This document has been written for clinicians. The content was developed by the Integrative Medicine Program, Department of Family Medicine, University of Wisconsin-Madison School of Medicine and Public Health in cooperation with Pacific Institute for Research and Evaluation, under contract to the Office of Patient Centered Care and Cultural Transformation, Veterans Health Administration.

Information is organized according to the diagram above, the *Components of Proactive Health and Well-Being*. While conventional treatments may be covered to some degree, the focus is on other areas of Whole Health that are less likely to be covered elsewhere and may be less familiar to most readers. There is no intention to dismiss what conventional care has to offer. Rather, you are encouraged to learn more about other approaches and how they may be used to complement conventional care. The ultimate decision to use a given approach should be based on many factors, including patient preferences, clinician comfort level, efficacy data, safety, and accessibility. No one approach is right for everyone; personalizing care is of fundamental importance.
WHOLE HEALTH: CHANGE THE CONVERSATION
Mindful Awareness
Educational Overview

*Peace: It does not mean to be in a place where there is no trouble, no noise, or hard work. It means to be in the midst of all those things and still be calm in your heart.* -Unknown

**Patient Vignette: Linda**

Linda is a 51-year-old nurse at the VA Medical Center. She is proud of her 27 years of service to the Veterans in her area, but it is becoming increasingly challenging to connect with her patients. She is frustrated with how often she sees the same patients in the hospital, always with the same, recurrent problems. They just do not seem interested in taking charge of their health. Additionally, the doctors are getting younger and younger, and it feels like they fail to see the value in her wisdom and experience.

Linda is not able to tolerate being on her feet for a twelve-hour shift like she once could. Low back pain often leaves her miserable by the end of her shift. She feels “scattered and irritable” a lot of the time. She is having trouble finding a sense of meaning and purpose in her work. That, combined with the pain, is taking a toll on her mood and her sleep. She does not think she can continue working given all of her frustrations and the negative affect her pain has on her ability to focus, but her allegiance to the VA leaves her feeling torn. During her visit with you today, she is tearful for most of the time. “What do you think I should do?” she asks.

This educational overview focuses on how mindful awareness may be helpful to people like Linda. As you make your way through it, consider the following:

- Linda’s distress is multifactorial. How might mindful awareness fit into her Personal Health Plan?
- What exercises or practices could you share with Linda at the point of care to help get her started with cultivating mindful awareness?
- How do you feel reading/discussing Linda’s story? Do you have patients like her? Have you experienced any of the same issues?

**Learning Objectives**

After completion of this module you will be able to

- Define mindful awareness and explain its importance
- Describe two widely used mindfulness-based interventions
- State the effect of mindful awareness meditation practice on clinician burnout
- List the elements of the TIES mnemonic and explain its use in mindful awareness practice
WHOLE HEALTH: CHANGE THE CONVERSATION
Educational Overview: Mindful Awareness

- List the elements of the SOLAR mnemonic and describe its use in the context of mindful awareness practice
- Describe how mindful awareness is being featured in various VA facilities
- Discuss findings on the physiologic and psychological effects of formal mindfulness practice, and its effectiveness for treating certain conditions and disorders.

What is Mindful Awareness?

Mindfulness is paying attending in a particular way: on purpose, in the present moment, and nonjudgmentally.¹

When you saw the Components of Proactive Health and Well-Being (the Circle of Health) for the first time, you might have been struck by the central location of the light blue Mindful Awareness circle. It completely enfolds the “Me” (the patient) in the center circle.

Just as it is central to the Circle of Health, mindful awareness is central to the Whole Health approach to care. It is a lens that can be used to view all of the other parts of the circle. As noted in the informational material in the Personal Health Inventory:
Mindfulness is being fully aware, or paying attention. Sometimes, we go through our daily lives on autopilot. We are not fully aware of the present. We often dwell on the past and plan events in the future. We do not spend much time really paying attention and noticing what is happening right now, without judging or trying to fix it. Your body and mind send you signals constantly. If your attention is elsewhere, you don’t notice. Then, the signals that began as whispers become loud warnings. For example, when you miss the whispers of an early discomfort or a sad feeling, you miss the opportunity to make a change before it grows into real pain or depression. Being mindful, or aware, allows you to make conscious proactive choices about every aspect of your health. Mindfulness connects you to each component of your well-being, and to your whole self.

Mindful awareness involves attending to relevant aspects of experience in an open and accepting manner. Mindful awareness practice is predicated on the following assumptions:

- **Focusing on the present moment is fundamental.** Typically we do not focus our attention on our moment-to-moment experience. Instead, we operate on “auto-pilot” while our attention is focused on preoccupations with the past or future.

