or less. It is recommended that the Veteran begins with small activities that can be integrated into daily routines.

Veterans will benefit from setting SMART goals, where SMART is an acronym:

- **S – Specific:** Rather than the vague goal of “be outside more,” their goal would be to “visit the park down the street.”
- **M – Measurable:** Make goals that you can count. Avoid a goal like “walk in the neighborhood for a while.” A better goal would be, “Walk for 15 minutes in the neighborhood.”

- **A – Achievable:** Pick goals that are very doable, and then they can work their way up to more challenging goals. “Plant a whole garden” might be too big a goal. They might be better off with a smaller goal, like, “Plant three tomato plants and three pepper plants.”
- **R – Relevant:** Encourage them to avoid goals that they might do just because someone else expects them to. Help them find goals that are relevant to their values.
- **T – Time-limited:** These first goals will be designed to be completed in one week or less. Other goals (e.g., train to complete a five-mile hike) might have a longer duration but could have smaller weekly goals. Either way, help the Veterans set a time by which they hope to complete each goal.

Example goals:

1. *This week, I will walk around the block with my spouse on Monday, Wednesday, and Friday evening.*

- This goal is **specific** because it describes when, where, and how it will take place. It also describes who might be involved.
- This goal is **measurable** because it lists how many times the activity will take place. It also describes the length of the walk (around the block), although it could have also been measured by time, such as a 10-minute walk.
- This goal is **achievable** for the Veteran in the example.
- This goal is **relevant** to Veterans as they want to be more physically fit, enjoy their neighborhood, and spend time with their spouse.
- This goal has a **time limit**: “this week.” Time limits can vary, depending on the goal.

2. *Every morning this week, I will take 15 minutes of quiet time to drink my tea on the back porch.*

- This goal is **specific** because it describes when, where, and how the activity will take place.
- The goal is **measurable** because it lists how many times the activity will take place (every day). It also says how long it will take each time (15 minutes).
- This goal is **achievable** for this Veteran, as they have time in the morning to drink tea and have it on a porch.
- This goal is **relevant** to Veterans as they want to practice quieting their mind and meditating. Others might do this activity to enjoy the sights, smells, and sounds of nature.
- This goal is **time-limited** because it mentions doing the activity “this week.”

SMART goals are more likely to be carried out than vague, overly difficult, and irrelevant goals. As they fill out the form, help the Veterans create SMART goals.

When Veterans feel ready to pursue more complicated or difficult goals, they will likely benefit from breaking those goals up into smaller goals or steps. For example, if they would like to plan a camping trip, they might set subgoals such as, look up nearby campgrounds online, book a campsite for two weeks from now, find a packing list online, clean gear, and so on. If at some point your Veteran identifies these types of goals, demonstrate the importance of breaking the goals down into smaller parts. Indicate to the Veteran that, while the completion of the ultimate long-term goal (e.g., completing a home landscaping project) will likely have positive outcomes, the whole process of pursuing that goal (e.g., buying seeds, exploring the yard, creating a plan, planting, and caring for the yard) can be enjoyable too.

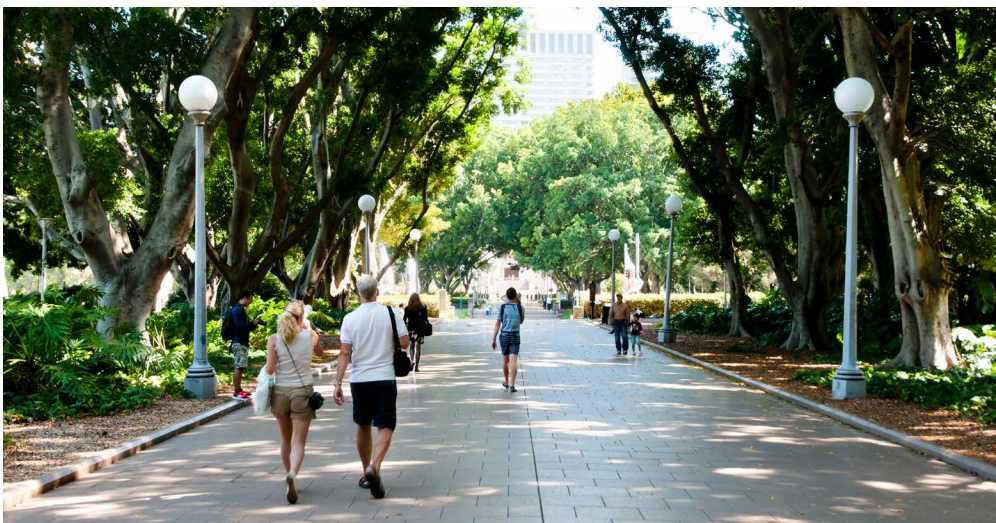
In line with previous research, if the activity can involve positive interactions with others and physical activity, it may provide additional benefits. Having a positive conversation with a friend while walking at a park might be particularly meaningful or emotionally restoring. At the same time, recognize that solitary and relaxing nature activities can be helpful as well. Those activities might promote personal reflection in a way that other activities cannot.

If you have subsequent sessions scheduled with the Veteran, you can provide additional copies of the Behavior Scheduling and Monitoring Form for scheduling new activities.

Safety Concerns

Engaging in nature can sometimes bring risks. To help reduce those risks, Veterans should prepare. Having proper gear can be helpful. The National Park Service suggests bringing the [10 Essentials](#) when engaging with nature. They are:

1. Navigation systems (e.g., GPS/map app on a phone)
2. Sun protection*
3. Warm clothing*
4. Light sources
5. First-aid supplies*
6. Source of fire
7. Repair kit and tools
8. Food
9. Hydration*
10. Emergency shelter



However, it is clear that not all forms of nature engagement will require these pieces of equipment (e.g., gardening at home, or walking in a tree-lined neighborhood). Yet the list has some items that are important in almost every outdoor activity. Sun protection; appropriate clothing; access to first-aid supplies; and, especially, hydration need to be considered.

Three other points should be emphasized. First, encourage Veterans to try to go with someone when doing outdoor activities away from home. This will improve safety and also likely make the experience more enjoyable. If they cannot or would not like to go with anyone, they should at least let someone know where they are going and when they should expect to hear back from them. Second, Veterans should match the activity to their physical ability. They should avoid overexerting themselves out of excitement and eagerness. Rather, encourage them to enjoy the activity and build up their physical conditioning over time. They would benefit from a warm-up period if exercising and a cooldown period as well to facilitate recovery. Third, remind Veterans to pay attention to the weather. They should avoid overheating and placing themselves in heavy rain, wind, or thunderstorms.

See these sites with additional guidelines:

<https://www.fs.fed.us/recreation/safety/safety.shtml>

<https://www.nps.gov/articles/hiking-safety.htm>

Audio Exercises

Carrying out planned nature activities is the central goal of this program. Another major goal is to have Veterans use guided audio mindfulness and savoring exercises at the end of the handbook. These exercises can enhance their time spent in nature. Additional guided imagery exercises can be used to improve mood, even while in man-made environments. Explain that they differ in length and that they can be implemented in a variety of different settings. Show them the links and try to problem solve around getting access to them if they lack internet access. For example, family or friends might be able to help them access and download the recordings.

Researchers have found that these types of exercises can benefit the mental health and well-being of those who use them. Review the benefits of those exercises and help Veterans schedule one or two of them into their week, alongside your nature-based activities. There is a column on the Behavior Scheduling and Monitoring form to track which days they completed an audio exercise.



Treatment Checkpoint:

- ☐ [] The Veteran has identified a variety of potential nature-based activities.
- ☐ [] The Veteran has selected one or two nature-based activities to complete in the coming weeks. These activities are of an appropriate difficulty.
- ☐ [] The Veteran has identified one or two guided audio exercises (see step 7) to complete.
- ☐ [] The Veteran has scheduled those activities.



Behavior Scheduling and Monitoring Form

What am I committing to do?

- _____
- _____

How often will I do it? (Times per week/day)

SCHEDULING

What am I doing and when?	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
Sunday	

MONITORING

Enjoyment (0 to 10)	Meaning (0 to 10)	Comments	Audio Y/N

STEP 6. Behavior monitoring.

After scheduling nature-based activities, behavior monitoring can help Veterans accomplish their goals. This process involves tracking the activities that they have committed to do and the results of those actions. Behavior monitoring can help Veterans track their own healthy behaviors and can help you provide accountability and problem solving if the Veterans' plans are not accomplished. The Behavior Scheduling and Monitoring Form is designed to help Veterans monitor their behaviors. Space is given for them to indicate how much they enjoyed the scheduled activity and how meaningful it was, and for them to make comments about the activity. This information might reveal which behaviors are most impactful for them. These behaviors should be scheduled again, when feasible. There is also a space for indicating whether they listened to a guided audio exercise on that day.

If you plan to follow-up with Veterans in subsequent sessions or over a phone call, let them know that you will be asking them about their success in changing their behaviors. Indicate that the purpose of following-up is to provide encouragement and help so that they can be successful. Subsequent follow-up contacts can also involve problem solving if Veterans are having a difficult time enacting their goals. Another benefit of setting set SMART goals is that behavioral monitoring will be much more effective. The specific, measurable, and time-bound aspects of the goal will help make it very clear when the Veteran has made changes. The hope is that, by changing their behaviors, carrying out more positive activities, and spending time in natural settings, Veterans will experience improved mental health and well-being. All aspects of this brief intervention, including behavior monitoring, are focused on bringing about those changes.

Problem Solving

It is likely that Veterans will run into challenges related to scheduling and carrying out their positive nature-based activities. Veterans can benefit from understanding why they struggled to change their behaviors. Help Veterans review their goals, examine their tracking form, and identify what factors led to their falling short.

