

# The Use of Healing Touch in Integrative Oncology

Laura K. Hart, RN, PhD, CHTP/I, Mildred I. Freel, RN, MEd, CHTP/I,  
Pam J. Haylock, PhD, RN, and Susan K. Lutgendorf, PhD

The use of complementary therapies by patients with cancer has become increasingly prevalent; as a result, oncology nurses find themselves needing to understand those therapies and the evidence-based support for their use. This article describes the integrative use of the biofield therapy healing touch in conjunction with the chemoradiation received by patients with cervical cancer (stages IB1 to IVA) as reported in a 2010 research study. Findings indicated effects on the immune response and depression in healing touch recipients compared to patients receiving relaxation or standard care. Specifically, healing touch recipients demonstrated a minimal decrease in natural killer cell cytotoxicity over the course of treatment, whereas the cytotoxicity of patients receiving relaxation therapy and standard care declined sharply during radiation. Healing touch recipients also showed decreases in depressed mood compared to relaxation therapy and standard care recipients. The findings suggest that appropriate integration of complementary modalities into oncology care can enhance the impact of conventional care by putting patients in the best condition to use their innate healing resources.

**G**rowing evidence supports the potential benefits to patients with cancer when the best conventional care is combined effectively with complementary approaches (Deng & Cassileth, 2005; Deng et al., 2007). Patients want more information about the potential benefits of complementary therapies; in addition, they believe access to those therapies should be included in standard cancer care (Coss, McGrath & Caggiano, 1998). Complementary or integrative and alternative medicine (CAM), including healing touch, has increased in popularity (see Figure 1). Therefore, nurses need to understand integrative oncology (Decker & Lee, 2010). This article provides information regarding the biofield modality healing touch, used as an integrative therapy in a study of women receiving treatment for cervical cancer, so that oncology nurses will have greater knowledge from which to answer inquiries about biofield therapies.

Cervical cancer is the third most common cancer in women worldwide (Arbyn et al., 2011). Although chemoradiation treatment potentially is curative (Eifel et al., 2004), cervical cancer survivors frequently report acute and late side effects, compromised

## At a Glance

- ◆ Patients have expressed interest in complementary therapies and believe access to those interventions should be included in standard cancer care.
- ◆ The benefits of healing touch for patients with cancer may include immune-preserving effects, improved mood, and enhanced cognitive ability.
- ◆ By supporting patients' self-healing resources, nurses may enhance the positive outcomes of allopathic treatments such as chemoradiation.

quality of life, and psychological distress (Hodgkinson et al., 2007; Vistad, Fossa, & Dahl, 2006). In addition, Rose et al. (1999) found that among patients with locally advanced cervical cancer treated with cisplatin-based chemoradiation (N = 526), 75% reported gastrointestinal adverse effects, 37% experienced leucopenia, and 8% had neuropathy and cutaneous adverse effects.

Laura K. Hart, RN, PhD, CHTP/I, and Mildred I. Freel, RN, MEd, CHTP/I, both are associate professors emeriti in the College of Nursing at the University of Iowa in Iowa City; Pam J. Haylock, PhD, RN, is the chief executive officer of the Association for Vascular Access in Medina, TX; and Susan K. Lutgendorf, PhD, is a professor in the Department of Psychology at the University of Iowa. The authors take full responsibility for the content of the article. The research discussed in this article was funded, in part, by National Institutes of Health (NIH) grant #R21AT0095801, NIH grant #P20AT7560, and grant #UL1RR024979 from the National Center for Research Resources, NIH. The content of this article has been reviewed by independent peer reviewers to ensure that it is balanced, objective, and free from commercial bias. No financial relationships relevant to the content of this article have been disclosed by the independent peer reviewers or editorial staff. (Submitted December 2010. Revision submitted January 2011. Accepted for publication February 1, 2011.)

Digital Object Identifier: 10.1188/11.CJON.xxx-xxx



**Figure 1. Reiki Therapy**

Note. Copyright 2011 by iStockphoto.com/gmnicholas.

A prospective randomized, clinical trial (Lutgendorf et al., 2010) reported the effects of healing touch versus relaxation therapy versus standard care for 60 women being treated with chemoradiation for a new diagnosis of cervical cancer (stages IBI to IVA cervical squamous cell carcinoma or adenocarcinoma). All patients received standard medical treatment including weekly platinum-based chemotherapy, external beam radiation (total dose about 45–50.4 Gy), and brachytherapy. Treatment generally lasted six weeks. Patients receiving healing touch showed relative preservation of their natural killer (NK) cell activity over the course of treatment, whereas the NK cell activity of patients receiving relaxation therapy and those in the standard care group showed significant declines. NK cells are large granular lymphocytes that can identify and destroy killer cells without being previously activated by antigen-presenting cells such as T or B cells; therefore, NK cells are an important line of defense, particularly in immune surveillance for metastases (Herberman, 1986). As NK cells play an important role in the immune response to cervical cancer (Textor et al., 2008), the immune-preserving effects of healing touch may be clinically significant. Greater NK cell activity has been linked with progression-free survival in patients with breast cancer treated with trastuzumab (Beano et al., 2008) and with long-term survival in patients whose gastrointestinal stromal tumors were treated with imatinib (Menard et al., 2009), suggesting a link between NK activity and survival for other cancers.

