

**THE EFFECT OF REIKI
ON THE LEVEL OF
FREE RADICALS**

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The work reported in this dissertation is original and carried out by me solely, except for the acknowledged direction and assistance gratefully received from colleagues and mentors.

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ABSTRACT

High levels of Free Radicals in the human body have been shown to correlate with disease and aging. The intention of the researchers was to show that Free Radical reduction could be facilitated by Reiki intervention. Reiki is an ancient energy healing modality closely related in method to Therapeutic Touch. Sixty-seven subjects were recruited. Thirty-four volunteer subjects served as the intervention group. Thirty-three volunteer subjects served as the control group. All subjects were given a pre-intervention OxiData™ Urine Test, used to test the amount of free radical activity within the body by measuring free radicals excreted in urine, and filled out State Trait Anxiety Inventory (STAI) questionnaires, a self-reporting measure used to monitor anxiety level. The intervention group subjects were given three Reiki interventions of one-half hour each, by Master Level Reiki practitioners, on alternating days of the same week. The control group was asked to schedule a follow-up appointment for four days after the initial testing was done. All subjects of both groups were again administered an OxiData™ Urine Test and STAI questionnaires. Statistics were compiled and the pre- and post-intervention measurements compared. The differences in the two OxiData™ urine tests showed a post-intervention reduction of an average of one color change representing a drop of approximately twenty percent, with statistical significance at a level of .0001. The measurements of the pre- and post-intervention STAI questionnaires also showed high statistical significance, with an overall drop in State Anxiety of over 7 points representing an approximate drop of twelve percent.

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CHAPTER 1: INTRODUCTION

This chapter will introduce ideas surrounding the topic of Complementary and Alternative Medicine and its struggle for acceptance in the United States and discusses some reasons why Reiki was chosen as a healing modality for the research discussed in this dissertation. Within are examples of why free radicals are considered impairment to health, why it would be advantageous to find simple methods to reduce them, and how scientists today are finding mind-body-spirit methods effective and reasonable to use in contemporary health care. This chapter also describes reasons why the OxiData™ Urine test was used as a measurement and how scientists are discovering supportive data. The goals of the study are discussed and the hypotheses are presented.

Background

Interest in Complementary and Alternative forms of health care has increased in the United States in recent years. What we call Complementary and Alternative Medicine (CAM) in the contemporary United States functions as primary care for much of the world. Many traditional forms of healing are in use today and can expand our therapeutic options. We are beginning to develop logical explanations and testable hypotheses for energetic healing modalities.¹ Many studies are being undertaken to show the usefulness of Reiki and similar CAM therapies: Therapeutic Touch, Touch for Health, Polarity Therapy, and Healing Touch, to name a few. Some have become established practices in nursing schools and hospitals.² All of these methods are considered energy therapies. Energy therapies utilize the magnetic fields that surround and interpenetrate the human body. These fields are referred to as biomagnetic fields.³

This study uses tools of modern medical science to attempt to understand whether Reiki, an ancient Spiritual Healing practice, can show concrete, tangible effects on physical and mental health and well-being.

Resistance to CAM therapies as methods of healing exists. Much of the resistance has come from the belief that they are not supported by scientific data. Contemporary researchers are developing a significant body of scientific data that is leading to acceptance and use of CAM therapies in mainstream allopathic medicine, clinics, and hospitals.

In this research, the aspiration was to provide evidence of Reiki's effectiveness and increase its scientific acceptance. Within, we define Reiki; describe how it is applied, and some of the effects of its application, as well as benefits received from its application. We seek to discover what changes may occur in free radical levels by the application of Reiki, and to observe changes in anxiety levels as a result of using Reiki.

A variety of degenerative diseases have been linked to free radical activity. "These diseases begin with biochemical processes in the body, during which free radicals can damage cells and tissues. . . . Our bodies must continually strive to balance the events taking place in the molecules of our bodies. . . . The body's built-in mechanisms for handling free radicals consist of antioxidants, enzymes, and nutrients that remove radicals before they can cause cellular damage."⁴ The toxic levels of our environment (air pollution, water contamination, and emotional stressors) impose such high levels of stress on the human body that it is imperative to find ways to assist our bodies in reducing free radicals and their deleterious effects. This research focuses on Reiki as a means to assist natural, built-in mechanisms in reducing free radicals.

This research uses the OxiData™ urine test to measure levels of free radicals. Several methods of testing for free radicals are either too costly (e.g., electron spin resonance and spin trapping methods), inaccurate (the thiobarbituric acid (TBA) has been challenged because of its lack of specificity, sensitivity, and reproducibility), or too time intensive for the independent researcher (Plasmid DNA testing). The OxiData™ urine test is accurate, easily administered, rapid, and inexpensive, making it a useful, reasonable tool for the independent researcher. The OxiData™ test for measuring Free Radicals is discussed further in the Literature Review chapter as are alternative measurement tools.

In the literature review free radicals will be defined; their effects and reasons for desiring to eliminate them will be discussed. Data collected throughout this study will be discussed in the Research Findings chapter.

“Allopathic medicine is often not able to provide relief from pain and suffering, leaving a large number of people dissatisfied with the options available to them. Mass production methods train modern caregivers in mechanistic, reductionistic (health care) systems.”⁵ In the last decade there has been a large increase in the number of visits to Complementary and Alternative Medicine (CAM) practitioners. “The public is learning to appreciate the benefits of spiritual healing and other CAM, voting for them with their dollars. Eleven billion dollars was spent annually (1993-1998) on CAM in the United States . . . directly from the pockets of consumers, while thirteen billion was paid, mostly through insurance for conventional medical care.”⁶ American’s use of Complimentary and Alternative Medical approaches such as Chiropractic or Acupuncture is widespread. “More than one-third of American adults use some form of CAM, with total visits to

CAM providers each year now exceeding those to primary care physicians. An estimated 15 million adults take herbal remedies or high-dose vitamins along with prescription drugs. It all adds up to annual out-of-pocket costs for CAM that are estimated to exceed \$27 billion. Many hospitals, managed care plans, and conventional practitioners are incorporating CAM therapies into their practices, and schools of medicine, nursing, and pharmacy are beginning to teach about CAM.”⁷

This support for CAM therapies exists despite insufficient changes to insurance guidelines to provide widespread payment for CAM therapies. Allopathic medicine provides superior emergency, surgical, and pharmaceutical care, yet people are looking toward CAM therapies in an attempt to find less invasive methods of health care. Reiki is a widely used CAM modality: a simple, noninvasive system of healing that has no known side effects and exists as a valuable health care option.

CAM modalities include a long list of therapies. Some of these therapies are ancient, such as Reiki and Acupuncture, and are enjoying extraordinary growth in health care today. These CAM therapies use the human energy field to restore health. The human energy field (HEF) is a dynamic multi-layered energy system that is part of the universal energy field.

Goals

The specific purpose of this study is to demonstrate the effects of Reiki on the free radical levels of 34 people who receive three one-half hour Reiki sessions in one week and compare the results with 33 other people who do not receive Reiki during the same time period. The goal is to bring Reiki to the attention of the scientific community

and health care professionals by demonstrating its effectiveness, and through that demonstration, to increase its validity in the eyes of the general public.

Hypotheses

Hypothesis 1: There will be a statistically significant decrease, of $p < .05$, in free radicals after three ½ hour Reiki sessions performed by Reiki Masters trained in the Usui System and this can be shown by the OxiData™ urine test.

Hypothesis 2: There will be a statistically significant decrease, of $p < .05$, in State and Trait Anxiety as shown by the State Trait Anxiety Inventory.

Having described background, goals, and hypotheses in chapter 1, chapter 2 will present relevant information collected as a consequence of an extensive review of literature on Reiki, spiritual healing, validating research, symbolism, free radicals, and measuring tools.

Chapter 1 Endnotes

¹ Daniel Benor, *Spiritual Healing: Scientific Validation of a Healing Revolution* (Southfield: MI, 2001), 34.

² Dolores Krieger, *The Therapeutic Touch: How to Use Your Hands to Help to Heal* (New York: Simon & Schuster, 1979), 90.

³ K. J. Hintz and others, "Bioenergy Definitions and Research Guidelines," *Alternative Therapies in Health and Medicine* 9, no. 3 Suppl (2003).

⁴ Gary Null, *Reverse the Aging Process Naturally* (New York: Villard Books, 1993), 97-8.

⁵ Benor, 24.

⁶ Published surveys, D. M. Eisenberg and others, "Unconventional Medicine in the United States: Prevalence, Costs and Patterns of Use," *New England Journal of Medicine* 328, no. 4 (1993), David M. Eisenberg and others, "Trends in Alternative Medicine Use in the United States, 1990-1997: Results of a Follow-up National Survey," *Journal of the American Medical Association* 280, no. 18 (1998).

⁷ *Executive Summary*, (National Academies Press, 2005, accessed); available from <http://www.nap.edu/books/0309092701/html>.

CHAPTER 2: REVIEW OF LITERATURE

This chapter is a summary of the literature uncovered during a search of topics related to the dissertation inquiry. Medical disciplines and spiritual healing, including Reiki are discussed. A thorough discussion of Reiki, its history, principals, and methods of attunement and application, is presented. Symbolism and Reiki symbols in particular are discussed. Research validating energy healing, including bioelectronics in medicine are covered. A description of free radicals, their causes, functions, and methods of measuring them are discussed. The OxiData™ test and State Trait Anxiety Inventory are described and the quality of them as measurement tools is included.

Disciplines

Allopathic medicine is superior in its ability to pharmaceutically treat bacterial infections and disease and has improved the overall health of the population it treats. Surgical repair of deformities, joint replacement, and other surgeries undoubtedly improve quality of life and save many lives. However the time has come to make more use of information people have known for centuries, to consistently use less invasive energetic modalities that have been handed down through centuries, and to acknowledge information shown through past and current research on traditional spiritual and energetic healing modalities.

After centuries of neglect, energetic therapies are beginning to take their appropriate place in clinical medicine. Findings of biologists and sensitive CAM therapists are being integrated to give us a deeper understanding of disease and healing. A growing number of allopathic practitioners are broadening their practices by becoming

trained in CAM therapeutic modalities. Many practitioners originally trained in CAM are also becoming trained in allopathic modalities.¹ “All aspects of healing, including medical and surgical therapy, are God-given. Spiritual healing has traditionally been considered a miraculous type of healing that occurs through the laying on of hands.”² The union of conventional and ancient healing methods will bring amazing, beneficial breakthroughs for all humankind.

Jonas and Chez edited the work of many authors in “Definitions and Standards in Healing Research, First American Samueli Symposium.”³ Their goal was create useful definitions and standardize terms for use in healing research, in an effort to make research in these fields more standardized and consistent.

Dossey states “the practitioner possesses bioenergy, namely the capacity to do work,” and in particular, “the capacity to utilize that energy to transfer power to a recipient either by direct contact or through radiation, and that the mechanism is electrical in nature . . . The total transfer of energy from the practitioner to the recipient is a linear function of the amount of time during which the practitioner directs energy to the recipient.” “The force that is generated by a biological system that acts on living or nonliving systems is called Biomotive Force . . . Although this discussion is focused on a force that causes electrical current to flow, the term is defined in a general sense allowing for other forces to readily fall within this definition of biomotive force.”⁴ This gives us an equation that shows the “BioEnergy Source with Information Content (as Reiki is believed to possess) moving through the Transfer medium (the electrons, most likely), and into the recipient”⁵ (who receives the BioEnergy, and in Reiki presumably this is intelligent universal life force energy). This seems to constitute a biomotive force that

acts on electrons. Also, “it may be another force that acts on an energy transport mechanism that may be living or nonliving. Further experimentation will allow further explanation.”⁶

Some History of Hands-On Healing

Healers have been highly regarded individuals among most civilizations. Hands-on healing is a basic component of healing rituals in many cultures, has been from ancient times, and is still very much in use today. Dating as far back as 1500 B.C., there has been documentation of the practice of energy healing by laying-on of hands . . . Of the recorded healings, said to be by the power of the Gods, most were accomplished by the laying on of hands. In ancient Egypt, priests and pharos were healers. They were believed to know the hidden powers and secrets of the Gods. Hieroglyphics, statues, engraved tablets, and other relics containing artwork depicting healing by laying-on of hands give evidence validating these healings . . . In sculptures and artwork, the Gods are shown at the bedside of patients with the right hand extended over the patient or touching them with a hand.⁷

In early Christianity, laying-on of hands was thought to be one of God’s blessings. In the bible, Jesus, Paul, and Peter were all healers. Laying-on of hands healing was commonly practiced during this period. There are many references to Laying on of Hands Healing in both the Old and New Testaments of the Judeo-Christian writings.⁸ In the New Testament healing was usually referenced as something supernatural, such as a faith healing or a miracle, which usually involved touching by hands⁹ . . . The belief that divine individuals have healing power was accepted by a majority of the population in those times.

Many religious traditions consider Spiritual Laying on of Hands Healing a sacred art, including: The Hindu Saint Ramakrishna's Healing Touch, The Chinese Qi Gong Master's Healing Touch, The Great Kahuna of Hawaii, The Medicine Man of the American Indian, The Shaman of the Eskimos, and The Medicine Healers in the many African tribes. These various cultures call on their rituals and ceremonies to help heal and cure the sick.¹⁰

Researchers have discovered that shaman and their healing abilities have been involved in spiritual healing back beyond recorded history. The people of Central and North Asia centered a large part of their spiritual life on the shaman. The shaman helped people heal through their contact with hidden forces of nature. They are believed to be able to obtain information by connecting to the innate power in all things. The word shaman means "transformer of energy." Physical ailment was thought to be the result of the disharmony of the mind and spirit. The shaman is aware that human beings are composed of several energy bodies that affect the physical body . . . The shaman has retained the ancient knowledge, through a holistic approach, of how to heal the physical body. Through returning and restoring the missing part of the soul, the shaman can bring the suffering individual into wholeness and out of the illness . . . Physical symptoms are often a warning sign that there is an imbalance in one of our auric bodies and that we should deal with the disharmony and create a sense of equilibrium in all the bodies to avoid illness. The shaman believes it takes more skill to restore a person to wholeness and well-being than simply administering a pill.¹¹ In many cultures, Laying-on of Hands Healing is employed to heal people on all levels, physical, spiritual, mental, and emotional. Each of these levels is part of the human energy field. It is the healer's

intention to support a balance of well-being and homeostasis in the individual; whether it is to help reduce the symptoms of a specific illness or disease, or to help maintain a person's energy level in balance.¹²

Most cultures have a name for the life force energy used in traditional energy healing. In Japanese it is ki, in Chinese, ch'i, in India, prana, and in Hawaiian, mana. In 500 B.C., Pythagoras called it vital energy. Mesmer who developed hypnosis in the 1800s named it animal magnetism. "In the Western scientific world, descriptions of quantum and electromagnetic fields may be seen to resemble descriptions of prana, ch'I, mana, and "magnetic Fluid."¹³ It resists quantifying, but exists all around and within us, deeply affecting our bodies, minds, and emotions. The ancients understood life-force energy to be in perfect balance in the body when a person experienced physiological orderliness, psychological equilibrium, and emotional stability.¹⁴

Pythagoreans recorded a luminous body of vital energy surrounding the human body around 500 B.C., and believed that it could produce a variety of effects, including curing illness. Boirac and Liebeault saw that humans have an energy that can cause an interaction between individuals at a distance, merely by their presence, in the twelfth century. Christians often refer to this force as the Christ Light. In the middle ages, Paracelsus called this vital force Illiaster. Helmont in the 1800s recognized this as a vital fluid that could not be condensed. He observed with Mesmer that physical bodies could exert influence on each other at a distance. Count Wilhelm Von Reichenbach experimented with this "odic force" and found that it exhibited properties similar to that of an electromagnetic field. He also noticed that this odic force attracts like poles, a phenomenon opposite that of electromagnetism. In addition, Von Reichenbach described

the left side of the body as acting like a negative pole and the right side as a positive pole, as compared to electromagnetic fields.¹⁵

These observations made in the nineteenth century describe characteristics of the human energy field. Researchers, medical doctors, and healers in the twentieth century have continued to show interest in the phenomena of the human energy field. Barbara Brennan made observations of other works and in “Hands of Light” she makes us aware that in 1911, Dr. William Kilner, using colored filters, noted a glowing mist around the whole body. He noted that the “aura” differed considerably from person to person, and that certain diseases showed as irregularities in the auric field. Dr. Lawrence Bendit and Phoebe Bendit observed the human energy field in the 1930s. They “stressed the importance of a knowledge and understanding of the powerful etheric formative forces which are the foundations of health and healing in the body.”¹⁶ “Dr. George De La Warr and Dr. Ruth Drown developed instruments to detect radiations from living tissues, in the mid-1900s.”¹⁷ Around the same time, Dr. Wilhelm Reich observed “pulsations of orgone energy radiating from microorganisms using a specially constructed high-powered microscope.”¹⁸ Dr. Dora Kunz wrote that “when the vital field is healthy, there is within it a natural autonomous rhythm” in which “each organ in the body has its corresponding energetic rhythm in the etheric field.”¹⁹ The frequencies of all parts work cooperatively to produce optimal functioning of the body. Of this phenomenon Brennan writes that “with pathology, the rhythms as well as the energy levels are changed,” noting that physicists refer to this as impedance matching or mismatching.²⁰ “John White in his book Future Science lists 97 different cultures that refer to the auric phenomena with 97 different names.”²¹

The Reiki Story

“The written formula for Reiki predates Jesus by at least one thousand years . . . It has undergone a long process of adaptation and change over several thousand years.”²²

Dr. Mikao Usui is credited with the rediscovery of Reiki, an ancient, hands-on healing system. Usui was the head of a Christian School in Kyoto, Japan. His students wondered about the teachings of the Bible that taught that healing could be accomplished on a physical level, in addition to a soul level. As Usui could not answer for them why the teachings did not cover physical healings, he decided to search for the answers. The history of healing took him to several countries. He learned several languages in an attempt to understand the manuscripts in their original forms, instead of translations of the material.

