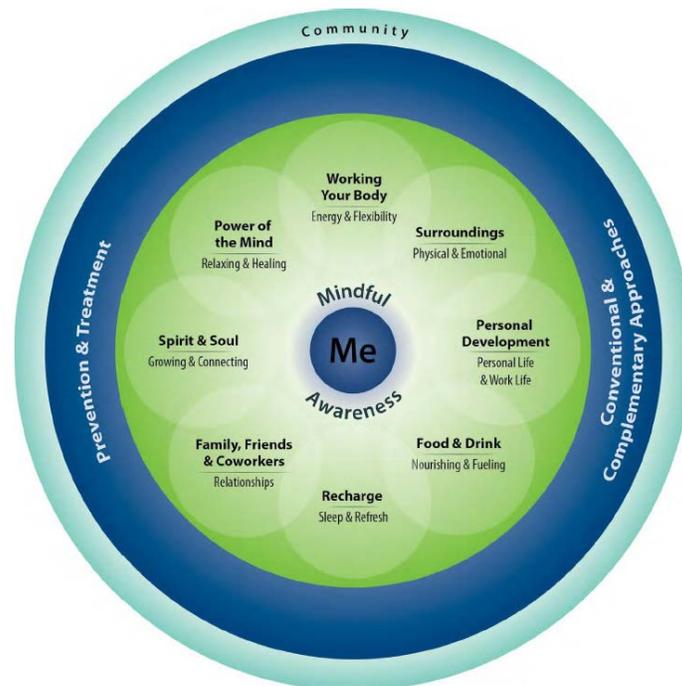


WHOLE HEALTH: CHANGE THE CONVERSATION

Advancing Skills in the Delivery of
Personalized, Proactive, Patient-Driven Care

Surroundings Educational Overview



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

Surroundings

Educational Overview

Vignette: Andre

A man is not rightly conditioned until he is a happy, healthy, and prosperous being; and happiness, health, and prosperity are the result of a harmonious adjustment of the inner with the outer of the man with his surroundings.

—James Allen

You are meeting Andre, a 36 year-old Marine Corps Veteran who is new to the VA system. He arrives at his visit with a completed Personal Health Inventory (PHI). As you review his PHI, your attention is drawn to what he has written in the “Surroundings: Physical and Emotional” section:

Surroundings: “Physical and Emotional” includes feeling safe, having comfortable, healthy spaces where you work and live, quality of the lighting, color, air, and water, and decreasing unpleasant clutter, noises, and smells.	
Where you are: Rate yourself on a scale of 1 (low) to 5 (high) 1 2 3 4 5	Where would you like to be? 1 2 3 4 5
What are the reasons you choose this number? <i>I don't like my apartment. It makes me feel bad to go home and not just because I live alone. I hate how cluttered it is. I can hear the traffic and sirens outside, and it is too dark. I think maybe I am sensitive to the smell, too. They painted the halls of the building, and I had a headache from the smell for days. I feel like everything around me is toxic.</i> <i>Work is unhealthy, too. I work on an assembly line, and it makes my shoulder pain flare up.</i>	What changes could you make to help you get there? <i>I'd like to be able to move away from my apartment and change my job, but I can't afford to. My lease still has six months anyway. I feel overwhelmed by what to do to make it better. I am embarrassed to have anyone come over to visit because everything is so messy, and I have a hard time getting organized. I need some help with how I react to chemical smells.</i>

WHOLE HEALTH: CHANGE THE CONVERSATION
Educational Overview: Surroundings

Introduction

How might you support Andre with regards to his surroundings at work and home? What could be incorporated into his Personal Health Plan (PHP) on this topic? This educational overview offers information and tools you can use to support self-care by helping patients like Andre improve their physical and emotional surroundings.

The powerful influence of surroundings on health has been recognized for as long as humans have had systems of healing. In most indigenous healing systems around the world, healers (shamans, medicine men and women, etc.) have explained and treated disease, at least in part, using elements from the natural world. For millennia, Chinese Medicine has emphasized the importance of environmental contributors to ill health, including the Six Pernicious Influences—heat, cold, wind, dampness, dryness, and summer heat—which are held to cause imbalances in body, mind, and spirit.

Sometime around 400 BCE, Hippocrates wrote *On Airs, Waters, and Places*, which highlighted the influence of surroundings on health. He noted,

Whoever wishes to investigate medicine properly, should proceed thus: in the first place to consider the seasons of the year, and what effects each of them produces, for they are not at all alike, but differ much from themselves in regard to their changes. Then the winds, the hot and the cold, especially such as are common to all countries, and then such as are peculiar to each locality. We must also consider the qualities of the waters, for as they differ from one another in taste and weight, so also do they differ much in their qualities.

A premise known as the biophilia hypothesis asserts that being acutely sensitive and responsive to our surroundings was fundamental to our ancestors' survival; we are still hard-wired to be influenced by the world around us.¹ Our health is contingent not only on what takes place internally, but how we are influenced by our external world—our environment—what information is coming to us through our senses, and interactions with others.

This overview explores how five general aspects of surroundings influence health. These five areas include:

1. Living conditions
2. Work conditions
3. Exposures
4. Sensory inputs
5. Emotional surroundings

WHOLE HEALTH: CHANGE THE CONVERSATION

Educational Overview: Surroundings

This module discusses how epigenetics is changing the way we look at our health, explores what it means to create an optimal healing environment, and encourages you to consider your surroundings at home and at work and how you can enhance them. It also outlines resources to enhance environmental health, including services offered for homeless Veterans. It further summarizes research findings regarding the health effects of sensory inputs, such as noise, light, and color.