- **Practice is needed.** With regular practice, over time, we can develop the capacity to sustain moment-to-moment non-judgmental awareness.

- **Mindful awareness improves quality of life.** Moment-to-moment awareness enhances our living experience as we more fully attend and embody the discrete moments of our lives.

- **Mindful awareness helps us to truly see.** Sustained, non-judgmental observation of our experience helps us see things as they really are, dispelling the fog of false perception.

- **Mindful awareness allows us to be more skillful with our thoughts.** Enhanced accuracy of perception interrupts established automatic patterns of thought and behavior, allowing us to more effectively navigate the world with a greater sense of self-determination.

Mindful awareness practices have conceptual roots in the Buddhist tradition, where they have been used for thousands of years to cultivate compassion and relieve suffering.

In contemporary use, mindful awareness is usually taught as a non-religious practice of self-observation and attention to the present moment. Most people find that this is compatible with their religious beliefs, since special care is taken at most hospital- and clinic-based training programs to keep them neutral in this regard.
Mindful awareness practice incorporates various interventions to facilitate practice and teaching; these are collectively known as mindfulness-based interventions (MBI). MBI’s are now employed in a wide variety of clinical settings.

**Mindfulness-based stress reduction (MBSR)**
MBSR is an eight-week program that was developed in 1979 by Jon Kabat-Zinn, PhD, at the University of Massachusetts Medical Center as an intervention for patients suffering with stress, chronic pain, and illness. This intervention uses meditation, mindful movement, group discussion, and home practice to develop mindful awareness skills. These skills include, among many others:

- Living more fully in the present moment
- Cultivating mental ease and flexibility
- Practicing compassion toward self and others
- Working with challenging emotions and thought patterns
- Relating to one's thoughts so as not to be overwhelmed by them
- Learning mindfulness techniques (including various forms of meditation) that can be practiced routinely.

A wide variety of courses that offer training in mindful awareness now exist, and they vary in terms of length and focus. Some people choose to learn mindful awareness practices in a class (which many people find preferable), while others spend time with audio resources, such as MP3’s and CD’s, to add to their experience. One common element for all the courses is that they emphasize the importance of regular practice. Many courses encourage learners to spend at least 40 minutes per day on exercises, though the optimal “dose” of such practices is still being explored through various research studies. Even 20 minutes daily can lead to dramatic improvements for people. Because practice tends to give rise to many questions, and because awareness of one’s thoughts can lead to concerns related to how to address the patterns that are observed, it is preferable to have an instructor versed with helping learners move through the training process.

**Mindfulness-based cognitive therapy (MBCT)**
MBCT is another MBI. It is a mindfulness-based mental health intervention originally designed for the treatment of recurrent depression. It combines mindful awareness training with techniques used in cognitive behavioral therapy (CBT). It teaches people to become aware of and disengage from mental patterns characterized by ruminative, negative thinking, with a shift toward new, more affirming and supportive, mental patterns. A 2011 systematic review and meta-analysis found that it led to a 34% relative risk reduction in relapses of major depressive disorder.

Both of these programs are now employed in a wide variety of clinical settings. In the Healthcare Analysis and Information Group (HAIG) survey of 141 VA facilities, 80 of the facilities reported offering mindfulness training. It is, by far, the most commonly used complementary approach within the VA.
Mindful Awareness Moment
When Have You Been Most Mindful?

Pause for a moment, and ask yourself the following:
- What circumstances allow you to be at a state of heightened awareness?
- When are you most present?
- When are you most peaceful, or calm?
- What makes you optimally focused?
- When are you at your most centered?

These questions are frequently posed to participants in the in-person Whole Health program. Some answers have included the following:
- When I am playing with my kids
- When I am “in the zone” playing a sport
- When I am in the operating room
- When I pray
- When I am lost in a good book or movie
- When I am gardening
- When I watch my dog
- When I play an instrument

What about the activities you listed that allows them to have such a positive effect on you? How can you bring those states of mind with you into other situations?

Why Does Mindful Awareness Matter?

As will be discussed in greater detail momentarily, mindful awareness has been the subject of increasing focus in health care research. It brings about positive physiological, psychological, and clinical changes. These findings may help to guide the creation of health plans that incorporate MBI’s.

It is important to emphasize that mindful awareness is an opportunity to be in the wholeness of life, including suffering, joy, peace, unrest, creativity, fullness, emptiness – all of it. It is not merely a technique for coping with a specific problem.

