

## Surroundings Overview, Part I

Humans have survived over the generations because we were closely attuned to the world around us. It is important to do our “inner work,” but we must balance that with being attuned to our external world, our surroundings, as well. Surroundings, though not often featured in clinical discussions, is an important aspect of self-care in the Circle of Health. Topics related to surroundings, which can inform Personal Health Plans (PHPs) include where we live, where we work, and how the external world affects our emotions. Other topics include avoiding toxins, spending time in nature, and seeking health care in facilities that are truly healing spaces. This overview builds on Chapter 6 of the US Veterans Health Administration’s [Passport to Whole Health](#).

### Key Points:

- Research in the field of epigenetics indicates that our surroundings have the power to affect us at the level of our genes, through a variety of biochemical mechanisms.
- Optimal healing environments—the surroundings that are most conducive to health and well-being—require a balance between internal, interpersonal, behavioral, and external forces that influence our health.
- When you consider living spaces, keep topics like homelessness, clutter, neighborhood crime, pests, and the presence of weapons in mind, in addition to other specific attributes of someone’s home.
- Elements of a healthy work environment include good ergonomics, taking breaks, and an absence of workaholicism as well as good relationships with colleagues and fine-tuning the attributes of the work space itself.
- People are exposed to thousands of potential toxins every day. Through healthy lifestyle choices and avoiding exposures as much as they are able, they can decrease their overall toxic burden.
- Healing spaces can have a favorable impact on patient outcomes. Pay attention to lighting, noise, art, temperature, other factors that research indicates can support healing.

### Meet the Patient

*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 Andrea, a 35 year-old computer programmer who is being seen in your clinic for the first time. She arrives at her visit with a completed Personal Health Inventory (PHI), sent to her when she enrolled at the clinic. As you review Andrea’s PHI, you are struck by the following information.

She rates herself 5/5 on all the Vitality Signs:

<b>Physical Well-Being</b>				
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Miserable				Great
<b>Mental/Emotional Well-Being</b>				
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Miserable				Great
<b>Life: How is it to live your day-to-day life?</b>				
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Miserable				Great

She has a unique answer for the question designed to capture Meaning, Aspiration, Purpose (MAP):

**What is your mission, aspiration, or purpose? What do you live for?  
What matters most to you?**

Write a few words to capture your thoughts:

*I want to be good at everything I do. I want to take the best care of my body and mind and spirit, and I want to help others. I want to make a contribution in the world. Being in harmony is part of my spirituality, and I want to find it as much as I can.*

When asked to rate herself in terms of where she is now versus where she wants to be, Andrea gives herself a 4 out of 5 on every topic but one. On surroundings, she rates herself a 1 in terms of where she is now, with a rating of 5 in terms of where she wants to be. In addition, the final question on her PHI verifies for you that “Surroundings” is her highest priority for his PHP.

Are there any areas you would like to work on? Where might you start?

*I am a health nut - I go to the gym at the YMCA all the time. I eat like a body builder. I sleep 8 hours and have people I care about. But, thinking about it, my surroundings at work and home aren't great. My apartment makes me feel penned in, and I don't like being there. It's cluttered, and it is too noisy and messy. I don't get outside as much as I want, because I work so much. I like my job, but I have to sit at a computer a lot, and I am having problems with my wrists lately. I am really sensitive to paint fumes and other chemicals.*

Surroundings is not necessarily a topic that comes up in much detail during clinical training. How do you help Andrea create a health plan that focus on this aspect of her self-care?

## Introduction

Surroundings powerful influence 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. This includes the “Six Pernicious Influences”—heat, cold, wind, dampness, dryness, and summer heat—which are thought 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.*

The Biophilia Hypothesis asserts we are hard-wired to be closely attuned to the world around us. In part, because it was vital to our ancestors' survival, but we are still drawn to locations that allow us to thrive.<sup>1</sup> Our health is contingent not only on what takes place internally, but how we are influenced by our external world through the sensory information, the media, our interactions with others, weather and climate changes, what we eat and drink, etc.