Overly ambitious goals are sometimes the cause of a failure to change behavior. You can support Veterans by helping them recognize that some behavior change goals may have been too ambitious. To improve chances of success, these can be broken down into smaller goals (10-minute nature walk rather than a 30-minute nature walk) or subgoals (go to the park that has the trails and sit on a bench; walk up to the trailhead; walk part of the trail; and then, eventually, walk the whole trail in subsequent visits).

Veterans may indicate that they do not have time to engage in nature-based activities. Remind them that the focus of this intervention is on simple activities in nearby, highly accessible environments. Also, remind them that we often take breaks without realizing it – checking news headlines, grabbing a snack, reading a magazine, checking email, scrolling through social media, watching TV – and this intervention is asking us to take our breaks more intentionally and in natural settings. Other Veterans may exclaim that

they never need to “take breaks,” and these Veterans might benefit from hearing about the importance of rest for success and for reducing burnout. Other Veterans may feel overwhelmed with obligations to loved ones. Again, see if others might be invited to participate in relevant activities with the Veteran. Across all of these situations, finding nearby, brief nature-focused activities will be part of the solution.

A lack of motivation might be the source of their challenges with carrying out their planned activities. These Veterans may also benefit from involving family or friends in accomplishing their goals. For example, a spouse might help them remember to prepare their bike before a planned ride. Or a friend might commit to volunteer with them to clean up trash once a month at a nearby park. Shared experiences are often more fun and can increase motivation for additional experiences.

If Veterans are struggling to remember their goals, placing written reminders where they are sure to see them can be helpful. For example, they could put a sticky note or the Behavior Scheduling and Monitoring Form on their bathroom mirror. Creating alerts or reminders on their phone can also be a way of helping them deal with forgetting.

Another aspect of problem solving is identifying Veterans’ personal strengths and other resources they can rely on. If Veterans have the ability to plan ahead well, or be creative in how to access nature, or are strong-willed in getting themselves motivated, see if you can build off of those strengths to help them make behavior changes.

There may be other barriers to nature engagement. Your effort and creativity will be required to help Veterans problem solve around the various barriers that might keep them from engaging in positive nature-based activities. For additional guidance and resources, see the Problem- Solving module in the VA’s, *A Provider’s Guide to Brief Cognitive Behavioral Therapy* (https://www.mirecc.va.gov/visn16/docs/therapists_guide_to_brief_cbtmanual.pdf).

Moving forward. Once your sessions with Veterans are completed, they should be able to continue to apply the principles from this intervention. Remind them that continued engagement in positive and meaningful activities will promote well-being. Emphasize how nature-based activities, supported by SMART goals and behavior monitoring, can have a wide range of potential benefits. Encourage them to use the guided audio exercises for improving their mood, developing mindfulness and connecting to nature.

Knowing that Veterans may be interested in exploring more ambitious and difficult nature-based goals (e.g., fishing trip at a state park, a long weekend bike ride, designing and planting a new flower or vegetable garden), encourage them to set specific feasible goals and break down those larger goals into meaningful, manageable subgoals. Combining ongoing daily/weekly engagement in nearby accessible nature with occasional and intensive nature-based activities will likely be the most beneficial path forward. Copies of the Long-Term Scheduling Form on pg. 38 can be used to plan future activities in the coming weeks.

Veteran Checkpoint:

- [] The Veteran has successfully carried out some nature-based activities.
- [] You and the Veteran have problem-solved around any challenges they faced.
- [] The Veteran is ready to carry out additional and more challenging nature-based activities in the coming weeks.



Long-Term Scheduling Form

		Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Week 1	What: Where: When: Who:							
Week 2	What: Where: When: Who:							
Week 3	What: Where: When: Who:							
Week 4	What: Where: When: Who:							

PHASE 3.

POSITIVE PSYCHOLOGICAL AND BEHAVIORAL ACTIVITIES

Along with the direct and indirect benefits of engaging with nature, Veterans can use the techniques in this section to enhance their time spent in nature and improve their mental health and well-being. The use of these types of techniques has been supported by various research studies. The three types of exercises discussed are:

Step 7A. Mindfulness in nature.

Step 7B. Savoring.

Step 7C. Guided imagery.

Web links have been added to this manual and to the Veteran guide so that you and the Veteran can easily play and/or download the files. The hope is that Veterans will try many of the exercises provided here. By doing so, they can identify the exercises that are most enjoyable and helpful for them. Depending on your time, you can describe the different techniques and explain that they have been shown to have a beneficial impact on mental health and well-being. If you will have multiple sessions with the Veteran, you could describe one class of exercise per session.

Guided Audio Exercises

Mindfulness in nature exercises	Duration	Link
Mindfulness Check-in	5 Minutes	https://tinyurl.com/yrzsd2k9
Mindfulness of a Leaf	4 Minutes	https://tinyurl.com/5n8234at
Body Scan	14 Minutes	https://tinyurl.com/a922j8s3
Mindfulness of the Breath Exercise	10 Minutes	https://tinyurl.com/3j68tv2c
Mindful Walking	9 Minutes	https://tinyurl.com/mtsmf2w6
Savoring activities		
Savoring Exercise	12 Minutes	https://tinyurl.com/2snbd6x3
Guided imagery exercises		
A Positive Memory in Nature	10 Minutes	https://tinyurl.com/ah2rpytd
A Nature Connectedness Exercise	5 Minutes	https://tinyurl.com/ypuk88e7

Treatment Checkpoint:

[] The Veteran understands the different types of audio exercises.

[] The Veteran knows how to access the audio exercise.

STEP 7A. Perform mindfulness in nature exercises.

Mindfulness techniques are becoming increasingly popular in healthcare settings. They have been integrated into various aspects of care for Veterans. This includes their integration into psychotherapy approaches (Acceptance and Commitment Therapy, Mindfulness-based Cognitive Behavioral Therapy) and as standalone approaches (Mindfulness-based Stress Reduction). *Mindfulness* has been defined as “paying attention, on purpose, in the present moment and nonjudgmentally” (Kabat-Zinn, 1994). Mindfulness is theorized to improve mental health and well-being through a number of mechanisms. These include improved emotion regulation through reduced reactivity to internal experiences, reduced rumination, and reduced attachment to specific objects or outcomes (Coffey et al., 2010). As such, mindfulness techniques, which can be as simple as spending a few minutes observing one’s breath or scanning through bodily sensations, might support well-being and nature engagement. In fact, research has shown experimentally that mindfulness in natural settings tends to predict better outcomes than mindfulness indoors (Choe et al., 2020).

Mindfulness practices are often classified as either formal or informal exercises (Birtwell et al., 2019). Formal exercises are those in which you set aside time to be mindful, while not really doing anything else. You might sit for five minutes and notice your breath as it comes in and out or observe the sounds in your environment. They are formal in that you take time out of your routine to engage in them. Informal mindfulness practice on the other hand, is implemented during your day-to-day activities. When showering, washing the dishes, playing with a pet, how often are our thoughts actually on what we are doing in the present moment? Unless a particularly tough food stain resists scrubbing or our dog accidentally scratches our arm, we are often “not there.” Rather, we are thinking about distant and recent memories, or imagining potential future events. In informal practice, you bring your attention more fully to the task at hand. You try to be aware of your sensations (e.g., while showering, can you attend to the smell of the soap, can you feel the water or steam on your skin, can you notice the droplets of water on the curtain or wall?).

In both formal and informal practice, the idea is not to have an “empty mind” or to get rid of all of one’s thoughts. In fact, a major aspect of mindfulness practice is noticing when one’s attention has wandered away. After noticing your mind has wandered, you can kindly bring your attention back to the sensation or activity of interest. As repeated lifting of weights builds physical muscle, repeated returning to the present can strengthen your ability to be more mindful. Being mindful means being present. It means not being driven by emotions or thoughts. And it means being freer to act according to your values.

If the Veteran is not familiar with mindfulness and would like additional information, these are some good options produced by the VA:

- “What is Mindfulness?” ([YouTube video](#))
- Mindfulness Coach App ([Video overview](#)) ([Link for downloading](#))
- Whole Health: Mindful Awareness ([More information](#))

However, often the best introduction to mindfulness is practicing mindfulness. To facilitate the practice of mindfulness in-session, a script is provided for clinicians who already have their own personal exposure to mindfulness. For those who are not familiar, various audio recorded versions of the exercises are available below. You can try the exercises on your own and play them in-session, joining the Veteran in practicing these formal mindfulness techniques. When using the Behavior Scheduling and Monitoring Form, both formal and informal mindfulness practice can be scheduled. Work with the Veteran to identify helpful activities.

Mindfulness Check-in (Five Minutes; [Link](#)).

This is an introductory practice to help someone experience mindfulness. It focuses on attending to the various senses and can be helpful to recenter and come back to the present moment.

This is a brief mindfulness check-in exercise. During this exercise you will pay attention to your senses for a few minutes. To begin, find a comfortable position. If you're sitting, place your feet flat on the ground if possible; and sit with a straight, but not stiff, back with your neck and head in line with your spine. Settle into your position and, if you're willing, close your eyes for the rest of the exercise; otherwise, relax your gaze on a point in front of you.

We will begin by exploring various sensations you might be having in your body, such as differences in temperature, pressure, tingling, tightness, or tension. At any point in this exercise, if you, due to injury or loss of limb, cannot feel any sensations in certain areas, feel free to explore sensations in other areas of your body or your breath until you can join the exercise again. You can first notice your feet on the ground. Feeling the ground support you. You can move up from your feet to your lower legs, noticing what's there – any physical sensations. From there move to your knees, your upper legs, with the back of your legs making contact with your chair. Then move to your hips and to your lower back, your abdomen, your upper back, and your chest, feeling your breath and the other sensations in your torso. Then you can notice your shoulders, your upper arms, down through your elbows and forearms, and wrists. Your palms and fingers. And all the various sensations there. Then move back up your arms and shoulders to your neck, noticing your jaw, your lips, your nose, cheeks, ears, eyes and area around your eyes, your forehead, the sides of your head and back of your head, and then the top of your head. And for a moment, sit here and notice all the sensations occurring in your body.