All three groups in Lutgendorf et al. (2010) entered treatment clinically depressed. By the end of their six weeks of treatment, the healing touch recipients had moved out of clinical depression, showing significantly greater decreases in two different indicators of depressed mood compared to the relaxation therapy and standard care recipients, whose scores still indicated levels of clinical depression. For a full report of this study, see Lutgendorf et al. (2010); the study design will be discussed in depth later in this article. Instrumentation for assessment of biofields is not well developed; therefore, biofields were not measured in Lutgendorf et al. (2010). The following discussion is based on proposed mechanisms of action.

## Energy Therapies in Complementary and Alternative Medicine

CAM modalities are used commonly by patients with cancer and cancer survivors, with several studies reporting about 50% of women with cancer use CAM modalities (Fasching et al., 2007; Navo et al., 2004; Wyatt, Sikorskii, Wills, & Su, 2010); some reports of CAM use are as high as 80% (Boon, Olatunde, & Zick, 2007). Patients with cancer who use CAM modalities more often are women, are having surgery or chemotherapy, are experiencing substantial symptoms (Fouladbakhsh, Stommel, Given, & Given, 2005), are well-educated, and report higher incomes (Alferi, Antoni, Kilbourn, & Carver, 2001). Referring to alternative modalities as *complementary* indicates that they are being used in conjunction with conventional therapy. When the modalities are considered *integrative*, they are being incorporated into the care delivery of the medical system.

### Overview of Biofield Therapies

According to the National Center for Complementary and Alternative Medicine ([NCCAM], 2010), biofield-based modalities involve two types of energy fields—those that can be measured (veritable) and those that have yet to be measured (putative). Veritable energy includes those with specific, measurable wavelengths and frequencies, such as mechanical vibrations of sound, visible light, magnetic fields, laser beams, and radiation from the electromagnetic spectrum. The use of veritable energy fields in medicine has been well documented (Fredericks, Nepola, Baker, Abbott, & Simon, 2000; McLeod & Rubin, 1992; Rubin, Donahue, Rubin, & McLeod, 1993; Markov, Williams, Cameron, Hardman, & Salvatore, 2004; Salvatore, Harrington, & Kummet, 2003). For example, pulsed electromagnetic fields are used commonly in medical practice to enhance healing of bone fractures and to stimulate bone formation (Fredericks et al., 2000; McLeod & Rubin, 1992; Rubin et al., 1993). The concept of the presence of electromagnetic fields (putative energy) underlying the patterns and organization of biologic systems has existed in the literature since the 1970s (Burr, 1972; Tiller, 1977) and has been a basic tenant of medical systems such as traditional Chinese medicine and ayurvedic medicine for centuries (NCCAM, 2010). The life force, referred to as *prana* in ayurvedic medicine or *qi* in Chinese medicine, is an example of putative energy (Dale, 2009; NCCAM, 2010). The human energy field, or *biofield*, refers to veritable and tangible as well as putative and subtle forms of energy (NCCAM, 2010).

### Biofields in Nursing Practice

Putative energy fields have been described in nursing theory. Rogers (1970, 1980, 1986, 1987, 1988), nursing professor and theorist, developed a conceptual system proposing that energy fields are fundamental units of human beings and their environment. The basic premise of Rogers's theory is that all living organisms are sustained by universal life energy. Health is compromised when a blockage or deficit exists in the flow of energy (Meehan, 1992). In 1984, the North America Nursing Diagnosis Association added "energy field disturbance" to its list of nursing

diagnoses because (a) it represents a specific nursing theory, the human energy field theory, and (b) the intervention requires specialized instruction and supervised practice (Carpenito-Moyet, 2009). The diagnosis of energy field disturbance is a state in which a disruption of the flow of energy surrounding a person's being results in a disharmony of the body, mind, and spirit (Carpenito-Moyet, 2009).

The energy field disturbance diagnosis supports the holistic perspective of health. According to this approach, feelings, attitudes, and emotions are not isolated events, but are translated into bodily changes that simultaneously affect all parts of the body. Pain and illness are valuable signals of an internal conflict that needs to be addressed. Brant and Wickham's (2004) *Statement on the Scope and Standards of Oncology Nursing Practice*, which includes outcomes with regard to physical, psychosocial, and spiritual aspects of cancer care, also supported this holistic perspective of health.

The emerging evidence-based links between biofields and scientific knowledge have been described by Oschman (2000), a cellular biologist, physiologist, and authority on energy and complementary medicine. According to Oschman (2000),

The concept of life energy and healing energy . . . [has] not been connected by a series of simple logical steps to generally accepted knowledge. However, scientists have established more than adequate measureable and logical connections between biological energy fields and generally accepted scientific knowledge (pp. xiii).