A distinction is often made between formal and informal mindful awareness practices. Formal practice involves coursework and specific time set aside to work with mindfulness techniques. (For more information about these techniques, which include various forms of meditation, see the module on Power of the Mind.) Informal practice might be viewed more as the practice or mindful awareness that is with you every moment of the day.
An added benefit of mindful awareness is that it tends to be quite safe. Clinicians should be aware of a few provisos with this, however. First, mindful practices should be done with guidance and supervision from a skilled professional for people with severe mental health problems, and particularly if they have psychotic disorders or posttraumatic stress disorder. Second, some people first practicing formal mindful awareness training will experience emotional distress as they come to be more aware of some of the patterns, emotions, thoughts and behaviors that challenge them.

**Incorporating Mindful Awareness into Daily Living**

*Mindfulness has to be experienced to be known.*

Usually our attention is scattered. We replay moments from the past; we savor, analyze, and edit them in our minds. We fantasize about the future, perseverating on our various hopes, fears, plans, and possible outcomes. Mindful awareness allows us to leave off the world of our imaginings to fully inhabit the present moment. This offers us a more complete and satisfying experience of the succession of moments that makes up our lives. During mindful awareness meditation practice, our full attention is focused on the “here and now.” Mindful awareness implicitly asks the question, “What am I experiencing right now?” To cultivate mindful awareness, we continually consider this question without judgment of the answer. In this way we maintain moment-to-moment awareness.

**With time, mindful awareness practice evolves into a way of being**

Diligent observation of the moment-to-moment mental content initially can feel effortful and even cumbersome. However, with practice, moment-to-moment nonjudgmental awareness comes more easily and naturally. Earlier, formal and informal mindful awareness practices were discussed. The goal of mindful awareness meditation practice (formal practice) is to become established in a continually mindful state (ongoing informal practice). Paradoxically, however, striving toward this goal is counterproductive. Mindful awareness is actually a process of non-striving, of being with what is.
To understand the difference between mindful awareness and our typical state of inattention and distraction, try the following experiment. Sit comfortably with the feet planted firmly on the floor. Lengthen through your back, neck, and the top of your head. Now, for the next two minutes, turn all of your awareness to your breathing. Without changing the rate or quality of your breathing, simply note the sensation of inhalation, the sensation of exhalation, and the pauses between these two dynamic states.

Now reflect:
- How easy was it to focus your attention on your breathing for two straight minutes?
- What distracting thoughts arose?
- What judgments or evaluations pulled your awareness away from your breathing?

Take two additional minutes to repeat the exercise above. This time, when your thoughts wander away from the breath, gently return your attention to your breathing. Judgments may arise – “I can't concentrate,” or “This is boring.” When this happens, simply notice that this is a thought, and bring your attention back to your breathing. When your mind wanders, be gentle with yourself. Notice if you scold yourself for deviating from the breath, accept the passing distraction, and refocus your attention on the breath.

Now reflect again:
- How did it feel taking an additional two minutes to focus on the breath?
- How easy was it to maintain your attention on the breath?
- What distracting thoughts and judgments arose?
- How easy or difficult was it to gently bring your awareness back to your breathing?
- How do you feel at the end of the exercise?

If you found it challenging to maintain present-moment awareness of the breath during the last exercise, take heart; the body is a constant ally in remaining grounded in the here and now. Your body feeds your constant updates about your experience of the present moment. Observe your breathing. Note the feeling of your feet on the floor. What signals are arising from your body – hunger, thirst, fatigue, discomfort, elimination cues? What are you seeing, hearing, smelling, tasting, touching? In bringing the awareness to these ongoing status indicators, we are able to maintain presence in the current moment.
Unexamined entanglement in our thoughts disconnects us from our anchors in the present moment

As you experienced in the exercise above, our full attention to the present moment is almost constantly challenged by our meandering thoughts. Regrets, to-do lists, fantasies, and frustrations sweep us up on currents of emotion and distract us from our experience of the present. We find ourselves lost in thought, absorbed in reverie, caught up in a narrative of our own construction. The thoughts are not in themselves problematic, but our tendency to become engrossed in our thoughts disconnects us from the present moment. This is the web of mental entanglement that impedes our ability to perceive things as they really are.

We observe our thoughts to maintain awareness of our anchors in the present moment

Mindful awareness training incorporates the systematic observation of our thoughts. In observing our thoughts we are able to gently redirect our attention to the present moment and avoid getting caught up in our imaginings. We do not judge our thoughts as they arise. We simply acknowledge thoughts in the form of “okay,” or “noted,” before bringing our awareness back to the question of “What am I experiencing right now?” This facilitates our full engagement in the current situation as it truly is, and allows us to employ our full cadre of internal resources.