Now you can shift your attention to the sounds in the area you're in. Notice what sounds you can hear. Some might be close, some might be further away, some might be distant. Some may be constant, and some may be occasional. Just notice those sounds, and then notice the changes in the sounds.

Lastly, bring your attention to your breath. You may notice your breath in your nose as the air comes in and out. Or in your throat. Or your chest or your abdomen as they expand and contract with each breath. Pick one of those areas of your body, and simply notice the breath moving in and out of your body. Just notice it as it flows in and out, somewhat like waves on the shore.

And to wrap up this exercise, imagine what the environment looked like before you closed your eyes. When you're ready, you can slowly blink, and open your eyes. As you go throughout your day, remember that attending to in-the-moment sensations like physical sensations, sounds, or your breath can be a helpful way to recenter yourself.

Mindfulness of a leaf (Four Minutes; [Link](#)).

As another introductory exercise, this mindfulness of a leaf (or other object from nature) is a very concrete way of experiencing mindfulness – much like the raisin exercise popularized in Mindfulness-Based Stress Reduction. It invites the Veteran to find and examine a nearby natural object, such as a leaf or a small rock, which will be the main target of the mindfulness exercise.

This exercise will be a way to practice mindfulness by exploring a leaf with your senses. Often times this is done with a leaf from a common tree or bush, which is a great object to practice with; but if there are no leaves around, a small rock, stick, blade of grass, or flower could work as well. Take a moment to find a leaf or other natural object that can fit on the palm of your hand. Get in a comfortable position to rest while you explore this leaf. As with all mindfulness exercises, when your mind wanders, gently bring your attention back to exploring the object.

Hold the object in the palm of your hand. Take a moment to examine this small piece of nature, trying to focus on the visual features you notice rather than judgments about the object, such as “this is ugly,” or “beautiful,” or “misshapen.”

Can you notice the weight of the object in your palm? Can you feel where the object makes contact with your palm?

Explore the edges of the object. What do you notice?

Pay attention to the colors you see in the object. You might bring it close to your eyes or further away, getting different perspectives on this object. How do the colors change from one part of the object to another? And how does light affect the object?

Explore any differences between the front and back of the object.

Explore the texture of the object in your fingers. What do you notice? Is it rough, smooth? Bumpy? Hard or soft?

Does this leaf, or rock or other natural object make any sounds when you move it with your fingers? Does it have a smell?

As you come to end this exercise, recognize how much you noticed about that object that you would not have otherwise paid attention to. Reflect on how this mindful approach to exploring this object might extend to other areas of your life. If you were mindful like this in other aspects of your day today, what might you notice in your relationships, your work, your hobbies, your surroundings, or your body that you would otherwise miss? As you go about your business today, take moments to really explore your senses in the present moment.

Body scan (14 minutes; [Link](#)).

The body scan exercise encourages Veterans to notice physical sensations in their body. The exercise may help them build the capacity to stay in the present, which can be helpful if they frequently engage in negative past- or future-based thinking, for example, rumination about the past and anxiety about the future. The exercise may also help them become more aware of the physical components of distressing emotions. This can be helpful because practicing being aware of these sensations without reacting to them, can translate to everyday living. Rather than getting caught up in anger or anxiety, they might be better able to observe the emotional rise and fall without reacting negatively. Along with these benefits, they might feel relaxed while engaging in the body scan exercise. While this is not a primary aim of the exercise, it can be a nice side-effect.

This is a guided body scan exercise. For the duration of this exercise, we will practice focusing our attention on various physical sensations in different parts of our bodies. We often have sensations of which we aren't aware. Sometimes these sensations are signs of emotional distress and, by practicing paying more attention to these sensations, we may become more aware of the physical side of our emotions. It is helpful to see the link between emotions and physical sensations. This exercise offers the additional benefit of suspending our judgment and our effort to make the sensations go away. So, when harmless, yet uncomfortable, physical sensations arise related to anxiety, frustration, fear, sadness, or anger, we can improve our ability to accept these sensations and not be overcome by them.

To begin this exercise, make sure that you are in a comfortable position. Sitting upright is preferred to reduce drowsiness. However, this exercise can also be helpful for falling asleep; so if you are using it for that purpose, you can do it lying down. For those sitting, if possible, have your feet flat on the ground. See if you can sit up straight. Have your back be firm, but flexible. Rest your hands in your lap in a comfortable way. If you're willing and able to close your eyes, gently do so. Otherwise, rest your gaze on something in front of you, maybe a spot on the ground or a nearby surface. Relax the muscles around your eyes.

Take a few breaths that are a bit deeper and slower than usual. See if you can feel the air coming in your nose, into your lungs, down into your belly and then back out of your nose. Breathe in... and out.... You should notice your abdomen rising and falling with each breath.

At any point in this exercise, if you, due to injury or loss of limb, cannot feel any sensations in certain areas, feel free to explore sensations in other areas of your body or your breath until you can join the exercise again. Begin by noticing the bottoms of your feet from the front, back and sides. Notice what it feels like, the pressure and the contact between your feet and the ground. There may be tingling, tightness, vibration, pressure, or variations in temperature. From there, move around to the tops of your feet and explore that area of your body, again noticing whatever sensations arise.

Then move up from the tops of your feet to your ankles. Feel all around your ankle and notice the sensations. At some point you may notice pain in parts of your body. Bring your attention to that pain and explore it more fully. Where does it start, and where does it stop? Where is it most intense, and where is it least intense? Is it shallow, deep, or both? Is it constant or changing? If pain arises, see if you can explore it, without needing to change it.

From your ankles, move up to your calves. Then move to the front of your legs, to your shins. Can you notice anything in your lower legs? Any sensations, potentially, contact with your clothing, or tightness, or tingling? Move from your calves to your knees, noticing the bend in your leg at the knees. Examine the front and the back and the sides of your knees.

From there move up to your upper legs. The front of your upper legs, which may have contact with your hands or arms. And the back of your upper legs, which may have contact with your chair or other surface you're on. Explore the sensations of that contact. Where does it start? Where does it stop? Is there pressure, or tingling, or temperature? From there move up through your hips, noticing the bend in this area of your body if you're sitting. Explore this area, and then move up to your lower back. It is possible there is some stiffness or pain here – see if, just for now, you can allow it to be as it is. Noticing and exploring any sensations of pain or other sensations you experience.

Then move to your abdomen. You may be able to feel your abdomen rise and fall with each breath. See if you can notice anything else there. And from there move up to your midback, potentially making contact with the chair or bed. Noticing where the contact starts and where it stops. From there move to your upper back. And your chest. Noticing any rising and falling. And then move up to the front of your shoulders. The top and the back of your shoulders. The sides of your shoulders. At any point during this exercise, your mind may begin to wander. When you notice that wandering, see if you can bring your attention back to the exercise.

From your shoulders move down to your upper arms. Explore all around your upper arms; and then move down into your elbows, noticing the bend in that area of your arm. Your forearms, possibly making contact with your legs or with armrests. Your wrists. The palms of your hands. Front of your fingers. And the tips of your fingers. Notice the sensation here, tingling, vibration, pressure, or contact with other things. And then from there move to the backs of your fingers, the backs of your hands, and then taking a path up your wrists, lower arms, elbows, upper arms, shoulders and then into your neck. See what sensation you can notice in the front of your neck. The back of your neck. Often the back of your neck or upper shoulders will have some tension. See and notice if you have any tension there.

Move up from your neck to your lower jaw, another place where we often hold tension. Explore sensations in your lips, your teeth, and the inside of your mouth. Your upper jaw. Your nose as your breath comes in and out of your nose. Your cheeks. And your ears. Your eyes and the area around your eyes. Your forehead. The sides of your head. The back of your head. The back of your head. And the top of your head.

And now that we have moved from the bottoms of your feet to the top of your head, see if you can take a few minutes and try to hold your whole body in your awareness, noticing all the sensations we explored and any others that you notice.

If your mind starts to wander, gently bring it back to explore the different physical sensations around your body.

Now, as we begin to come to a close for this exercise, see if you can remember what the surrounding area looked like before you closed your eyes. When you're ready, you can slowly blink, and open your eyes. Feel free to move your fingers hands, toes, and feet. Stretch your body. This is a great way to take care of yourself by learning how to be more aware of your physical sensations, accepting those sensations, and staying in the present moment. As you go through your day, look for more opportunities to practice those skills.

Mindfulness of the breath (10 minutes; [Link](#)).

The breath is a common sensation to focus on in mindfulness. It has natural fluctuations that you can pay attention to. You breathe in, pause, breathe out, and so on. This flowing nature of the breath gives you the chance to practice staying in the present moment. You “follow” the breath as it moves in and out. While trying to pay attention to the breath, a wide variety of internal experiences may occur. Feelings, memories, or thoughts may take you off track. When your attention wanders, bring it back to the breath with a gentle and kind attitude. Mindfulness is not about avoiding all distractions. It is about noticing the distractions and bringing your attention back to your point of focus. Try to avoid negative judgments about these distractions and yourself. It is human nature for your mind to wander. The more you practice, the better you can mindfully follow the breath.