The diagram in figure one, which zeroes in on the Surroundings circle in the Circle of Health, offers a framework for thinking about Surroundings and incorporating goals for that aspect of self-care.

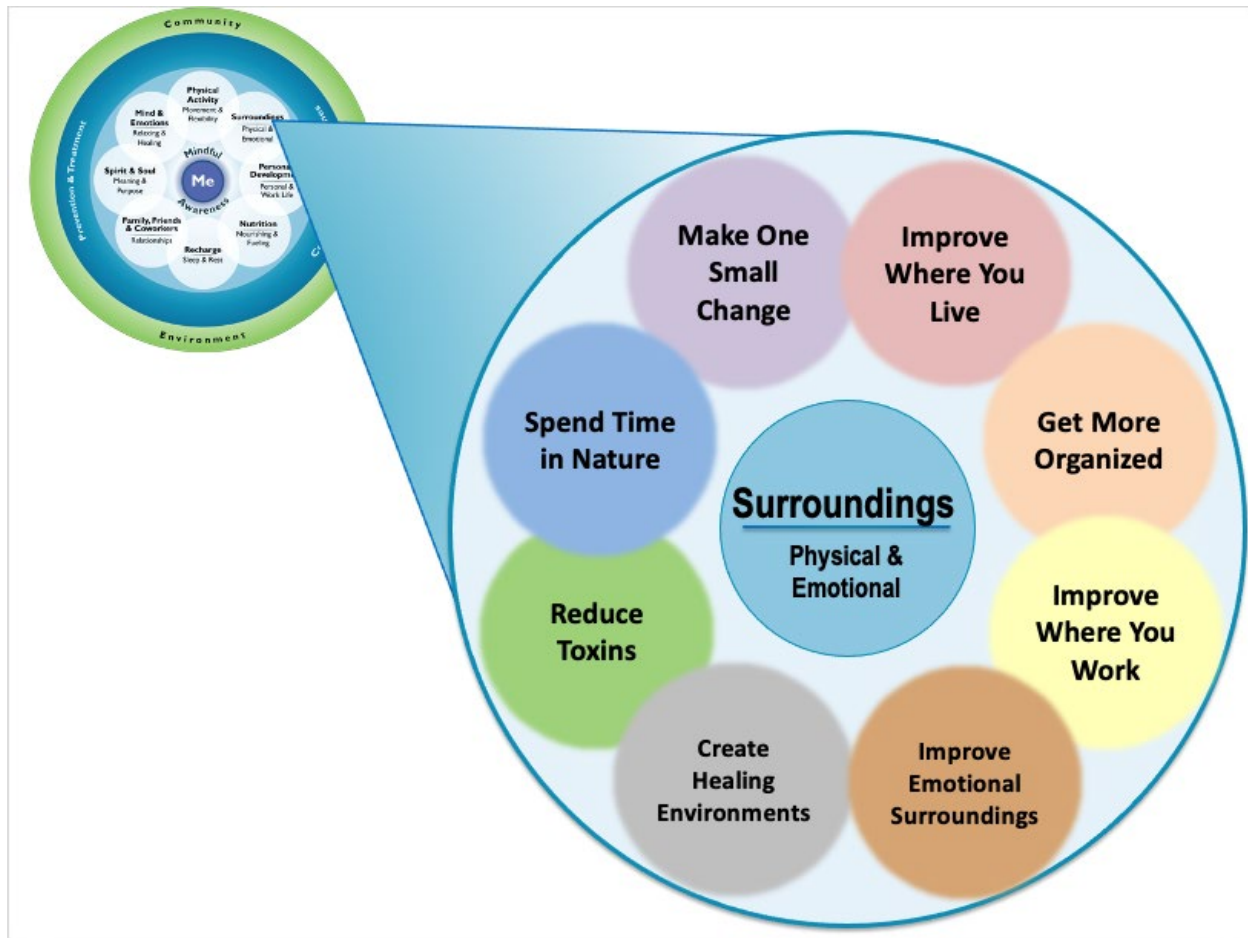


Figure 1. Subtopics included in the Surroundings Circle of Self-Care

After discussing some important general topics related to surroundings like epigenetics and optimal healing environments, this overview will explore the topics shown in Figure 1 in greater detail. For a general introduction to Surroundings, check out Chapter 6 of the Veterans Health Administration’s [Passport to Whole Health](#).