Epigenetics: Surroundings Affect Our DNA

With the rise of medicine that is informed by biochemistry and genetics, we continue to expand our understanding of how the natural world influences our health. Epigenetics was first defined by the biologist Conrad Waddington in 1942 as the study of *how environment interacts with an organism's genetic information (genotype) to produce various traits (phenotype)*.²

We know that in groups of identical twins, one twin may express a trait or have a particular disorder, while the other does not. Why the difference? The environment—the surroundings—of each twin plays a significant role. One of the twins may have had more sun exposure. One of them may have smoked while the other one did not. One may have eaten less healthily, exercised less, or been exposed to more of a particular toxin in the environment, such as cigarette smoke. Epigenetics focuses on these differences and what each of us can do to improve the odds so that our environment is influencing our genetic expression in a positive way.

Every nucleated cell in our body carries the same overall genetic code, and yet lung cells, neurons, muscle cells, and other cell groups in the body end up being quite different from one another. This is because each different cell type has been subject to chemical signals that lead to selective expression of different groups of genes. There are many different ways that gene expression can be influenced, including the following:³

- **DNA methylation.** Three different DNA methyltransferase enzymes add methyl (CH₃) groups to DNA. The more methyl groups attached to a gene regulation region, the LESS likely the gene is to be expressed.
- **Histone acetylation.** Histones are proteins found in cell nuclei that serve as “spools” for DNA to wind around. Without them, it would not be possible to fit all of our DNA into a cell nucleus. The more acetyl chemical groups that are attached to the histones, the GREATER the genetic expression of the DNA associated with them.
- **Other, more recently-discovered processes.** New ways that the environment chemically alters gene expression are being discovered all the time. For instance, non-coding RNA and prion proteins have been found to play a role, as do various processes involved in cell differentiation (the signals that tell a stem cell what type of cell to become). Some environmental influences will cause entire genes to relocate from one part of a chromosome to another.

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Particularly fascinating in the area of epigenetics has been research indicating that epigenetics can have intergenerational effects; that is, *the environment of an ancestor can influence the gene expression of his/her descendants*. For example, under normal circumstances, agouti mice are genetically destined to yellow fur and obesity. However, this phenotype—their gene expression—can be changed by behaviors, including the behaviors of their mothers while the agouti mice are in utero. A mouse can develop to be dark-furred and non-obese if its mother was fed foods containing methyl donors (e.g., onions, garlic, and beets) prior to giving birth.⁴

Never underestimate the power of surroundings on health. Epigenetics research findings demonstrate numerous ways in which our environment changes our bodies at the molecular level.

Optimal Healing Environments

We have looked at things at the molecular level; let us take a moment now to look at things at the “macro” level. As clinicians, it is our responsibility to do all we can to ensure that our patients’ surroundings support optimal health. In 2004, as a supplemental issue of the *Journal of Alternative and Complementary Medicine*, the Samueli Institute put forth a series of monographs describing what optimal healing environments (OHEs) are and how they can best be created and supported in various medical settings.⁵

The authors defined an optimal healing environment as “...one in which the social, psychological, spiritual, physical and behavioral components of health care are oriented toward support and stimulation of healing and the achievement of wholeness.”

The Samueli institute outlines eight key components of an OHE, including the following:⁶

1. **Healing intention.** “Conscious development of intention, awareness, and expectation,” including the belief that healing can occur.
2. **Personal wholeness.** Self-care practices on the part of the clinician and the patient.
3. **Healing relationships.** A therapeutic alliance predicated on compassion, love and the interconnectedness of all is of key importance.
4. **Healing organizations.** Not only do individuals support the process; organizations and social groups do as well.
5. **Healthy lifestyles.** Health promotion is fundamental, with self-healing and social support as important elements.
6. **Integrative care.** The best conventional and complementary approaches are used.
7. **Healing spaces.** Physical and natural surroundings—light, air, color, temperature, sound—also contribute to health.
8. **Ecological sustainability.** The most “macro” level of all. A healing environment also has to be healthy for the larger environment, for the world as a whole.

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Using these components as a framework, the authors created a diagram summarizing key factors that contribute to an OHE. Note in Figure 1 below how multiple aspects of experience, including internal, interpersonal, behavioral, and external factors, are all drawn in as important parts of an OHE. Some of these, including relationships, healthy lifestyles, integrative care, and intention, are covered in more depth elsewhere in the Whole Health program. We will focus more specifically on physical and emotional surroundings below.

OPTIMAL HEALING ENVIRONMENTS

Surround the individual with elements that facilitate the innate healing process.