### Proposed Mechanisms for Biofield Effects

Practitioners of therapies such as healing touch, therapeutic touch, Reiki, and qigong are hypothesized to modulate the human biofield by removing blockages (Berden, Jerman, & Skarja, 1997; Chen & Liu, 2004; Grad, 1963, 1964; Kiang, Marotta, Wirkus, Wirkus, & Jonas, 2002; NCCAM, 2010; Oschman, 2000; Wirth, Brenlan, Levine, & Rodriguez, 1993; Wirth & Cram, 1993; Zimmerman, 1990). Effects of biofield therapies on disease processes may occur via a variety of pathways, both direct and indirect. For example, biofield therapies may induce the relaxation response, which results in blunting of the neuroendocrine stress response. Stress-related information is processed via the central nervous system and ultimately results in activation of the sympathetic nervous system (producing norepinephrine and epinephrine) and the hypothalamic-pituitary-adrenal axis, which produces cortisol (Chrousos, 2009). The relaxation response results in blunting of those neuroendocrine stress hormones and may enhance immune function and other bodily systems (Dusek et al., 2008; Kiecolt-Glaser et al., 1995). Elicitation of the relaxation response may occur through specific biofield manipulations, as well as by the provision of social support and hope. Neuroendocrine stress hormones have been shown to enhance tumor growth, angiogenesis, and invasion, and to impair the cellular immune response (Antoni et al., 2006; Sood et al., 2006; Thaker et al., 2006). Therefore, to the extent that biofield therapies can diminish the neuroendocrine stress response, a variety of cancer growth processes may be blunted and immunity may be supported. More direct mechanisms would include pathways not mediated by the neuroendocrine stress response. For example, biofield therapies are believed to

release blocks to circulation of vital energy within the patient. Modulation of a person's energy to recreate flow and balance throughout the body affects multiple systems and ultimately supports greater resistance to disease and more rapid recovery. Those direct and indirect mechanisms also could work together (Lutgendorf & Mullen, 2008).

### Dynamics of the Biofield

The biofield is believed to be composed primarily of the aura, a set of energy bands that graduate in color and frequency as they move outward from the physical body (Dale, 2009). The putative subtle energy centers that convert fast-moving energy obtained from the environment into slow moving energy in the body are referred to as *chakras*. Each of the auric fields partners with a chakra, or energy center. The chakras serve as collection and transmission centers for subtle and biophysical energy. The chakras interface with the body's energy meridians and conduits called *nadis* (in ayurvedic medicine), which disperse life energy throughout the body, interfacing between the body's subtle energy structures and physical organs (Dale, 2009).

### Healing Touch as a Nursing Intervention

Healing touch is categorized by NCCAM (2010) as a biofield therapy. The goal in healing touch is to restore harmony and balance in the patient's energy system, placing him or her in a position to self-heal. Practitioners of healing touch believe that it complements conventional health care by supporting a patient's innate healing ability. The healing touch modality is purported to influence the human energy system, specifically the energy fields that surround the body, and the centers that control the flow of energy from the fields to the physical body. The noninvasive, nonmanipulative techniques of healing touch are believed to use the electromagnetic field of the practitioner's hands to clear, energize, and balance the human and environmental energy fields and, therefore, affect physical, emotional, mental, and spiritual health and healing (Mentgen, 2001). Healing touch uses a heart-centered caring relationship in which the practitioner and patient are believed to come together energetically to facilitate the patient's health and healing. Research findings, although limited, have noted significant reduction in pain, distress, and fatigue (Post-White et al., 2003); improved quality of life, emotional role functioning, and mental health (Cook, Guerrerio, & Slater, 2004); and among hospice patients, improved mood, relaxation, and pain relief (Ziembroski, Gilbert, Bossarte, & Guldberg, 2003). Reports from practitioners indicate that the benefits of healing touch include acceleration of wound healing, relief of pain, reduced anxiety, relaxation, and enhanced spiritual development (Mentgen, 2001).

### Cervical Cancer Healing Touch Study

To avoid interfering with the therapeutic effect of chemotherapy, the relaxation therapy and healing touch sessions in Lutgendorf et al.'s (2010) study were not provided until at least 24 hours following participants' chemotherapy treatment. Therefore, only four sessions per week were provided, usually on Tuesday through Friday. Sessions occurred immediately following radiation (usually within 10 minutes) in a quiet room, initially in the clinical research



center and subsequently in the radiation oncology suite. Healing touch sessions (about 25 minutes) were conducted by nurses with at least 10 years' experience as certified healing touch practitioners. The sessions included five specific healing touch techniques to clear, balance, and energize the energy flow of the body, along with supplemental techniques as needed (see Figure 2). For maximum efficiency, the healing touch sessions generally were provided by a team of two practitioners (64% of sessions). The relaxation therapy sessions (about 25 minutes) were conducted by a trained research assistant or graduate student. A scripted, standardized relaxation intervention, adapted from previously used protocols (Antoni, 2003), included passive progressive relaxation, autogenic relaxation, relaxation with nature imagery, and relaxation with imagery of a patient-selected special place.