## Epigenetics

Environment is thought to contribute to as much as 80% of our risk of disease<sup>2</sup>. We know that in pairs of identical twins, one twin may express a trait or have a particular disorder, while the other does not. Why the difference? Each twin’s environment—his or her surroundings—plays a significant role. One twin may have had more sun exposure. One may have smoked, while the other one did not. One may have exercised more or have had less exposure to a particular toxin in the environment, such as cigarette smoke.

Epigenetics was first defined by the biologist Conrad Waddington in the 1950s as the study of how information, in addition to our DNA sequences, influences genetic expression. Over time, it has become increasingly clear just how susceptible our genes are to changes in our

surroundings. Epigenetic changes are tied to the development of cancer, occurring long before cancer actually develops. They also precede autoimmune diseases and type 2 diabetes.

Epigenetic information takes three different forms<sup>2</sup>. These include the following:

- **DNA methylation.** Methyl groups are attached to the nucleotide cytosine in the DNA. Methyl groups can be copied when DNA is and they can also be erased. More variability in DNA methylation is tied to more aggressive leukemias and lymphomas,<sup>3,4</sup> as well as risk of breast cancer.<sup>5</sup> There are also links to autoimmune diseases<sup>6</sup> and obesity.<sup>7</sup>
- **Histone modification.** Histones are proteins found in cell nuclei that serve as “spools” for DNA to wind around to form nucleosomes. Without them, it would not be possible for all of a cell’s DNA to fit into the cell nucleus. Histones can be modified in over 200 different ways, to alter the genetic expression of the DNA associated with them.
- **Changes of higher order chromosome structure.** An example of this type of epigenetic information is the way nucleosomes cluster together near a cell’s nuclear membrane. This type of epigenetic information gives a cell instructions based what type of a cell it is. In liver cells, certain genes are unwrapped from histones and activated, but they would not be in a skin cell or cell from other types of tissues.

Particularly fascinating has been epigenetic research indicating that environmental exposures can have intergenerational effects.<sup>2</sup> One’s environment not only influences their gene expression, but also the gene expression of their descendants. For example, under normal circumstances, agouti mice are genetically destined to have yellow fur and the mouse equivalent of obesity. However, this phenotype—how their genes are expressed—can be changed by what their mothers are exposed to while pregnant. A mouse can develop to be dark-furred and non-obese, despite its agouti genetic profile, if its mother is fed foods containing methyl donors (e.g. onions, garlic, beets) prior to giving birth.<sup>8</sup> In humans, mothers who smoke cause epigenetic changes in their babies.<sup>9</sup> Methylation changes in sperm cells have been found to carry down through generations in autistic fathers and their autistic sons.<sup>10,11</sup> Parents who experience starvation are more likely to have children with type 2 diabetes<sup>12</sup>. Prenatal stress a mother experiences is linked to the development of a variety psychological problems in her child<sup>13</sup>.

Epigenetics is currently one of the hottest areas of medical research out there. It may soon be possible to personalize the clinical management of a number of health issues; such as obesity, where eating patterns can be shaped based on a person’s personal epigenetic profile. The epigenetics of other disorders, such as PTSD,<sup>14</sup> mood disorders,<sup>15</sup> asthma,<sup>16</sup> and various cancers<sup>17</sup>, is also a promising area of research<sup>18</sup>.

Never underestimate the power of surroundings on health. Epigenetics research demonstrates numerous ways in which our environment changes us at the genetic level.