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<th>Mindful Awareness Moment</th>
<th>Metacognition</th>
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Metacognition is, put simply, the mind being aware of how it works. It can be likened to a state of mind you can attain while watching a movie. If cognition – or your usual thinking patterns - are the equivalent of being lost in the movie, to the point where you feel like it is your reality, then metacognition is akin to moving out of that state, into an awareness that you are in the theater, sitting in your seat, caught up in a movie that does not necessarily represent your reality. After you experience that broader awareness, you then have the opportunity to choose whether or not to escape back into the movie. The key is that you now consciously have chosen to do so.

Take a moment to explore this more right now. What is going on around you as you read this material? What other thoughts have been intruding? How has your body been feeling? What is going on with you emotionally? What is the temperature of the room? What ambient sounds and smells surround you? How long has it been since you have taken a break, stood up from your chair, or rested your eyes?

Mindful awareness is, in part, about becoming more aware of your mind’s patterns. As you come to recognize those patterns, it can be extremely empowering, for then you can consciously choose to make changes.
Mindful Awareness Research: A Selected Review

There is growing evidence that MBIs increase well-being in patients and clinicians.

As will be described in more detail below, studies and meta-analyses have demonstrated that MBSR and therapeutic approaches derived from it are effective in improving health status in many areas, including the following:

- Reducing psychological symptoms in people suffering from cancer, hypertension, rheumatoid arthritis, psoriasis, and tinnitus
- Easing depressive symptoms and fatigue in people with multiple sclerosis
- Improving symptoms in those with psychiatric disorders, including those associated with major depressive disorder and various anxiety disorders
- Helping those with alcohol and substance misuse.

An exhaustive review of the literature is beyond the scope of this overview. However, mindful awareness and MBIs are revisited in relation to all of the components of proactive self-care and professional care that are covered throughout the Whole Health curriculum. Some highlights from the body of mindful awareness literature are presented here. This research focuses on formal mindful awareness practice, and various forms of mindfulness meditation have received the greatest attention.

Physiologic effects of mindful awareness

- **Central nervous system effects**
  Electroencephalographic (EEG) and functional MRI data are beginning to show that mindfulness meditation changes both brain structure and function. For example, experienced meditators demonstrate greater power of alpha and theta waves on EEG, which are associated with relaxation states. Evidence suggests these relaxation states become more permanent conditions in experienced meditators.  

  Additionally, attention and affective processes are more organized in long term practitioners of meditation, as evidenced by increased gamma oscillations on EEG. In a 2004 study, Lutz and colleagues demonstrated gamma oscillations in long term meditators with a higher level of synchronization than ever previously documented.

  Meditation has been linked to greater activation of the left anterior cerebral cortex, which is associated with positive mood and affect. Functional MRI data demonstrate increased activation in attention centers and less cortical activity in response to distracting stimuli in experienced meditators, as compared to controls.

- **Immune system effects**
  Interestingly, mindfulness training has been linked to enhanced immune system
Mindful awareness and psychiatric disorders

- **Depression and anxiety**
  A 2010 meta-analysis showed large effect sizes for the treatment of affective symptoms in patients with primary depression and anxiety. In patients with depression and anxiety resulting from medical conditions, effect sizes were moderate. These results suggest mindful awareness practice is helpful for patients suffering depression and anxiety in a variety of clinical contexts.\(^{15}\)

Teasdale and colleagues showed that the combination of MBCT and treatment as usual (TAU) for depression reduces by half the rate of depressive relapse as compared to TAU in people with multiple prior episodes of major depression.\(^3,^{16}\) MBIs have been shown to decrease ruminative thinking in subjects with anxiety and depression.\(^{17,18}\) MBCT is as effective as maintenance antidepressants in preventing relapse of depression. In a well-designed trial, after completing MBCT, 75% of people with a history of major depression were able to discontinue antidepressant medications at 15-month follow-up.\(^{19}\)

A 2004 meta-analysis of studies of MBSR used in a heterogeneous mix of clinical populations showed improvements with moderate effect sizes in overall psychological well-being, depression, anxiety, sleep, quality of life, and affective perceptions of pain.\(^3\) However, the authors of a 2007 review article investigating the efficacy of mindful awareness for depression and anxiety concluded that mindful awareness did not reliably effect improvements in these disorders. They found that studies using active controls failed to show a clear benefit from MBSR in anxiety and depression, where studies using more passive controls (i.e., wait lists) tended to show more benefit from MBSR.\(^{20}\) In other words, benefits were not as great if the
control group was offered something else to do, as compared to not doing anything differently and just waiting to take a mindfulness course.