## Healing Touch Techniques Used

**Practitioner preparation:** At the initiation of each session, the healing touch practitioners moved into therapeutic presence by centering through directing awareness inward and operating from heart-centered decisions as evidenced by the presence of caring and compassion (Freel & Hart, 1999). After the practitioners centered by turning their attention inward and grounded by aiming to become connected with the earth's energy, the intention of the work (to support the patient's healing, particularly the healthy function of her immune system) was set. Focused intent is the act of using the conscious experience to define a set of new experiences, realities, or outcomes. Intent is believed to initiate a flow of subtle energy to directly or indirectly influence desired outcomes (Barlett, 2007). Studies have suggested that human intent is a potent healing force (McTaggart, 2002).

**Magnetic connecting and clearing:** The practitioners noted that after radiation, the physical bodies of the patients had to be reconnected with their energy fields. The practitioners used their hands to pull or rake the energy field that had moved above the head back into the body. The procedure usually took 10–12 passes to bring the field and physical body back together. Then, the lower portion was raked back into the body, which usually

only took a few passes. When the field was again reconnected, the patients' faces turned pink, their eyes became bright again, and their proprioception returned. Many participants could inform the practitioners when this happened and often described it as "becoming themselves again." At least 30 passes were made as the practitioners' hands helped clear each participant's electromagnetic field, allowing the body's energy flow to reestablish.

**Chakra connection:** The practitioners reconnected the energy centers (i.e., chakras) to reestablish the energy flow through the body's channels. This was done by placing the hands sequentially on each of the minor chakras of the joints, starting with the soles of the feet, and moving up the body to the hips. Then the joint chakras were connected to four major energy centers (root, sacral, solar plexus, and heart) through the center of the body. The chakras of the arms then were connected, as with the legs, sequentially from the hands to the shoulders and then to the major centers in the throat, forehead, and crown. When those centers were connected and balanced, the energy flow was felt in the practitioner's hands as a symmetrical pulsing, and the participants were relaxed.

**Liver drain:** The platinum-based chemotherapy agent was eliminated through the liver; therefore, an energetic siphon was used to accelerate the exit of chemotherapy-related toxins. The practitioner's left hand was placed over the liver and the right hand was held lower than the left hand. Energy then flowed from the left hand over to and out of the right hand. The same procedure was applied to the liver meridian on the right foot, between the big and second toe. On the day after chemotherapy treatment, the liver drain usually took three to four minutes. On subsequent days, draining from the liver took less time (one to two minutes), but draining from the liver meridian took longer and had more intensity. Once the liver and liver meridian were cleared, those structures were reenergized by reversing the siphon.

**Mind clearing:** The cranial and spinal energetic flow was reconnected and rebalanced by placing the finger tips on a specific sequence of points on the head and base of the head to reconnect energetic flow. The energy patterns flowed up the spine to the cranium or between the two hemispheres of the brain. Points held also included those around the eyes and at the temporomandibular joints, thyroid, and parathyroid. Patients became very relaxed with this technique and reported to the practitioners that their ability to think and see clearly improved.

**Supplemental techniques:** The previous five techniques were used with all healing touch recipients. In addition, three other energetic systems (marma points, tan tiens, and Hara line) were consistently found congested or broken. The Hara line, which extends through the center of the body and deep into the earth, is the vibratory life force (Brennan, 1993). The tan tiens are energy reservoirs connected to meridian channels, which support the energy systems of the body's organs (Cohen, 1997). In addition, marma points, according to the ayurvedic system, are energy points or vortices that influence organ function (Tuwaru, 1995). Attention was paid to those areas as necessary. Specific techniques were used when needed to address specific issues. For gastrointestinal symptoms such as loss of appetite, constipation, and diarrhea, the practitioner lightly massaged the gastrointestinal valve and sphincter reflex points. The menopausal symptom of hot flashes was treated by lightly massaging the pituitary reflex point. In addition, neuropathy

### Chakra Connection

A balancing technique to open and stabilize energy centers to enhance energy flow

### Liver(or Magnetic) Drain

A clearing technique to reduce energy congestion

### Magnetic Clearing

A clearing technique to remove congested energy, physical toxins, and emotional debris

### Mind Clearing

A technique to alter patterns to promote relaxation and mental focus

### Practitioner Preparation

Using a conscious experience of focused intent to ground and define a new set of outcomes

## Figure 2. Primary Healing Touch Techniques Used in the Cervical Cancer Study

Note. Based on information from Lutgendorf et al., 2010.

of the hands or feet was managed by raking the energetic field back into the physical part.

## Practitioner Observations of Patient Biofields

Lutgendorf et al.'s (2010) study provided an opportunity to experience the energetic impact of chemotherapy and radiation therapy on participants' biofields. The practitioners kinesthetically felt chemotherapy clogging the body's energy centers and channels. The participants often identified how they responded to the chemotherapy as "I feel ill or toxic," "My head doesn't work," "I have a film over my eyes," and "I can't think or remember things very well." The practitioners also felt how the radiation shattered the patient's energy fields, much like how a glass shatters when dropped. The energy field broke at the waist; the upper half of the field moved 24–36 inches above the participants' heads, and the lower half moved 12–24 inches below their feet. Within minutes of receiving radiation, participants looked pale, had glazed eyes, and experienced difficulty with balance and proprioception. In addition, participants frequently reported not knowing where their feet were without looking at them.