After many years of searching, Dr. Usui found what he believed were the keys to physical healing, in the holy writings, or Sutras of Zen Buddhism. These writings were a formula to activate and direct the Universal Life Energy that he later named Reiki. Although he found the system to perform the healing, he did not find the power to start the activation of the energy with which the healing was accomplished.

Usui went up Mt. Kurama-yama, a sacred mountain outside Kyoto for 21 days of meditation, prayer, and fasting to see if he could uncover the answer. He gathered 21 stones. Each day he threw one stone away. Finally, on the last day, he was given the information he sought. Over the horizon he saw a tiny beam of light. It moved toward him. It gained speed and got larger. He was frightened nearly to death. He jumped up and began to run, being sure he would die, if hit by this light. He decided that he had searched too long and hard for the answer to his question, and decided not to run away.

He braced himself, and said, “Father, if it kills me, I’ll accept the light.” As he made this declaration, the light struck him in the middle of his forehead and knocked him to the ground, unconscious. He believed that he had died.

He began to see millions of bubbles, moving right to left in every color of the rainbow. After all of the glorious colors, came gold and in the gold, white lights. In the middle of every gold bubble was a gold figure in the Sanskrit that he had learned and read in the Sutras. He remained unblinking, trying not to miss any of the information being given to him. He thanked God, saying, “Now I have it. Now I can use it. Thank you, thank you, thank you.”

Usui realized as he rose and dusted himself off, that he had experienced a miracle. He was not tired after 21 days of fasting, he was energized. He began to run and stubbed his toe. As he held it, he realized his hands were hot. The pain and bleeding had stopped. The toe was healed. He continued down the mountain. He came upon an eating place. He ordered a big breakfast. The daughter of the proprietor came out with a rag tied around her face. She had a toothache. Dr. Usui sat with her and put a hand on each side of her face. She soon told him he had done magic. His hands were hot and the pain and swelling was gone. Usui ate a rich feast, reckless upon completion of fasting. He suffered no indigestion or problems related to the feast.

When Usui returned to the monastery he was told the Bishop was in bed suffering from arthritis. He went to tell the Bishop of his adventures. He put one hand on the Bishop’s back and one on his hip. Soon the pain was gone. Dr. Usui and the Bishop prayed for guidance on how best to use Reiki. They decided he should go to Beggar City and heal the beggars. For seven years Usui treated and healed the beggars. Many more

miracles occurred. He discovered that some of the beggars he healed did not change their ways and become more useful people. He decided then, that Reiki given away would not be respected and appreciated. Usui decided that there must always be an exchange with Reiki, in order to complete the circle. He believed it would then heal the body and the spirit.

Dr. Usui realized that he had forgotten to give the beggars the spiritual side of Reiki, by teaching them gratitude. He then formulated the Five Principles of Reiki. Usui began looking for people who genuinely wanted health, peace, and a good life, in order to teach them Reiki. For the rest of his life, Usui traveled throughout Japan lecturing and teaching Reiki. He trained only 18 disciples, who traveled and studied with him. This was the beginning of the tradition of teaching Reiki through an apprenticeship. As his children did not want to dedicate their lives to Reiki, Usui chose Dr. Chujiro Hayashi, his most dedicated disciple, to continue his work after his death.²³

Dr. Hayashi opened a Reiki clinic in Tokyo. It flourished for many years. Hawayo Takaya lived in Hawaii, and was an American citizen. After her husband died, she became ill. She traveled to Japan in order to have her parents take care of her children, as she expected to die. While on the operating table, waiting for surgery, she heard a voice tell her that the operation was not necessary. She questioned her own sanity, but after the third time she heard the voice, she asked what she should do. She was then told to “ask the doctor.” She told the doctor that she did not think she needed the surgery, and asked him if there was any other treatment for her condition. The doctor told Takata that his sister had recently been cured by a noninvasive method of healing. He referred Takata to the Reiki Clinic run by Dr. Hayashi. With in a month of daily

Reiki treatments she was totally healed, and her life transformed. Her deep belief in this method of treatment caused her to want to be able to learn it, in order to help others. She was told that healing was a man's domain, prohibited to women. Takata persisted and Dr. Hayashi continued to deny her access to Reiki training. Eventually, Hayashi initiated Takata, the first woman, first non-Japanese, and the first relatively uneducated person to have First Degree Reiki.²⁴ Takata returned to Hawaii and diligently worked with Reiki for herself, family, and friends. On a trip to Hawaii couple of years later, Hayashi saw the work Takata had been doing. He decided to initiate Takata to Reiki II and later granted her the honor of initiating her to Reiki Master. Takata was chosen to carry on the Reiki tradition after Dr. Hayashi passed on in 1941. Takata died in 1980, having trained 22 Master Teachers. Takata's granddaughter, Phyllis Lei Furumoto is the current head of the Reiki lineage.

The Word Reiki

Reiki is pronounced Ray-Key. It is defined as Rei--Soul, Spirit, or Universal, and Ki--Energy. The essence of the word is Universal Life Energy, which describes the subtle energy that surrounds and interpenetrates the human body.

What Is Reiki

Reiki is the name given, by Dr. Mikao Usui, to Universal Life Energy. It is the balanced energy flowing through the practitioner that brings about healing. Therapists, Practitioners, Channels, or Healers, are all common names for persons administering Reiki. This energy works on all levels of human existence including, physical, mental, emotional, and spiritual.

On the physical level, Reiki helps to bring balance and homeostasis; injuries heal faster, bones mend sooner, and bleeding stops quickly. Reiki encourages mental relaxation, allowing learning to come easier, stress to be easier to handle, and so, we become more clear minded. On the emotional level, balance is easier to achieve, less medication is needed, and normal fluctuations are more manageable. Spiritual balance through Reiki will make it easier to meditate and pray, and to become aware of and act upon higher guidance.

“Reiki is not learned with the conscious mind. We have memory at cellular level, and we learn all over our bodies, with every fiber of our being.”²⁵ The ability to pass on Reiki is acquired through an attunement, also called an alignment or initiation, given by a Reiki Master. Attunement is the only way to receive the ability to pass on Reiki. Some healers are able to give healing energy to others, but only by attunement is Reiki energy passed on. To become a Reiki Master one has to have been initiated into First and Second Degree Reiki. Then after much practice the initiate may be ready to receive Third Degree, Master Level Reiki attunements.

Reiki has its own innate intelligence and goes where it is needed in the body. The body knows its own perfect state and Reiki helps the physical body return to it. Reiki has a harmonizing effect on the human energy system. When we are in a state of imbalance, we are in a state of dis-ease. “Reiki works as a catalyst for change, bringing to the surface those aspects of life which are blocking our spiritual progress.”²⁶

“Reiki is not the practitioners own energy, but rather Universal Life Energy that enters the body through the crown chakra at the top of the head, flows down through the body, expands the auric field and flows out through the hands. It is drawn through in

direct proportion to the amount of energy needed by the recipient, not what the therapist thinks is needed.”²⁷ Auric field is the name given to the subtle energy that surrounds and permeates the human body, giving life and perfect knowledge to the being.

Reiki can be likened to radio or TV waves that surround us constantly. This energy is only sensed and interpreted by radio or TV receptors. The human body receives Reiki signals from the Universal Energy Field. One cannot just randomly receive radio or TV signals from the airways without the proper tuning capabilities. Similarly, one cannot receive Reiki energy without being attuned to the proper wave-links by Reiki Attunements, which attune us to the vibratory level of Reiki energy. The more we work with, and receive attunements, the more we are able to amplify Reiki energy for healing use. Reiki can be felt as heat, cold, tingling, throbbing, a variety of other sensations, or not noticed at all. Reiki is an unpolarized energy, attracted to where polarized imbalances exist, is compatible with all other healing modalities and cannot be used to induce negative outcomes.

Reiki Principals

Usui developed a set of five principals that serve as a guide to living, as valuable today as when written.²⁸

Just for today I will give thanks for my many blessings
Just for today I will not worry
Just for today I will not be angry
Just for today I will do my work honestly
Just for today I will be kind to my neighbor and every living thing

When we live these principals our lives will be more joyous and peaceful. As we exhibit kindness and love, we experience it. We give to ourselves and to others concurrently.

Three Levels of Reiki

Reiki is divided into three levels or degrees. As a person learns about Reiki and develops skills, they are able to progress to the next level of knowledge. Ultimately they can move to the level of Reiki Master Teacher, or Reiki Level III Practitioner. Each level is marked with attunements. Training for each level begins the learning process for that level. An amazing amount of learning is possible in each level of Reiki. Some practitioners never feel a need to progress past Reiki Level I. At that level, they have the knowledge and attunement level to treat themselves, their families, and others. Reiki I is a powerful place of healing. Higher levels have additional features. Reiki II teaches symbols and distant healing techniques and includes further attunement. Reiki III gives the knowledge and attunements necessary for teaching Reiki.

Level I or First Degree Reiki

Teaching for this level generally begins with the history of Reiki and the hand positions used in Reiki healing. In this training a student would receive four attunements that allow them to draw in Reiki energy and pass that energy along for healing. After attunement, Reiki energy comes in through the Crown chakra, moves down through the Third Eye, Throat, and Heart Chakras, channels into the chakras in the hands, and is channeled into the energetic field of the body being healed. In Level I a student will learn what Reiki will and will not do. Level I often includes many anecdotal reports of healing miracles. Time is given for practicing the new skills, feedback, and questions. Reiki at this level can be used for healing one's self and others. Once attuned to Reiki a person only needs to "turn it on" by putting their hands-on the client, which sets the energy in motion.

Many teachers require, and more desire that students practice Reiki on themselves and others for 90 days before going on to learn Second Degree Reiki information. It is good practice and increases healing ability to use Reiki energy daily. The more a person practices the more relaxed they will be with the process, and the hand positions will become second nature. One may be surprised by the intensity of the healing work that begins to happen early in their experience with Reiki. Clients may report amazing and interesting healing experiences even when the practitioner did not notice anything at all. Just doing the process allows the Reiki to work. Reiki Master Teachers differ in their beliefs about waiting periods. Although 90 days of practice before undergoing further training is a good rule of thumb, the timing of additional Reiki training is a personal decision. Inner knowing will be the best guide.

Level II or Second Degree Reiki

Second Degree Reiki training builds on the foundation of First Degree Reiki attunements. It allows one to add emphasis to mental and emotional levels of healing and to assist with addictive problems. The Second Degree attunement will intensify the energy used for healing, and allow healing at a distance. Sacred knowledge learned at this level will help the practitioner use Reiki for manifesting positive results in all areas of life. Reiki is a tool that can assist personal transformation on a spiritual path. Traditionally, Reiki students are not permitted to keep copies of symbols, but must learn them in class, and destroy their drawings of the symbols before leaving class.

Master Level or Third Degree Reiki

Originally, Reiki Masters would only train men who were dedicated enough to live an apprenticeship for an extended period of time. The Master decided when it was

time for these students to be attuned to be a Master Level Practitioner. Only those students who were dedicated to teaching Reiki would be attuned to Master Level.

Women are now similarly able to acquire Reiki training.

Master Level is considerably more powerful than Second Degree. The attunements for this advanced degree cause a substantial increase in power for the practitioner. It is the highest level of training available in Reiki. Some ancient Oriental spiritual practices of healing and martial arts require years of apprenticeship. Reiki was one of those practices until recent years. In the past it was common to pay \$10,000 for Master Level training. It is now believed by many that it is important to train as many Reiki practitioners as possible in an effort to assist the planet in healing on many levels. As this belief grows the cost of training is coming down. Most now pay a fraction of the original fee for Reiki training. Master level students are taught the attunement procedures for all three levels of Reiki.

Reiki Master Lineage

The lineage of Reiki is very important. Dr. Usui rediscovered Reiki and developed the system generally followed today, for its use. Usui trained and initiated Hayashi, who in turn initiated 18 Masters, including Takata. Takata initiated 22 Masters. In order to be considered to be using Reiki energy for healing by the Usui Tradition of teaching Reiki, one needs to have been initiated by a person who has direct lineage that connects them to Usui. In Reiki circles lineage is often discussed and compared. As with other traditions and rituals, lineage is often omitted or assigned less importance today.

Attunements, Initiations

Sacred rituals are used to pass the healing power of Reiki from a Master to a student. These ceremonies are called Attunements, or Initiations, and open the student's energy channel to a vibratory rate in resonance with physiological processes, conducive to healing, so that Reiki energy can flow from its Source to the client through the healer's hands. The Source is Divine Energy. Our innate connection to the Divine is often beyond our awareness. Reiki attunements permanently increase the level of energy we receive and often our awareness of the flow of this Divine Energy. "The attunement process makes Reiki unique, and is the reason why the ability to heal can be developed so quickly, yet so permanently."²⁹

"A Reiki attunement is really an ancient spiritual empowerment, similar in nature to empowerments given today in Tibetan Buddhism and other spiritual schools, where the teacher transfers energy and existential knowledge to the student through a form of initiation."³⁰ An attunement is performed in a space that has been set up by the Master Teacher by intending to embody the highest level of Reiki energy they can bring in to themselves and the space in order to form a sacred space for the attunement ceremony. This energy is often palpable to the Master and students. The experiences of students differ widely. Some experience a noticeable spiritual awakening; others are not aware of any changes. One's own experience is the natural and the correct experience for them. One is not superior to another, all attunements "work" as long as they are done by a Reiki Master.

In an interview by William Lee Rand, James Oschman, Ph.D., speculated on the scientific explanation for the nearly instant ability to heal with Reiki energy. He

hypothesized, “. . . what is being passed during the attunement process is a frequency or a set of frequencies that can be transferred from a teacher to a student via the energy field and that will always be remembered by the student.”³¹ Oschman compared it to the electromagnetic signature memory of a substance transferred to water in Homeopathy.

Symbolism

The American Heritage ® Dictionary of the English Language³² defines symbolism as:

The practice of representing things by means of symbols or of attributing symbolic meanings or significance to objects, events, or relationships. 2. A system of symbols or representations.

Reiki Symbols

Reiki symbols (Appendix K) are traditionally kept secret. “They are sacred representations of ancient energy, and embody the (Reiki) energy in themselves.”³³

Three symbols are taught to students in Reiki II and two more in Reiki III classes.

Human memory being what it is, often the symbols are distorted and incorrectly memorized. It is not important that symbols are drawn alike by everyone. It is important that they are recognizable, and that the intent is for the highest level of healing for all concerned.

Tibet was taken over by Communist China in recent years, and its spiritual traditions have been threatened. Much of these teachings have been smuggled into other countries by fleeing monks. Many monasteries and ancient texts have been destroyed. This loss has for Tibet been a gain for other parts of the world, as remaining information is being taught and put into writing in an effort to preserve it. Changing methods of teaching are not as secretive as historic teaching. Materials are being diluted and some

teaching lost in this transitional period, but increased access has made Reiki much more available to the world.

Symbols were originally kept secret because of their sacred nature. Historically, people were taught Reiki through years of devoted following of a Master Teacher. Very few people today are able to follow such a path. Apprenticeships and oral teaching are not an option for most people. In order to keep spiritual traditions alive, it is necessary to make spiritual teachings directly available in all cultures, and this includes Reiki and its symbols.

Symbols are of key importance in passing Reiki to students and clients. “They are the formula Usui found in the Sutras.”³⁴ Symbols are placed into the auric field of the student during the attunement rituals of Reiki classes. Practitioners channel symbols of Reiki energy through their hands. In hands-on sessions the practitioner simply visualizes them, and they are passed to the client with intent. Setting the intention to use the symbols will activate them. Drawing them over the receiver’s body is common practice in an in-person healing session.