- **Posttraumatic stress disorder (PTSD)**
  
  In 2013 King and colleagues published data from a small controlled trial of MBCT for the treatment of combat-associated PTSD. In this study, combat Veterans with longstanding PTSD experienced moderate improvements in clinician-assessed and self-reported PTSD symptoms following a MBCT intervention as compared to Veterans in a TAU group. In an open pilot study of MBSR taught to a heterogeneous group of Veterans at a VA facility, approximately three-fourths met symptom criteria for PTSD and two-thirds had a chronic pain diagnosis; attendance rates were high and improvements in measures of mental health and quality of life were seen over time. In a small pilot randomized controlled trial (RCT), as compared to usual care, for Veterans with PTSD, MBSR participation was associated with enhanced functionality and reduced depressive symptoms, but not reductions in PTSD symptoms, for those who attended at least four MBSR classes.

A telehealth mindfulness intervention has been developed for Veterans with PTSD. Telehealth mindfulness treatment involves two in-person sessions followed by six telehealth sessions (sessions that are conducted remotely). In a small pilot RCT, telehealth mindfulness treatment was associated with temporary reductions in PTSD symptoms as compared to psychoeducation. Satisfaction with the telehealth treatment approach appeared to be high.

**Mindful awareness and chronic pain**

A pilot study investigating a mindfulness-based intervention for the management of chronic pain in an economically disadvantaged population showed improvement in indices of overall mental health after MBSR. In 2012, Ussher and colleagues studied the utility of a brief (10-minute) body scan for the management of chronic pain. The body scan is an exercise often employed in mindful awareness meditation. The brief body scan group had more significant findings than people in the control group, in terms of pre/post intervention measures of pain-related distress and social limitations related to pain. Interestingly, these improvements were not sustained when the intervention was repeated in the home.

- **Chronic back pain**
  
  In 2012, Cramer and colleagues completed a systematic review of three RCTs studying the use of MBSR in chronic back pain. One of three RCTs showed benefits from MBSR as compared to a wait-list control group in the domains of pain intensity, disability, medication use, and sleep. Another of the trials showed improvements in disability with MBSR compared to wait-list control group, though this difference was not clinically significant. These two trials showed improvement in pain acceptance in the MBSR groups as compared to controls. The remaining trial, notably the only trial in the study with an active control, showed similar improvements in disability between the MBSR and the health education class control group.
**Fibromyalgia**
A 2007 quasi-randomized (group assignment by date of entry) controlled trial comparing MBSR to an active control group showed large improvements in visual analog pain scales, quality of life, coping with pain, anxiety, depression, and somatic complaints in the MBSR group. Improvements in these domains were maintained on three year follow-up, with some attenuation of effect. However, a follow-up RCT with three treatment arms – wait-list control, active control, and MBSR showed no difference between groups in pre-post intervention pain assessments.

**Stress and inflammation improve with mindfulness training**
Rosencranz and colleagues demonstrated both decreased stress hormones and decreased inflammatory response in a study of MBSR in healthy subjects. Subjects were randomized to either MBSR or a health enhancement program (active control). To induce stress, subjects participated in a public speaking exercise, a mental math exercise, and an inflammatory cream was applied to the forearm. These three events occurred at both the beginning and the end of the study. Subjects in the MBSR group and in the health enhancement program group showed decreased stress hormones in response to the stressful activities. Subjects completing MBSR also showed decreased skin inflammation in response to the application of the irritating cream. These data suggest a potential benefit of mindful awareness training in the management of inflammatory conditions.

**Irritable bowel syndrome and mindful awareness**
A study conducted in a Veteran population revealed significant improvements in irritable bowel syndrome-related quality of life and gastrointestinal-specific anxiety over a six-month period in those who participated in an MBSR program; those Veterans also showed a measurable increase in mindful awareness skills. The authors asserted the need for further studies to discern the relationship between mindful awareness education and gastrointestinal-specific anxiety and quality of life.

**Mindful awareness decreases clinician burnout**
In 2012, Goodman and Schorling published results from an eight-week MBSR adaptation specifically tailored to the needs of healthcare workers. A pre-post analysis of physician participants demonstrated improved indices of mental health, depersonalization, emotional exhaustion, and personal accomplishment. Also encouraging are results from a 2009 study wherein primary care physicians enrolled in a twelve-month MBI showed improvements in the domains of mindful awareness, emotional exhaustion, depersonalization, perceived personal accomplishment, empathy, mood, and emotional stability. There was a correlation between improvements in mindful awareness and improvements in mood, burnout, conscientiousness, and emotional stability.