## The Essence of Nursing Interventions

Florence Nightingale wrote, "Nursing is putting the patient in the best condition for nature to act upon him" (Nightingale & Barnum, 1992, p. 75). The essence of nursing always has been nurturing, caring, and healing rather than curing. Curing is the process of eliminating the signs and symptoms of disease, whereas healing is the process of restoring balance to body, mind, and spirit (Dossey, 1995; Freil & Hart, 1999). Oncology nurses committed to creating models of healing might consider the advantages of integrative practices. Informed choice for nurses and patients is fundamental to decisions based on patients' interests and desires, and to providing the integrated, holistic care patients seek and are willing to purchase.

## Integrative Oncology Nursing

Changing perspectives regarding integrative modalities within the field of nursing and among the public can reframe them as conventional nursing care. The change can expand and enrich nursing's current practice models. Many state boards of nursing include biofield therapies such as healing touch within the scope of practice for RNs (local licensure and liability standards apply). For example, in 1998 the Iowa Board of Nursing stated,

Therapeutic touch and healing touch were within the scope of practice of the registered nurse when the nurse has the appropriate education and skill to perform the function. As with any nursing activity that requires specialized nursing knowledge and skill, the Board holds the individual nurse accountable and expects the nurse to personally possess current clinical competence to perform the act safely (p. 27).

Research is shifting toward evidence-based practice, which relies on outcome studies to identify the best available evidence to be used as the basis for clinical guidelines. Some of the challenges related to the integrative use of CAM therapies are the issues of documentation and integrative assessments, the best

### Literature

#### *Energy Medicine: The Scientific Basis* (Oschmann, 2000)

Presents evidence from multiple disciplines to explain the energetic exchanges that occur in medical therapies

#### *Handbook of Integrative Oncology Nursing: Evidence-Based Practice* (Decker & Lee, 2010)

Addresses the issues of integrative assessments, use of common therapies, symptom management, and the evidence surrounding common interventions

#### *Nurse's Handbook of Alternative and Complementary Therapies* (Kowalak et al., 2003)

Discusses more than 100 alternative and complementary therapies, as well as their impact on nursing practice

#### *Vibrational Medicine: The #1 Handbook of Subtle-Energy Therapies* (Gerber, 2001)

Explores the science of energies using a model based on Albert Einstein's physics of energy

### Organizations

#### Healing Touch International ([www.healingtouchinternational.org](http://www.healingtouchinternational.org))

Provides information regarding healing touch curriculum, certification, research funding and findings, and the status of specific practitioners

#### National Center for Complementary and Alternative Medicine (<http://nccam.nih.gov>)

Offers information and research on all complementary and alternative therapies, including healing touch

### Figure 3. Healing Touch Resources for Nurses

type of therapy for each patient's situation, and how to know or find out about the qualifications or preparation of the therapists. Therapist qualifications can be validated by professional organizations or endorsements of practitioner preparation (see Figure 3).

The use of integrative modalities, as shown by Lutgendorf et al. (2010), can provide ways to diminish adverse effects of allopathic treatment. By supporting patients' self-healing resources, the positive outcomes of allopathic treatments such as chemoradiation may be enhanced. The primary risk of complementary modalities is when they are used as alternatives or substitutes for conventional medical treatments, thereby risking disease progression.

## Conclusions

Community integrative care centers are emerging, and some conventional cancer treatment centers have adopted integrative cancer care departments and programs (Cassileth, 2002). However, complementary and integrative approaches to health care have outcome and process issues that require rigorous, ongoing, qualitative, and quantitative evaluation of short-term and long-term effects (Brazier, Cooke, & Moravan, 2008). Clinicians and researchers must continue to examine findings related to biofield-based therapies and determine whether and when those modalities provide helpful tools (Jain & Mills, 2010).

Oncology nursing is moving into a phase of care delivery articulated with multifaceted, high-tech delivery and documentation systems. However, oncology nurses should not let the appeal of

high-tech bioinformatics override nursing's primary mission. Appropriate integration of low-tech complementary care modalities has the potential to enhance the impact of conventional care by putting patients in the best condition for nature to act on them, as Nightingale advised (Nightingale & Barnum, 1992).

*The authors gratefully acknowledge Lauren Clevenger, BA, for editorial assistance with formatting and references.*

**Author Contact:** Susan K. Lutgendorf, PhD, can be reached at susan-lutgendorf@uiowa.edu, with copy to editor at CJONEditor@ons.org.