Meditating on the symbols will help the practitioner embody their energy. Symbols are drawn with the whole hand, visualizing energy flowing forth from the center of the palm chakra. Symbols are visualized in violet, the color associated with Reiki; however, they may spontaneously appear in other colors during a healing session. Whatever clear color they appear in during a healing is the correct color for that healing.

Tibetan Buddhist understanding of these symbols was originally not for healing. They were used for “Enlightenment to help others, representing the five levels of wisdom that culminate in Enlightenment.”³⁵ Each symbol resonates with a particular vibrational

level of your energetic field and each symbol has recommended uses. Intuition is the best guide for when to use each symbol.

Cho-Ku-Rei (Cho-Koo-Ray)

Cho-Ku-Rei is used to increase power. A substantial boost of energy is often felt by the client or practitioner when Cho-Ku-Rei is applied. As you activate this symbol it concentrates Reiki in one spot. It is the shape of a spiral and represents the path of a Labyrinth, which is an initiation space. It is important to memorize and be able to draw symbols as accurately as possible. Cho-Ku-Rei is likely to be used in every healing after Second Degree attunement. Drawn clockwise, Cho-Ku-Rei increases power. Some teach it to be drawn counterclockwise, but in most metaphysical teachings, “clockwise motion in the Northern Hemisphere is the direction of invoking and increase, and counterclockwise motion is the direction of decrease and dispersion. In the Southern Hemisphere it is opposite. Intent is paramount here.”³⁶ Using this symbol in the reverse is used to decrease power, as over a tumor.³⁷ In both cases the practitioner will visualize the symbol and say the name aloud or in their mind three times.

Sei-He-Ki (Say-Hay-Key)

Sei-He-Ki is the emotional healing symbol. It is used for purification, clearing, cleansing, and for releasing attachments. The phrase, as above, so below, holds a similar energy. This symbol aligns the upper chakras and draws divine energy into the human energy field. Most physical problems have an emotional component; therefore this symbol is used in most healing sessions, and always when there is known emotional distress. Disease is more often caused by strong emotions, fear, anger, loneliness, and grief, than by bacteria or physical malfunction. Sei-He-Ki can be invoked for protection

and purification. It helps the practitioner focus Reiki energy on the emotional field on the level of the unconscious. It intensifies Reiki energy to activate inner resources for emotional healing and strengthening the mind-body connection.

Hon-Sha-Ze-Sho-Nen (Hon-Sha-Ze-Show-Nen)

Hon-Sha-Ze-Sho-Nen is the distance healing symbol, and is always used in distant and absentee healing. It transmits Reiki energy across time and space, is used as an entrance into the Akashic Records; healing and repatterning on the Karmic level, and for repatterning the brain. Namaste': the God in me honors the God in you, holds a similar energy to this symbol. Hon-Sha-Ze-Sho-Nen is also used for mental level healing. It works on the conscious level. Translation of Hon-Sha-Ze-Sho-Nen from Japanese is, no past, no present, no future.

Dia-Ko-Myo (Die-ko-myō)

Dia-Ko-Myo treats the spiritual level of the human energy field, the first cause of disease. It is used to transmit Reiki attunements, and is used during healings. There are two forms for this symbol. To my knowledge, the Traditional form is still the most commonly used today. It is used in all healings, once the practitioner has been attuned to Reiki Master. In distant healing, it works well to send it from the heart of the practitioner to the heart of the client. The Modern version of the Dia-Ko-Myo is a double spiral, drawn from the inside out, in a clockwise direction, but can be drawn in the reverse direction to pull out negative energy. Of all of the Reiki symbols, it carries the most powerful healing energy. Spirals are often found in nature and spiritual practices. In clockwise direction they represent increasing energy. Counterclockwise spirals represent dispersion and unwinding.

In historic times, many more Reiki symbols were in use. Today most Reiki practitioners use only four consistently. The Raku is a fifth symbol that is also used with some frequency today.

Raku

Raku is used only in the in the attunement process. Many Masters have little knowledge of its importance. “It activates the Hara Line, helping the student to bring the Reiki energy through energy channels, and grounds it in the Hara center (Tan Tien or navel).”³⁸ The modern Dia-Ko-Myo includes the Raku, similar to a lightening bolt, in between two spirals.

Studies That Validate Energy Healing

Many experiments validate the effectiveness of Reiki and other CAM healing techniques.³⁹ Some results demonstrate that the positive effects of Reiki are coming from more than the placebo effect. Others illustrate that Reiki energy is nonphysical in nature in that the benefits do not diminish regardless of the distance between sender and receiver. Following are a few experiments that have been conducted.

In the 1920s and 1930s, Harold Saxon Burr, a researcher at Yale University School of Medicine, suggested that diseases could be detected in the energy field of the body before physical symptoms appear. Burr was convinced that pathology alters the biomagnetic field and that altering the energy field could prevent diseases.⁴⁰

Wendy Wetzel, RN, described a Reiki experiment she conducted in her paper, “Reiki Healing: A Physiologic Perspective.” She used forty-eight people for her experimental group and ten for a control group. Pre and post blood samples were taken

from both groups. The experimental group received First Degree Reiki training. The control group did not receive Reiki training.

The blood samples were measured for hemoglobin and hematocrit values. Hemoglobin is the part of red blood cells that carries oxygen. Hematocrit is the ratio of red blood cells to total blood volume. The experimental group, who received Reiki training, experienced a significant change in these values with 28 percent experiencing an increase and the remainder experiencing a decrease. Post-intervention hematocrit readings, whether increased or decreased compared to pre-intervention readings, are consistent with the purpose of Reiki, which is to bring balance on an individual basis. One individual experienced a 20 percent increase in these values. After three months of continuing daily Reiki self-treatment, she maintained that increase and improved upon it; positively affecting the iron deficiency anemia she was experiencing.⁴¹ The people in the control group who did not receive Reiki training experienced no significant change.

Daniel Wirth conducted a tightly controlled experiment involving a Reiki-like healing technique, Therapeutic Touch. Forty-four male college students received identical minor wounds deliberately inflicted by a doctor in the right or left shoulder. Twenty-three then received a Therapeutic Touch treatment and the other twenty-one did not. The treatments were given in a way believed to reduce a placebo effect. All forty-four students extended their arms through a hole in the wall. In the next room, a trained healer was present for those who received healing and administered healing from a distance without touching. For those who did not receive healing, no one was present in the room. Both the students and the doctor who administered the wounds and later evaluated their healing rate had been told that the experiment was about the electrical

conductivity of the body. Neither was aware that the experiment was about healing. Eight and sixteen day follow-up measurements of the rate of wound healing were done. After eight days, the treated group's wounds had shrunk 93.5 percent compared with 67.3 percent for those not treated. After sixteen days, the figures were 99.3 and 90.9. Upon debriefing, the students stated they did not know the true nature of the experiment and had felt no contact with the healer. The possibility that expectations of the students caused the healing was ruled out.⁴²

Dr. Barnard Grad of McGill University in Montreal, used barley seeds to test the effect of psychic healing energies on plants. The seeds were planted in pots and watered with a saline solution that is known to retard their sprouting and growth. Under elaborate double-blind conditions, one group of seeds was watered with saline solution that had been treated by a psychic healer. The healer held and treated the saline for fifteen minutes. The other seeds were watered with untreated saline. The person watering the plants did not know which group was getting the treated saline and which was getting the untreated saline. The plants watered with healer treated saline solution grew faster and were healthier, producing 25% more weight and having higher chlorophyll content. These experiments have been replicated in Dr. Grad's laboratory and other laboratories as well.⁴³

Dr. Grad carried out similar experiments involving tap water and plants. Sealed containers of water were given to a psychic healer to hold and others were given to a severely depressed patient to hold. The plants watered with the healer-held water had an increased growth rate and those watered with the water held by the severely depressed patient had a decrease in growth rate as compared to controls. These experiments

involving plants, in addition to confirming the nonplacebo nature of psychic healing, scientifically confirm the ancient metaphysical understanding that healing energies can be stored in water for future use.⁴⁴

In another experiment involving psychic healer Olga Worrall, Dr. Robert Miller used an electromechanical transducer to measure the microscopic growth rate of rye grass. The device used has an accuracy of one thousandth of an inch per hour. Worrall was located over 600 miles away. She was asked to pray for the test plant at exactly nine o'clock that evening. When Dr. Miller returned to the laboratory the next day, the test equipment had recorded normal continuous growth of 6.25 thousandths of an inch per hour until 9:00 P.M. At that time, the record began to deviate upward and had risen to 52.5 thousands of an inch per hour, which was an increase of 840 percent. This increased growth rate remained elevated until morning when it decreased but not to as low as its original level.⁴⁵ This research shows hands-on-healing to be useful for positive physical growth.

The Spindrift Group, a prayer research group, has done extensive research involving prayer and plants. Their results indicate that prayed for plants always grow faster and are healthier than not prayed for plants even though the conditions are equal for both groups of plants and those doing the praying are miles away. These results were consistent regardless of the distance involved and occurred over and over. One of the interesting findings of their research is that they were most effective when the prayer was non directional; that is when the prayer was simply for the plants general well-being, rather than for a specific result, such as a certain growth rate or overall height.⁴⁶ This research shows positive outcomes from positive intentionality.

More experiments are being conducted and scientific theories are being developed in an effort to understand Reiki and other CAM healing techniques. Increasing interest along with more sensitive equipment will allow science to more completely understand, validate, and accept the reality of Reiki. As this happens, we will see increasing use of Reiki and other laying-on of hands healing by individuals for themselves, family, and friends, as well as its use in hospitals and clinics. Through research we have begun to understand the roles of energy fields in health and disease.

Many people are unaware of the research in this area, and persist in the attitude that there is no logical basis for energy healing. Larry Dossey notes that there is a dilemma between observing a change and demonstrating that energy has influenced that change.⁴⁷ But he also believes that, “scientists, following customary logic and scientific methods, have begun to clarify the roles of various kinds of energy in the healing process. Consequently, the picture that is emerging has the same scientific foundations that instigate modern allopathic clinical medicine.”⁴⁸ Developing validating evidence for CAM therapies is important, but the burden of necessary proof should not exceed the proof necessary for conventional medicine. “Western medicine has embraced numerous treatments with less research evidence than is available to support the efficacy of Spiritual Healing.”⁴⁹ “Furthermore, some treatments for cancer are toxic, noxious, and of unproven value.”⁵⁰

It has long been known that activities of cells and tissues generate electrical fields that can be detected on the skin surface.⁵¹ The laws of physics demand that any electrical current generates a corresponding magnetic field in the surrounding space. Historically, machinery has been unable to detect these subtle fields.⁵² Until recent years, there have

not been scientifically acceptable ways to measure subtle energies. These energies are subtle enough that it takes advanced technology to measure them. Some humans have the ability to sense these fields without outside assistance. Elmer Green stated in *Beyond Biofeedback*, “some energies have not been detected with scientific instruments because these instruments have no parts above the physical level. Humans have all the parts and can therefore detect a greater spectrum of energies . . . Living beings are coupled to the cosmos better than scientific devices, which are, after all, quite limited tools.”⁵³

Biologists initially assumed (biological fields) could have no physiological significance.⁵⁴ This picture began to change in 1963. Gerhard Baule and Richard McFee of the Department of Electrical Engineering, Syracuse University, Syracuse, NY, detected the biomagnetic field projected from the human heart. They used two coils; each with 2 million turns of wire, connected to a sensitive amplifier.⁵⁵ In 1970, David Cohen of MIT, using a Superconducting Quantum Interference Device (SQUID) magnetometer, confirmed energetic heart measurements. By 1972, Cohen had improved the sensitivity of his instrument, enabling him to measure magnetic fields around the head produced by brain activities.⁵⁶

The development of sensitive instruments that can detect the subtle energy fields around the human body is of particular importance. The SQUID magnetometer is capable of detecting tiny biomagnetic fields associated with physiological activities in the body.⁵⁷ Additionally in 1972, Dr. John Zimmerman of the University of Colorado using a SQUID discovered that “magnetic fields several hundred times stronger than background noise are created around the hands of trained healers when doing healing work on patients. No such fields are created by a sham healer making the same

movements indicating something special is happening with the trained healers. The frequencies of the magnetic fields surrounding the hands of the trained healers were of the alpha and theta wave range similar to those seen in the brain of meditators.”⁵⁸

Subsequently, it has been discovered that all tissues and organs produce specific magnetic pulsations. These have come to be known as biomagnetic fields. Biomagnetic recordings, called magnetocardiograms and magnetoencephalograms, are now complementing traditional electrical recordings, such as the electrocardiogram and electroencephalogram. Mapping the magnetic fields in the space around the body often provides a more accurate indication of physiology and pathology than traditional electrical measurements.⁵⁹

In the early 1980s, Zimmerman began a series of important studies on therapeutic touch, using a SQUID magnetometer at the University of Colorado School of Medicine in Denver. Zimmerman discovered that a huge pulsating biomagnetic field emanated from the hands of a Therapeutic Touch (TT) practitioner. The frequency of the pulsations is not steady, but “sweeps” up and down, from 0.3 to 30 Hz (cycles per second), with most of the activity in the range of 7-8 Hz. The biomagnetic pulsations from the hands are in the same frequency range as brain waves.⁶⁰ Scientific studies of the frequencies necessary for healing indicate a full range of therapeutic frequencies are necessary to stimulate healing in any part of the body.

Confirmation of Zimmerman’s findings came in 1992, when Seto and colleagues, researchers in Japan, studied practitioners of various martial arts and healing methods. They noted that “Qi emission” from the hands is so strong that they can be detected with a simple magnetometer consisting of two coils, of 80,000 turns of wire . . . Biomagnetic

measurements are a lot more informative about what is happening inside the body than are bioelectric measurements.⁶¹ This is important for energy therapists because a magnetic sense, if it exists, will provide much more information on what is going on within the body than will measurements of electrical fields from electrodes on the skin surface. There is a good scientific basis for the existence of a magnetic sense in the human body.⁶²

Scientists are demonstrating neurophysiological and biophysical explanations for energy medicine . . . It is not widely understood that “brain waves” are not confined to the brain, but actually spread throughout the body via the perineural system; the connective tissue sheathes surrounding all nerves.⁶³ Dr. Robert O. Becker has described how this system, more than any other, regulates injury repair processes throughout the body. Accordingly the entire nervous system acts as an “antenna” for projecting the biomagnetic pulsations that begin in the thalamus. Brain waves that begin as relatively weak pulsations appear to gather strength as they flow along the peripheral nerves and into the hands. The mechanism of this amplification probably involves the perineural system and the other connective tissue systems, such as the fascia that are closely associated with it.⁶⁴

New paradigms are emerging in many domains. Evolving perspectives allow understanding from new viewpoints. Energy medicine is one of these domains. Incomprehensible principles are becoming comprehensible. This new paradigm provides a wholistic view to regaining and maintaining optimum health.

Bioelectronics in Medicine

Proper functioning of any organism is dependent upon a connection with a deeper level of energy structure in the organism. “A growing awareness is developing of the interactions between chemical states and electromagnetic fields. Small direct current (D.C.) electric currents have been shown to produce cell regeneration and to enhance fracture healing in animals and humans. We do not yet understand the detailed pathways whereby electric and magnetic fields couple into cellular metabolism.”⁶⁵ Science is beginning to realize that “the human organism is a series of interacting multidimensional energy fields.”⁶⁶ “Electromagnetic healing represents the beginnings of a revolution in consciousness for the medical profession.”⁶⁷

Free Radicals: Description, Causes, and Functions

“Free radicals are atoms or particles with at least one unpaired electron on the last orbital creating increased chemical reactivity and instability.”⁶⁸ They are submicroscopic chemical fragments formed as the by-product of normal metabolism. This creates a molecule with an imbalance in electrons. They damage the body in many ways. Sometimes the damage is severe enough to allow diseases to take hold.⁶⁹

All living and nonliving things are made up of units of matter called atoms. When atoms join together they are called molecules. The atom is made up of two basic parts: the nucleus and the electrons. The nucleus has a positive electric charge that balances the negative electric charge of the electrons. The electrons are arranged in pairs. There is a dynamic balance both between the pairs of electrons and between the electrons and the nucleus. When an electron is added or removed this balance is lost, and the atom or molecule seeks to regain this balance by taking an electron from another atom.⁷⁰

It is important to learn how to counteract the influences of free radicals. “You can enhance your well-being and increase your longevity by fending off all of the most common illnesses, stopping the process of the symptoms of aging, and generally reinforcing overall health,”⁷¹ by reducing the amount of free radicals in your body.

