

# The Multiple Uses of Guided Imagery



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## KEYWORDS

- Guided imagery • Visualization • Complimentary medicine intervention

## KEY POINTS

- Guided imagery is a complimentary intervention that has been used for centuries.
- Guided imagery has multiple effects, including relaxation, stress reduction, anxiety reduction, immune system enhancement, and overall well-being.
- Guided imagery incorporates 5 main steps: assessing the issue, establishing a relaxed body position, using a focused breathing pattern, establishing a positive imagery environment, and beginning the “journey.”

With the United States facing a so-called opioid epidemic, it is important to identify and use therapies that reduce pain but that do not involve pharmacologic interventions. There are a variety of nonpharmacologic interventions that not only have been shown to ameliorate pain, and the perception of pain, but that have been shown to help patients' mood, decrease anxiety, enhance relaxation, support behavior modification, and improve the immune system. One method that has shown all of these modifications is the use of imagery. It is common to have patients who have engaged in mental imagery for a variety of reasons, because imagery takes on many forms. As such, it is important to know how the patients have used imagery, the reasons they have used imagery, and the expected outcomes. Understanding this intervention improves the care nurses offer their patients, because it allows them to comprehend more about their patients and their patients' values and beliefs.

Imagery is a nonpharmacologic intervention that can be accessed in a variable manner, and usually is inexpensive. There are a variety of methods that incorporate the use of imagery, but, regardless of the form, or name, the method typically involves the mental representation of a future situation, task, or event.<sup>1</sup> One of the more common forms of mental imagery is referred to as guided imagery. Guided imagery is sometimes referred to as guided meditation, visualization, mental rehearsal, or guided self-hypnosis. It can be as simple as a ski jumper's 10-second pause to consider the perfect ski jump and imagining how perfect it would feel to fly through the air and come to a perfect landing and slide. It can be more complicated to help individuals alter

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behavior, or reduce anxiety and stress, by imagining positive interactions and scenarios to a real or potentially distasteful or anxiety-producing personal interaction.

## GUIDED IMAGERY

Imagery is a technique that has been used in a variety of forms for centuries, even as far back as ancient Greek times. In the history of other cultures, the technique of guided imagery is a well-established therapeutic approach, as found in Chinese medicine and American Indian traditions. There are currently a variety of organizations that exist to help health care providers become imagery therapists, including certification programs in guided imagery.

Guided imagery is a mind-body technique that incorporates mental images to enhance an overall sense of well-being and to promote relaxation. In some cases, it involves the incorporation of visualization from direct imagery-based suggestion, or is the result of metaphor use and storytelling.<sup>2</sup> Guided imagery is based on the notion that the mind and the body are interrelated and can have bilateral interactions. As such, the brain is stimulated to envision an event in a positive and affirmative manner before the experience of the actual event. In essence, the individual is guided to develop an advantageous image mentally with a focus on the imagination to feel, see, hear, and smell the event as though it was real. It involves all of the senses, which is important because individuals learn differently and perceive differently; it is thought that only 55% of the population are primarily visually oriented, so the incorporation enriches the experience and the overall outcome that the individuals seek.

The individual's thoughts and imagination are focused and engaged toward a specific goal or outcome using a facilitator. The facilitator can be another person who is trained in guided imagery, or an audio tape or recording. Guided imagery can be used conjunctively with traditional interventions to specifically alleviate pain and/or to promote relaxation.<sup>2</sup> Through this process, individuals are mentally transported to a place where they feel safe and can be relaxed. The technique is easy to implement, not expensive, and not associated with adverse effects. Essentially, it is thought that the imagination of the individual is harnessed to overcome physiologic and psychological symptoms by the ability to send messages and information to the central nervous system to affect the body's physiologic processes.<sup>2</sup> Guided imagery is based on the principle of psychophysiology in that every thought results in a physiologic reaction, and a mental image invokes an associated emotion that connects the feeling state with the mind and body, which results in a physiologic change.<sup>3</sup>