This skill is important because you likely have the same distractions in your daily life. Painful emotions can take you off track. Negative thoughts can distract you from your goals. Physical sensations, like pain, can overwhelm you. If you practice mindfulness, you can increase your ability to respond to these difficulties in a helpful way. You can notice thoughts, memories, emotions, or physical sensations like pain without being trapped by them. Mindfulness can help you watch distracting thoughts come and go. You can feel emotions rise and fall in day-to-day living. With mindfulness, you are not trying to get rid of these sensations. Rather, you want to relate to them differently. You can bring an attitude of openness to them. Being open to them saves the energy it takes to try to avoid them. You can then focus your energy on living according to your values.

Overall, mindfulness can help in three ways. 1) It can help increase your awareness of your internal experience. 2) It can help you save your energy from trying to control your internal experiences. And 3) it can give you more freedom to live out your values in daily life.

This is a guided mindfulness of the breath exercise. It is an exercise that can be done without this audio for those familiar with mindfulness; but it can be helpful, especially for those who are still learning about mindfulness, to have some instructions. Put simply, we will be paying attention to our breath. The exercise involves two main parts. The first is to try to focus our attention on the breath. The breath is always changing, flowing in and out. By keeping your attention on your breath, you can build your ability to stay in the present moment, which is where life happens. It is easy to get caught up in the past through regret, guilt, anger, or shame, and caught up in the future through fear and anxiety. But we can miss out on life right now if we allow ourselves to get too involved with the past or future. Along with focusing on your breath, the other goal is to notice when you have stopped paying attention to our breath and are doing something else, like thinking, remembering, daydreaming, getting caught up in emotions, or noticing other physical sensations. When you have succeeded in noticing when your mind has wandered, recognize the sensations for what they are – you can mentally give them a label such as “thinking” or “remembering.” Then the next step is to gently bring your attention back to the breath – just like every repetition of lifting weights makes your muscles strong, repeatedly bringing your attention back to the breath makes you mentally strong. The hope is that by practicing this technique, you can use a similar strategy and do the same thing in your daily life when you find yourself caught up in thoughts, memories, emotions, and sensations in a way that keeps you from being in engaged in life. When this happens, you can notice these various internal experiences for what they are; and then recognize your ability to come to the present and choose to engage in life in meaningful ways.

So, to begin, it is recommended that you sit upright, with a relatively straight back, and your neck and head in line with your spine. Your spine does not need to be rigid, but rather firm and flexible, rising from your hips up to the top of your head. If possible, place your feet flat on the floor. Rest your hands in your lap in a comfortable way, with palms either up or down. If you feel comfortable closing your eyes, please do so. Otherwise, rest your gaze on a point out in front of you – either on the ground or on some other surface.

Begin by taking a few deep breaths through your nose. The breaths can be longer than normal, maybe four to six seconds for breathing in. Then exhale slowly for about six seconds. One key with deep breathing is that you should start your breath at your belly - you should feel your belly expanding with each inbreath and contracting with each outbreath. Feel free to rest a hand on your belly for a short time to see if you are breathing deeply into your belly. You should notice your hand rising and falling with your abdomen as you take these deep breaths.

Now allow your breath to return to normal pace, breathing through your nose if possible. Explore the areas of your body where you can notice your breath. You may notice your breath at the tip of your nose, where the breath enters and leaves your body. Can you notice differences in temperature between the in breath and out breath? Or notice your breath in your throat as the breath moves from your nose into your lungs. Or your chest, with a slight rising and falling. Or your abdomen, as it expands and contracts with each breath. When you breathe naturally, where can you most easily notice your breath in your body?

For the next few moments, we will continue to watch or notice our breath. Continue exploring what it feels like to breathe in that area of your body, either your nose, throat, chest, or abdomen - just noticing the sensation. When your mind wanders, gently bring your attention back to your breath.

Questions or thoughts may arise, "Am I doing this right?" Or "This is odd." When those come up, try to recognize them, label them as "thinking," and bring your attention back to your breath. Like waves on a beach, watch your breath as it moves in and out.

Has your mind wandered; where did it go? You can label it either as thinking, feeling, or remembering. And then come back to the breath. One breath at a time.

Continue watching your breath, noticing the natural rhythm. Recognize you benefit when you notice your mind has wandered - and then be kind to yourself and bring your attention back to the breath.

As we draw near to the end of this exercise, allow yourself a just few more breaths. See if you can remember what your surroundings looked like before you closed your eyes; and, when you are ready, slowly blink and open your eyes. Feel free to move your feet, legs, hands, or arms - stretch as needed. Now notice your breath again. It is always with you and as you go about your day and find yourself getting pulled into the past or future in a way that is not helpful, come back to your breath. It can act like an anchor to the present moment - the place from which you can act in a purposeful and meaningful way.

Mindful walking (nine minutes; [Link](#)).

We have different levels of mindfulness during our daily activities. For example, we can brush our teeth mindlessly, thinking about the day ahead, or while trying to gather our keys and phone. Or we can try brushing our teeth mindfully: experiencing the minty smell of the toothpaste, noticing the taste and the texture of the bubbles while brushing, feeling the

bristles against our gums. By regularly bringing our full attention to the task at hand we can slow down and experience life in the present moment. While there are times we need to plan ahead or reflect on past events, we often do this type of thinking too much. This mindful walking exercise is one way to better engage with the present moment. The exercise may be particularly beneficial if the walk is in a natural setting.

This is a mindful walking exercise which can be carried out in different ways. For example, you can try to be mindful of your walking as you go about your business at a normal walking pace. On the other hand, you can also intentionally slow down your pace of walking, sometimes very slowly at about one step for every 20 to 40 seconds. While that may sound quite odd, it can be a very interesting experience, worth trying at least once. Walking – something many of us take for granted, just like breathing – has many aspects to it, which makes it a great activity for practicing mindfulness. The goal of this mindfulness practice is to increase your ability to be in the present moment and to do so without judgment.

To begin this practice, stand for a moment. Feel the breath moving in and out of your body. Notice your feet making contact with the ground, the ground supporting your feet and your legs supporting the rest of your body. And when you're ready, begin by lifting one leg up and moving it forward to begin walking. If you can walk a bit slower than your normal pace, it may help you attend to the many sensations involved in walking.

With each new step, notice where your foot first makes contact with the ground. What part of your foot first makes contact with the ground? Notice how more of the foot gradually makes contact with the ground over time. Be aware of how the weight shifts from one part of the foot to many areas of the foot. Over time, as your body moves forward, the weight begins to shift away from the back foot onto the front of the foot. What part of the back foot first leaves the ground? Pay attention to the process of your foot leaving the ground. Notice how the weight shifts from one part of the foot to another and then, as you step with the other foot, the process of taking your weight from one foot to another. There may be sensations such as stretching, bending, tensing, and relaxing at different times. With each step notice all the sensations in your feet as you walk.

As is likely, your mind will wander. You may start thinking about things you see, smell, feel, or hear. You may have memories or thoughts about the future. As those come up, notice them and then, with kindness to yourself, bring your attention back to the physical sensations of walking.

Next bring your attention to your legs. Notice the bending in your knees with each step that you take and then gradually a straightening of the leg at the knee. Spend some time noticing the bending that occurs at the hips with each step that you take. Notice the muscles that work to pull and push your legs forward. Notice your leg lifting and being put down with each step. While you continue walking for the next minute or so, notice the changes in your legs as you take each step; and notice any other physical sensations you have as you walk.

Now bring your attention to your whole body as you walk. Notice any shifting or turning in your hips. If walking at a more normal pace, notice your arms as they swing back and forth as you walk. Notice any slight changes in your body, maybe in the shoulders, neck, or head. Really feel what it is like to walk by keeping your attention on all the physical sensations occurring.

You may continue this practice for as long as you would like while you're walking. You can expand your awareness to your other senses, what do you see, smell, hear, feel, or taste? Try to stick with what is happening right now as you walk and, when your mind wanders, bring your attention back to any of these physical sensations. Mindful walking is a good way to practice mindfulness while taking care of daily tasks at home, at work, or in other settings. Building your ability to stay in the present moment with this and other mindfulness exercises may reduce stress and improve your sense of well-being.

STEP 7B. Savoring.

Humans have a natural tendency to focus on negative aspects of their environment or circumstances. Scholars argue that this stems from our species' history of surviving difficult environments. Yet, when there is no imminent physical risk, focusing on our weaknesses, difficulties, or other concerns is not helpful. In fact, it can bring emotional distress and even negative physical health outcomes. One approach to reducing this emphasis on negative and threatening aspects of life and to promote well-being is savoring. When most people hear the term savoring, they think of how food – a bite of a delicious meal or dessert or a mouthful of a favorite drink – can be savored. The savorer takes time and effort to bring their attention to the look, taste, smell, texture, and even sound of the food. The goal is to fully experience it and enjoy it. By savoring, the savorer has a more enjoyable and stimulating experience.

Psychologists in the field of positive psychology have applied the experience of savoring to other activities of life. They argue that, to increase happiness and well-being, we may benefit from bringing our full attention to the positive, enjoyable, invigorating, and peaceful aspects of our other experiences, to savor them (Bryant, 2003). Just as with food, to savor other daily experiences, you must take time and effort to bring your attention to the pleasurable aspects of an experience to gain the most enjoyment from it. Even when facing challenging times, and perhaps especially when you are facing challenging times, you may benefit from savoring exercises that can help balance out the stress and negative emotions you are feeling. One theory argues that the positive emotions you feel at one time, can expand to include other positive feelings and perspectives (Fredrickson, 2004). One of the foremost scholars on the concept of savoring likens it to a skill that can be developed (Bryant & Veroff, 2017). These activities described in this chapter might help build the skill of savoring, which can be applied more widely in day-to-day life.

uoidbach, Berry, Hansenne, & Mikolajczak, 2010). Other research shows that those who engage in both savoring and mindfulness tend to see the greatest daily positive emotions (Kiken, Lnuudberg & Fredrickson, 2017). One study showed that in a one-week savoring intervention for older adults, rate of engagement in the savoring exercises was

associated with improved resilience, reduced depression, and increased happiness over time (Smith & Hanni, 2019). Another intervention study for young adults indicated that savoring exercises can be beneficial for reducing depressive symptoms and negative affect (Hurley & Kwon, 2012).