Metabolism is a function of the interaction of the oxygen you breathe and the foods you eat. It is how your body generates energy and heat and disposes of carbon dioxide. Free radicals form as a natural by-product of this process.⁷² “A normal attribute of aerobic life is the structural damage of a number of compounds--DNA, proteins, carbohydrates, and lipids--by oxidation. The oxidative damage caused by reactive oxygen species is called oxidative stress.”⁷³ “Oxidative stress is a result of a disturbed ‘normal’ balance between pro- and antioxidants. Antioxidant vitamins and a number of enzymes and nonenzymic substances are integrated in the antioxidant system of the organism, which maintains the pro/antioxidative equilibrium (antioxidative homeostasis) to protect against oxidative stress. In the human organism the antioxidative system guides this homeostasis. Damage begins only if this compensation fails. Damage detection is a better choice than antioxidant detection. Oxidative stress creates marked increases in free radicals levels.”⁷⁴

When an oxygen molecule is used to facilitate the digestion of food to produce energy, the reaction adds an electron to the molecule. This leaves an unpaired electron in the oxygen molecule and an imbalance between the nucleus and the electrons. Once this happens the oxygen becomes volatile and finds an electron to use to stabilize itself. It steals an electron from another atom or molecule and leaves it out of balance. This causes a chain reaction that can result in enormous cellular damage.⁷⁵

Free radicals also perform many essential functions in the body. The immune system uses them to dispose of unwanted bacteria, viruses, and other potentially damaging entities such as cancer cells. Free radicals also help to generate energy the cells use, and assist in the creation of hormones and in the synthesis of proteins and nucleic acids.⁷⁶

The most common atom that creates free radicals in humans is oxygen, the process is known as oxidation. In normal circumstances, the body neutralizes free radicals with antioxidants. The most familiar antioxidants are vitamins C, E, and A. When stress factors cause excess free radicals, antioxidants can become overwhelmed, and then free radicals begin to break down health.⁷⁷

Three to four billion years ago the earth's atmosphere had no oxygen. When living organisms first appeared on the Earth, they did so under an atmosphere containing very little oxygen (O²). They were essentially anaerobes. Anaerobic microorganisms still survive today, but their growth is inhibited and they can be killed by exposure to 21% oxygen, which is the current atmospheric level. As the O² content of the atmosphere rose, many primitive organisms must have died out. Other organisms began the evolutionary process of evolving antioxidant defense systems to protect against O² toxicity. Organisms that tolerated the presence of O² could evolve to use it for metabolic transformations. The evolution of efficient energy production allowed the development of complex multi-cellular organisms, which also needed systems to ensure that the O² could be distributed throughout the organism. As the O² content of the atmosphere rose, it exposed living organisms to O² toxicity: oxidations in the cell are harmful to the organism and in some cases lethal. There was considerable pressure upon organisms to evolve protective mechanisms against O² toxicity, or to retreat to the environments that the O² did not penetrate. Primitive species that failed to adapt were lost during the evolution.⁷⁸

When algae developed, it lived on sunlight and water and released oxygen. The oxygen supported the development of life. That process made the protective ozone layer around the earth, which allowed a variety of life forms to develop. These early life forms had to contend with free radicals as a by-product of oxygen metabolism, and needed to

counteract their damage in order to survive. A mechanism to do this evolved through the development of enzymes created in the body specifically for this purpose, and through the use of antioxidant nutrients. “A balance thus emerged between the destructive aspect of oxygen-based metabolism and the antioxidant enzymes and nutrients used to neutralize its damage . . . The human body is composed of about 75% water. Water is approximately eight-ninths oxygen. So overall your body is approximately two-thirds oxygen . . . Oxygen is essential. Without it body cells die in a few minutes. The word “antioxidant” could make you think that oxygen is the problem, but it is not. Excess production of free radicals is the problem.”⁷⁹

Some Causes of Damage by Free Radicals

“Uncontrolled free radicals damage body cells either by breaking down the cell membrane, by attacking the internal working of the cell, or by going right to the nucleus to attack the genetic material.”⁸⁰ “A fundamental way that free radicals cause their damage is by breaking down natural body fats. Since the cell membrane is composed of fatty tissue (called lipids), it is a target for free radical attack. They may destroy the cell membrane, so that it cannot take in nutrients or release wastes. This leads eventually to the collapse and death of the cell.”⁸¹

Free radicals can damage white blood cells and particularly the defender T cells, both of which are vital to a strong immune system and enable you to ward off bacteria and viruses. “Free radicals may also weaken essential antibodies that are produced by the immune system to protect from disease, resulting in susceptibility to communicable diseases. Uncontrolled free radicals may disturb nerve chemicals, which can affect the brain and nervous system.”⁸² “Emotions are also being implicated in the production of

free radical activity. Depressed individuals tend toward higher free radical levels. Stress is considered the number one cause of many illnesses in this country, both physical and mental.”⁸³ It is considered a contributing factor to high blood pressure, stroke, heart disease, and depression. “Nitric Oxide an identified free radical has been implicated in depressive states.”⁸⁴

“Digestive enzymes are also vulnerable to free radical assault, reducing their ability to digest and utilize food and thus limiting the absorption of nutrients . . . Free radicals may injure the lubricating synovial fluid around the joints, causing inflammation and pain and resulting in arthritis, bursitis, or gout.”⁸⁵ “The antioxidant defense system is, of course, finite in its capacity to resist oxidative stress. When the body is overwhelmed by excess oxidative stress disease must result.”⁸⁶

Air pollution is a main source of exposure to toxins. Millions of tons of toxic pollutants are released into the atmosphere every year in the United States. These toxins react with oxygen in the presence of sunlight to form photochemical smog, which when inhaled causes free radicals and immune system suppression.⁸⁷ Cigarette smoke reacts in the body to create free radicals, which can lead to lung fibrosis, emphysema, and cancer.⁸⁸ Stress generates high levels of adrenaline and other body chemicals, which result in increased production of free radicals. Modern life presents many occasions for stress, so there may be almost constant production of stress-related free radicals.⁸⁹ Excess exercise is known to cause free radicals, but the body can normally handle them. Balance is the key. Although exercise is necessary to health building, too much weakens the body through the formation of excess free radicals.⁹⁰

Denham Harman researched free radical formation in the 1950s. In his book *Free Radical Theory of Aging*, Denham used radiation as the cause of free radical production. He states that radiation shortens the life span of most organisms.⁹¹ Abram Petkau showed in 1972 that low doses of radiation cause physiological damage through the formation of free radicals. Radiation sickness is a disease caused by unleashing excess free radicals in the body.⁹² The “Petkau Effect” showed that small amounts of radiation received over a period of time (as from a nuclear power plant) are more harmful than a higher dose at one time (as from an x-ray).

In high-altitude jet travel, you are exposed to electromagnetic fields that cause free radicals, which may contribute to jet lag.⁹³ Free radicals cause what is called “cross-linking.” It is a hooking together of cell structures that may be partly responsible for hardening of the arteries, stiffness of joints, and wrinkling of skin. These are manifestations that are referred to as aging. “Cross-linking in the lungs causes emphysema . . . Free radicals may damage genes, the DNA and RNA in the cell nucleus that mastermind the creation of new cells. When a cell with a damaged gene divides to make two cells, the new cell may be abnormal. When the DNA is damaged it tends to reproduce new cells very rapidly--the hallmark of what we call cancer. Damaged DNA may produce cells that are not able to function as they were meant to, resulting in, for example, deterioration of tissue and organs and messenger hormones, among many other things.”⁹⁴ “Recent studies have suggested that free radicals can stimulate the activation (and proliferation) of HIV.”⁹⁵

Free radicals account for the majority of the symptoms we think of as being caused by aging.⁹⁶ An article in the August 1992 issue of the journal *Science*⁹⁷ centers on

“the importance of free radical damage to nucleic acids and lipids in age-related disease processes.” It discusses the difficulty of the task the human body faces in counteracting free radicals, and concludes, a “fraction of such a massive amount of damage would escape repairs by even the most sophisticated mechanisms and the accumulation of unrepaired damage could account for the age related loss of physiological function.”⁹⁸ Free radical damage to cells progresses to tissues and organs and results primarily in heart disease, cancer, diabetes, arthritis, and diseases of immune suppression. Free radicals can damage any organ system of the body. Science has developed a term for this damage, “degenerative diseases.”⁹⁹

The immune system is the body’s protective system. It has the purpose of ensuring survival of the individual. When there are excessive free radicals in the body over a long period of time, the immune system will become exhausted, compromising health. “When immune cells, such as lymphocytes or T cells, are weakened by free radicals they may attack cells that they mistake as foreign, while damaging the body’s own cells: this behavior results in what is called an autoimmune disease.”¹⁰⁰

“Although free radicals are ubiquitous, they are by no means omnipotent”

(Brian Liebovitz, 1980)

Methods of Measurement of Free Radicals

Free radicals have a very short half-life, which makes them very hard to measure. Multiple methods of measurement are available today, each with their own benefits and limitations. Measuring oxidative stress can be performed a number of ways, indirectly or

directly using different samples and quantifying different products. This section gives a general overview on various measurement methods with their advantages and disadvantages.

Radicals can be measured using electron spin resonance and spin trapping methods. These methods are both very sophisticated and can trap even the shortest-lived free radical.¹⁰¹ Their sophistication also means they are skilled labor and time intensive, making them expensive to use. These caveats make them impractical for the independent researcher.

Some exogenous compounds have a high affinity for free radicals (i.e., xenobiotics) and are utilized in the spin techniques. The compound and radical together form a stable unit that can be easily measured. This indirect approach has been termed “fingerprinting.” Spin-trapping collection techniques have poor sensitivity, which can skew results.¹⁰²

A commonly used alternate approach measures markers of free radicals rather than the actual radical. These markers of oxidative stress are measured using a variety of different assays. When a fatty acid is peroxidized it is broken down into aldehydes, which are excreted. Aldehydes such as thiobarbituric acid reacting substances (TBARS) have been widely accepted as a general marker of free radical production. The most commonly measured TBARS is malondialdehyde (MDA). The thiobarbituric acid (TBA) test has been challenged because of its lack of specificity, sensitivity, and reproducibility.¹⁰³ The use of liquid chromatography instead spectrophotometer techniques help reduce these errors. Gases such as pentane and ethane are also created as lipid peroxidation occurs. These gases are expired and commonly measured during free

radical research. Serum MDA levels correlate closely with blood levels of creatine kinase, an indicator of muscle damage. Conjugated dienes (CD) are often measured as indicators of free radical production. Oxidation of unsaturated fatty acids results in the formation of CD. The CD formed are measured and provide a marker of the early stages of lipid peroxidation.¹⁰⁴

A newly developed technique for measuring free radical production shows promise in producing more valid results. The technique uses monoclonal antibodies and may prove to be the most accurate measurement of free radicals.¹⁰⁵ However, until further more reliable techniques are established it is generally accepted that two or more assays be utilized whenever possible to enhance validity.

Some methods test for free radicals using plasma and urine sampling and standard tissue sampling techniques. A quantitative measure can be obtained using a flow cytometer. This method also evaluates intracellular glutathione and hydrogen peroxide production.

The general principle behind Plasmid DNA is to measure the proportion of a relaxed coil DNA to that of supercoiled DNA. $X = \text{Relaxed coil DNA} / \text{Supercoiled DNA}$. The higher the value of X , the more oxidative damage (based on free radicals damaging the supercoiled DNA and causing it to uncoil) therefore oxidative stress is shown by relaxed coil proportion.

Plasmid DNA is incubated with 5 μ l of particle suspensions at 37 °C in a water bath. The supercoiled, relaxed coiled and linearised plasmid DNA are separated by electrophoresis and quantified by scanning. This method is not particularly sensitive. It is complicated, requires equipment, highly trained technicians, and is expensive.

There is an extracellular lab-based assay that measures the rate of reactive oxidative species generation by measuring rate of reduction of Cytochrome C using luminol-induced chemiluminescence for quantifying the results. A color is produced if the reduction occurs and there is a reaction with a free radical. This is a sensitive method but determining results requires skill and accuracy, making it expensive.

8-hydroxydeoxyguanosine (8-OhdG) is an often used measure of oxidative damage to chromosomal and mitochondrial DNA in a cell. 8-OhdG is a nucleotide which is excised from DNA. Endonuclease repair enzymes work quickly therefore the amount excised in urine directly reflects a person's degree of damage in the body. A kit has been developed by the Japan Institute for Control of Ageing to measure 8-OhdG. This method is easy, very sensitive, and time efficient, taking only 3-4 hours for results.

Total alkenals is a measure of products of lipid peroxides from free radical attacks on cellular lipid membranes and lipoproteins. Creatinine is the product of breakdown ATP/Creatine utilization and excreted in the urine. The measure of this calculates metabolic efficiency (the amount of free radical production--damage per energy utilized/ATP synthesis).

Exhaled 8-isoprostane are prostaglandin analogs produced from the peroxidation of arachidonic acid catalyzed by free radicals. The desirable features of this molecule are: they are chemically stable, are formed in vivo, are specific for lipid peroxidation (linked to oxidative stress), and they can be measured in breath condensate thus reflecting oxidative damage in the lung. This method is sensitive, noninvasive and therefore very useful. It is more complicated and expensive than a urine test.

Difficulties arise in the analysis of Oxygen Free Radicals (OFRs) due to their short half-lives. To study these species, radical spin trapping agents have been used to form stable radical adducts with the OFRs for detection by electron paramagnetic resonance spectroscopy (EPR). EPR detection suffers from hampered sensitivity due to water in biological systems absorbing microwave radiation, increased amounts of free radicals resulting from necessary sample handling, and the occurrence of artifacts and spurious signals.

In biological systems a number of different molecules classified as Reactive Oxygen Species (ROS) (singlet oxygen, superoxide anion, hydrogen peroxide, and hydroxyl radical) or Reactive Nitric Oxide Species (RNOS) (nitric monoxide, nitric dioxide, and peroxynitrite) are produced. Only compounds with an unpaired electron, so called “free radicals” are detectable by electron spin resonance (ESR) spectroscopy.

The kind of reaction radicals usually are involved in is the oxidation of biomolecules, for example sugars, proteins, lipids, RNA, and DNA. Recently the connection between radicals and their oxidative reactivity has been shown or proposed for many so called “free radical diseases.” Some examples are: cancer, ischemia/reperfusion, arteriosclerosis, diabetes mellitus, AIDS, inflammation, and aging. Consequently, the development of methods offering the possibility of specific detection and quantification of a particular radical species are of great interest. Current indirect methods measure a metabolite that is specific for a reaction a particular radical is involved in. Often these kinds of reactions are also catalyzed by enzymes, so the results are not reliable in general. As there are only a few reactions available for such measurements, none of these indirect assays has been set-up as a standard detection

method. The equipment used for the detection of metabolites is expensive and the method time intensive. Anti-oxidative status of cells is not a very discriminating measure, as too many variables exist. In this context the advantage of a direct assay for different radical species becomes obvious.

There are numerous published descriptions of new methods and modifications of methods to assess free radicals activity in biological materials. Analysis of a number of related indicators and use of a variety of approaches appears the only reliable way to evaluate these processes *in vivo*.¹⁰⁶

There are existing reproducible techniques to measure radical generating systems, direct measurement or trapping of reactive radical species and acute-phase proteins, and measurement of metabolic intermediates derived from the oxidation of lipids, proteins, and nucleic acids. The techniques take advantage of new instrumentation and technology-probes, photon counting, chemiluminescence, and caged compounds. These are state-of-the-art methodologies for quantifying free radical and antioxidant analytes in tissue and body fluids using *in vitro* procedures. These procedures, although useful, are time consuming, technology intensive, and prohibitively expensive. The Oxidata Urine Test used for this research is by far the most easily administered, most accurate, and most cost effective for an independent researcher. It is an *in vitro* test, making it possible to do this test without direct supervision of an M.D. or use of laboratory personnel, which reduces time delays, costs and complications.

The Oxidata™ Test

The Oxidata™ test is a monitoring system for testing the amount of free radical activity in the body. Free radicals are formed with almost every biochemical reaction in

the body. The body's natural mechanisms for fighting free radicals may be inadequate due to excessive stress from the environment. Cell degeneration caused by free radical damage can easily be assessed with this test. The OxiData™ Test is a colorimetric (color absorbent) reading from urine testing, which has evolved from blood/plasma fluorometric data, and determines the level of free radical activity in the body. This technological breakthrough measures the distant end of the polyunsaturated fat chain where aldehydes form as a result of free radical attacks. Aldehyde activity is concentrated in urine. The test coordinates with lab measurements to create precise results from a urine specimen.