In 2013, Fortney and colleagues published data from an abbreviated mindful awareness course for physicians conducted over a weekend with two follow-up evening sessions, rather than the typical eight-week MBSR course. Physicians in this study showed improvements in scores of burnout, stress, anxiety, and depression. Improvements were maintained nine months after the intervention ended.
Health care quality improves, too
It appears that mindful awareness in clinicians may influence both the quality of their care as well as patient satisfaction. In 2013, Beach and colleagues studied physician self-perception with respect to mindful awareness. Results indicate that physicians who rate themselves as more mindful are more likely to have patient-centered visits (as opposed to physician-centered visits) when compared to their less mindful colleagues, as measured by the Roter Interaction Analysis System. Additionally, the patients of more mindful physicians rate physician communication and overall quality of care more highly than do patients of less mindful physicians. Mindful awareness can serve as a fundamental element of personalized, proactive, and patient-driven care.

Nonclinical populations and mindful awareness
Mindful awareness has also been shown to benefit nonclinical populations, enhancing well-being, and decreasing stress and negative emotions in study participants outside of a medical treatment context. Chiesa and Seretti in a 2009 review article examined the effects of MBSR on stress in healthy people and found that MBSR was beneficial. The included studies had mainly inactive control groups; however, MBSR also proved more effective in the mitigation of stress than an active control, suggesting a more specific effect. The authors also included a head to head trial of MBSR and relaxation training, and the two interventions performed equally well at reducing stress. Additionally, the authors reported a positive effect on spirituality in healthy study participants undergoing MBSR as compared to inactive controls. Furthermore, they included a head to head trial of MBSR versus an active intervention for spiritual development, and the two interventions performed equally well. For an extensive discussion of spirituality and its relationship to health, please see the module entitled Spirit and Soul.

Mindful awareness meditation practice is a powerful tool in the maintenance and restoration of well-being. Current research demonstrates the power of mindful awareness practice to re-engineer the internal landscape for the promotion of health and happiness for patients finding living under a wide array of circumstances.

Quality of the mindful awareness evidence
Despite the promising findings for both clinical and non-clinical populations, MBSR research—and mindful awareness research more generally—has been limited by a number of conceptual and methodological issues. Many of the quantitative studies employed small sample sizes and exhibited high drop-out rates, and few include an additional treatment comparison intervention in order to control for factors such as group support, home practice, or placebo effects. Further, many questions remain concerning the mechanisms through which mindful awareness training contributes to positive health related outcomes. Research initiatives with a combined focus upon process and outcome variables and diversified research methods (e.g., use of qualitative and physiological methods) are thus recommended. Finally, studies designed with broad cultural and conceptual sensitivity will lead to a rich understanding of the health benefits of MBSR and other MBIs.
Mindful Awareness: A Summary of Key Research Findings

General Findings
- Reduces psychological symptoms in people with cancer, hypertension, rheumatoid arthritis, psoriasis, tinnitus, multiple sclerosis, depressive disorders, and anxiety disorders
- Assists with the treatment of alcohol and substance misuse

Physiologic Effects
- Alters brain activity. Long-term meditators have gamma wave oscillations not seen in others. Even people who have just begun meditating in the past two months show functional MRI changes
- Leads to longer-lived relaxation states
- Activates the left anterior cerebral cortex, which is linked to positive mood. Increases activation in brain attention centers

Immune System Effects
- Enhances immune response to influenza vaccine
- Stabilizes CD4+ counts in people with HIV infection
- Enhances natural killer cell function and alters interleukin levels

Psychiatric Disorders
- Decreases depression and anxiety severity in general
- Reduces rumination in people with anxiety and depression
- Mindfulness-based cognitive therapy are as effective as medications for depression relapse prevention
- Did not reduce PTSD symptoms in some studies (did in others). Helped with other symptoms in PTSD patients, such as overall function and mood

Chronic Pain
- Improved pain intensity, disability, medication use, and sleep in some studies
- Large improvement in many fibromyalgia symptoms

Other Findings
- Reduced IBS symptoms in a Veteran population
- Reduced clinician burnout
- Improves quality of care in clinician practitioners
Mnemonics for Mindful Awareness Practices

Tell me what you pay attention to, and I will tell you who you are. -Jose Ortega y Gasset

The dimensions of our moment-to-moment experience – TIES
The TIES mnemonic is a useful framework for characterizing our moment-to-moment experience. It can be used to describe the internal landscape. TIES covers more or less everything that can come up for you as you practice mindful awareness:

- **Talk/Thoughts:** mental chatter, incessant thinking, storyline narratives
- **Images:** mental pictures, imagined scenes, visualized scenarios
- **Emotional/Feelings:** love, hate, lust, fear, joy, sadness, anxiety, jealousy, etc.
- **Sensations:** sound, touch, sight, taste, smell.