## GUIDED IMAGERY RELATED TO PAIN AND HEALING

One of the many benefits of guided imagery is targeted to a patient's healing and relief from pain. Because there is national concern about the opioid epidemic, modalities to alleviate pain adjuvant to pharmacologic solutions have helped bring to the forefront a focus of complimentary and integrative health (CIH) strategies, including the use of guided imagery. There are several theories related to the workings of guided imagery and how it affects pain and healing. One theory behind the process by which guided imagery affects pain and healing can be linked to the psychoneurological theory and the gate control theory.<sup>4</sup> It is postulated that, when a person creates an image, the cerebral cortex of the brain is in turn activated. As that image is held, the limbic system becomes activated, which in turn creates changes in the autonomic nervous system. According to the gate control theory, which remains controversial, the stimulation of the cerebral cortex caused by the image competes with pain stimuli, which closes the theoretic pain gate. This process occurs in conjunction with the secretion of

neurotransmitters, which suppress pain transmission and support the inhibitory neurons in the secretion of natural opioids.<sup>4</sup> This theory is one theoretic hypothesis of how guided imagery works. This conjecture is difficult to support, as stated by King,<sup>4</sup> (2010) who conducted a thorough analysis of the effects of guided imagery on patients with cancer with pain. The inconsistencies among the studies in the analysis made it difficult to conclude that guided imagery should be recommended for all patients experiencing cancer pain.<sup>4</sup> The review consisted of small sample sizes, variations in the measurement of pain, different patient populations, and variations in guided imagery treatment times. Although the evidence is not strong or absolute, the analysis did conclude that guided imagery could be recommended as a potential aid in the relief of pain caused by cancer.

A controlled study by De Paolis and colleagues<sup>5</sup> (2019) had 104 randomized patients with advanced cancer using a combination of progressive muscle relaxation (PMR) and interactive guided imagery. Approximately one-third of patients with terminal cancer experience moderate to severe pain. These patients experience a myriad of emotions that affect psychological, affective, emotional, and spiritual aspects. It is also thought that these patients, as they become more preoccupied with their impending deaths, have catastrophic thoughts that have a tendency to amplify the perception of pain.<sup>6</sup> The purpose of guided imagery and PMR is thought to be to distract the patients from their perceptions of pain and physical deterioration, and to enhance their ability to control pain and, to some extent, their self-efficacy. The researchers had data showing that guided imagery had the ability to control pain and to improve the quality of life of patients with cancer and/or chronic pain associated with cancer.<sup>7-14</sup> This strong study of 104 randomized patients supported the efficacy of adjunct PMR and guided imagery in alleviating pain distress in patients with terminal cancer.<sup>5</sup>

In an effort to address the opioid crisis, a group of researchers examined common CIH approaches in US veterans with chronic musculoskeletal pain.<sup>15</sup> The nation's largest integrated health care system has been a leader in increasingly offering CIH therapies.<sup>15</sup> It was found that more than 27% of younger veterans with chronic musculoskeletal pain used CIH, including meditation, yoga, acupuncture, biofeedback, tai chi, hypnosis, and massage. Many of the subjects thought that yoga was for girls.<sup>15</sup> The study revealed that 4% used guided imagery to control their pain. Of note in this study, younger men and African American men were less likely to engage in CIH therapies than older white patients. These findings are similar to the general population.<sup>13</sup>

## **GUIDED IMAGERY AND ITS IMPACT ON PAIN, ANXIETY, AND QUALITY OF SLEEP**

A randomized 2-group experimental research design was used to study the effect of guided imagery on the pain, anxiety, and perceived quality of sleep of patients with fibromyalgia.<sup>16</sup> The study was supported by previous findings of another study showing that guided imagery improved overall quality of life.<sup>17</sup> The 2-group randomized study explored the impact of guided imagery using a program that was based on an audio program of relaxation guided imagery audiotapes. The intervention group had sessions on how to use the guided imagery audio program, and group discussions, and were asked to use the audio guided imagery CD at least 4 or 5 times per week over an 8-week period. The control group received 3 relaxation sessions of 1.5 hours, along with data collection.

At the beginning of the study, there were no significant differences between the two groups with regard to trait anxiety, state anxiety, sleep quality (except duration), pain at sensitive areas, or effects of fibromyalgia as measured by the Fibromyalgia Impact Questionnaire (FIQ).<sup>16</sup> The results of the study indicated that guided imagery

relaxation in patients with fibromyalgia can be a favorable therapy when managing pain at tender points, anxiety, sleep, quality of life, and self-efficacy.<sup>16</sup>

### GUIDED IMAGERY AND FOOD CRAVINGS AND CONSUMPTION

Guided imagery has also been studied as a method to reduce food cravings, and achieve behavioral modification of food consumption.<sup>18</sup> In 1 study, the investigators used guided imagery and cognitive defusion together with a study group of 127 women who reported experiencing at least 1 food craving per day. The participants were allocated to 3 groups. One group received cognitive defusion (n = 42), 1 received guided imagery (n = 39), and 1 served as the control group (n = 37).<sup>18</sup> Through their vigorous research process, the investigators discovered that cognitive defusion and guided imagery reduced the subjects' craving intensity and frequency, but these interventions also reduced craving-related food consumption.<sup>18</sup> There was no significant difference between guided imagery and cognitive defusion in reducing cravings or consumption.