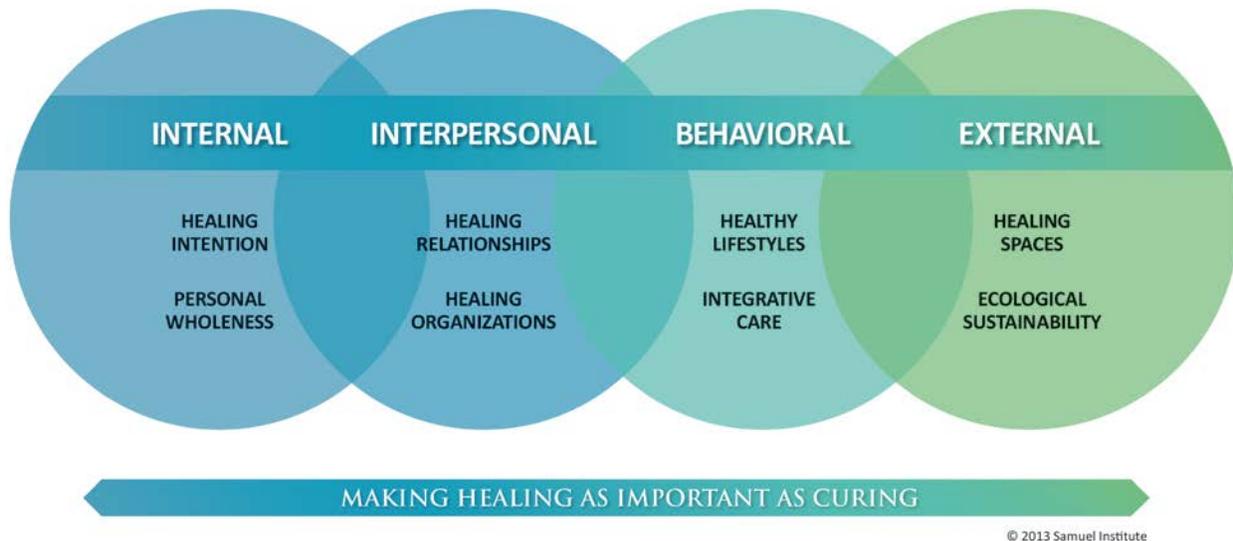


Figure 1. Optimal Healing Environments
Reprinted with permission from Samueli Institute⁶



Mindful Awareness Moment Different Perspectives on Surroundings

Spend a few minutes thinking about *your* practice environment.

1. Start by visualizing where you practice from a patient's eye view.
 - What is it like to check in, to interact with a receptionist, or to be admitted through the emergency department?
 - Imagine you are a patient sitting in a waiting area, about to see you as the clinician. Note the feel of your surroundings.
 - The lighting?
 - The colors?
 - What about the noise level? Is there music playing?
 - How is the temperature?
 - Are the chairs comfortable?
 - Are there any antiseptic smells (or other smells)?
 - Are there interesting and up-to-date magazines to read?
 - Do you like the art on the walls?
 - Are there any natural elements (plants, windows, fountains)?
 - Ask the same questions about the space where patients see you, be it a hospital room, an exam room, an office, etc. What sort of impression does your practice space make?
2. Now, consider the healing environment from your perspective.
 - How do you feel about where you practice, in terms of the eight components of an OHE listed above?
 - Is it possible to set healing intentions and focus on personal wholeness, for yourself and your patients?
 - How easy is it to foster healing relationships in this environment?
 - Is your organization—your department or section, your hospital, your clinic—supporting the creation of OHEs? Why or why not?
 - Is your workspace comfortable, with good ergonomic support, sufficient lighting, and clean air?
 - Are you able to practice in an environmentally friendly way?
 - Is the overall work environment good for you? Do you feel supported by your colleagues? Do you feel respected? Do you have any “toxic” colleagues?
 - Do you look forward to being in your work environment?
3. What is one thing you could do right now to make your surroundings more healing, both for you and for patients?

WHOLE HEALTH: CHANGE THE CONVERSATION
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At its core, this educational overview is about creating OHEs. You have taken a moment to consider the quality of your patients' surroundings during health care experiences with you. Let us turn our attention to other aspects of Veterans' experiences—their surroundings at work and home.

Taking Stock: Assessing Surroundings

If you want to go deeper in terms of the surroundings aspect of self-care with people like Andre, it can help to have them take some time to describe their surroundings. See the clinical tool, [Taking Stock: Assessing Your Surroundings](#), for more information. Clinicians can use this tool to gather additional details about a Veteran's home and work environments. Completing the assessment will help determine the areas to focus on in the PHP.

	<h3>Mindful Awareness Moment Taking Stock Yourself</h3>
<p>Before proceeding with the key elements of healthy surroundings, apply the questions in the Taking Stock: Assessing Your Surroundings clinical tool to yourself.</p> <ul style="list-style-type: none">• What comes up as you think in more depth about your home environment? What one thing could you change, right now?• How about when you consider your physical and emotional surroundings at work?• How much do your surroundings influence your well-being in comparison to the seven other components of proactive self-care (the green circles within the Circle of Health)?	

The assessment tool is organized around five main areas. There are four categories of physical surroundings—living conditions, work conditions, exposures, and sensory inputs. Emotional surroundings constitute a fifth section. Some key issues related to each of these five categories are addressed in more detail below. Always remember that individuals' overall health is closely—even inextricably—linked not only to their immediate home or work environment, but also to what is happening around them at a regional or even global level. People have varying levels of awareness about how events such as changes in weather patterns, natural disasters (such as droughts that cause increases in food prices), epidemics, and wars also can have an impact.

The following sections highlight some of the key elements of health surroundings.