## Optimal Healing Environments

We have looked at the influence of Surroundings at the molecular level in terms of epigenetics. What about at the “macro” level? In 2004, the Samueli Institute put forth a series of monographs outlining what an “optimal healing environment” (OHE) is and how any home, workplace, institution, or larger group can move closer toward being one.<sup>19</sup>

There are eight key elements of an OHE, as follows:<sup>20</sup>

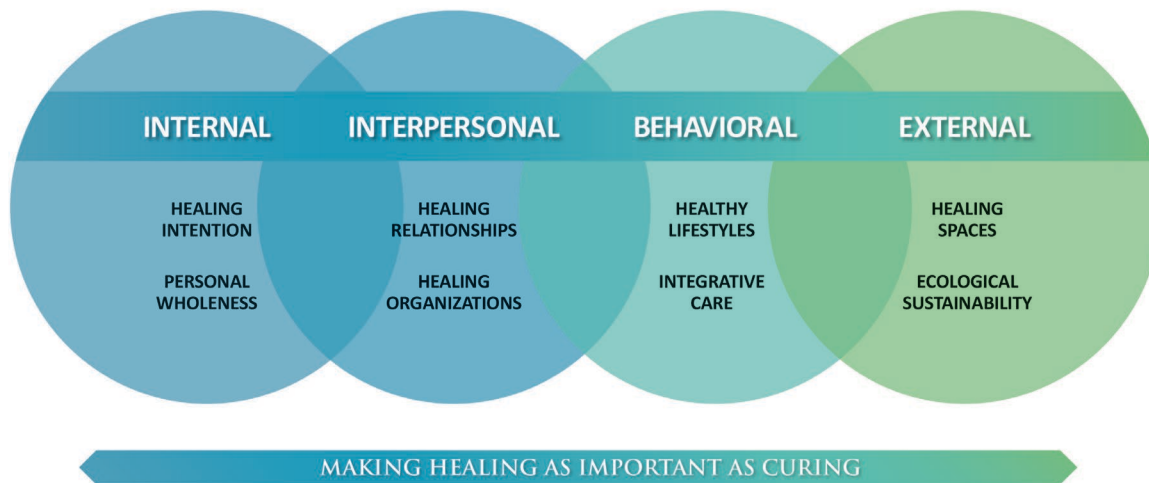
1. **Healing intention.** Conscious development of intention, awareness, and expectation, including the belief that healing can occur.
2. **Personal wholeness.** Self-care practices on the part of the clinician and the patient.
3. **Healing relationships.** A therapeutic alliance predicated on compassion, love, and the interconnectedness of all is of key importance.
4. **Healing organizations.** Institutions, communities, and social groups buy into creating/being OHEs.
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 supports the health of the larger environment—ecosystems, the climate, and the well-being of our planet as a whole.

The Samuelli Institute created a graphic that illustrates how these eight elements fit together (Figure 2). Note that many of these, including relationships, healthy lifestyles, and integrative care—in addition to surroundings—are also components of the Circle of Health.

How can you make your home and your workplace OHEs? How can you help your patients do the same? How do you support the creation of OHEs at the institutional level?

## OPTIMAL HEALING ENVIRONMENTS

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



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Figure 2. Optimal Healing Environments  
Reprinted with permission from Samuelli Institute<sup>20</sup>



## 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 point of view*.
  - What is it like to check in, to interact with a receptionist, or to be admitted through the emergency department?
  - Imagine the perspective of a patient sitting in your waiting area, about to have a visit with you, their clinician. What would this patient notice?
    - How is the lighting?
    - What colors are the walls and furnishings?
    - 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?
    - How appealing is the art on the walls?
    - Are there any natural elements (plants, windows, fountains)?
    - Is there a TV in the waiting room? What shows are likely to be on?
  - Ask the same questions about the spaces where patients meet with you, be it a hospital room, an exam room, an office, etc. What sort of impression does your practice space make? What is good about the space? Where is there room for improvement?
2. Now, consider the healing environment where your work *from your perspective*.
  - How do you feel about where you practice, in terms of the eight elements of an OHE listed above? Take a moment to consider how each one fits in for your Surroundings.
    - 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 situation 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 each day, or do you dread it?

What is one thing you could do right now to make your surroundings more healing, both for you and for patients?

## Integrative Health Tools

- [Informing Healing Spaces Through Environmental Design: Thirteen Tips](#)
- [Improving Work Surroundings Through Ergonomics](#)
- [A Media/Information Fast](#)
- [Healthy Work Habits: Avoiding Workaholism](#)

## Author

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