Free radical damage can lead to cell degeneration, initiating a host of diseases such as fatigue, allergies, arthritis, elevated cholesterol and degenerative heart disease, and can create stress to the liver, kidney damage, premenstrual syndrome (PMS) symptoms, and eventually contribute to the onset of cancer. This test indicates the actual degree of damage to the cells caused by free radical activity. In the process of free radical production in the body, one of the byproducts is Malondialdehyde (MDA). The most accurate measurement of MDA is in the urine. Blood contains only the amount of MDA circulating the body at a particular time. However the amount of MDA in the urine is a superior assessment for total MDA output. Urinary MDA is a qualitative test; results are reported from 0 to +5.¹⁰⁷

State Trait Anxiety Inventory

The State Trait Anxiety Inventory (Appendix B) was initially conceptualised as a research instrument for the study of anxiety in adults. It is a reliable, relatively brief, self report assessment device, which includes separate measures of state and trait anxiety.¹⁰⁸

State anxiety (S-Anxiety) is defined as a transitory emotional state characterized by

consciously perceived feeling of tension and apprehension; Trait anxiety (T-Anxiety) refers to relatively stable individual differences in anxiety proneness.¹⁰⁹ Speilberger's State-Trait theory of anxiety provides a conceptual framework, which specifies the relationship between the two anxiety concepts and other variables related to stress or anxiety. Depending upon the characteristics of stressful stimulus conditions, individuals experience differential levels of S-Anxiety as a function of their level of T-Anxiety. For example, situations, which evaluate personal adequacy, are likely to be perceived as more threatening by high T-Anxiety individuals than by persons who are low in T-Anxiety.¹¹⁰ Scores on the STAI have a direct interpretation: high scores on their respective scales mean more trait or state anxiety and low scores mean less.

The STAI is recommended for studying anxiety in research and clinical settings such as psychological, sports psychological, health research, and clinical diagnosis for differentiating anxiety from depression and assessment of anxiety in medical, surgical, psychosomatic, psychiatric, and sports situations.

The STAI consists of two separate subscales that contain 20 questions each. These two subscales, State-Anxiety and Trait-Anxiety, each use a 4 point Likert scale to describe frequency, or intensity with which each question applies to them. The STAI questionnaire is designed to be completed in 20 minutes or less to increase validity. State anxiety could increase, affecting outcome if the questionnaire was of a longer duration.

Statements which people have used to describe themselves are given on the STAI State assessment. The client reads each statement and then circles the appropriate number to the right of the statement to indicate how they feel *at this moment*. There are

no right or wrong answers. They are asked not to spend too much time on any one statement but give the answer which best describes their present feelings.

For STAI Trait assessment, a number of statements which people have used to describe themselves are given. The client reads each statement and then circles the appropriate number to the right of the statement to indicate how they *usually* feel.

Over the past decade, the State Trait Anxiety Inventory has been used in more than 2,500 studies¹¹¹ and has become the standard international measure of state and trait anxiety. Adaptations for different areas of study are available for adults, teens, children, armed forces, and sports. Translations of the scale are available in more than forty languages, and standardized editions are published commercially in English, Dutch, German, Italian, Portuguese, and Spanish.

The STAI increases its reliability by its dual approach to measuring anxiety. A low level of stability for the State-anxiety scale is expected as responses reflect the influence of transient situational factors at the time of testing. Trait-anxiety scales show reliable measurement of trait anxiety levels among subjects.

The STAI has a clinical background, and uses the State-Trait anxiety construct theory.¹¹² It was developed in 1969 and has been widely used in research studies and clinical psychology settings. It continues to be a relevant, effective psychometric instrument. Comparability to other valid testing tools indicates the STAI's value. Its longevity indicates its effectiveness and underlines the STAI's importance and validity as a measure of anxiety. Relatively high correlations are presented in the STAI manual between this scale and other measures of trait-anxiety: the Taylor Manifest Anxiety Scale

(.80), the IPAT Anxiety Scale (.75), and the Multiple Affect Adjective Check List (.52).¹¹³ This correlation increases probability for internal and external validity.

Having given a summary of the information disclosed in the literature review in this chapter, chapter 3 will discuss methods used in this research. Motivation for the research, research assistants, subjects, randomization methods and the chosen research design will be discussed. Reiki treatments, general research procedures, and instruments used will also be covered.

Chapter 2 Endnotes

- ¹ R. Gerber, *A Practical Guide to Vibrational Medicine: Energy Healing and Spiritual Transformation* (New York: Harper Collins Publishers Inc., 2001), 115.
- ² Norman C. Shealy, *Sacred Healing: The Curing Power of Energy and Spirituality* (Boston: Elements Books, Inc., 1999).
- ³ W. B. Jonas and Ronald A. Chez (Eds.), "Definitions and Standards in Healing Research First American Samuelli Symposium," *A Supplement to Alternative Therapies in Health and Medicine* 9, no. 3 (2003): A15.
- ⁴ Larry Dossey, "But Is It Energy? Reflections on Consciousness, Healing and the New Paradigm," *Subtle Energies* 3, no. 3 (1992).
- ⁵ Jonas and (Eds.): A15.
- ⁶ Ibid.
- ⁷ Gerber.
- ⁸ "Acts, 3:1-10," in *Bible, New Testament. New International Version* (Grand Rapids, MI: Zondervan Publishing House, 1995).
- ⁹ "Mark 9: 14-29," in *Bible, New Testament. New International Version* (Grand Rapids, MI: Zondervan Publishing House, 1995).
- ¹⁰ T. Kaptchuk and M. Croucher, *The Healing Arts: Exploring the Medical Ways of the World* (New York: Summit Books, 1987).
- ¹¹ Kenneth Meadows, *Shamanic Experience* (Boston: Element Books Limited, 1991).
- ¹² Gerber.
- ¹³ E. Lomax, "Manipulative Therapy: A Historical Perspective from Ancient Times to the Modern Era," in *The Research Status of Spinal Manipulative Therapy*, ed. M. Goldstein (Washington, D.C.: U.S. Government Printing Office, 1975), 11-17.
- ¹⁴ Libby Barnett and Maggie Chambers, *Reiki: Energy Medicine, Bringing Healing Touch into Home, Hospital, and Hospice* (Rochester, Vt.: Healing Arts Press, 1996).
- ¹⁵ Barbara A. Brennan, *Hands of Light: A Guide to Healing through the Human Energy Field* (New York: Bantam Books, 1987), 30.
- ¹⁶ Ibid., 32.
- ¹⁷ Ibid., 31.
- ¹⁸ Ibid., 32.
- ¹⁹ Dora Kunz, *Spiritual Aspects of the Healing Arts*, ed. Dora Kunz (Wheaton, Ill.: Quest Books, 1985).
- ²⁰ Brennan, 32.
- ²¹ Ibid.
- ²² Diane A. Stein, *Essential Reiki: A Complete Guide to an Ancient Healing Art* (Freedom, Calif.: The Crossing Press Inc., 1995), 95.
- ²³ Ibid., 12.
- ²⁴ Ibid.
- ²⁵ Penelope Quest, *An Introduction to Reiki* (London: Piatkus Books, 2001), 2.
- ²⁶ Ibid.
- ²⁷ Joyce Morris, *Reiki, Hands That Heal* (Encino, Calif.: The Center Bookstore, 1993), 4.
- ²⁸ Stein, 27.
- ²⁹ Quest, 2.
- ³⁰ Ibid., 1.
- ³¹ William Rand, "An Interview with James Oschman," *Reiki News* 1, no. 3 (2002).
- ³² *American Heritage Dictionary of the English Language*, ed. American Heritage Dictionaries, 4th ed. (Boston: Houghton Mifflin Company, 2000).
- ³³ Stein, 63.
- ³⁴ Ibid., 56.
- ³⁵ Ibid., 154.
- ³⁶ Ibid., 57.
- ³⁷ Ibid., 145.

- ³⁸ Ibid., 101.
- ³⁹ Benor.
- ⁴⁰ Harold Saxon Burr, "Harold Saxon Burr," *Yale Journal of Biology and Medicine* 30, no. 3 (1957).
- ⁴¹ Wendy S. Wetzel, "Reiki Healing: A Physiologic Perspective," *Journal of Holistic Nursing* 7, no. 1 (1989).
- ⁴² Daniel P. Wirth and Jeffery R. Cram, "Multi-Site Electromyographic Analysis of Non-Contact Therapeutic Touch," *International Journal of Psychosomatics* 40, no. 1-4 (1993).
- ⁴³ B. Grad, "Some Biological Effects of Laying-on of Hands: A Review of Experiments with Animals and Plants," *Journal of the American Society for Psychological Research* 59, no. 5 (1965). Also B. Grad, *Some Biological Effects of Laying-on of Hands: A Review of Experiments with Animals and Plants*, ed. Gertrude Schmeidler, Parapsychology: Its Relation to Physics, Biology and Psychiatry (Metuchen, N.J.: Scarecrow, 1976).
- ⁴⁴ B. Grad, "A Telekinetic Effect on Plant Growth, II. Experiments Involving Treatment of Saline in Stopped Bottles," *International Journal of Parapsychology* 6, no. 4 (1964).
- ⁴⁵ Robert N. Miller, "Study of Remote Mental Healing," *Medical Hypotheses* 8, no. 5 (1982).
- ⁴⁶ Robert. Owen, *Qualitative Research: The Early Years* (Salem, Ore.: Grayhaven Books, 1988).
- ⁴⁷ Larry Dossey, "The Right Man Syndrome: Skepticism and Alternative Medicine," *Alternative Therapies* 4, no. 3 (1998).
- ⁴⁸ Larry Dossey, *Healing Words: The Power of Prayer and the Practice of Medicine* (New York: HarperCollins Publishers, 1993).
- ⁴⁹ "Assessing the Efficacy and Safety of Medical Technologies," (Washington, D.C.: Congressional Office of Technology Assessment, 1978).
- ⁵⁰ Robert Oye and Martin Shapiro, "Reporting Results from Chemotherapy Trials. Does Response Make a Difference in Patient Survival?," *Journal of the American Medical Association* 252 (1984).
- ⁵¹ Barry Halliwell and John M. C. Gutteridge, *Free Radicals in Biology and Medicine* (New York: Oxford University Press, 1999).
- ⁵² James Oschman, *Energy Medicine: The Scientific Basis* (New York: Harcourt Publisher Limited, 2000).
- ⁵³ Elmer Green, *Beyond Biofeedback* (New York: Delta Publishing, 1978).
- ⁵⁴ Oschman.
- ⁵⁵ G. M. Baule and R. McFee, "Detection of the Magnetic Field of the Heart," *American Heart Journal* 55, no. 7 (1963).
- ⁵⁶ D. Cohen, "Magnetoencephalography; Detection of the Brain's Activity with a Superconducting Magnetometer," *Science* 175, no. 4022 (1970).
- ⁵⁷ J. E. Zimmerman, Paul Thiene, and J. T. Harding, "Design and Operation of Stable Rf-Biased Superconducting Point-Contact Quantum Devices, and a Note on the Properties of Perfectly Clean Metal Contacts," *Journal of Applied Physics* 41, no. 4 (1970).
- ⁵⁸ John Zimmerman, "New Technologies Detect Effects of Healing Hands," *Brain/Mind Bulletin* 10, no. 16 (1985).
- ⁵⁹ Oschman.
- ⁶⁰ John Zimmerman, "Laying-on-of-Hands Healing and Therapeutic Touch: A Testable Theory. Bemi Currents," *Journal of the Bio-Electro-Magnetics Institute* 2, no. 1 (1990).
- ⁶¹ A. Seto and others, "Detection of Extraordinary Large Bio-Magnetic Field Strength from Human Hand," *Acupuncture and Electro-Therapeutics Research International Journal* 17, no. 2 (1992).
- ⁶² Oschman.
- ⁶³ D. Cohen, "Magnetic Fields around the Torso: Production by Electrical Activity of the Human Heart," *Science* 156, no. 3775 (1972).
- ⁶⁴ Robert O. Becker, "Evidence for a Primitive Dc Electrical Analog System Controlling Brain Function," *Subtle Energies* 2 (1991).
- ⁶⁵ Richard Gerber, *Forward to William Tiller, Science and Human Transformation: Subtle Energies, Intentionality and Consciousness*, vol. 10 (Walnut Creek, Calif.: Pavior Publishing Company, 1997), 12.
- ⁶⁶ Gerber, *A Practical Guide to Vibrational Medicine: Energy Healing and Spiritual Transformation*, 91.
- ⁶⁷ Ibid.
- ⁶⁸ Shealy.

- ⁶⁹ David J. Lin, *Free Radicals and Disease Prevention: What You Must Know* (New Canaan, Conn.: 1993).
- ⁷⁰ Sara Shannon, *Good Health in a Toxic World: The Complete Guide to Fighting Free Radicals* (New York: Warner Books, Inc., 1994).
- ⁷¹ Ibid.
- ⁷² Lin.
- ⁷³ Halliwell and Gutteridge.
- ⁷⁴ Ibid.
- ⁷⁵ Shannon.
- ⁷⁶ Ibid.
- ⁷⁷ Lin.
- ⁷⁸ Halliwell and Gutteridge, 1.
- ⁷⁹ Shannon.
- ⁸⁰ B. Halliwell, J. M. C. Gutteridge, and C. E. Cross, "Free Radicals, Anti-Oxidants and Human Disease," *Journal of Laboratory and Clinical Medicine* 119, no. 6 (1992).
- ⁸¹ Shannon.
- ⁸² Ibid.
- ⁸³ C. N. Shealy, V. Borgmeyer, and P. Thomlinson, "Intuition, Neurotensin and the Ring of Air," *Subtle Energies and Energy Medicine* 11, no. 2 (2002).
- ⁸⁴ E. Suzuki and others, "The Role of Nitric Oxide and Depressive States," *Journal of Affect Disorder* 63, no. 1-3 (2001).
- ⁸⁵ Shannon.
- ⁸⁶ S. Levine and P. Kidd, *Antioxidant Adaptation* (San Leandro, Calif.: Biocurrents, 1986).
- ⁸⁷ W. A. Pryor, "Free Radical Biology: Xenobiotics, Cancer and Aging," *New York Academy of Science Annals* 393, no. 1 (1982).
- ⁸⁸ F. C. Johnson, "Carcinogenesis, Vascular Disease, and the Free Radical Reaction," *Nutrition and Cancer* 3, no. 3 (1982).
- ⁸⁹ Shannon.
- ⁹⁰ Ibid.
- ⁹¹ Denham Harman, *Free Radical Theory of Aging* (1953).
- ⁹² A. Petkau, "Effects of $^{22}\text{Na}^+$ on a Phospholipid Membrane," *Health Physics* 22, no. 3 (1972).
- ⁹³ Shannon.
- ⁹⁴ Ibid.
- ⁹⁵ C. Sappey and et al., "Of the Grepo Laboratory in Grenoble, France, Paper Given at the VIII International Conference on AIDS," (1992).
- ⁹⁶ R. J. Melhorn and G. Cole, "The Free Radical Theory of Aging," *Advances in Free Radical Biology and Medicine* 1 (1985).
- ⁹⁷ E. R. Stadtman, "Protein Oxidation and Aging," *Science* 257, no. 5074 (1992).
- ⁹⁸ Ibid.
- ⁹⁹ J. Bjorksten, *Longevity* (Madison, Wis.: Bjorksten Research Foundation, 1981).
- ¹⁰⁰ G. B. Bulkely, "The Role of Oxygen Free Radicals in Human Disease Processes," *Surgery* 94, no. 3 (1983).
- ¹⁰¹ Lin.
- ¹⁰² Melissa Choo, *Measurement* [article on-line] (University of Edinburgh, accessed 6/19/2005); available from <http://www.portfolio.mvm.ed.ac.uk/studentwebs/session2/group31/measurment.htm>.
- ¹⁰³ B. Halliwell and J. M. C. Gutteridge, "The Chemistry of Oxygen Radicals and Other Oxygen-Derived Species," in *Free Radicals in Biology and Medicine* (New York: Oxford University Press, 1985), 20-64.
- ¹⁰⁴ Ibid.
- ¹⁰⁵ Ibid.
- ¹⁰⁶ Halliwell and Gutteridge, *Free Radicals in Biology and Medicine*.
- ¹⁰⁷ Ibid.
- ¹⁰⁸ C. D. Spielberger, R. L. Gorsuch, and R. E. Lushene, *Stai Manual for the State-Trait Anxiety Inventory* (Palo Alto, Calif.: Consulting Psychologists Press, 1969).
- ¹⁰⁹ Ibid.

¹¹⁰ H. M. Van Der Ploeg, “The Development and Validation of the Dutch State-Trait Anxiety Inventory,” in *Anxiety and Behaviour* (New York: Academic Press, 1976).

¹¹¹ Spielberg, Gorsuch, and Lushene.

¹¹² Ibid.

¹¹³ Ibid.

CHAPTER 3: RESEARCH METHODS

In this chapter we will discuss what drove the researchers to follow this line of study. The methods used to find Reiki Masters to assist in the research and subjects to volunteer is explained. Reiki treatment procedures and instruments chosen for measuring free radicals are also discussed.

Motivation

The high toll free radicals take upon the human body inspired my interest in finding ways by which they could be reduced. Research done by Shealy,¹ recently showed a statistically significant reduction of free radicals by electrical stimulation of specific acupuncture points with the use of the She-Li TENS (Transcutaneous Electrical Nerve Stimulation) device. In the belief that Reiki energy moves through the human body in a manner similar to the travel of electrical impulses produced by the Shi-Li TENS device, I undertook this study. If reduction of free radicals can be accomplished with the simple technique of applying Reiki, people could easily be taught to improve their own health with minimum effort and expense.