Step 7B. A savoring exercise (12 minutes; [Link](#)).

The following is a brief exercise that can be used to enhance a current nature experience through savoring. It invites the Veteran to slow down, notice, and appreciate aspects of their experience in nature.

This is an exercise to enhance your experience of a natural environment. As humans, our minds are very good at spotting and trying to solve problems. However, they can become so problem-focused that sometimes all we see are challenges, difficulties, setbacks, and barriers to happiness. While these things certainly exist, it may help to take the opportunity to focus your attention to parts of your experience that are positive, enjoyable, or fun, not to ignore the challenges you face, but to open yourself up to all aspects of living.

Begin by taking a few deep breaths, breathing down into your belly. If you are sitting still, this may be easier than if you're being active; but either way, bring your attention to your breathing, and just notice what it feels like to breathe. See if you can be here in the present moment, noticing your breath. With each in breath, notice your belly expanding and then with each out breath, notice your belly contracting.

Your eyes may already be open, but see if you can really open your eyes, and notice the environment. What do you notice around you? What can you see? Shapes... color... motion? Try being somewhat like a little child, who, with curiosity, is seeing this environment for the first time. As you look around, is there anything that you find particularly interesting, beautiful, mesmerizing, or relaxing? Make note of it.

Now how about smells? Can you take in some deep breaths through your nose to try and sense what smells are in the area? Can you pick up anything that you hadn't previously noted? Any smells from the earth, plants, water, or other parts of the natural environment? Is there anything you especially like? If so, again, make a note of it.

And now we move to the sensation of touch. Are there any sensations on your skin or your face? You may notice a cool breeze, a light mist, the warmth of the sun. You may feel the earth under your feet – firm rock or dirt, soft sand, or vegetation. Your hands may be in contact with some part of the natural environment. Are there any of these sensations that you find pleasing or relaxing? Make a mental note of those.

Moving on to sounds. What can you hear? When we pause and bring our attention to the sounds around us, we may notice sounds of which we weren't previously aware. Are there any nearby sounds? Sounds that are far? Or sounds that are very distant? Are

there constant sounds, and are there fluctuating sounds? If you're walking, can you hear your feet making contact with the ground with each step? Are there sounds that you find interesting or enjoyable? Make a note of them.

For the next few minutes, see if you can revisit those aspects of the environment that are most enjoyable or interesting to you. Are there sights you could spend a few moments studying in more depth? Are there smells you'd like to linger on? Any sensations of touch that feel good that you can welcome? And sounds that are worth more of your attention? Allow yourself to experience these sensations fully. If that means changing your position, moving to get a better smell or look, please do so. When your mind wanders to other things, gently bring it back to these positive experiences. Spend the next few minutes really enjoying the different aspects of this environment.

Like many individuals, you may find yourself avoiding the process of savoring the present moment and avoiding the good feelings associated with savoring. While there are many reasons you might keep yourself from fully enjoying the moment, see if you can allow your resistance to these positive emotions to relax. Even for just a minute, put your guard down and open up to the positive aspects and feelings related to your experience. Our minds wander many times to other events, which is normal, but just for these few minutes, intentionally bring your attention back to the positive parts of the environment you have chosen to reflect on. You can even tell your mind, "We will almost certainly have time to reflect on the other parts of this experience later, but for right now, I'd like to experience the most enjoyable parts. The sights, sounds, smells, tastes and touch-related sensations that bring positive emotions."

You cannot force a positive experience, just like you cannot force a seed to sprout. But, just as you can create a garden that welcomes and supports the growth of a sprout, you can create an internal environment that welcomes positive experience. With that in mind, while engaging in this savoring exercise, be intentional about noticing what is happening right here, right now, rather than what you expect to happen in the coming seconds, minutes, or hours. Your mind may wander to events from your past or in the future, but while engaging in this type of savoring, see if you can gently, and with kindness, bring your attention back to the sights, smells, sounds, tastes, and sensations of your current nature setting.

As you notice the different aspects of the environment, is there something for which you can express gratitude? It may feel odd, but you can say, "I'm feeling grateful for ____"? Or "I appreciate ____". And it can include the warmth of the sun, the sky, the wind on your face, or the ground supporting you. See if you can allow this appreciation to grow. In fact, it may expand to more than one aspect of the environment.

If you're with others in this experience, see if you can at some point let them know that you value being with them and are happy that you can share this experience together. If you're alone, express appreciation for the opportunity to take care of yourself and promote your personal development through this positive exercise.

As you continue with this nature experience, see if you can continue to explore aspects of the environment that are especially appealing to you. Be curious about it. Enjoy it and allow yourself to experience it fully. Though the formal exercise will end now, you can continue to take opportunities to notice and enhance the positive aspects of this nature experience.

Some research has shown that sharing positive experiences with others makes them more impactful. So, with that in mind, after you engage in the exercise, the Veteran can consider sharing the experiences or moments they savored with someone else.

Another form of savoring is **anticipatory savoring**. This includes consciously thinking about future positive events. Related to nature, this might include reflecting on nature activities that Veterans are looking forward to. If they have a trip planned to go camping by a lake, or to visit their favorite beach/mountain, or to spend the evening on the back porch, they can take moments throughout the day to anticipate those enjoyable experiences. They can imagine what aspects of your five senses they expect will be the most fulfilled or invigorated.

A third form of savoring is **reminiscent savoring**, which involves taking time to intentionally reflect on positive memories. Veterans could look at old photographs or engage in conversations about past trips or nature experiences. The first guided imagery exercise in the section below is also a form of reminiscent savoring.

STEP 7C. Guided imagery.

Guided imagery exercises have been used in many approaches to improve mental health and well-being. They are a type of exercise in which you use your imagination to visualize certain settings, events, or behaviors. Engaging in these exercises can elicit a relaxation response and affect how our body deals with stress (Lewandowski & Jacobson, 2013). They fit in well with this intervention because they can emphasize imagery related to nature and natural environments. While a Veteran can use their own format for imagery exercises, having a guided audio recording (or a clinician in-session) walk them through an imagery exercise can be particularly beneficial.

The manual includes two scripts and audio links for imagery exercises. The first is a more traditional exercise, encouraging the Veteran to remember a nature scene that they experienced as relaxing, peaceful, comforting, and enjoyable. This exercise may be helpful during times of distress, especially when enjoying nature in-person is not possible. Also, by working through this exercise regularly, Veterans may be able to build up a more habitual relationship with this imagery experience, allowing them to benefit from it in their day-to-day stressors.

The second exercise is newer and more experimental. It may be especially appealing to Veterans who have strong desires to be in, care for, and be connected to nature. It aims to promote a sense of connectedness to nature by imagining the ways in which humans rely on nature.

A positive memory in nature (10 minutes; [Link](#)).

This is a guided imagery exercise focused on a positive past experience in nature. Let's take a minute and identify a positive memory from your past which occurred in a natural environment. Can you think of any enjoyable moments from your life that took place in nature? These could be childhood experiences, adolescent or young adult experiences, or recent experiences. They can be from exciting trips, nearby parks, or right where you live. It could involve a beach, forest, lake, stream, river, field, mountain, park, or other natural space. See if you can identify a positive memory.

The hope is that this exercise will promote a sense of relaxation, peace, and contentment. Even if the reduction in stress is not significant by the end of the exercise, just taking a few minutes to allow your body to rest and to breathe more deeply can be good. Your mind may wander during the exercise, and that wandering is not a problem. In fact, noticing the wandering is a helpful skill we can practice now and apply throughout the day. So, when you notice your mind wandering, gently lead it back to the exercise.

The exercise can be carried out while sitting up or lying down – just recognize that if you are lying down, you may begin to feel tired and start dozing off. If you want to sleep, then that is great. If, however, you want to be attentive throughout the whole exercise, then sitting up may be ideal. So, if lying on your back, have your arms rest along the sides of your body, but not touching the rest of your body. If sitting, see if you can have your feet flat on the ground, your back straight, but not rigid, firm, but flexible. See if you can have your head resting on top of your shoulders, looking straight ahead. Try and find a comfortable position, and then settle in for the exercise.

Now, for this and other exercises, many individuals find it helpful to close their eyes. If you feel comfortable closing your eyes, please do so. Otherwise, find a spot on the ground in front of you or a plain wall, and relax your gaze. Relax the muscles around your eyes and rest your gaze on that spot.

Begin by taking some breaths, lower and slower than you would normally. Rather than having a lot of expansion in the chest and shoulders, you should notice your abdomen rising and falling as your lungs fill with air. With each in-breath your abdomen expands, and with each out-breath your abdomen contracts. Take a few more of these deep breaths. Now continue breathing into your belly, but allow your breath to return to a normal pace.

At this time, I would like you to begin to open up to your memory of the past experience in nature. Consider how old you were and what you were most interested in about this environment. In your mind, see if you can picture what the environment looked like. Was it a beach, forest, mountain, field, or other environment? What was right around you within arm's reach or at your feet? Can you remember or imagine what the ground looked like? What do you notice right in your nearby environment? Is it morning, midday, evening, or night? Looking out further, what can you see? Are there features of the environment that are interesting to look at? Is there motion? What colors do you see? What does the sky look like?

What can you feel physically? Do you notice the breeze on your face? The warmth of the sun? How would you describe the temperature of this environment? See if you can remember what physical sensations you might have been feeling.

What can you smell? Are there salty ocean breezes, or the smell of the earth, trees, grasses, flowers? Explore the smells in this memory.

Can you taste anything? Were there foods or drinks that you brought with you?