1. Living Conditions

Back to basics: Homelessness

In the module, **Taking Action: How to Write a Personal Health Plan**, it is noted that basic needs (items that are at the base of Maslow’s Hierarchy of Needs) have fundamental importance. Shelter is certainly one of these, and being homeless has a profound negative impact on many aspects of health. Here are some key facts on homelessness:

- Lifetime prevalence of homelessness in the United States has been estimated to be between 5% and 14%.⁷
- Veterans comprise 13% of the adult homeless population. An estimated 62,619 Veterans are homeless on a given night, and who is homeless shifts so that twice as many Veterans are actually homeless at some point during a given year.⁸
- 8% of VA homeless services users (2011-2012 data) are women, and 21% of them have dependent children.⁹
- 73% of homeless people have unmet health needs.¹⁰ An estimated 40% of homeless people are dependent on alcohol, 25% are dependent on drugs, and mental illnesses are common, with a prevalence of 11% for depression, 23% for personality disorder, and 13% for major psychotic illness.
- Homeless Veterans have four times the odds of seeking care at emergency departments (EDs) than non-homeless Veterans. Homeless ED users were more likely to have a diagnosis of drug use disorder (odds ratio [OR] = 4.12; 95% confidence interval [CI] = 3.97, 4.27), alcohol use disorder (OR = 3.67; 95% CI = 3.55, 3.79), or schizophrenia (OR = 3.44; 95% CI = 3.25, 3.64) in the past year.¹¹
- Not surprisingly, homelessness is associated with a lower quality of life, and when independent housing is obtained, quality of life improves.^{10,12}
- Fortunately, the federal strategic plan to decrease homelessness in the United States has made a difference. Through the efforts of the VA, homelessness among Veterans declined by 24%, between 2010 and 2013. The number of unsheltered Veterans declined by 30% during that time.⁸
- Universal screening is part of the VA’s strategy to end homelessness by 2015, and it is proving effective.¹³

Resources for Homeless Veterans	
Resource	Website
Information on homelessness programs and initiatives through the U.S. Department of Veterans Affairs	http://www.va.gov/homeless
VA drop-in centers, supported housing, and work therapy options	http://www1.va.gov/HOMELSS/Programs.asp
U.S. Department of Veterans Affairs success stories about homeless Veterans. Inspiring accounts of Veterans who have faced homelessness and prevailed	http://www.va.gov/homeless/success_stories.asp
The National Coalition for Homeless Veterans—A helpline available to clinicians and Veterans needing homelessness resources and support	http://www.NCHV.org (1-800-VET-HELP) (1-800-838-4357)
*Consider including homelessness resource information in PHPs.	

WHOLE HEALTH: CHANGE THE CONVERSATION
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Clutter, collecting, hoarding, or squalor?

In our vignette, Andre expresses concern about the level of clutter in his home. Some people simply need guidance or encouragement related to tidying up, but for others, the situation may be more complex. One can assess the severity of the problem by having clinicians visit a Veteran's home, or having the Veteran complete an assessment, such as the **Environmental Cleanliness and Clutter Scale**.¹⁴ It is available as a clinical tool.

An estimated 5% of people fit the criteria for being hoarders.¹⁵ Hoarding is included in the fifth Diagnostic and Statistics Manual (DSM-5) as a discrete diagnosis. Hoarders are not merely collectors who accumulate belongings that clutter up their homes somewhat. Rather, hoarders are people for whom the urge to accumulate has spiraled out of control.¹⁶ Their living spaces are cramped, unsanitary, and potentially dangerous; the key characteristic of hoarding behavior is that it interferes with one's quality of life and normal functioning in some way. In roughly half of hoarders' homes, items such as the sink, tub, stove, or shower are not used because they are full of accumulated objects.¹⁷

Hoarding behavior seems to begin for many in the teen years after a traumatic or stressful event, and it typically worsens in middle age.¹⁷ It runs in families. Seventy-five percent of the time, it is associated with other mental health issues, such as depression, alcohol abuse, anxiety, or dementia. Hoarding behavior is viewed by many as being closely related to obsessive-compulsive disorder (OCD).

If a Veteran mentions dealing with a lot of clutter, it is worth exploring whether or not he or she meets criteria for hoarding behavior. Unfortunately, diagnosing it is easier than effectively treating it. Selective serotonin reuptake inhibitors are now thought to be more helpful than previously assumed,¹⁸ and cognitive behavioral therapy is key.¹⁹ Forcible cleaning and organizing by a family member or other concerned party does NOT improve the situation, primarily because most people who hoard do not view their behavior as problematic. Furthermore, they tend to refill a newly cleaned space with new hoarded items. One tragic outcome of hoarding behavior is that hoarders experience a high level of rejection by family members; it is on par with the rejection experienced by schizophrenics.¹⁷ For more on hoarding, see the information available through the National OCD Foundation at <http://www.ocfoundation.org/hoarding>.

In contrast to hoarding where accumulated objects may lead to unsanitary conditions, squalor specifically involves the accumulation of refuse (garbage) in the home.²⁰ Half of people described as "living in squalor" in a review of over 1,100 cases were elderly, and they commonly carried diagnoses of dementia, alcoholism, or schizophrenia.²¹ Clinicians should screen carefully for these disorders if concerns about living conditions merit doing so.

For general assistance with cleaning and clutter, particularly for disabled or elderly Veterans, an important resource is the nonprofit (501c3) organization, Cleaning for Heroes. It can be accessed at www.cleaningforheroes.org.