Research Assistants

Consideration was given to the implications of having one or multiple practitioners provide the Reiki treatments for the study. It was decided that multiple practitioners should be used to insure internal validity by improving the probability that the results were due to the Reiki energy and not due to the individual practitioner's personal impact on the subjects. It was decided that only Usui Method trained Reiki

Masters would be used. Reiki I or Reiki II practitioners could have been used, but Reiki Masters would generally have more experience working with Reiki and it seemed reasonable that they would require less instruction or supervision. An email was sent out to the students and faculty of Holos University Graduate Seminary advertising the desire to find Reiki Masters who would volunteer to provide the Reiki sessions in this study. Word of mouth and email forwarding extended the circle of advertisement. Over the course of one month 15 volunteers emerged. Of those who volunteered 10 remained available at the time of the study. These Reiki Masters became Research Assistants (RAs) for the study.

Information was sent to the RAs informing them of the study criteria and protocol. See RA Information (Appendix I).

After sending the preliminary information about the study, the Primary Investigator telephoned each Reiki Master, discussed the parameters of the study and answered any questions they had. Each RA chose the number of subjects they would be comfortable working with during the study timeframe.

The final number of subjects was established during the above mentioned phone conversation between the PI and the RAs. A corresponding number of OxiData™ Urine Test Kits (two for each subject) was sent to each RA.

The list of information sent to the RAs included: Reiki Coupons for Control Group Subjects (good for a free one-hour Reiki session following the study) (Appendix A), State-Trait Anxiety Inventory for Adults (Appendix B), STAI administration instructions(Appendix B), STAI Scoring Key (Appendix C), OxiData testing information (Appendix D), Information for Research Assistants Form (including study protocol)

(Appendix I), Information Form for Subjects (Appendix J), Consent Form (Appendix J). Many RAs were interested in what is required to develop a research study. For this reason, a copy of the Internal Review Board forms with approval (Appendix G), was sent to the RAs as a courtesy.

The RAs chose to work with from 4 to 12 subjects each. Each accepted their own subjects for the study from volunteers found through personal contacts and referrals. Often in CAM studies a disproportionate number of participants are female. RAs attempted to accept an equal number of male to female subjects in an effort to balance gender dissimilarity in order to increase internal validity.

It was decided that internal validity would be best served by getting as much done in the first week as possible in order to reduce outside variables that could confound outcome. Assistants were asked to schedule study appointments for all their subjects within a two week period when possible.

RAs were from twenty-five to sixty-seven years of age. Years of Reiki Master experience varied from one and a half years to twenty-eight years.

Subjects

Subjects were recruited by individual RAs by accepting volunteers from word of mouth to people in their practices, friends and family members. A total of sixty-seven volunteers participated in this study as subjects. Inclusion criteria were designed to include the widest possible range of the general population available.

Inclusion Criteria: Individuals, male and female, 18 years of age and older, who volunteered, signed a consent to participate and who would be available for all sessions were to be included in this study.

The idea was to find out how average people, in their usual circumstances would be affected by Reiki energy. The theory was that Reiki would work to reduce free radicals in the same way that it reduces pain; apart from personal circumstances or setting. To this end, but considering the safety of researchers, subject exclusion criteria were as follows.

Exclusion Criteria: Anyone under 18 years of age, or who was currently under treatment for a psychotic disorder, or who had been hospitalized within the last year for mental illness, would be excluded from this study.

Subjects ranged in ages from 23 to 66 years, with a mean age of 45.3 years. They work in a variety of occupations from retail to technology. Economic status range was from low to high middle income. Only two had previously existing serious physical problems. Subjects were requested not to have any other energy medicine interventions other than the study procedures during the week of the study.

Randomization

“Random selection of subjects refers to the equal probability that subjects within the population can be selected.”² External validity may have been reduced by drawing subjects from a convenience population of people known to the RAs, rather than a larger cross section of the general population, affecting the ability to generalize results.

“Random assignment consists of allocating subjects to groups in such a way that the probability of each subject appearing in any of the groups is equal.”³ Random assignment for these study groups was accomplished by pairing two like gender participants and flipping a coin, thus giving each participant an equal chance of being in either the control or intervention group, improving external validity. Same gender pairs

were used in each coin flip, in order to insure an equivalent number of each gender in the intervention and control groups, which could affect external validity.

Research Design

This study uses a Pretest-Posttest Control Design. This design was chosen because it establishes a pretest baseline to compare with the post test results within and between groups.

Study Reiki Treatments

Reiki is a noninvasive hands-on healing modality that transmits subtle energy through the healer into the client, as mentioned in an earlier description.

RAs were not asked to arrange any particular setting for working with their study participants. Each RA was allowed to work in the environment they typically use for administering Reiki sessions. This allowed the diversity of settings common for Reiki sessions to be present in this study. RAs were instructed to administer Reiki sessions according to the protocol taught in the Usui System of Reiki training.

All subjects participating in this study received Reiki sessions. All sessions related to the study were given free of charge.

As is described in the Literature Review chapter, Reiki symbols are used in all or most Reiki sessions given by RAs. Symbols were used in each session given in this study, as taught in Reiki training and/or as the Reiki Master/RA was intuitively guided to do so.

Free radicals are constantly being produced in the human body through multiple mechanisms, exacerbating many conditions. Multiple Reiki sessions are often recommended to facilitate significant changes in health. To this end, three successive

Reiki treatments were decided upon for this study. They were scheduled close together to allow any cumulative effects of Reiki's healing energy to be utilized.

All Reiki treatments in this study were one-half hour in duration and administered by a Reiki Master trained in the Usui System of Reiki. As mentioned before, in the Literature Review, Reiki is transferred from the practitioner to the client through the hands of the healer. The Reiki Master's hands are placed on or over the client's body in a series of 12 sequential positions. Other positions are used as intuitively guided to do so. There are four head positions, four on the trunk of the body and four on the back of the trunk. By treating these basic positions, all of the major energy centers are treated. This allows the energy to flow through the chakra system to the entire body to facilitate healing.

When all data were returned to her, the Principal Investigator sent the information to Paul Thomlinson, Ph.D., a professional statistician from Springfield, Missouri, for analyzing. Statistical significance of the results is discussed in the Research Findings chapter.

Procedures

Seventy subjects originally volunteered for this study. Finally sixty-seven subjects participated and completed the study. One Research Assistant volunteer was unable to participate in the study due to personal problems which arose subsequent to sending the OxiData™ kits out to the RAs. Her kits were returned to the Primary Investigator, but time did not permit other subjects to be substituted.

On the first day of participation in the study, all subjects were given Information and Consent Forms. They were asked to sign the copies and return one signed copy of

the consent form to the Research Assistant they were working with and to keep one copy. Subjects were randomized at this time. Control group subjects were asked to make an appointment with the Research Assistant for a second Oxidata™ Urine test and STAI and asked to return on the fourth day following their first day of participation in this study. For example, if the first day was Monday, they would return on Friday. Three visits over a five day period were required for the intervention group of this study. Two visits were required for the control group subjects. A third visit was optional: for the control group subjects to receive their free Reiki session.

After initially filling out and returning the consent form and answering the STAI questionnaire, subjects in the intervention group were given a first Oxidata™ Urine Test and their first Reiki session. They were asked to return on each of two alternate days following their first day of participation in this study, for example, if Monday was the first day of their participation of the study, they would return on Wednesday and Friday. On each of these two days they also received Reiki sessions. On the last visit, all subjects were asked to complete a second OxiData™ test and to repeat the STAI questionnaire.

The data collected (see Excel Spreadsheets used to compile data, Appendices G and F) from the Oxidata™ Urine Testing Kits and STAIs were processed by Paul Thomlinson, Ph.D., a statistician in Springfield, Missouri. Outcomes were statistically significant and are discussed in the Research Findings chapter following this methodology discussion.

The Instruments: Oxidata™ Urine Test

The OxiData™ Test evaluates the level of free radicals in urine. It is a colorimetric testing kit that is simple to use, gives fast results, and provides the most accurate measurement of free radical levels available without laboratory interface.

Subjects were asked to catch a urine sample in a plastic cup that was provided. The research assistant then drew a small amount into of urine into a dropper (also provided) and added it to the content of an Oxidata™ Test vial, turning the vial several times to mix the contents. The Oxidata™ Kit contains a chart showing five colors with which to compare the outcome of the urine test vial. The mixed contents either remained the same color or changed to a color between pale pink and dark red. After a five minute waiting period the number related to the color of the contents was noted (Oxidata™ test instructions in Appendix D).

All data is kept confidential. Subject's names were deleted from the Excel Worksheet containing the data for statistical computation in order to protect their identity during the analysis of data.

State Trait Anxiety Inventory (STAI)

The State Trait Anxiety Inventory for Adults-X, was developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene, STAI Form X was chosen as a tool for this study because of its simplicity. It is self-administered and takes only about fifteen minutes to complete. No supervision is required during administration nor does it have complex instructions. The STAI consists of 20 questions referring to current State of anxiety level and 20 questions referring to Trait levels of anxiety (how the subject usually experiences life). Each question is rated on a scale of one to four, ranging from not at all,

somewhat, moderately so, and very much. STAI forms and description (Appendix B) and STAI scoring key (Appendix C). If Hypothesis 2 is correct the level of anxiety would show a decrease after the series of Reiki sessions.

Reiki Coupons

Control group subjects received a voucher redeemable for a one-hour Reiki Session to be given by the RAs to which they were assigned. Appointments were made directly with that person. This voucher was nontransferable and has no monetary value (Appendix A).

In this chapter research methods used for the study were discussed. All phases and parts of the study were thoroughly explained, including motivation, research assistant and volunteer recruitment, research design, Reiki treatments, procedures, and instrumentation. In the following chapter the results of the study are presented. The findings were highly statistically significant and figures are included for clarity.

Chapter 3 Endnotes

¹ C. Norman Shealy, Vera Borgmeyer, and K. Paul Thomlinson, "Reduction of Free Radicals by Electrical Stimulation of Specific Acupuncture Points," *Subtle Energies and Energy Medicine Journal* 13, no. 3 (2002).

² Alan E Kazdin, *Research Design in Clinical Psychology*, 4th ed. (Boston: Allyn and Bacon, 2003), 149.

³ *Ibid.*, 154.

CHAPTER 4: RESEARCH FINDINGS

The results of this study are described in this chapter. The data from the OxiData™ and STAI (Appendix F) was gathered and sent to statistician, Paul Thomlinson, Ph.D. for processing. The statistical significance of the results is reported in text and figures for clarity of presentation.

In order to answer the research questions, two mixed Analyses of Variance (also known as split-plot ANOVAs) were conducted, with one between groups' factor (i.e., control or intervention group) and one within groups factor (i.e., repeated measures of either urine testing for free radicals or STAI for anxiety). This analysis allows us to determine whether there were differences between the control and intervention groups across the pretest and posttest scores by focusing on the interaction effect (i.e., the *F*-ratio for the interaction between group and repeated measures).

Regarding Hypothesis 1, that Reiki intervention will produce reduction in free radicals measured in urine samples, the results indicate significant support. That is, as shown in Figure 1, the intervention group's mean levels of free radicals in the urine dropped dramatically from pretest to posttest, while the control group's free radical levels actually increased during this period. The mixed ANOVA results, specifically the *F*-test for the interaction, demonstrate that this effect is statistically significant ($F[1,65] = 26.90$, $p < .0001$).

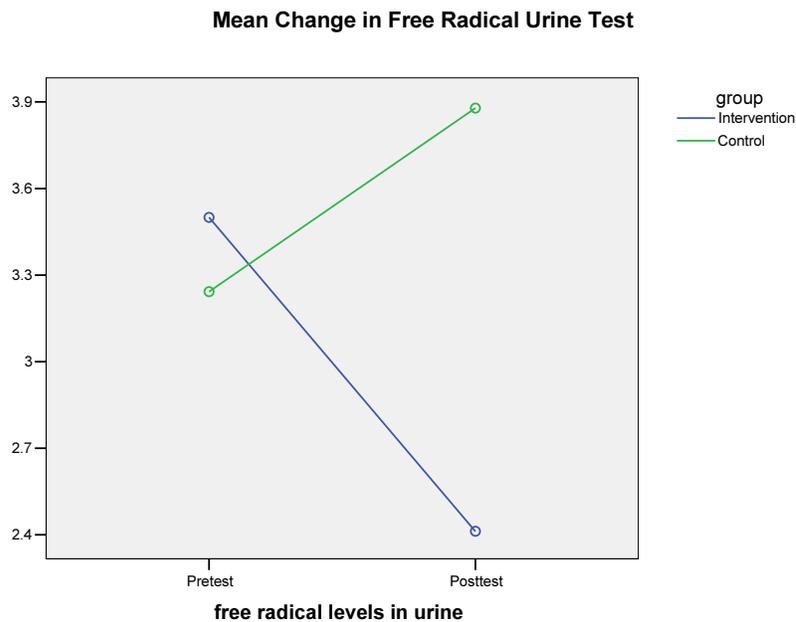


Figure 1. Pre- and Posttest Free Radical Levels for Control and Intervention Groups

Figure 1 shows movement in free radical levels in the intervention and control groups. The movement in the intervention group is just over one point based upon the chart given in the OxiData™ kit. This represents a positive change of approximately 20%, and can be expected to have positive health implications if the changes can be maintained. There is a negative change in free radical levels in the control group which is less than the positive movement for the intervention group. This negative movement in the control group, compared with the positive movement for the intervention group would indicate the intervention facilitated cessation of the negative momentum of free radical production, as well as a drop in free radical levels.

Hypothesis 2, that Reiki intervention produces significant reductions in anxiety levels among participants, also received substantial and significant support in this study.

Figures 2 and 3 illustrate the pattern of changes in mean State-Trait Anxiety Inventory scores for control and experimental groups across the pretest and posttests. The mixed ANOVA results, specifically the F -test for the interaction, demonstrate that this effect is also statistically significant ($F[1,65] = 16.42, p < .0001$).

These results of this study show significant improvement in both the OxiData™ urine test and the STAI, in both S-anxiety as well as T-anxiety, questionnaires. The researchers believe this will be an important step toward helping verify the efficacy of Reiki, and look forward to an increase in its use in contemporary medicine. Scientific research have now shown that Reiki can be used for pain relief, relaxation, and reducing free radicals. Studies showing the efficacy of CAM practices are being conducted with increasing frequency. These verifiable studies help scientists and the general public become more comfortable with the use of CAM. The final chapter is a summary of the conclusions that have been drawn through this study, a discussion of related ideas, and some suggestions for research that could further verify this field of study.

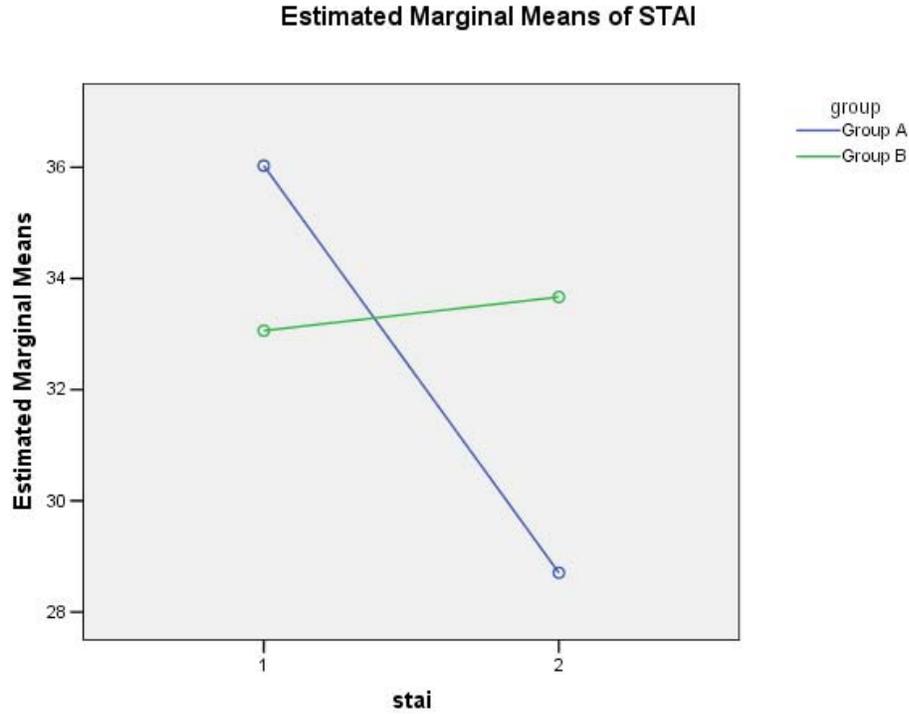


Figure 2. Changes in State-Trait Anxiety Inventory Scores—State

Figure 2 shows a decrease of approximately 7 points in the intervention group mean State anxiety scores following Reiki treatments, and compares the pre- and posttest results of the state segment of the STAI. This figure represents a decrease in State anxiety scores for the intervention group. State anxiety scores represent more variable distinguishing characteristics than do Trait anxiety scores. The increase in the control group scores of less than 1 point on State anxiety scores suggests that an increase could have been expected instead of the decrease noted in intervention scores. The control group mean score increase adds to the importance of the intervention group score drop because it shows an increase was continuing in the control group that is not present in the

intervention group, therefore indicating more actual improvement to the intervention group outcome.