## References

- Alferi, S., Antoni, M.H., Kilbourn, K.M., & Carver C.S. (2001). Factors predicting the use of complementary therapies in a multi-ethnic sample of early-stage breast cancer patients. *Journal of the American Medical Women's Association*, 56(3), 120-123.
- Antoni, M.H. (2003). *Stress management intervention for women with breast cancer*. Washington, DC: American Psychological Association.
- Antoni, M.H., Lutgendorf, S.K., Cole, S.W., Dhabhar, F., Sephton, S., McDonald, P.G., . . . Sood, A.K. (2006). The influences of biobehavioral factors on tumour biology: Pathways and mechanisms. *Nature Reviews. Cancer*, 6, 240-248. doi:10.1038/nrc1820
- Arbyn, M., Castellsagué, X., de Sanjosé, S., Bruni, L., Saraiya, M., Bray, F., & Ferlay, J. (2011). Worldwide burden of cervical cancer in 2008. *Annals of Oncology*. Advance online publication.
- Bartlett, R. (2007). *Matrix energetics*. Hillsboro, OR: Beyond Words.
- Beano, A., Signorino, E., Evangelista, A., Brusa, D., Mistrangelo, M., Polimeni, M.A., . . . Matera, L. (2008). Correlation between NK function and response to trastuzumab in metastatic breast cancer patients. *Journal of Translational Medicine*, 6, 25-35.
- Berden, M., Jerman, I., & Skarja, M. (1997). A possible physical basis for the healing touch (biotherapy) evaluated by high voltage electrophotography. *Acupuncture Electrotherapeutics Research*, 22, 127-146.
- Boon, H.S., Olatunde, F., & Zick, S.M. (2007). Trends in complementary/alternative medicine use by breast cancer survivors: Comparing survey data from 1998 and 2005. *BMC Women's Health*, 7, 4-11.
- Brant, J.M., & Wickham, R.S. (Eds.). (2004). *Statement on the scope and standards of oncology nursing practice*. Pittsburgh, PA: Oncology Nursing Society.
- Brazier, A., Cooke, K., & Moravan, V. (2008). Using mixed methods for evaluating an integrative approach to cancer care: A case study. *Integrative Cancer Therapies*, 7, 5-17.
- Brennan, B.A. (1993). *Light emerging: The journey of personal healing*. New York, NY: Bantam Books.
- Burr, H.S. (1972). *The fields of life*. New York, NY: Ballantine Books.
- Carpenito-Moyet, L.J. (2009). *Nursing diagnosis: Application to clinical practice* (13th ed.). Philadelphia, PA: Lippincott, Williams and Wilkins.
- Cassileth, B.R. (2002). The integrative medicine service at Memorial Sloan-Kettering Cancer Center. *Seminars in Oncology*, 29, 585-588. doi:10.1053/sonc.2002.50009
- Chen, K.W., & Liu, T. (2004). Effects of qigong therapy on arthritis: A review and report of a pilot trial. *Medical Paradigm*, 1, 36-48.
- Chrousos, G.P. (2009). Stress and disorders of the stress system. *Nature Reviews. Endocrinology*, 5, 374-381.
- Cohen, K.S. (1997). *The way of qigong: The art and science of Chinese energy healing*. New York, NY: Ballantine Books.
- Cook, C.A., Guerrerio, J.F., & Slater, V.E. (2004). Healing touch and quality of life in women receiving radiation treatment for cancer. *Alternative Therapies in Health Medicine*, 10, 34-41.
- Coss, R.A., McGrath, P., & Caggiano, V. (1998). Alternative care: Patient choices for adjunct therapies with a cancer center. *Cancer Practitioner*, 6, 176-181.
- Dale, C. (2009). *The subtle body: An encyclopedia of your energetic anatomy*. Boulder, CO: Sounds True.
- Decker, G.M., & Lee, C.O. (2010). *Handbook of integrative oncology nursing: Evidence-based practice*. Pittsburgh, PA: Oncology Nursing Society.
- Deng, G., & Cassileth, B.R. (2005). Integrative oncology. *CA: A Cancer Journal for Clinicians*, 55, 109-116.
- Deng, G.E., Cassileth, B.R., Cohen, L., Gubili, J., Johnstone, P.A., Kumar, N., . . . Society for Integrative Oncology Executive Committee. (2007). Integrative oncology practice guidelines. *Journal of Society of Integrative Oncology*, 5, 65-84.
- Dossey, B.M. (1995). Dynamics of healing and the transpersonal self. In B.M. Dossey, L. Keegan, C.E. Guzzetta, & L.G. Kolkmeier (Eds.). *Holistic nursing: A handbook for practice* (2nd ed., pp. 39-60). Gaithersburg, MD: Aspen.
- Dusek, J.A., Otu, H.H., Wpohlhueter, A.L., Bhasin, M., Zerbini, L.F., Joseph, M.G., . . . Libermann, T.A. (2008). Genomic counter stress changes induced by the relaxation response. *PLoS One*, 3, E2576.
- Eifel, P.J., Winter, K., Morris, M., Levenback, C., Grigsby, P.W., Cooper, J., . . . Mutch, D.G. (2004). Pelvic irradiation with concurrent chemotherapy versus pelvic and para-aortic irradiation for high-risk cervical cancer. *Journal of Clinical Oncology*, 22, 872-880.
- Fasching, P.A., Thiel, F., Nicolaisen-Murmann, K., Rauh, C., Engel, J., Lux, M.P., . . . Bani, M.R. (2007). Association of complementary methods with quality of life and life satisfaction in patients with gynecologic and breast malignancies. *Supportive Care in Cancer*, 15, 1277-1284. doi:10.1007/s00520-007-0231-1
- Fouladbakhsh, J., Stommel, M., Given, B., & Given, C. (2005). Predictors of use of complementary and alternative therapies among patients with cancer. *Oncology Nursing Forum*, 32, 1115-1122.
- Fredericks, D.C., Nepola, J.V., Baker, J.T., Abbott, J., & Simon, B. (2000). Effects of pulsed electromagnetic fields on bone healing in a rabbit tibial osteotomy model. *Journal of Orthopaedic Trauma*, 14, 93-100. doi:10.1097/00005131-200002000-00004
- Freel, M.I., & Hart, L.K. (1999). *Nurse's handbook of alternative and complementary therapies*. Springhouse, PA: Springhouse.
- Grad, B. (1963). A telekinetic effect on plant growth. *International Journal of Parapsychology*, 5, 117-133.
- Grad, B. (1964). A telekinetic effect on plant growth II. *International Journal of Parapsychology*, 6, 479-485.
- Gerber, R. (2001). *Vibrational medicine: The #1 handbook of subtle-energy therapies* (3rd ed.). Rochester, VT: Bear and Company.
- Herberman, R.B. (1986). Natural killer cells. *Annual Review of Medicine*, 37, 347-352.
- Hodgkinson, K., Butow, P., Fuchs, A., Hunt, G.E., Stenlake, A., Hobbs, K.M., . . . Wain, G. (2007). Long-term survival from gynecologic cancer. *Gynecologic Oncology*, 104, 381-389.
- Iowa Board of Nursing. (1998). *Dec. 10, 1998 minutes of the Iowa Board of Nursing*. Des Moines, IA: Author.
- Jain, S., & Mills, P.J. (2010). Biofield therapies: Helpful or full of hype? *International Journal of Behavioral Medicine*, 17, 1-17.
- Kiang, J.G., Marotta, D., Wirkus, M., Wirkus, M., & Jonas, W.B. (2002). External bioenergy increases intracellular free calcium concentration and reduces cellular response to heat stress. *Journal of Investigative Medicine*, 50, 38-45.