The process of engaging our moment-to-moment experience – SOLAR
Building on the utility of the TIES mnemonic in characterizing experience, the SOLAR mnemonic is a useful framework for fully embodying our moment-to-moment experience. It can be used to observe the internal landscape.

- **Stop:** Take a moment to practice mindful awareness. This might be a specific time that you set aside on a routine basis, or it may be more spontaneous. Many clinicians will stop at key moments during their workday, such as prior to crossing a threshold into a clinic or hospital room, or as they are using their stethoscope.
- **Observe:** Pay attention, without judging, to what goes on during this time. Which elements of the TIES mnemonic (thoughts, images, emotions, sensations) come up? Just notice them.
- **Let it be:** Again, there is no striving, and there is no need to judge. If you catch yourself thinking about whether or not you are “good at this,” that too is just a thought that you can allow to pass by.
- **And Return:** Move back into what you were doing prior to stopping. Of course, you can repeat this process throughout your day.
Mindful Awareness Moment
Practicing with the SOLAR and TIES Mnemonics

This is an opportunity to practice the SOLAR steps you just learned. The TIES mnemonic is used during the “Observe” step.

**Stop:**
- Move to a quiet place where you won’t be disturbed.
- Set your phone or other alarm for five minutes, and then allow yourself to let go of time altogether.
- Sit comfortably in a posture of relaxed alertness.
  - If in a chair, plant the feet squarely on the floor.
  - If on a cushion, ideally the hips will be elevated above the level of the knees.
  - Ensure that both knees are amply supported by the floor, or by supportive props.
- Elongate the spine from the tailbone through the top of the head.
  - Gently tuck the chin and lengthen through the back of the neck.
- Position your hands comfortably.
- Set an intention for your period of meditation. It may be as simple as “May I cultivate mindful awareness in my life,” or “May I enjoy the benefits of silence and stillness.”

**Observe**
- Focus your attention on the sensations in your body. Note the feeling of your hips on the chair (or cushion), your feet (or knees) grounded, and your posture erect and relaxed.
- Next, turn your attention to your breathing. Without manipulating the rate or quality of the breath, simply observe the sensations of inhaling and exhaling.
- Now, on a moment-to-moment basis, observe what arises in your experience. Use the TIES mnemonic outlined above to inventory your experience. Pause, breathe, and feel what arises.

**Let it be**
- During your meditation, try to sit with your experience exactly as it is. Allow yourself to simply observe your experience from moment-to-moment, like scenes on a roll of film projected onto a screen. You may perceive this to be pleasant, unpleasant, or neutral – continue to sit with the experience exactly as it unfolds without trying to change it in any way.
- If at any point you become engrossed or caught up in your thoughts, gently turn your awareness back to your breathing. Let the thoughts simply roll away like scenes on a roll of film projected onto a screen.

**And Return**
- Continue to let your breathing anchor you in the present moment.
- At the end of your “formal” sitting remain still for a few moments, simply noting how you feel at the end of the practice.
- Invite this mindful stillness into the rest of your day, taking time to momentarily STOP, OBSERVE, LET IT BE, AND RETURN as often as you are able.
Back to Linda

You ask Linda to complete a Personal Health Inventory, and together, you draft a Personal Health Plan. Central to that plan is guidance to help Linda enhance mindful awareness in her life. You provide her with information about the mnemonics for mindful awareness practice (listed in the above section), and encourage her to start working on incorporating them on a daily basis. You suggest she look over some of the resources listed below.

Linda explores a number of the digital resources listed at www.fammed.wisc.edu/mindfulness. She also checks out a few CDs with guided mindfulness exercises from the local library. Ultimately, she elects to take a course in mindful awareness offered by her VA facility. During this eight-week course, Linda is introduced to several different practices.

When Linda follows up two months later, she seems to be improving. She is much more aware of the difficult emotions she experiences, such as the frustration of seeing the same people coming into the hospital repeatedly, and the anger she feels at not being respected by her peers. By becoming more aware of her internal experience, she is able recognize patterns and work with these challenges more effectively. She is also able to note the pain in her back without getting caught up in her habitual responses to it. She becomes more animated as she discusses how she has learned to separate the pain – the neurological signal from her back – from the suffering it causes her. She describes the suffering as how she chooses to react to the pain, noting that practicing mindful awareness has enabled her to cope more skillfully with it.