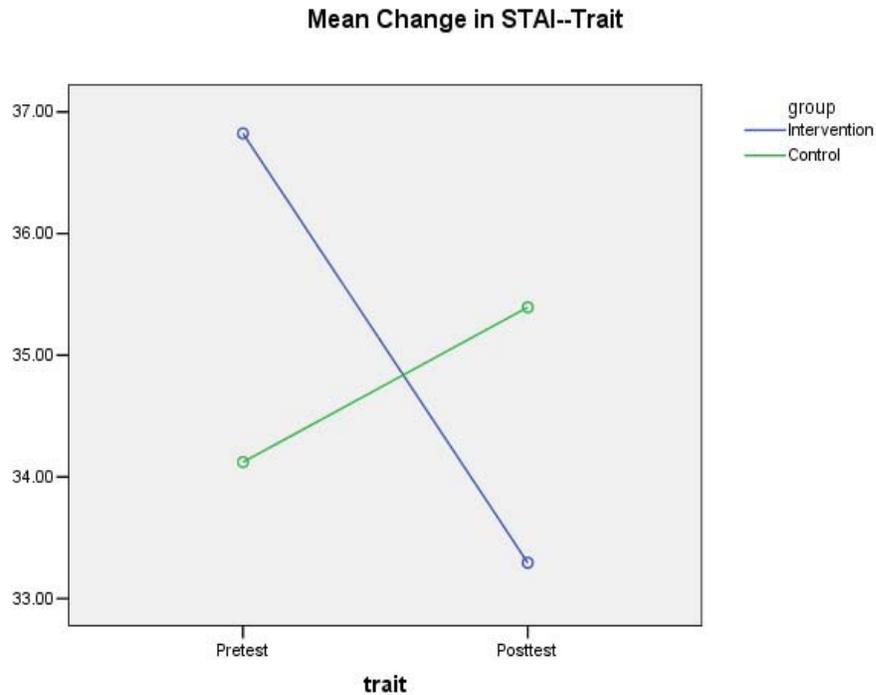


Figure 3. Changes in State-Trait Anxiety Inventory Scores—Trait

Figure 3 shows a decrease of approximately 4 points in the intervention group mean Trait anxiety scores following Reiki interventions. The 1 point increase in the control group Trait anxiety scores suggests that an increase could have been expected instead of the decrease noted. Figure 3 compares the pre- and posttest results of the trait segment of the STAI. The figure represents a decrease in Trait anxiety for the intervention group. This is important because Trait scores represent distinguishing characteristics which are less variable than State qualities. The control group mean score increase adds to the importance of the intervention group drop because it shows an increase was continuing in the control group that is not present in the intervention group.

The stop in increase is in itself a positive change, therefore the drop in intervention group scores indicates additional improvement to the intervention group outcome.

CHAPTER 5: SUMMARY

Conclusions

With this and other groundbreaking research, Reiki is being examined scientifically. At this stage of investigation, indications are that these methods are highly effective in treating a range of physical and psychological conditions, including reducing free radicals that exacerbate many other health problems, anxiety, and pain reduction.¹

The statistical significance of the results confirmed in this study is encouraging. Further studies are in the planning and research stages and it is the belief of the PI that further investigation will further substantiate Reiki's positive influence on health.

Discussion

The purpose of the present study is to evaluate the changes that occur as an effect of Reiki on free radicals and anxiety. These changes are measured with the OxiData™ Urine Test and the STAI. These results provide evidence to support the hypothesis that Reiki can have a positive effect upon the body as shown by the OxiData urine test. The results of the State Trait Anxiety Inventory demonstrate that anxiety can be reduced with Reiki. This reduced anxiety will have additional positive effects on physical health as well as positively affecting the mind and emotions.

Highly significant changes were shown by comparison within as well as between groups using both measurement tools, as shown in Figures 1, 2, and 3 in chapter 4, Research Findings. General linear and Crosstab models used by the statistician are shown in Appendix L. These charts show methods used to calculate results.

Reiki, and other spiritual healing methods, are important to consider as adjuncts to the human capacity to heal and to current health care practices. As reductionistic, mechanistic methods are the norm in contemporary Allopathic health care, it is becoming clear that consideration of the whole person needs to be returned to health care systems. Reiki and other spiritual healing methods include these considerations, and apply methods that satisfy the clients' mind, emotions, and spirit, as well as their body.

The study plan called for scheduling all participants during the same week. As it became evident that this would be impossible for some RAs and study subjects, it was agreed to work in a two week timeframe. Most participants were able to complete their involvement in the study within the two week time period. Two RAs did not receive the OxiData™ kits in the mail until after the end of the first scheduled week. These RAs began working with their subjects the following week. One other RA was not able to participate in the study after receiving the OxiData™ kits in the mail. She did not work with any subjects and subsequently returned the kits to the PI.

The locations used by these RAs represent environments typically used for Reiki sessions. This diversity of settings for the Reiki sessions was considered logical because many Reiki sessions are given in homes and home offices. Anecdotal reports from Reiki clients tell us that they experience physical and mental improvement from symptoms after Reiki sessions in these typical environments. The primary investigator was confident that characteristic results could be attained in typical settings; no attempt was made to alter usual settings or protocol for the study sessions. An attempt was made to validate results as they would normally occur in average Reiki sessions.

There were no controls for nutritional and other environmental factors during the project week, which may have influenced the results of the free radical tests. For example, if subjects consumed antioxidant foods or vitamins during that week, it is possible the outcome may have been different. However, there is now some change of thought occurring in the scientific community as to the usefulness of anti-oxidants. Controlling free radicals with anti-oxidants may not be as simple as once thought. Considering the pervasiveness and toxicity of free radicals, it is important to discover and use whatever methods are available to reduce them. The noninvasiveness of Reiki makes it a wonderful tool for increasing health by reducing free radicals. Also, Reiki's ability to reduce symptoms of stress increases the probability of producing less free radicals.

Each RA worked with only a small subsection of the study subjects. The subjects were in nine different locations around the United States and one in Canada. The locations were equally spread out in the four quadrants of the United States, Northwestern, Northeastern, Southwestern, and Southeastern. Four subjects were located in South Eastern Canada. Data was not collected in enough quantity to show any statistically significant difference between subjects located in different areas. As each Research Assistant only treated a small number of study subjects, no observation could be made as to any differences that may have occurred due to practitioners.

Generalizability across diversity of population may have been reduced because the RAs sought volunteers for the study from people with whom they were, or someone they knew was, previously acquainted.

The control group controlled for the possibility of spontaneous improvement in free radical levels or stress reduction occurring in the study period.

RAs were not given a specific protocol for Reiki sessions other than hand positions which are taught in Usui Method Reiki training. Individual Masters administered Reiki in the way they had been taught in their Usui Master Level training. Reiki Masters were asked which symbols they used. The RAs used the healing symbols as taught in Usui Reiki Master Level training.

Setting intention for healing to be accomplished is usual practice in Reiki healing. In this study, no intention was asked to be set specifically for reduction of free radicals. A common intention during a Reiki session would be for healing the client to the highest degree of healing available on all levels of being. In this study protocol no specific intention was requested, suggested, or specified. Reiki Masters were not required to prepare themselves for Reiki treatments before the study Reiki sessions in any particular way. Instructions dictated that they practice Reiki as taught in the Usui Method.

Study parameters did not require RAs to prepare the environment prior to giving the 30-minute treatments during the study. Some RAs lit candles, some did not. Two RAs “set the energy of the space,” by putting energetic Reiki Symbols into the corners and on the table used for the sessions before the arrival of their subjects.

Some Reiki Masters say prayers before the beginning of healing sessions. No suggestion was made on this subject for this study. However, it is questionable whether or not healing intent by the Reiki practitioners is different than prayers.

Ability to generalize may have been changed by recruiting equal numbers of male and female subjects. Although it was not difficult to find a sufficient number of male subjects for this study, it is commonly found that female respondents far outnumber male

respondents in CAM studies. It is possible that this balancing of gender could have improved ability to generalize this study to the overall population.

There are several different varieties of Reiki practiced today. Usui Reiki and Karuna Reiki are the most well know methods of Reiki practice. Different types of Reiki are not discussed in this document. Only Usui trained masters were used in this study in an effort to strengthen validity which could be confounded by differing methods of Reiki practice.

Reiki Masters were chosen from a group of convenience, in that the recruitment notice went out through the Holos University email list for students and faculty. However, only one of the Reiki Masters who volunteered for the study was directly related to Holos. All Reiki Masters/Research Assistants came to the study by word of mouth, or email forwarding, from those receiving the original recruitment notice. The respondents were widely diverse in locations and experience and are believed to represent a typical cross-section of Reiki Masters.

State anxiety levels were expected to change, as suggested in the hypothesis, due to the relaxing and therapeutic effects of Reiki. The average change in State anxiety of eight points would be enough to cause noticeable change for the subject. They would probably report that they “feel better” at this level of reduction. Changes manifested through use of Reiki are generally gentle. This does not mean that they are not meaningful or important. Trait anxiety levels are more likely, by definition, to remain stable over time. Changes in Trait anxiety measurement were higher than expected during this study, about four points, and demonstrate that Reiki can influence changes in unanticipated areas. A reduction in Trait anxiety could reasonably be expected to lower

free radical production over a longer period of time than could a reduction in State anxiety because of State anxiety's fluidity. However, changes in either anxiety measure will cause a positive effect for overall health.

OxiData™ test result readings were performed by each Research Assistant as the tests were taken. Results needed to be read five minutes after urine was added to the contents of the test vial. Individual evaluation was carefully considered, however, the minimal choices offered by the test left much room for subjective visual evaluation. The aggregate average difference in this study was about one point. Gradation between colors of levels of the evaluation chart is small, with each level representing about 20% of the aggregate scale. Discrepancy could therefore exist about which level on the evaluation scale should be chosen for each scoring, with an unknown variance between RAs reading the results. This variable is a weakness in protocol. Further strength could have been added to the study by having another person read the test results for the RA, blinding the RA to the results. The other person could have been blinded to whether a higher or lower reading would be a more positive outcome, and also could be a person not acquainted with the subjects.

There was no effort to control for demand characteristics in this study. Demand characteristics include expectations, beliefs, attitudes, motivation, perceptions, and values. One could argue that spiritual healing, because it evokes personal spiritual beliefs and is often thought of in connection to religious beliefs, could increase expectation of symptom resolution and positive study results. State anxiety could certainly change from expectation of the power of spiritual influence. Trait anxiety would theoretically change more slowly from conscious or unconscious beliefs. Measuring the ability to change free

radicals quickly and easily through Spiritual Healing with Reiki was the original intent of the study. One respondent told me today, when asked if he would like to try Reiki for a physical ailment, that he had already been trying to think it away and that if he could not do that that he did not think I could. No explanation was useful, and in fact explanation was rebuffed. This is not an unusual response from skeptics. This indicates that generalizability could have been negatively impacted by the fact that our subjects were volunteers, which because of lack of blinding, were known to be open to experimenting with Reiki.

The Hawthorn Effect takes place when subjects have knowledge that they are participating in an experiment. They can be grateful that someone cares about them, to which they attribute their being chosen for the study. All subjects in this study knew they were in a study. Subjects also knew whether they were in the intervention or control group from the first day of the study when they were randomized into groups. It is possible that there was some positive change to outcome attributable to that knowledge. In future research, in an effort to balance positive change attributable to attention from the health care provider, the control group could be given lectures on improving health during the time the intervention group was receiving their Reiki sessions.

One needs to consider whether or not anyone who has any degree Reiki training would have similar results to the results in this study. One may wonder even if someone pretending to give Reiki would get similar results. Studies are in progress to find out the answers to these questions. One can expect variability of results even within trained and experienced Reiki Masters. The Reiki Master/RAs in this study show a variety of ages, length of time since training as a Reiki Master and other variables. Consistency was

sought by using only Usui Method trained Reiki Masters in this study to minimize these effects. The Reiki Attunement process is said to raise the vibratory frequency level of the practitioner permanently. Thus, being Reiki Masters our practitioners theoretically embody a certain level of Reiki energy to share with the client, strengthening validity and generalizability by using only Reiki Masters for the study.

Visual representations of ancient Reiki symbols are presented in Appendix K. It is the considered opinion of the primary investigator that the importance of secrecy of spiritual traditions was perpetuated by people who believed their power would be diminished if common people understood that they could communicate directly with the divine. It is because of this belief that the symbols are presented herein. I believe that the world needs spiritual involvement from many to increase positive growth. As no harm can come from using Reiki, common knowledge of the symbols can not cause harm. Also, since it is necessary to be attuned by a Reiki Master in order to use Reiki, no one who has not been attuned can activate the symbols.

It is common among Allopathic practitioners to assume that spiritual healing modalities that they know little about can be grouped together. Various studies are being conducted that will help differentiate modalities and their usefulness. Information from previous studies validates different modalities. As results from emerging studies are published validity for each method of healing will be strengthened.

Suggestions for Future Research

A study subsequent to the findings of this study would be helpful. Using a greater number of subjects could further validate the results and bring attention to Reiki in particular and CAM in general as useful treatment choices.

Research to discover what prompts the public to make the decision to go to CAM providers would facilitate understanding for both CAM and conventional providers. This knowledge could focus attention on how to draw more clients into CAM offices and crucial factors for client retention. In chapter 1 of this study, I referenced The Executive Summary of the NAS NIM report of the Committee on the use of CAM by the American public, “Complementary and Alternative Medicine in the United States.” Chapter 2 of this report, “Prevalence, Cost and Patterns of CAM Use,” reviews some studies on this topic.

Studies done on qualitative and descriptive data tell us that recipients of Reiki report greater self-awareness, feelings of peace, and overall well-being. These are important qualities in patient care that need to be measured. Balancing qualitative studies with control groups is an important step to strengthening study outcomes.

In a study similar to this present study, it would be valuable to have follow-up at intervals of one and two weeks to find out how long the reduction of free radicals lasts beyond the end of the Reiki sessions. Control group measurements and cross group comparisons would need to be continued as well.

Anecdotal reports tell us that positive results, such as pain reduction, continue to be observed for about twenty-four hours after Reiki and other spiritual healing sessions. Some report longer relief periods. They also indicate cumulative effects. Reports of long-term pain relief from several sessions in a short period of time indicate long-term relief can be obtained from these sequenced sessions. Studies on larger populations by those with the ability to follow several variables concurrently would be of scientific and clinical interest.

A study using a specific ailment, such as sciatic pain, and implementing sequential Reiki sessions aimed at long-term pain relief could be very informative. Preliminary observations by the PI show promising results in this arena.

In ten years, Reiki could conceivably be incorporated into many more mainstream Allopathic hospital and clinic applications and be considered a necessary adjunct to common procedures and surgeries, and its use will become commonplace.

Thorough accounts of the details of this research, its methods and procedures have been made in this dissertation. It is the hope of the primary investigator that many studies will soon follow showing the efficacy of Reiki and other mind-body-spirit healing methods. The PI has confidence that through this anticipated research new light will be shed on the mechanisms causing the changes observed, as well as showing a high rate of statistically significant, positive outcomes.

Chapter 5 Endnotes

¹ Eleanor Hunter Flemming, “The Effects of Reiki on Chronic Pain” (Dissertation, Holos University Graduate Seminary, 2001). Also see: K. Olson and J. Hanson, “Using Reiki to Manage Pain: A Preliminary Report,” *Cancer Prevention and Control* 1, no. 2 (1997): 108-13.