What can you hear? Can you hear the sounds of animals, insects, birds? Can you hear water or wind, trees or plants blowing? Are you with anyone? Can you hear them or others in the area? Are the noises loud, quiet, or somewhere in-between? Take a minute to notice all the sounds you can remember in this nature experience.

With all of these sensations and experiences, can you take a few moments and just rest in this natural environment? Continue breathing, breathing in the air of that place, allowing any positive feelings such as joy, contentment, peace, happiness to come and go as they may. Rest in this place.

As you continue to rest, recognize that this is a place to which you can return. By nature, most of us spend much of our waking hours remembering difficult events from the past or imagining possible challenges in our future. This exercise reminds us to balance that tendency with imagery focused on positive memories. So, as you go throughout your week, know that you can return to this place or another place through an imagery exercise.

So, begin to say goodbye to this memory of nature, the sights, sounds, smells. Let them go and start to imagine what the room looked like before you closed your eyes. Begin moving your fingers and toes. And when you're ready, slowly blink and open your eyes, coming back to the room. As you feel like it, stretch out your muscles, and get ready for the rest of your day.

A nature connectedness exercise (five minutes; [Link](#)).

This is a brief exercise aimed at enhancing your sense of connection to nature. Feeling connected to nature has been linked to improved well-being and mindfulness. See if this exercise helps you feel more connected to nature and, if so, consider using it as a way to build that sensation.

First, as with many imagery or mindfulness exercises, we start by drawing attention to your breath. Notice how, without consciously thinking, our brain and body take care of breathing for us. There is a natural rhythm to our breath as it flows in and flows out. Although there are a variety of molecules that comprise the air we breathe, oxygen is essential for our bodies. With each breath, in, our lungs take in the oxygen, which then enters our blood stream. Our hearts push that oxygen-rich blood throughout our bodies to help our essential organs function. About two thirds of the human body is

made up of oxygen. And then, with each breath out, our body expels carbon dioxide into the air. All on its own, with trillions of cells working together, our body takes in oxygen and expels carbon dioxide so that we can move and live.

At the same time, throughout the earth, plants, algae, and ocean bacteria, use the energy from the sun to take in carbon dioxide and send out oxygen. This is the same oxygen that is in each breath we take. In a partnership of shared air, we and the plants in our environment work together to sustain life. Consider how every life-giving breath you take is dependent on the plants and algae on earth – including those right around you. Even in the winter, when the plants in many areas no longer produce oxygen, plants and algae in warmer climates make up for it. Your in-breath is the out-breath of plants. Your out-breath is the in-breath of these different organisms. Take a few moments to breathe in and out, imagining how your breath, and the breath of every person and animal around you, depends on the production of oxygen from plants and algae. And in turn, plants, algae, and some bacteria depend on the carbon dioxide we breathe out and the light of the sun.

Consider how the life-giving breath you're taking in now is supported by plants and other organisms. Consider how your next outbreath supports the life of those same organisms.

At this point we will wrap up this exercise. As you move through your day, pause now and then, take a breath. Take a moment to remember your interdependence with the natural environment – remembering that even if you're in a winter environment, your oxygen comes from distant organisms. See if you can take a moment to appreciate that interdependence and allow yourself to feel that connection with nature.



REFERENCES

- Alessi, C. A., Martin, J. L., Webber, A. P., Kim, E. C., Harker, J. O., & Josephson, K. R. (2005). Randomized, Controlled Trial of a Nonpharmacological Intervention to Improve Abnormal Sleep/Wake Patterns in Nursing Home Residents. *Journal of the American Geriatrics Society*, 53(5), 803–810. <https://doi.org/10.1111/j.1532-5415.2005.53251.x>
- Anderson, A. R. (2020). Enjoying nature, exercise, social interaction, and affect: A daily diary study. *Journal of Health Psychology*, 1359105320977642. <https://doi.org/10.1177/1359105320977642>
- Anderson, A. R., & Fowers, B. J. (2020). Lifestyle behaviors, psychological distress, and well-being: A daily diary study. *Social Science & Medicine*, 113263. <https://doi.org/10.1016/j.socscimed.2020.113263>
- Anderson, C. L., Monroy, M., & Keltner, D. (2018). Awe in nature heals: Evidence from military veterans, at-risk youth, and college students. *Emotion*, 18(8), 1195–1202. <https://doi.org/10.1037/emo0000442>
- Apóstolo, J. L. A., & Kolcaba, K. (2009). The Effects of Guided Imagery on Comfort, Depression, Anxiety, and Stress of Psychiatric Inpatients with Depressive Disorders. *Archives of Psychiatric Nursing*, 23(6), 403–411. <https://doi.org/10.1016/j.apnu.2008.12.003>
- Arkowitz, H., & Miller, W. R. (2008). Learning, applying, and extending motivational interviewing. In *Motivational interviewing in the treatment of psychological problems* (pp. 1–25). The Guilford Press.
- Ashdown-Franks, G., Firth, J., Carney, R., Carvalho, A. F., Hallgren, M., Koyanagi, A., Rosenbaum, S., Schuch, F. B., Smith, L., Solmi, M., Vancampfort, D., & Stubbs, B. (2020). Exercise as Medicine for Mental and Substance Use Disorders: A Meta-review of the Benefits for Neuropsychiatric and Cognitive Outcomes. *Sports Medicine*, 50(1), 151–170. <https://doi.org/10.1007/s40279-019-01187-6>
- Baxter, D. E., & Pelletier, L. G. (2019). Is nature relatedness a basic human psychological need? A critical examination of the extant literature. *Canadian Psychology/Psychologie Canadienne*, 60(1), 21–34. <https://doi.org/10.1037/cap0000145>
- Bennett, J. L., Piatt, J. A., & Van Puymbroeck, M. (2017). Outcomes of a Therapeutic Fly-Fishing Program for Veterans with Combat-Related Disabilities: A Community-Based Rehabilitation Initiative. *Community Mental Health Journal; New York*, 53(7), 756–765. <http://dx.doi.org/10.1007/s10597-017-0124-9>

- Berman, M. G., Jonides, J., & Kaplan, S. (2008). The Cognitive Benefits of Interacting With Nature. *Psychological Science*, 19(12), 1207–1212. <https://doi.org/10.1111/j.1467-9280.2008.02225.x>
- Bettmann, J. E., Scheinfeld, D. E., Prince, K. C., Garland, E. L., & Ostrom, K. V. (2019). Changes in psychiatric symptoms and psychological processes among veterans participating in a therapeutic adventure program. *Psychological Services*, 16(4), 525–534. <https://doi.org/10.1037/ser0000213>
- Birtwell, K., Williams, K., van Marwijk, H., Armitage, C. J., & Sheffield, D. (2019). An Exploration of Formal and Informal Mindfulness Practice and Associations with Wellbeing. *Mindfulness*, 10(1), 89–99. <https://doi.org/10.1007/s12671-018-0951-y>
- Boswell, J. F., Iles, B. R., Gallagher, M. W., & Farchione, T. J. (2017). Behavioral activation strategies in cognitive-behavioral therapy for anxiety disorders. *Psychotherapy*, 54(3), 231–236. <https://doi.org/10.1037/pst0000119>
- Bratman, G. N., Anderson, C. B., Berman, M. G., Cochran, B., Vries, S. de, Flanders, J., Folke, C., Frumkin, H., Gross, J. J., Hartig, T., Kahn, P. H., Kuo, M., Lawler, J. J., Levin, P. S., Lindahl, T., Meyer-Lindenberg, A., Mitchell, R., Ouyang, Z., Roe, J., ... Daily, G. C. (2019). Nature and mental health: An ecosystem service perspective. *Science Advances*, 5(7), eaax0903. <https://doi.org/10.1126/sciadv.aax0903>
- Bratman, G. N., Hamilton, J. P., & Daily, G. C. (2012). The impacts of nature experience on human cognitive function and mental health. *Annals of the New York Academy of Sciences*, 1249(1), 118–136. <https://doi.org/10.1111/j.1749-6632.2011.06400.x>
- Bratman, G. N., Hamilton, J. P., Hahn, K. S., Daily, G. C., & Gross, J. J. (2015). Nature experience reduces rumination and subgenual prefrontal cortex activation. *Proceedings of the National Academy of Sciences*, 112(28), 8567–8572. <https://doi.org/10.1073/pnas.1510459112>
- Bryant, F. (2003). Savoring Beliefs Inventory (SBI): A scale for measuring beliefs about savouring. *Journal of Mental Health*, 12(2), 175–196.
- Bryant, F. B., & Veroff, J. (2017). *Savoring: A New Model of Positive Experience*. Psychology Press. <https://doi.org/10.4324/9781315088426>
- Buecker, S., Simacek, T., Ingwersen, B., Terwiel, S., & Simonsmeier, B. A. (2020). Physical activity and subjective well-being in healthy individuals: A meta-analytic review. *Health Psychology Review*, 0(0), 1–19. <https://doi.org/10.1080/17437199.2020.1760728>
- Caldwell, J. T., Ford, C. L., Wallace, S. P., Wang, M. C., & Takahashi, L. M. (2016). Intersection of Living in a Rural Versus Urban Area and Race/Ethnicity in Explaining Access to Health Care in the United States. *American Journal of Public Health*, 106(8), 1463–1469. <https://doi.org/10.2105/AJPH.2016.303212>
- Capaldi, C. A., Dopko, R. L., & Zelenski, J. M. (2014). The relationship between nature connectedness and happiness: A meta-analysis. *Frontiers in Psychology*, 5. <https://doi.org/10.3389/fpsyg.2014.00976>