### GUIDED IMAGERY AND IMMUNE SYSTEM ENHANCEMENT

Trakhtenberg<sup>19</sup> (2008) conducted an extensive and critical review of the impact of guided imagery on the immune system. The review supports the use of guided imagery in the reduction of stress. In turn, reduction of stress enhances the immune system as measured in the literature primarily by white blood cell count. The author concludes

#### Box 1

#### The impact of guided imagery on the immune system

There is a relationship among guided imagery, stress and relaxation, and immune function.

Guided imagery as a relaxation intervention can reduce stress and allow the immune system to function more effectively.

Changes in immune system efficacy are correlated with either an increase or decrease in white blood cell count or with changes in neutrophil adherence.

Stress and relaxation may contribute to changes in the immune system when measured qualitatively by nature of neutrophil adherence, or quantitatively by white blood cell count.

Cell-specific imagery may predict which white blood cell category changes will occur.

An active cognitive exercise initiated in the beginning stages of guided imagery is associated with decreased neutrophil adherence.

Relaxation without an active imagery application is associated with increases in neutrophil adherence.

Decreases in white blood cell count occur only in early stages of guided imagery and/or relaxation interventions.

After 4 to 5 weeks of guided imagery and or relaxation, white blood cell counts increase.

Decreases and increases in white blood cell counts could be caused by the effect of margination, which means that the imagining training may be changing the movement of the white blood cells in the body, as opposed to the imagery sessions themselves and the white blood cell count overall not changing.

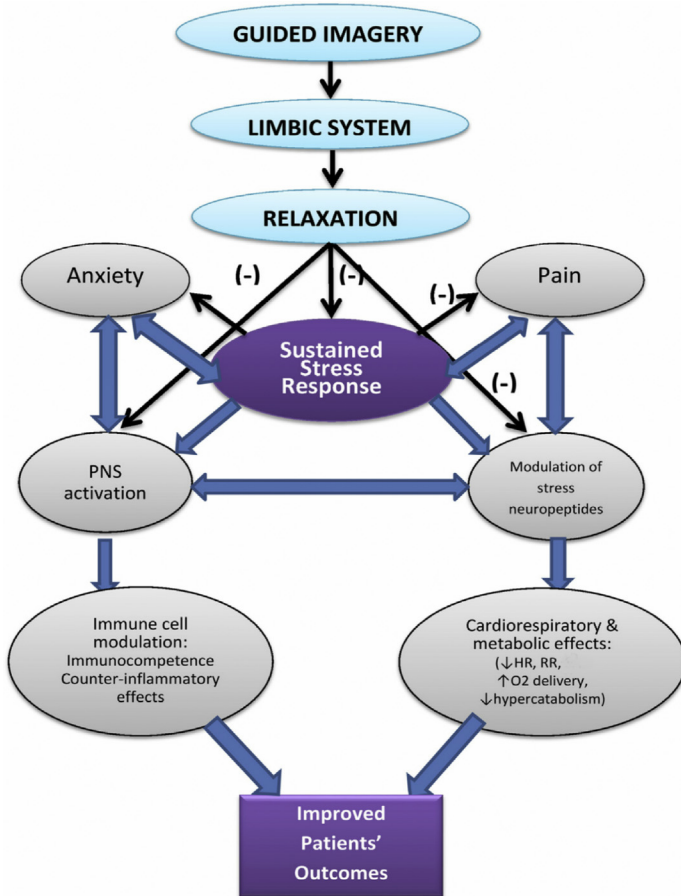
The change in white blood cell count may occur earlier in persons who present with a depressed white blood cell count and later in persons with normal white blood cell counts.

*Adapted from Trakhtenberg, E. The effects of Guided Imagery on the Immune System: A Critical Review, International Journal of Neuroscience, (2008); 118:839-855 with permission.*

that more long-term studies of guided imagery are needed to fully understand the impact of guided imagery on the immune system.<sup>19</sup> However, information gleaned from the review is extensive and has many implications for patient care. **Box 1** presents an overview of Trakhtenberg's<sup>19</sup> findings.