- Kiecolt-Glaser, J., Glaser, R., Williger, D., Messick, G., Sheppard, S., Ricker, D., . . . Bonnell, G. (1995). Psychosocial enhancement of immunocompetence in a geriatric population. *Health Psychology, 4*, 25-41.
- Kowalak, J.P., Chonhan, N.D., & Follin, S.A. (Eds.). (2003). *Nurse's handbook of alternative and complementary therapies*. Philadelphia, PA: Lippincott Williams and Wilkins.
- Lutgendorf, S., & Mullen, E. (2008). Energy medicine in oncology settings. In D. Abrams & A. Weil (Eds.), *Integrative oncology* (pp. 341-376). Oxford University Press.
- Lutgendorf, S.K., Mullen-Houser, M.A., Russell, D., Degeest, K., Jacobson, G., Hart, L., . . . Lubaroff, D.M. (2010). Preservation of immune function in cervical cancer patients during chemoradiation using a novel integrative approach. *Brain, Behavior, and Immunity, 24*, 1231-1240. doi:10.1016/j.bbi.2010.06.014
- Markov, M.S., Williams, C.D., Cameron, I.L., Hardman, W.E., & Salvatore, J.R. (2004). Can magnetic fields inhibit angiogenesis and tumor growth? In P.J. Rosch & M.S. Markov (Eds.), *Bioelectromagnetic medicine* (pp. 625-636). New York, NY: Marcel Dekker.
- McLeod, K.J., & Rubin, C.T. (1992). The effect of low-frequency electrical fields on osteogenesis. *Journal of Bone and Joint Surgery, 74*, 920-929.
- McTaggart, L. (2002). *The field: The quest for the secret force of the universe*. New York, NY: Harper Collins.
- Meehan, T.C. (1992). Therapeutic touch. In G. Bulechek & J. McCloskey (Eds.), *Nursing interventions: Essential nursing treatments* (pp. 201-212). Philadelphia, PA: Saunders.
- Menard, C., Blay, J.Y., Borg, C., Michiels, S., Ghiringhelli, F., Robert, C., . . . Zitvogel, L. (2009). Natural killer cell IFN-gamma levels predict long-term survival with imatinibmesylate therapy in gastrointestinal stromal tumor-bearing patients. *Cancer Research, 69*, 3563-3569. doi:10.1158/0008-5472.CAN-08-3807
- Mentgen, J.L. (2001). Healing touch. *Nursing Clinics of North America, 36*, 143-158.
- National Center for Complementary and Alternative Medicine. (2010). *What is complementary and alternative medicine?* Retrieved from <http://nccam.nih.gov/health/whatiscam/D347.pdf>
- Navo, M.A., Phan, J., Vaughan, C., Palmer, J.L., Michaud, L., Jones, K.L., . . . Smith, J.A. (2004). An assessment of the utilization of complementary and alternative medication in women with gynecologic or breast malignancies. *Journal of Clinical Oncology, 22*, 671-677.
- Nightengale, F., & Barnum, B.S. (1992). *Notes on nursing: What it is, and what it is not*. Philadelphia, PA: Lippincott.
- Oschman, J.L. (2000). *Energy medicine: The scientific basis*. Edinburgh, NY: Churchill Livingstone.
- Post-White, J., Kinney, M.E., Savik, K., Gau, J.B., Wilcox, X., & Lerner, I. (2003). Therapeutic massage and healing touch improve symptoms in cancer. *Integrative Cancer Therapies, 2*, 332-334.
- Rogers, M.E. (1970). *An introduction to the theoretical basis of nursing*. Philadelphia, PA: F.A. Davis.
- Rogers, M.E. (1980). Nursing: A science of unitary man. In J. Riehl & C. Roy (Eds.), *Conceptual models for nursing practice* (2nd ed., pp. 329-337). NY: Appleton-Century-Crofts.
- Rogers, M.E. (1986). Science of unitary human beings. In V.M. Malinski (Ed.), *Explorations on Martha Rogers' science of unitary human beings* (pp. 3-8). Norwalk, CT: Appleton-Century Crofts.
- Rogers, M.E. (1987). Rogers' science of unitary human beings. In R.R. Parse (Ed.), *Nursing science: Major paradigms, theories, and critiques* (pp. 139-146). Philadelphia, PA: Saunders.