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Other considerations for living conditions

- **Unwelcome roommates: pests**
Remember to ask about pest control, if appropriate. The Centers for Disease Control and Prevention (CDC) has a number of resources on dealing with different pests. In the past several years, bed bugs, in particular, have made a comeback in many American homes.²² The CDC website has an informational page on bed bugs, accessible at <http://www.cdc.gov/parasites/bedbugs/faqs.html>. Some good resources for health care professionals include the educational materials at the University of Kentucky, at www.ca.uky.edu/entomology/entfacts/entfactpdf/ef636.pdf.
- **Accident prevention**
In addition to reminding people about having smoke and carbon monoxide detectors, be sure to assess for fall risk, if possible. A good VA resource for this is <http://www.patientsafety.va.gov/professionals/onthejob/falls.asp>.
- **Weapons**
As you think about surroundings, it is important to ask Veterans if they have any weapons at home. Death certificate reviews from nine states indicate that male Veterans who commit suicide were 6% more likely to use firearms, and the likelihood was 18% higher in female Veterans.²³

2. Work Conditions

Back to basics: Unemployment²⁴

Having an income, much like having shelter, is a fundamental need. Not having a job markedly increases mortality; an analysis of data on more than 20 million people revealed a hazard ratio of 1.63.²⁵ Unemployment also contributes significantly to chronic illness, including many mental health problems.²⁶ For example, the relative risk of suicide in those who have become unemployed in the past five years, as compared to those who are employed, is 2.50 (CI 1.83-3.17).²⁷

According to the Bureau of Labor Statistics,²⁴ the March 2014 unemployment rate for Veterans who have served since 2001 is 9%, and the rate for all Veterans is 6.6%. Unemployment for women Veterans is slightly higher (6.9% in 2013). Of the 722,000 unemployed U.S. Veterans in 2013, 60% were over the age of 45.

Twenty-nine percent of Gulf War-era II Veterans (those who have served since September 2001) reported having service-connected disability as of August 2013, as compared to 15% of all Veterans.²⁴ Those with a service-connected disability had a lower unemployment rate (6.2%). One in three Veterans with service-connected disabilities worked in the public sector, versus one in five with no disability. For more information on employment and vocational rehabilitation opportunities for Veterans, see <http://www.benefits.va.gov/vocrehab>.

Ergonomics and repetitive use injuries

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Employed Americans with children have workdays that are an average of 8.8 hours long.²⁸ It is important, knowing that a significant proportion of many people's lives are spent at work, to ensure that work surroundings are as healthy as possible. Work-related exposures are covered in [Section 4](#) of this overview. It is also important to keep ergonomic and repetitive use-related concerns in mind as you think about surroundings.



Mindful Awareness Moment

Notice your body position now, as you are reading this material. How are you doing, in this moment, from an ergonomics standpoint?

- Are there any parts of your body that feel fatigued?
 - Your neck?
 - Your lower back?
 - How do your hands feel with regard to using a mouse or a keyboard?
 - Are your eyes fatigued?
- How about for the other places where you spend a large proportion of your time?
 - How are the ergonomics of other workspaces, either at home or at work?
- What about where you sleep?

Think of one positive change you can make, and set the intention to make it.

Ergonomics is, as the CDC puts it, “the scientific study of people at work.”²⁹ Its goal is to reduce problems related to repetitive use of muscles, muscle overuse, and poor posture. The goal of ergonomics is to enhance health at work by improving the quality of the workspace environment and tailoring tasks and tools to an employee’s capabilities and limitations.

Study findings regarding the efficacy of ergonomic interventions are mixed, but many show moderate benefit for conditions such as work-related neck problems (less data supports intervention for the upper limbs).³⁰ Chair interventions seem to help reduce musculoskeletal symptoms,³¹ but it is not clear that ergonomic positioning or equipment help for carpal tunnel syndrome.³² Given that various interventions are safe to try, they are worth discussing with Veterans who have work-related problems.

For more information, see the [Ergonomics](#) clinical tool.

3. Environmental Health: Exposures

We are exposed to thousands of toxins daily, ranging from air pollutants to pharmaceuticals in water, and from heavy metals to pesticides. A 2011 systematic review concluded that in 2004, 4.9 million deaths (8.4% of the total number worldwide) and 86 million Disability-Adjusted Life Years (DALYs) were attributable to environmental exposures.³³ The biggest culprits were smoke from solid fuel use, air pollution, second-hand smoke, occupational exposures, and chemicals involved in acute poisonings. The authors note, however, that many chemicals known to cause harm could not be included in the review due to lack of data.

When thinking about surroundings and health, it can be less overwhelming if one focuses on reducing total chemical burden; that is, focus on specific ways to reduce just one or a few exposures at a time. Exposures to minimize can include anything from cigarette smoke or wood smoke to chemicals used in farming and car exhaust. One can eat foods that are less likely to contain pesticide residues, avoid bisphenol A in beverage containers, or use more “green” household cleaning products, for example. For more information specifically about toxins in food, see the **Food Safety** clinical tool. The diagram in Figure 2 conceptualizes the various types of exposures a person might encounter in day-to-day living.³³