### OVERVIEW OF GUIDED IMAGERY MECHANISM IN CRITICAL CARE

Although guided imagery is commonly seen in outpatient and noncritical in-patient settings, there are cases where guided imagery has been shown to be beneficial in critical care.<sup>20</sup> A review explored the effects of guided imagery on critical illnesses. The outcome measures seen in the review included pain, anxiety, hemodynamic measurements, stress neuropeptides, length of patient stay, sleep quality, inflammatory markers, patient satisfaction, and overall cost of care. The selection criteria allowed for 10 studies, which included 1391 critically ill patients. In any review there are limitations with inconsistent measurements, missing or incomplete data, or variations in the data used.



**Fig. 1.** Synthesis of mechanism involved in guided imagery effects. HR, heart rate; RR, respiration rate. (From: Hadjibalassi M, et al. The effect of guided imagery on physiological and psychological outcomes of adult ICU patients: A systematic literature review and methodological implications, *Aust Crit Care* (2018);31(2):73-86.)

The outcomes of the review were favorable in supporting guided imagery as an intervention in critical care. Effects were primarily seen in the reduction of pain, anxiety, and length of stays primarily in cardiovascular patients with moderate to high support.<sup>20</sup> Quality of sleep, patient satisfaction, and cost of care were difficult to support because of the limited number of studies that included these markers. The reviewers identify that there are other aspects related to critical care patients that could be included in future studies related to the impact of guided imagery on critically ill patients. For example, duration of mechanical respiration, rate of complications, stress neuropeptide levels, and immune measures warrant exploration.<sup>20</sup> The review lent itself to a depiction of the scheme of the proposed mechanisms of guided imagery with regard to critical illness (**Fig. 1**). Guided imagery acts early in the pathophysiologic cascade in which an exaggerated stress situation results in unfavorable effects in critical illness by activating the relaxation response. This response counterbalances the exaggerated stress response in the limbic system. It also activates the parasympathetic nervous system signaling and activating stress neuropeptides. Through these complex pathways, immune, cardiorespiratory, and metabolic responses are regulated, which results in improved patient outcomes.

### STEPS USED IN GUIDED IMAGERY

This article presents an overview of guided imagery and the impact it has on patient care. There are variations in the process, as discussed, and, with advancing technology, the ability to access patients has become more efficient through telemedicine.

Step 1: Assessing the problem	Establish the reason for the individual to engage in guided imagery. Determine whether the point is to reduce pain, create relaxation, reduce stress, enhance sleep, or reduce anxiety. Establish with the individual, or yourself, places that are considered "happy"
Step 2: Assume a relaxed position	Typically lying on the back with hands at the sides is a generic relaxation position. If a person finds this positioning painful, it is important to explore other options. Identify the position that the individual finds most comfortable for sleep. The use of a pillow or warm blanket is sometimes helpful
Step 3: Controlled breathing pattern	Once a comfortable position is established, the focus turns to breathing. Deep breathing alone has been shown to have numerous mental and health benefits. Breathing through the nose and out the mouth is recommended. Count up to 3 s while inhaling and 5 s while exhaling. Use an easy tempo for the individual and keep a focus on the breathing throughout the session
Step 4: Create an imagery environment	At this juncture, create the environment that was discussed and decided on earlier to deepen the relaxation. Within this environment, incorporate all of individual's senses
Step 5: Begin the journey	Once the patient is relaxed and the imagined environment is created, it is then time to guide the experience. This guidance is contingent on the desired outcome of the session

*Adapted from* Integrative Pain Science Institute. 5 Steps to easing pain with guided imagery. <https://www.integrativepainscienceinstitute.com/guided-imagery-5-steps/> Accessed 5/17/2020; with permission.

There are several associations that offer education, training, and certification to persons wish to become guided imagery therapists. For the elimination of pain, there are 5 common steps to conducting guided imagery. **Table 1** reviews those steps.

## SUMMARY

Guided imagery is a therapeutic technique that has been used for centuries. As science and research have progressed, the efficacy of guided imagery has become better understood and has been used in practice with positive outcomes. Techniques vary because guided imagery can be done alone by individuals, with a guided imagery therapist in an individual session, in group sessions, or in remote sessions with the use of technology. With the further development of virtual reality technologies, the possibilities of guided imagery interventions become innumerable. Telemedicine is already a method of engaging a guided imagery therapist. Virtual technology has the capacity to help individuals create their safe places and virtually transport the individuals to those safe places. There remain many questions that warrant further exploration as they relate to patient outcomes. Research that standardizes measurements, methods, and controls will enhance the support of guided imagery.

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