- Chambers, R., Gullone, E., & Allen, N. B. (2009). Mindful emotion regulation: An integrative review. *Clinical Psychology Review*, 29(6), 560–572. <https://doi.org/10.1016/j.cpr.2009.06.005>
- Choe, E. Y., Jorgensen, A., & Sheffield, D. (2020). Does a natural environment enhance the effectiveness of Mindfulness-Based Stress Reduction (MBSR)? Examining the mental health and wellbeing, and nature connectedness benefits. *Landscape and Urban Planning*, 202, 103886. <https://doi.org/10.1016/j.landurbplan.2020.103886>
- Cleaver, J. E., & Crowley, E. (2002). UV damage, DNA repair and skin carcinogenesis. *Frontiers in Bioscience: A Journal and Virtual Library*, 7, d1024-1043.
- Coffey, K. A., Hartman, M., & Fredrickson, B. L. (2010). Deconstructing Mindfulness and Constructing Mental Health: Understanding Mindfulness and its Mechanisms of Action. *Mindfulness*, 1(4), 235–253. <https://doi.org/10.1007/s12671-010-0033-2>
- Corazon, S. S., Sidenius, U., Poulsen, D. V., Gramkow, M. C., & Stigsdotter, U. K. (2019). Psycho-Physiological Stress Recovery in Outdoor Nature-Based Interventions: A Systematic Review of the Past Eight Years of Research. *International Journal of Environmental Research and Public Health*, 16(10), 1711. <https://doi.org/10.3390/ijerph16101711>
- Cruwys, T., Haslam, S. A., Dingle, G. A., Haslam, C., & Jetten, J. (2014). Depression and Social Identity: An Integrative Review. *Personality and Social Psychology Review*, 18(3), 215–238. <https://doi.org/10.1177/1088868314523839>
- Dauwan, M., Begemann, M. J. H., Slot, M. I. E., Lee, E. H. M., Scheltens, P., & Sommer, I. E. C. (2019). Physical exercise improves quality of life, depressive symptoms, and cognition across chronic brain disorders: A transdiagnostic systematic review and meta-analysis of randomized controlled trials. *Journal of Neurology*. <https://doi.org/10.1007/s00415-019-09493-9>
- Dumont, M., & Beaulieu, C. (2007). Light exposure in the natural environment: Relevance to mood and sleep disorders. *Sleep Medicine*, 8(6), 557–565. <https://doi.org/10.1016/j.sleep.2006.11.008>
- Egger, G. (2018). Defining a Structure and Methodology for the Practice of Lifestyle Medicine. *American Journal of Lifestyle Medicine*, 12(5), 396–403. <https://doi.org/10.1177/1559827616669327>
- Egger, G., Stevens, J., Binns, A., & Morgan, B. (2019). Psychosocial Determinants of Chronic Disease: Implications for Lifestyle Medicine. *American Journal of Lifestyle Medicine*, 13(6), 526–532. <https://doi.org/10.1177/1559827619845335>
- Engemann, K., Pedersen, C. B., Arge, L., Tsirogiannis, C., Mortensen, P. B., & Svenning, J.-C. (2019). Residential green space in childhood is associated with lower risk of psychiatric disorders from adolescence into adulthood. *Proceedings of the National Academy of Sciences*, 116(11), 5188–5193. <https://doi.org/10.1073/pnas.1807504116>

- Fernández-Rodríguez, C., González-Fernández, S., Coto-Lesmes, R., & Pedrosa, I. (2020). Behavioral Activation and Acceptance and Commitment Therapy in the Treatment of Anxiety and Depression in Cancer Survivors: A Randomized Clinical Trial. *Behavior Modification*, 0145445520916441. <https://doi.org/10.1177/0145445520916441>
- Forrest, K. Y. Z., & Stuhldreher, W. L. (2011). *Prevalence and correlates of vitamin D deficiency in US adults*. <https://pubag.nal.usda.gov/catalog/446017>
- Fredrickson, B. L. (2004). The Broaden-and-Build Theory of Positive Emotions. *Philosophical Transactions: Biological Sciences*, 359(1449), 1367-1377.
- Germain, A., & Kupfer, D. J. (2008). Circadian rhythm disturbances in depression. *Human Psychopharmacology: Clinical and Experimental*, 23(7), 571-585. <https://doi.org/10.1002/hup.964>
- Goyal, M., Singh, S., Sibinga, E. M. S., Gould, N. F., Rowland-Seymour, A., Sharma, R., Berger, Z., Sleicher, D., Maron, D. D., Shihab, H. M., Ranasinghe, P. D., Linn, S., Saha, S., Bass, E. B., & 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. <https://doi.org/10.1001/jamainternmed.2013.13018>
- Gullone, E. (2000). The Biophilia Hypothesis and Life in the 21st Century: Increasing Mental Health or Increasing Pathology? *Journal of Happiness Studies*, 1(3), 293-321.
- Hartig, T., Mitchell, R., Vries, S. de, & Frumkin, H. (2014). Nature and Health. *Annual Review of Public Health*, 35(1), 207-228. <https://doi.org/10.1146/annurev-publhealth-032013-182443>
- Hettema, J., Steele, J., & Miller, W. R. (2005). Motivational Interviewing. *Annual Review of Clinical Psychology*, 1(1), 91-111. <https://doi.org/10.1146/annurev-clinpsy.1.102803.143833>
- Holick, M. F. (2017). The vitamin D deficiency pandemic: Approaches for diagnosis, treatment and prevention. *Reviews in Endocrine and Metabolic Disorders*, 18(2), 153-165. <https://doi.org/10.1007/s11154-017-9424-1>
- Hollis, B. W. (2005). Circulating 25-Hydroxyvitamin D Levels Indicative of Vitamin D Sufficiency: Implications for Establishing a New Effective Dietary Intake Recommendation for Vitamin D. *The Journal of Nutrition*, 135(2), 317-322. <https://doi.org/10.1093/jn/135.2.317>
- Holt-Lunstad, J., Smith, T. B., Baker, M., Harris, T., & Stephenson, D. (2015). Loneliness and social isolation as risk factors for mortality: A meta-analytic review. *Perspectives on Psychological Science: A Journal of the Association for Psychological Science*, 10(2), 227-237. <https://doi.org/10.1177/1745691614568352>
- Hurley, D. B., & Kwon, P. (2012). Results of a Study to Increase Savoring the Moment: Differential Impact on Positive and Negative Outcomes. *Journal of Happiness Studies*, 13(4), 579-588. <https://doi.org/10.1007/s10902-011-9280-8>

Jacobson, N. S., Martell, C. R., & Dimidjian, S. (2001). Behavioral Activation Treatment for Depression: Returning to Contextual Roots. *Clinical Psychology: Science and Practice*, 8(3), 255–270. <https://doi.org/10.1093/clipsy.8.3.255>

Jones, A., Hillsdon, M., & Coombes, E. (2009). Greenspace access, use, and physical activity: Understanding the effects of area deprivation. *Preventive Medicine*, 49(6), 500–505. <https://doi.org/10.1016/j.ypmed.2009.10.012>

Jose, P. E., Lim, B. T., & Bryant, F. B. (2012). Does savoring increase happiness? A daily diary study. *The Journal of Positive Psychology*, 7(3), 176–187. <https://doi.org/10.1080/17439760.2012.671345>

Keesing, F., Belden, L. K., Daszak, P., Dobson, A., Harvell, C. D., Holt, R. D., Hudson, P., Jolles, A., Jones, K. E., Mitchell, C. E., Myers, S. S., Bogich, T., & Ostfeld, R. S. (2010). Impacts of biodiversity on the emergence and transmission of infectious diseases. *Nature*, 468(7324), 647–652. <https://doi.org/10.1038/nature09575>

Kellert, S. R., & Wilson, E. O. (1993). *The biophilia hypothesis*. Island Press.

Kesebir, S., & Kesebir, P. (2017). A Growing Disconnection From Nature Is Evident in Cultural Products. *Perspectives on Psychological Science*, 12(2), 258–269. <https://doi.org/10.1177/1745691616662473>

Khoury, B., Lecomte, T., Fortin, G., Masse, M., Therien, P., Bouchard, V., Chapleau, M.-A., Paquin, K., & Hofmann, S. G. (2013). Mindfulness-based therapy: A comprehensive meta-analysis. *Clinical Psychology Review*, 33(6), 763–771. <https://doi.org/10.1016/j.cpr.2013.05.005>

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. <https://doi.org/10.1016/j.jpsychores.2015.03.009>

Koenig, H. G. (2012). Religion, Spirituality, and Health: The Research and Clinical Implications. *ISRN Psychiatry*, 2012, 1–33. <https://doi.org/10.5402/2012/278730>

Kondo, M. C., Jacoby, S. F., & South, E. C. (2018). Does spending time outdoors reduce stress? A review of real-time stress response to outdoor environments. *Health & Place*, 51, 136–150. <https://doi.org/10.1016/j.healthplace.2018.03.001>

Larson, L. R., Szczytko, R., Bowers, E. P., Stephens, L. E., Stevenson, K. T., & Floyd, M. F. (2019). Outdoor Time, Screen Time, and Connection to Nature: Troubling Trends Among Rural Youth? *Environment and Behavior*, 51(8), 966–991. <https://doi.org/10.1177/0013916518806686>

Leigh-Hunt, N., Bagguely, D., Bash, K., Turner, V., Turnbull, S., Valtorta, N., & Caan, W. (2017). An overview of systematic reviews on the public health consequences of social isolation and loneliness. *Public Health*, 152, 157–171. <https://doi.org/10.1016/j.puhe.2017.07.035>

Lejuez, C. W., Hopko, D. R., Acierno, R., Daughters, S. B., & Pagoto, S. L. (2011). Ten Year Revision of the Brief Behavioral Activation Treatment for Depression: Revised Treatment Manual. *Behavior Modification*, 35(2), 111-161. <https://doi.org/10.1177/0145445510390929>