- Rogers, M.E. (1988). Nursing science and art: A prospective. *Nursing Science Quarterly, 1*, 99-102.
- Rose, P.G., Bundy, B.N., Watkins, E.B., Thigpen, J.T., Deppe, G., Maiman, M.A., . . . Insalaco, S. (1999). Concurrent cisplatin-based radiotherapy and chemotherapy for locally advanced cervical cancer. *New England Journal of Medicine, 340*, 1144-1153.
- Rubin, C.T., Donahue, H.J., Rubin, J.E., & McLeod, K.J. (1993). Optimization of electric field parameters for the control of bone remodeling. *Journal of Bone and Mineral Research, 8*(Suppl. 2), S573-S581.
- Salvatore, J.R., Harrington, J., & Kummert, T. (2003). Phase I clinical study of a static magnetic field combined with anti-neoplastic chemotherapy in the treatment of human malignancy: Initial safety and toxicity data. *Bioelectromagnetics, 24*, 524-527.
- Sood, A.K., Bhatti, R., Kamat, A.A., Landen, C.N., Han, L., Thaker, P.H., . . . Cole, S.W. (2006). Stress hormone-mediated invasion of ovarian cancer cells. *Clinical Cancer Research, 12*, 369-375.
- Textor, S., Dürst, M., Jansen, L., Accardi, R., Tommasino, M., Trunk, M.J., . . . Cerwenka, A. (2008). Activating NK cell receptor ligands are differentially expressed during progression to cervical cancer. *International Journal of Cancer, 123*, 2343-2353.
- Thaker, P.H., Han, L.Y., Kamat, A.A., Arevalo, J.M., Takahashi, R., Lu, C., . . . Sood, A.K. (2006). Chronic stress promotes tumor growth and angiogenesis in a mouse model of ovarian carcinoma. *Nature Medicine, 12*, 939-944. doi:10.1038/nm1447
- Tiller, W. (1977). New fields, new laws. In J. White & S. Krippner (Eds.), *Future science: Life energies and the physics of paranormal phenomena* (pp. 28-34). Garden City, NY: Doubleday.
- Tuwaru, M. (1995). *Ayurveda: Secrets of healing*. Twin Lakes, WI: Lotus Press.
- Vistad, I., Fossa, S.D., & Dahl, A.A. (2006). A critical review of patient-rated quality of life studies of long-term survivors of cervical cancer. *Gynecologic Oncology, 102*, 563-572.
- Wirth, D.P., Brenlan, D., Levine, R., & Rodriguez, C. (1993). The effect of complementary healing therapy on postoperative pain after surgical removal of impacted third molar teeth. *Complementary Therapies in Medicine, 1*, 133-138.
- Wirth, D.P., & Cram, J.R. (1993). Multi-site electromyographic analysis of non-contact therapeutic touch. *International Journal of Psychosomatic Medicine, 41*, 68-75.
- Wyatt, G., Sikorskii, A., Wills, C.E., & Su, H. (2010). Complementary and alternative medicine use, spending, and quality of life in early stage breast cancer. *Nursing Research, 59*, 58-66.
- Ziembroski, J., Gilbert, N., Bossarte, R., & Guldberg, M. (2003). Healing touch and hospice care: Examining outcomes at the end of life. *Alternative and Complementary Therapies, 9*, 146-151.
- Zimmerman, J. (1990). Laying-on-of-hands healing and therapeutic touch. *Journal of the BioElectroMagnetics Institute, 2*, 8-17.

Receive free continuing nursing education credit\* for reading this article and taking a brief quiz online. To access the test for this and other articles, visit <http://evaluationcenter.ons.org/Login.aspx>. After entering your Oncology Nursing Society profile username and password, select CNE Tests and Evals from the left-hand menu. Scroll down to *Clinical Journal of Oncology Nursing* and choose the test(s) you would like to take.

\* The Oncology Nursing Society is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's COA.