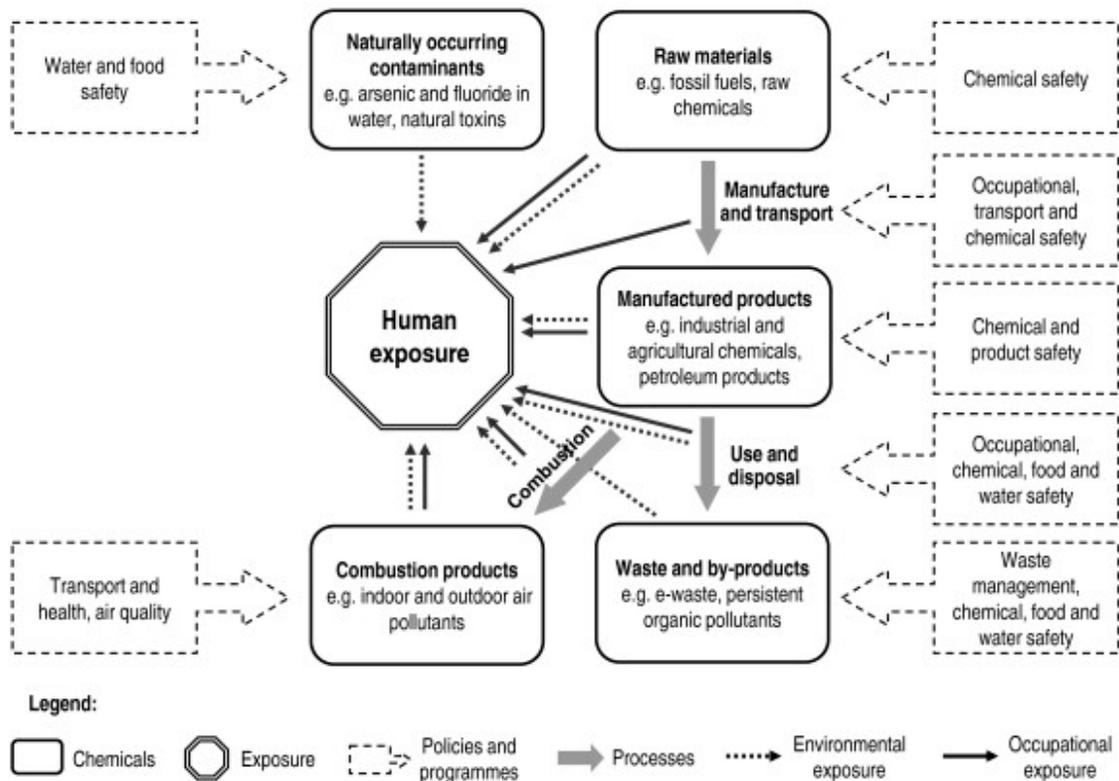


Figure 2. Environmental Health: Potential Sources of Toxic Exposures. Reproduced with the permission of the publisher, from *Environmental Health*, Geneva, World Health Organization, 2011.³³

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The number of potential environmental toxins is vast. Fortunately, there are a number of resources that can be helpful. If you or a patient would like a place to start, consider the National Institutes of Health “Toxtown” website (<http://toxtown.nlm.nih.gov>). This site has user-friendly images that not only show the user potential sources of toxin exposure but also link to reliable government sources of additional information.

The National Library of Medicine’s Medline website (<http://www.nlm.nih.gov/medlineplus/environmentalhealth.html>) includes a well-done introduction to environmental health and links to key resources. See the “Related Topics” list on the right side of the screen. Topics include air pollution, drinking water, molds, noise, and water pollution.

To obtain specific information and find reliable resources about specific toxins, Toxnet, offered through the United States National Library of Medicine website (<http://toxnet.nlm.nih.gov/>), is an excellent database to use. Users can enter any chemical or other substance of concern and obtain information and resources about it. Among the databases searched is the HAZ-MAP database, which describes, in detail, how to handle occupational exposures to various compounds. Toxtown also contains a searchable list of toxins at http://toxtown.nlm.nih.gov/text_version/chemicals.php.

Environmental Exposure Resources	
Water quality	
United States Geological Survey: A Primer on Water Quality	http://pubs.usgs.gov/fs/fs-027-01/
Centers for Disease Control and Prevention: Drinking Water Frequently Asked Questions	http://www.cdc.gov/healthywater/drinking/public/drinking-water-faq.html
Moisture and mold	
National Library of Medicine mold resources	http://www.nlm.nih.gov/medlineplus/molds.html
Centers for Disease Control and Prevention information on mold	http://www.cdc.gov/mold/faqs.htm
World Health Organization Guidelines for Indoor Air Quality Information on “Dampness and Mould.”	http://www.euro.who.int/_data/assets/pdf_file/0017/43325/E92645.pdf
Electromagnetic fields (EMFs)	
Nice summary of the research related to known health effects. This is a controversial topic.	http://www.who.int/peh-emf/about/WhatisEMF/en/index1.html

Remember, as you discuss exposures with Veterans, ensure that they have been asked about the following:

- Exposure to Agent Orange or other chemical weapons
- The presence of shrapnel in their bodies
- Encounters during time in service (and elsewhere) to ionizing radiation.