Lewandowski, W., & Jacobson, A. (2013). Bridging the Gap Between Mind and Body: A Biobehavioral Model of the Effects of Guided Imagery on Pain, Pain Disability, and Depression. *Pain Management Nursing*, 14(4), 368-378. <https://doi.org/10.1016/j.pmn.2011.08.001>

Markevych, I., Schoierer, J., Hartig, T., Chudnovsky, A., Hystad, P., Dzhambov, A. M., de Vries, S., Triguero-Mas, M., Brauer, M., Nieuwenhuijsen, M. J., Lupp, G., Richardson, E. A., Astell-Burt, T., Dimitrova, D., Feng, X., Sadeh, M., Standl, M., Heinrich, J., & Fuertes, E. (2017). Exploring pathways linking greenspace to health: Theoretical and methodological guidance. *Environmental Research*, 158, 301-317. <https://doi.org/10.1016/j.envres.2017.06.028>

Mayer, F. S., & Frantz, C. M. (2004). The connectedness to nature scale: A measure of individuals' feeling in community with nature. *Journal of Environmental Psychology*, 24(4), 503-515. <https://doi.org/10.1016/j.jenvp.2004.10.001>

Mayer, F. S., Frantz, C. M., Bruehlman-Senecal, E., & Dolliver, K. (2009). Why Is Nature Beneficial?: The Role of Connectedness to Nature. *Environment and Behavior*, 41(5), 607-643. <https://doi.org/10.1177/0013916508319745>

McEwan, K., Richardson, M., Sheffield, D., Ferguson, F. J., & Brindley, P. (2019). A Smartphone App for Improving Mental Health through Connecting with Urban Nature. *International Journal of Environmental Research and Public Health*, 16(18). <https://doi.org/10.3390/ijerph16183373>

Meidenbauer, K. L., Stenfors, C. U. D., Bratman, G. N., Gross, J. J., Schertz, K. E., Choe, K. W., & Berman, M. G. (2020). The affective benefits of nature exposure: What's nature got to do with it? *Journal of Environmental Psychology*, 72, 101498. <https://doi.org/10.1016/j.jenvp.2020.101498>

Morres, I. D., Hatzigeorgiadis, A., Stathi, A., Comoutos, N., Arpin-Cribbie, C., Krommidas, C., & Theodorakis, Y. (2019). Aerobic exercise for adult patients with major depressive disorder in mental health services: A systematic review and meta-analysis. *Depression and Anxiety*, 36(1), 39-53. <https://doi.org/10.1002/da.22842>

Morrison, R., & O'Connor, R. C. (2008). The role of rumination, attentional biases and stress in psychological distress. *British Journal of Psychology*, 99(2), 191-209. <https://doi.org/10.1348/000712607X216080>

Müller-Riemenschneider, F., Petrunoff, N., Yao, J., Ng, A., Sia, A., Ramiah, A., Wong, M., Han, J., Tai, B. C., & Uijtdewilligen, L. (2020). Effectiveness of prescribing physical activity in parks to improve health and wellbeing—The park prescription randomized controlled trial. *International Journal of Behavioral Nutrition and Physical Activity*, 17(1), 42. <https://doi.org/10.1186/s12966-020-00941-8>

- Orban, E., Sutcliffe, R., Dragano, N., Jöckel, K.-H., & Moebus, S. (2017). Residential Surrounding Greenness, Self-Rated Health and Interrelations with Aspects of Neighborhood Environment and Social Relations. *Journal of Urban Health*, 94(2), 158–169. <https://doi.org/10.1007/s11524-016-0112-3>
- Parker, G. B., Brotchie, H., & Graham, R. K. (2017). Vitamin D and depression. *Journal of Affective Disorders*, 208, 56–61. <https://doi.org/10.1016/j.jad.2016.08.082>
- Pergams, O. R. W., & Zaradic, P. A. (2008). Evidence for a fundamental and pervasive shift away from nature-based recreation. *Proceedings of the National Academy of Sciences*, 105(7), 2295–2300. <https://doi.org/10.1073/pnas.0709893105>
- Plagge, J. M., Lu, M. W., Lovejoy, T. I., Karl, A. I., & Dobscha, S. K. (2013). Treatment of Comorbid Pain and PTSD in Returning Veterans: A Collaborative Approach Utilizing Behavioral Activation. *Pain Medicine*, 14(8), 1164–1172. <https://doi.org/10.1111/pme.12155>
- Poulsen, D. V. (2017). Nature-based therapy as a treatment for veterans with PTSD: What do we know? *Journal of Public Mental Health*, 16(1), 15–20. <https://doi.org/10.1108/JPMH-08-2016-0039>
- Poulsen, D. V., Stigsdotter, U. K., & Refshage, A. D. (2015). Whatever happened to the soldiers? Nature-assisted therapies for veterans diagnosed with post-traumatic stress disorder: A literature review. *Urban Forestry & Urban Greening*, 14(2), 438–445. <https://doi.org/10.1016/j.ufug.2015.03.009>
- Prescott, S. L., Millstein, R. A., Katzman, M. A., & Logan, A. C. (2016). Biodiversity, the Human Microbiome and Mental Health: Moving toward a New Clinical Ecology for the 21st Century? *International Journal of Biodiversity*, 2016, 1–18. <https://doi.org/10.1155/2016/2718275>
- Prévot-Julliard, A.-C., Julliard, R., & Clayton, S. (2015). Historical evidence for nature disconnection in a 70-year time series of Disney animated films. *Public Understanding of Science*, 24(6), 672–680. <https://doi.org/10.1177/0963662513519042>
- Pritchard, A., Richardson, M., Sheffield, D., & McEwan, K. (2020). The Relationship Between Nature Connectedness and Eudaimonic Well-Being: A Meta-analysis. *Journal of Happiness Studies*, 21(3), 1145–1167. <https://doi.org/10.1007/s10902-019-00118-6>
- Rollnick, S., Heather, N., & Bell, A. (1992). Negotiating behaviour change in medical settings: The development of brief motivational interviewing. *Journal of Mental Health*, 1(1), 25–37. <https://doi.org/10.3109/09638239209034509>
- Sarris, J., O'Neil, A., Coulson, C. E., Schweitzer, I., & Berk, M. (2014). Lifestyle medicine for depression. *BMC Psychiatry*, 14, 107. <https://doi.org/10.1186/1471-244X-14-107>
- Sato, I., Jose, P. E., & Conner, T. S. (2018). Savoring mediates the effect of nature on positive affect. *International Journal of Wellbeing*, 8(1). <https://doi.org/10.5502/ijw.v8i1.621>

- Schenck, C. H., Mahowald, M. W., & Sack, R. L. (2003). Assessment and Management of Insomnia. *JAMA*, 289(19), 2475–2479. <https://doi.org/10.1001/jama.289.19.2475>
- Schuch, F. B., Vancampfort, D., Firth, J., Rosenbaum, S., Ward, P. B., Silva, E. S., Hallgren, M., Ponce De Leon, A., Dunn, A. L., Deslandes, A. C., Fleck, M. P., Carvalho, A. F., & Stubbs, B. (2018). Physical Activity and Incident Depression: A Meta-Analysis of Prospective Cohort Studies. *The American Journal of Psychiatry*, 175(7), 631–648. <https://doi.org/10.1176/appi.ajp.2018.17111194>
- Sianoja, M., Syrek, C. J., de Bloom, J., Korpela, K., & Kinnunen, U. (2018). Enhancing daily well-being at work through lunchtime park walks and relaxation exercises: Recovery experiences as mediators. *Journal of Occupational Health Psychology*, 23(3), 428–442. <https://doi.org/10.1037/ocp0000083>
- Smith, J. L., & Hanni, A. A. (2019). Effects of a Savoring Intervention on Resilience and Well-Being of Older Adults. *Journal of Applied Gerontology*, 38(1), 137–152. <https://doi.org/10.1177/0733464817693375>
- Taylor, B. (2009). Dark Green Religion. In *Dark Green Religion*. University of California Press. <https://www.degruyter.com/document/doi/10.1525/9780520944459/html>
- Twohig-Bennett, C., & Jones, A. (2018). The health benefits of the great outdoors: A systematic review and meta-analysis of greenspace exposure and health outcomes. *Environmental Research*, 166, 628–637. <https://doi.org/10.1016/j.envres.2018.06.030>
- Tyrväinen, L., Ojala, A., Korpela, K., Lanki, T., Tsunetsugu, Y., & Kagawa, T. (2014). The influence of urban green environments on stress relief measures: A field experiment. *Journal of Environmental Psychology*, 38, 1–9. <https://doi.org/10.1016/j.jenvp.2013.12.005>
- United Nations: Department of Economic and Social Affairs. (2020). *World social report 2020: Inequality in a rapidly changing world*. United Nations. <https://www.un.org/development/desa/dspd/wp-content/uploads/sites/22/2020/02/World-Social-Report2020-FullReport.pdf>
- Wacker, M., & Holick, M. F. (2013). Sunlight and Vitamin D. *Dermato-Endocrinology*, 5(1), 51–108. <https://doi.org/10.4161/derm.24494>
- Wolch, J. R., Byrne, J., & Newell, J. P. (2014). Urban green space, public health, and environmental justice: The challenge of making cities ‘just green enough.’ *Landscape and Urban Planning*, 125, 234–244. <https://doi.org/10.1016/j.landurbplan.2014.01.017>
- World Health Organization. (2015). *Connecting Global Priorities: Biodiversity and Human Health A State of Knowledge Review*. World Health Organization Press. <https://www.cbd.int/health/SOK-biodiversity-en.pdf>
- World Health Organization. (2016). *WHO global urban ambient air pollution database (update 2016)*. <https://www.who.int/airpollution/data/cities-2016/en/>