See the module Self-Management of Chronic Pain for more information on this and similar approaches to pain.

Linda comments that she has gotten into the habit of taking a deep breath before she walks into a room to visit with a patient, or before she makes a patient phone call. She feels as though she is “fully present” with each person she sees, and this helps her feel better about the quality of the work she is doing. Her kids tell her that she seems less grouchy, and some coworkers have asked her how she manages to be so busy, and yet, so engaged with her work. Her supervisor has asked her to talk about what she learned at her eight-week course at a team meeting. She has even begun to teach some of her patients some basic breathing exercises to help them practice mindful awareness as well.

Linda smiles as she leaves her visit, noting she will continue to follow up regularly with you or other members of her Whole Health team.

For more information, see the clinical tools related to this module, including Bringing Mindful Awareness into Clinical Work and Practicing Mindful Awareness with Patients: 3-Minute Pauses.
## Mindful Awareness Clinical Tools

- Bringing Mindful Awareness into Clinical Work
- Mindful Awareness Practice
- Practicing Mindful Awareness with Patients: 3-Minute Pauses
- Present Moment Awareness

## Additional Resources

### CDs


### Online

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center for Investigating Healthy Minds</td>
<td>Center at the University of Wisconsin-Madison that focuses on mindful awareness research.</td>
<td><a href="http://www.investigatinghealthyminds.org/">http://www.investigatinghealthyminds.org/</a></td>
</tr>
<tr>
<td>University of Massachusetts Center for Mindfulness in Medicine, Health and Society</td>
<td>Founded in 1995 by Jon Kabat-Zinn, PhD. First program to draw mindful awareness training into health care institutions. Offers an array of mindfulness resources.</td>
<td><a href="http://www.umassmed.edu/CFM/Home/index.aspx">http://www.umassmed.edu/CFM/Home/index.aspx</a></td>
</tr>
<tr>
<td>University of California San Diego Center for Mindfulness</td>
<td>Institute offering retreat-style professional trainings.</td>
<td><a href="http://mbpti.org">http://mbpti.org</a></td>
</tr>
<tr>
<td><strong>Oasis Institute</strong></td>
<td>An institute for mindfulness-based professional education and training.</td>
<td><a href="http://www.umassmed.edu/cfm/oasis/index.aspx">http://www.umassmed.edu/cfm/oasis/index.aspx</a></td>
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<tr>
<td><strong>Mindfulness Based Cognitive Therapy</strong></td>
<td>Designed to help people who suffer repeated bouts of depression and chronic unhappiness.</td>
<td><a href="http://www.mbct.com">http://www.mbct.com</a></td>
</tr>
<tr>
<td><strong>Mindfulness Based Relapse Prevention</strong></td>
<td>Developed at the Addictive Behaviors Research Center at the University of Washington, for individuals in recovery from addictive behaviors.</td>
<td><a href="http://www.mindfulrp.com/">http://www.mindfulrp.com/</a></td>
</tr>
<tr>
<td><strong>University of Wisconsin Integrative Medicine</strong></td>
<td>This site features a number of Power of the Mind tools, including a module entitled, “Learning to Meditate.”</td>
<td><a href="http://www.fammed.wisc.edu/integrative">www.fammed.wisc.edu/integrative</a></td>
</tr>
<tr>
<td><strong>University of Wisconsin Mindfulness Digital Resources</strong></td>
<td>Contains audio recordings of many mindful awareness techniques most commonly used in courses.</td>
<td><a href="http://www.fammed.wisc.edu/mindfulness">www.fammed.wisc.edu/mindfulness</a></td>
</tr>
<tr>
<td><strong>Mindfulness Coach</strong></td>
<td>App designed specifically for Veterans and Servicemen.</td>
<td><a href="https://mobilehealth.va.gov/app/mindfulness-coach">https://mobilehealth.va.gov/app/mindfulness-coach</a></td>
</tr>
</tbody>
</table>
### Books

#### For Clinicians


#### For Veterans and Clinicians

Whole Health: Change the Conversation Website

Interested in learning more about Whole Health? Browse our website for information on personal and professional care.

http://projects.hsl.wisc.edu/SERVICE/index.php

This educational overview was written by Adrienne Hampton, MD, Academic Integrative Medicine Fellow, Department of Family Medicine, University of Wisconsin-Madison School of Medicine and Public Health.

References


VHA Office of Patient Centered Care and Cultural Transformation
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