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Idiopathic Environmental Intolerances (IEI's)

Our patient, Andre, notes that paint fumes and other chemical odors elicit various symptoms for him. He is likely one of 12-30% of people who have idiopathic environmental intolerance (IEI) to airborne chemicals.³⁴

IEI's have been given many names, ranging from sick building syndrome to multiple chemical sensitivity. Gulf War syndrome has also been linked to this. Some key points to know about working with these challenging conditions include the following:^{35,36}

- Many organizations do not recognize these disorders as “official” diagnoses.
- Theories about the etiology of these problems abound. Some are more biochemical in their focus, while others emphasize the relationship between IEI's and mental health issues.
- These disorders are chronic, with reproducible symptoms that are often elicited with low levels of multiple unrelated chemicals. Symptoms are reproducible and can involve any number of organ systems.
- These disorders have any number of triggers; appliances, ink, and chlorinated water are among the most common.
- Many different symptoms are associated with IEI's.
- The best ways to treat these disorders is avoidance. Biomolecular approaches (medications, supplements) do not seem to be particularly effective, according to surveys of people with these conditions. Mindful awareness-focused approaches, and those invoking the power of the mind, are viewed by patients as the most effective.
- These problems can resolve over time, but this is not the case for everyone.

4. Sensory Input and Health: Environmental Design

When you think of a healing environment, what comes to mind? A spa? A Japanese garden? Perhaps a corner of your house? Few of us would immediately think of a clinic or hospital. But that view is beginning to change as health care organizations are becoming aware of the growing body of evidence that shows the benefits of a healing environment, and are incorporating ideas generated by such studies into new facilities.³⁷

Healthy food for the senses: simple approaches

We know that our sensory environments have a significant impact on health. Light levels affect mood and sleep quality.³⁸ Loud noises can influence blood pressure and heart rate for hours after a person hears them. Music can have a variety of effects, including calming, depending on the type of music and individual preferences. Choosing the right color can change the feel of a space; cool tones slow the autonomic nervous system, while warm tones activate it.³⁹ Art—particularly art that features the natural world—improves patient outcomes.⁴⁰

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In discussing sensory input with individuals, take a moment to ask them to describe their living and work spaces in more detail. Explore topics covered in the clinical tool, **Taking Stock: Assessing Your Surroundings**, which include

- Light (light levels during the day and during the night)
- Noise (traffic, sirens, neighbors)
- Color
- Temperature (sufficient heating and air conditioning)
- Presence of nature (plants, aquariums, views outside)
- Smells

People often have a number of great ideas about improving their sensory surroundings, if they are simply given a bit of encouragement to give this aspect of their health some thought. Strategies to incorporate into a PHP may include one or more of the following:

- Buying light-opaque curtains or a sleep mask
- Wearing earplugs to bed
- Painting a room or adding more art to the walls
- Buying an electric heater or fan
- Buying a plant or walking in a local park
- Opening windows
- Having smokers cut back and/or smoke outdoors
- Cleaning with different household products or changing humidity levels to decrease mold growth.

Sensory inputs and beyond in health care settings

Environmental design draws from evidence-based findings regarding what aspects of a health care environment can enhance health, above and beyond what is “done to” patients in terms of tests and procedures. It factors in the following areas, among others, as fundamental aspects of OHEs:

- Patient choice and control
- Enhancing human connection
- Reducing negative sensory inputs
- Ensuring patients can find their way around a given site
- The presence of art and subject matter that is most healing
- The role of color in healing environments
- The importance of light and sound levels for healing
- Music and healing
- Drawing nature into health care settings.

For more detailed information about each of these, along with a synopsis of research findings and specific guidelines for how you, as a clinician, can use environmental design in your own practice see the **Healthy Surroundings through Environmental Design** clinical tool.

5. Emotional Surroundings

It was only from an inner calm that man was able to discover and shape calm surroundings.

—Stephen Gardiner

As you have seen, many aspects of our physical surroundings influence Whole Health. Emotional surroundings are similarly important.

	<h3>Mindful Awareness Moment Noting Emotional Surroundings</h3>
<p>Part One. Pause for a moment and assess your current emotional state.</p> <ul style="list-style-type: none">• What emotions are you experiencing in this moment?• Where do you feel those emotions in your body?• If you had to assign those emotions colors, sounds, or textures, how would you describe them? <p>Part Two. Now, take a moment to assess your emotional surroundings.</p> <ul style="list-style-type: none">• If there are people around you, do you have a sense (through their spoken language or body language, or even based on your intuition) what they are feeling?• Does your current location allow you to feel at ease, or do you feel tense or as though you have to be on your guard? Why?• How does this location influence how you feel? Is there anything about this place that influenced the emotional state you identified in part one of this exercise? <p>What is one thing you could do to make your current location more supportive of positive emotions?</p>	

What follows is a list of suggestions you can offer to your patients or try out for yourself, in terms of emotional surroundings. This list is by no means complete; it was created to bring your attention to some areas that are frequently overlooked during patient encounters.

Determine emotional states and surroundings

Take time throughout the day to be aware of your emotional state and the aspects of surroundings that influence your feelings the most. An important key to healthy emotional surroundings is the recognition that they are, to some degree, in the eye of the beholder. Data from thousands of people, compiled by groups like the National Opinion Research Center at the University of Chicago, has concluded that happiness does not appear to depend significantly on external circumstances. Wealth, in particular, is a poor predictor.⁴¹ More optimistic, altruistic, and generally happy people are less likely to be affected by challenging external circumstances; their health is likely to be better in general, and they are much more resilient.⁴²⁻⁴⁵

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Mindful awareness can be useful for maintaining healthy emotional surroundings. As illustrated in the mindful awareness exercise featured in the box above, knowing what you are feeling and knowing the source or sources of those feelings is essential to working with emotional surroundings.

It can be helpful to have a patient take a minute or two to list what makes him or her happiest. Then, list the few sources of unhappiness. Bringing awareness in this simple way can guide the suggestions you make as part of the PHP. See the educational overview, [Taking Action: How to Write a Personal Health Plan](#), for guidance on how to “accentuate the positive” in a Whole Health approach.

Incorporate more humor

Humor can be an important aspect of healthy emotional surroundings. Even before Norman Cousins described how he used humor for his own healing in 1975, humor was noted for having healing benefits.⁴⁶ For example, laughter leads to increases in heart and breathing rates and oxygen consumption, reduced muscle tension, decreased cortisol, and improved immune function.^{47,48} See the clinical tool, [The Healing Benefits of Humor and Laughter](#), for more information.

Bring pets into the picture

One potential contributor to emotional surroundings is pets. Animal-assisted therapy (AAT) is known to decrease heart rate, pain, anxiety, and depression, and pet ownership is also known to have a number of health benefits.^{49,50} For more information, see the [Animal-Assisted Therapy](#) clinical tool.

Note the influence of media and technology and information overload

We live in an era of information overload (also known as infobesity, infoxication, information glut, data smog...yikes, information overload is happening in this sentence!). Information overload can be linked to poorer memory.⁵¹ In prehistoric times, it served people well to pay close attention to new information and to actively search for it; this is not so helpful when we have access to billions of webpages, tweets, texts, and emails.

In the media, the estimated ratio of negative to positive content has been estimated to be roughly 17:1. Imagine—17 times more negative stories.⁵² Again, people probably innately seek out novel or dramatic information; it helped our ancient ancestors survive and may be somewhat hardwired into us. People in the media know they sell more newspapers and have higher ratings if they focus on the negative.

The bottom line is when you ask people about their surroundings, remember to ask about their virtual surroundings, which can have a significant effect on stress, mood, and overall perceptions of the environment. Many people find it helpful to periodically do a “media/information fast.” For more information, see the [A Media/Information Fast](#) clinical tool.

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Explore highly sensitive personality traits and address them accordingly

Psychologist Elaine Aron described what it means to be a “highly sensitive person” in her 1996 book of that title.⁵³ Highly sensitive people (HSPs)

- Are easily overwhelmed by intense sensory experiences
- Have trouble with being rushed or needing to make deadlines
- Work to avoid upsetting or overwhelming situations
- Tend to have a heightened esthetic sense
- Like to withdraw after intense times, such as a busy day at work
- Tend to avoid violence, including in movies and TV.

More information on highly sensitive people is available at the HSP website at <http://www.hsperson.com/>.⁵⁴

When dealing with HSPs, it can be helpful for clinicians to keep the following in mind:

- They are highly attuned to whether or not clinicians are hurried or stressed, and they may limit what they disclose in a visit accordingly.
- Many of them tend to respond to very low doses of medications – both in terms of therapeutic benefits and adverse effects.
- It may help to encourage them to show up 10-15 minutes before they are supposed to see their clinician, if they have a tendency to be late.
- They may be affected strongly by the lighting in offices and examination rooms.
- They often do well with visualization exercises and guided imagery. It can be helpful to have them envision themselves in a protective “bubble” or “shield” that helps them filter out some of the stimuli that comes their way.
- HSPs often benefit from encouragement to honor their introverted natures and take a set amount of time as alone time or time just for them each day.

Back to Andre

Andre was asked to complete the **Taking Stock: Assessing Your Surroundings** form. Based on the results and the discussion about them that occurred at his next visit, the following suggestions were offered as part of his PHP:

- Andre struggles a great deal with clutter, but he does not meet criteria for hoarding behavior. He will explore how to declutter, and he will save enough money to hire a professional organizer or housekeeper to help him.
- Andre’s clinician reviewed information about IEI with him, and they will address his intolerance of strong scents using various mind-body approaches, including hypnosis, which is available at his local VA hospital.
- He will talk to a union representative about options regarding his repetitive use-related shoulder injury. He is encouraged to work with a physical therapist as well.
- His overall toxin exposure is minimal. His apartment has relatively clean water and air, and he is not exposed to hazardous chemicals at work, so far as he knows. He is very interested in learning more about low- and high- pesticide foods, so you provide him with information about the Dirty Dozen and Clean Fifteen, which is featured in the **Food and Drink** module.

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- Andre agrees there are some simple things he can do to improve his sensory environment at home. He plans to start wearing an eye mask to sleep, and he will consider playing music more often, particularly classical guitar, which he hopes to learn himself someday. He will clean with fragrance-free household products and avoid air fresheners in his house and car, since they give him headaches.
- On further discussion, Andre does seem to be a “highly sensitive person.” He is very sensitive to his environment, is quite musically inclined, and is extremely shy. You suggest some potential books and websites he can use to learn more.

Why should we think upon things that are lovely? Because thinking determines life. It is a common habit to blame life upon the environment. Environment modifies life but does not govern life. The soul is stronger than its surroundings.

—William James

Surroundings Clinical Tools

- Healthy Surroundings through Environmental Design
- Taking Stock: Assessing Your Surroundings
- Chelation, Cleanses, Saunas and Supplements: What Every Clinician Should Know about Popular Approaches to “Detox”
- Detox Supplements
- Ergonomics
- A Media/Information Fast
- Workaholism
- Environmental Cleanliness and Clutter Scale

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>

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