REFERENCES AND BIBLIOGRAPHY

- Abbot, Neil C., Elaine F. Harkness, Clare Stevinson, F. Paul Marshall, David A. Conn, and Edzard Ernst. "Spiritual Healing as a Therapy for Chronic Pain: A Randomized, Clinical Trial." *Pain* 91, no. 1-2 (2001): 79-89.
- "Acts, 3:1-10." In *Bible, New Testament. New International Version*. Grand Rapids, MI: Zondervan Publishing House, 1995.
- Acworth, I. N., and B. Bailey. *Reactive Oxygen Species. In: The Handbook of Oxidative Metabolism*. Chelmsford, Mass.: ESA Inc, 1997.
- Alessio, H. M., and E. R. Blasi. "Physical Activity as a Natural Antioxidant Booster and Its Effect on a Healthy Lifestyle." *Research Quarterly for Exercise and Sport* 68, no. 4 (1997): 292-302.
- Altshul, S. "Dances with Shamans." *Prevention* 55, no. 7 (2003): 48-50.
- Altshul, Sara. "Weird Things I've Tried." *Prevention* 54, no. 6 (2002): 140-46.
- American Heritage Dictionary of the English Language*. 4th ed., ed. American Heritage Dictionaries. Boston: Houghton Mifflin Company, 2000.
- Araki, T., H. Kanaya, M. Shimizu, H. Mabuchi, and et al. "Changes in Serum Malondialdehyde-Modified Low-Density Lipoprotein in Patients with Acute Myocardial Infarction and Stable Angina Pectoris Treated by Coronary Angioplasty." *Journal of Cardiology* 38, no. 2 (2001): 55-60.
- Arnold, Larry E., and Sandra K. Nevius. *The Reiki Handbook*. 4th ed. Harrisburg, PA: PSI Press, 1992.
- Asp, Karen, Rick Chillot, Daryn Eller, Liz Krieger, Eva Marer, Jen Matlack, Su Reid, Laura Williams, and Abigail Walch. "Be Your Own Alt-Healer." *Health* 16, no. 6 (2002): 32.
- _____. "Effect of Reiki Treatments on Functional Recovery in Patients in Poststroke Rehabilitation: A Pilot Study." *Journal of Alternative and Complementary Medicine* 8, no. 6 (2002): 755-63.
- _____. "What Are the Distinctions between Reiki and Therapeutic Touch?" *Clinical Journal of Oncology Nursing* 7, no. 1 (2003): 1-3.
- "Assessing the Efficacy and Safety of Medical Technologies." Washington, D.C.: Congressional Office of Technology Assessment, 1978.

- Baginski, Bodo J., and Shalila Saramon. *Reiki: Universal Life Energy*. Mendocino, Calif.: Life Rhythm, 1988.
- Ballentine, Rudolph. *Radical Healing*. New York: Three Rivers Press, 1999.
- Bantseev, V., R. Bhardwaj, W. Rathbun, H. Nagasawa, and J. R. Trevithick. "Antioxidants and Cataract: (Cataract Induction in Space Environment and Application to Terrestrial Aging Cataract)." *Biochemistry and Molecular Biology International* 42, no. 6 (1997): 1189-97.
- Barnett, Libby, and Maggie Chambers. *Reiki: Energy Medicine, Bringing Healing Touch into Home, Hospital, and Hospice*. Rochester, Vt.: Healing Arts Press, 1996.
- Barrett, B. "Ethnomedical Interactions: Health and Identity on Nicaragua's Atlantic Coast." *Social Science and Medicine* 40, no. 12 (1995): 1611-21.
- Baule, G. M., and R. McFee. "Detection of the Magnetic Field of the Heart." *American Heart Journal* 55, no. 7 (1963): 95-6.
- Becker, Robert O. "Evidence for a Primitive Dc Electrical Analog System Controlling Brain Function." *Subtle Energies* 2 (1991): 71-88.
- Beckford, J. A., and A. Suzara. "A New Religious and Healing Movement in the Phillipines." *Religion* 24, no. 2 (1994): 117-41.
- Benally, Delmona. "A Final and Complete Healing." *Indian Life* 22, no. 5 (2002): 7-8.
- Benor, Daniel. *Spiritual Healing: Scientific Validation of a Healing Revolution*. Southfield: MI, 2001.
- Berman, Brian M. "Integrative Approaches to Pain Management: How to Get the Best of Both Worlds." *BMJ: British Medical Journal* 326, no. 7402 (2003): 1320-1.
- Bjorksten, J. *Longevity*. Madison, Wis.: Bjorksten Research Foundation, 1981.
- Blass, J. P. "Brain Metabolism and Brain Disease: Is Metabolic Deficiency the Proximate Cause of Alzheimer Dementia?" *Journal of Neuroscience Research* 66, no. 5 (2001): 851-56.
- Blofeld, John. *The Tantric Mysticism of Tibet*. New York: E. P. Dutton, 1970.
- Borelli, M. D., and P. Heidt. *Therapeutic Touch*. New York: Springer Publishing Company, 1981.

- Braud, William G. "Psi Conducive States." *Journal of Communications* 25, no. 1 (1975): 142-52.
- Brennan, Barabara A. *Hands of Light: A Guide to Healing through the Human Energy Field*. New York: Bantam Books, 1987.
- Brown, C. K. "Methodological Problems of Clinical Research into Spiritual Healing: The Healer's Perspective." *The Journal of Alternative and Complementary Medicine* 6, no. 2 (2000): 171-76.
- Brown, Fran. *Living Reiki: Takata's Teachings*. Mendocino, Calif.: Life Rhythm, 1992.
- Bulkely, G. B. "The Role of Oxygen Free Radicals in Human Disease Processes." *Surgery* 94, no. 3 (1983): 407-11.
- Burr, Harold Saxon. "Harold Saxon Burr." *Yale Journal of Biology and Medicine* 30, no. 3 (1957): 161-67.
- Bushby, T. *The Bible Fraud*. Hong Kong: The Pacific Blue Group Inc., 2001.
- Choo, Melissa. *Measurement* [article on-line]. Edinburgh: University of Edinburgh, accessed 6/19/2005
<http://www.portfolio.mvm.ed.ac.uk/studentwebs/session2/group31/measur.htm>.
- Clarke, D., and A. Roberts. *Twilight of the Celtic Gods: An Exploration of Britain's Hidden Pagan Traditions*. London: Blanford Press, 1996.
- Clarkson, P. M. "Antioxidants and Physical Performance." *Critical Reviews in Food Science and Nutrition* 35, no. 1-2 (1995): 131-41.
- Clay, Mackenzie A. J. *The Challenge to Teach Reiki*. Byron Bay, NSW, Australia: New Dimensions, 1992.
- _____. *One Step Forward for Reiki*. Byron Bay, NSW, Australia: New Dimensions, 1992.
- Cohen, D. "Magnetoencephalography; Detection of the Brain's Activity with a Superconducting Magnetometer." *Science* 175, no. 4022 (1970): 664-66.
- _____. "Magnetic Fields around the Torso: Production by Electrical Activity of the Human Heart." *Science* 156, no. 3775 (1972): 652-54.
- Crawford, C. C., A. G. Sparher, and W. B. Jonas. "A Systematic Review of the Quality of Research on Hands-on and Distance Healing: Clinical and Laboratory Studies." *Alternative Therapies* 9, no. 3 (2003): A96-A104.

- Dekkers, J. C., L. J. P. van Doornen, and Han C. G. Kemper. "The Role of Antioxidant Vitamins and Enzymes in the Prevention of Exercise-Induced Muscle Damage." *Sports Medicine* 21, no. 3 (1996): 213-38.
- Del Maestro, R. F. "An Approach to Free Radicals in Medicine and Biology." *Acta Physiologica Scandinavica* 492, no. Suppl (1980): 153-68.
- Demirkaya, S., M. A. Topcuoglu, A. Aydin, U. H. Ulas, A. I. Isimer, and O. Vural. "Malondialdehyde, Glutathione Peroxidase and Superoxide Dismutase in Peripheral Blood Erythrocytes of Patients with Acute Cerebral Ischemia." *European Journal of Neurology* 8, no. 1 (2001): 43-51.
- Diamond, John. *Your Body Doesn't Lie*. New York: Warner Books, 1979.
- Diamond, W. John. "Aging, Degenerative Disease, and Free Radicals." *BT: biologicaltherapy* 12, no. 1 (1994): 136-43.
- Dillard, C. J., R. E. Litov, W. M. Savin, E. E. Dumelin, and A. L. Tappel. "Effects of Exercise, Vitamin E, and Ozone on Pulmonary Function and Lipid Peroxidation." *Journal of Applied Physiology* 45, no. 6 (1978): 927-32.
- Dincer, Y., E. Ozen, P. Kadioglu, H. Hatemi, and T. Akcay. "Effect of Sex Hormones on Lipid Peroxidation in Women with Polycystic Ovary Syndrome, Healthy Women, and Men." *Endocrine Research* 27, no. 3 (2001): 309-16.
- Dossey, Larry. "But Is It Energy? Reflections on Consciousness, Healing and the New Paradigm." *Subtle Energies* 3, no. 3 (1992): 69-82.
- _____. *Healing Words: The Power of Prayer and the Practice of Medicine*. New York: HarperCollins Publishers, 1993.
- _____. "The Right Man Syndrome: Skepticism and Alternative Medicine." *Alternative Therapies* 4, no. 3 (1998): 12-19.
- Drury, Josephine A., Julie A. Nycyk, and Richard W. I. Cooke. "Comparison of Urinary and Plasma Malondialdehyde in Preterm Infants." *Clinica Chemica Acta* 263, no. 2 (1997): 177-85.
- Easter, A. "The State of Research on the Effects of Therapeutic Touch." *Journal of Holistic Nursing* 15, no. 2 (1997): 158-75.
- Eck, B. E. "An Exploration of the Therapeutic Use of Spiritual Disciplines in Clinical Practice." *Journal of Psychology and Christianity* 21, no. 3 (2002): 266-80.
- Edleson, Harriet. "Healing Touch." *Prevention* 55, no. 2 (2003): 81.

- Eisenberg, D. M., R. C. Kessler, C. Foster, F. E. Norlock, D. R. Calkins, and T. L. Delbanco. "Unconventional Medicine in the United States: Prevalence, Costs and Patterns of Use." *New England Journal of Medicine* 328, no. 4 (1993): 246-52.
- Eisenberg, David M., Roger B. Davis, Susan L. Ettner, Scott Appel, Sonja Wilkey, Maria Van Rompay, and Ronald C. Kessler. "Trends in Alternative Medicine Use in the United States, 1990-1997: Results of a Follow-up National Survey." *Journal of the American Medical Association* 280, no. 18 (1998): 1569-75.
- Eos, Nancy. *Reiki and Medicine*. Laytonville, Calif.: White Feather, 1995.
- Executive Summary* Washington, D.C.: National Academies Press, 2005, accessed <http://www.nap.edu/books/0309092701/html>.
- Finley II, Sherwood H. K. "Secrets of Reiki Healing with Energy in an Ancient Tradition." *Body Mind and Spirit* (1992): 41-43.
- Fisher, S., and P. G. Johnson. "Therapeutic Touch: A Viable Link to Midwifery Practice." *Elsevier Science* 44, no. 3 (1999): 300-09.
- Flemming, Eleanor Hunter. "The Effects of Reiki on Chronic Pain." Dissertation, Holos University Graduate Seminary, 2001.
- Gerber, R. *A Practical Guide to Vibrational Medicine: Energy Healing and Spiritual Transformation*. New York: Harper Collins Publishers Inc., 2001.
- Gerber, Richard. *Forward to William Tiller*. Vol. 10 Science and Human Transformation: Subtle Energies, Intentionality and Consciousness. Walnut Creek, Calif.: Pavior Publishing Company, 1997.
- Goldfarb, A. H. "Nutritional Antioxidants as Therapeutic and Preventive Modalities in Exercise-Induced Muscle Damage." *Canadian Journal of Applied Physiology* 24, no. 3 (1999): 249-66.
- Goldsmith, J. S. *The Art of Spiritual Healing*. New York: Harper & Row Publishers, 1959.
- Grad, B. "A Telekinetic Effect on Plant Growth, II. Experiments Involving Treatment of Saline in Stopped Bottles." *International Journal of Parapsychology* 6, no. 4 (1964): 473-78.
- _____. "Some Biological Effects of Laying-on of Hands: A Review of Experiments with Animals and Plants." *Journal of the American Society for Psychical Research* 59, no. 5 (1965): 95-127.

- _____. *Some Biological Effects of Laying-on of Hands: A Review of Experiments with Animals and Plants* Parapsychology: Its Relation to Physics, Biology and Psychiatry, ed. Gertrude Schmeidler. Metuchen, N.J.: Scarecrow, 1976.
- Green, Elmer. *Beyond Biofeedback*. New York: Delta Publishing, 1978.
- Greenberg, Robert C. "Biological Terrain - Part 1." *BT: Biomedical Therapy* 15, no. 3 (1997): 89-93.
- Guichardant, M., L. Valette-Talbe, C. Cavadini, G. Crozier, and M. Berger. "Malondialdehyde Measurement in Urine." *Journal of Chromatography B* 655, no. 1 (1994): 112-16.
- Haberly, Helen J. *Reiki: Hawayo Takata's Story*. Olney, Md.: Archedigm Publications, 1990.
- Halliwell, B., and S. Chirico. "Lipid Peroxidation: Its Mechanism, Measurement, and Significance." *American Journal of Clinical Nutrition* 57, no. 5 (1993): 715S-25S.
- Halliwell, B., and J. M. C. Gutteridge. "The Chemistry of Oxygen Radicals and Other Oxygen-Derived Species." In *Free Radicals in Biology and Medicine*, 20-64. New York: Oxford University Press, 1985.
- Halliwell, B., J. M. C. Gutteridge, and C. E. Cross. "Free Radicals, Anti-Oxidants and Human Disease." *Journal of Laboratory and Clinical Medicine* 119, no. 6 (1992): 598-620.
- Halliwell, Barry, and John M. C. Gutteridge. *Free Radicals in Biology and Medicine*. New York: Oxford Univeristy Press, 1999.
- Harman, D. "Aging: A Theory Based on Free Radical and Radiation Biology." *Journal of Gerontology* 11, no. 2 (1956): 298-300.
- Hintz, K. J., G. L. Yount, I. Kadar, G. Schwartz, R. Hammerschlag, and S. Lin. "Bioenergy Definitions and Research Guidelines." *Alternative Therapies in Health and Medicine* 9, no. 3 Suppl (2003): A13-30.
- Hubbard, R., R. Iacono, J. Westengard, and T. Schoonenberg. "Urine Malondialdehyde (Mda) Measured by a Fluorometric and a Visually Read Colorimetric Assay." In *Experimental Biology*, 2000.
- Iyengar, B. K. S. *Light on the Yoga, Sutras of Patanjali*. Pymble NSW, Australia: harpercollinspublishers, 2003.
- Jackson, M. J. "An Overview of Methods for Assessment of Free Radical Activity in Biology." *Proceedings of the Nutrition Society* 58, no. 4 (1999): 1001-06.

- Jayne, W. A. *The Healing Gods of Ancient Civilizations*. New York: University Books, Inc, 1962.
- Johnson, F. C. "Carcinogenesis, Vascular Disease, and the Free Radical Reaction." *Nutrition and Cancer* 3, no. 3 (1982): 117-21.
- Johnson, Melissa Ewey. "Natural Stress Relief." *Essence* 33, no. 1 (2002): 85.
- Jonas, W. B., and Ronald A. Chez (Eds.). "Definitions and Standards in Healing Research First American Samuelli Symposium." *A Supplement to Alternative Therapies in Health and Medicine* 9, no. 3 (2003): A5-A104.
- Jonas, Wayne B., and Ronald A. Chez. "Education, Initiatives, and Information Resources: Recommendations Regarding Definitions and Standards in Healing Research." *The Journal of Alternative and Complementary Medicine* 10, no. 1 (2004): 171-81.
- Kaczmarek, M., J. Wojcicki, L. Samochowiec, T. Dutkiewicz, and Z. Sych. "The Influence of Exogenous Antioxidants and Physical Exercise on Some Parameters Associated with Production and Removal of Free Radicals." *Pharmazie* 54, no. 4 (1999): 303-06.
- Kanter, M. M., G. R. Lesmes, L. A. Kaminsky, J. LaHam-Saeger, and N. D. Nequin. "Serum Creatine Kinase and Lactate Dehydrogenase Changes Following an Eighty-Kilometer Race." *European Journal of Applied Physiology* 57, no. 1 (1988): 60-65.
- Kaptchuk, T., and M. Croucher. *The Healing Arts: Exploring the Medical Ways of the World*. New York: Summit Books, 1987.
- Kaptchuk, T., and D. Eisenberg. "Varieties of Healing. 1: Medical Pluralism in the United States." *Annals of Internal Medicine* 135, no. 3 (2001): 189-95.
- Karlsson, J. "Exercise, Muscle Metabolism and the Antioxidant Defense." *World Review of Nutrition and Dietetics* 82 (1997): 81-100.
- _____. "Introduction to Nutraology and Radical Formation." In *Antioxidants and Exercise*, 1-143. Champaign, Ill.: Human Kinetics Press, 1997.
- Katz, W. A. "The Needs of a Patient in Pain." *The American Journal of Medicine* 105, no. 1 (1998): 2s-7s.
- Kazdin, Alan E. *Research Design in Clinical Psychology*. 4th ed. Boston: Allyn and Bacon, 2003.

- Kelner, M., and B. Wellman. "Health Care and Consumer Choice: Medical and Alternative Therapies." *Social Science and Medicine* 45, no. 2 (1997): 203-12.
- Kelner, Merrijoy, and Beverly Wellman. "Who Seeks Alternative Health Care? A Profile of the Users of Five Modes of Treatment." *Journal of Manipulative and Physiological Therapeutics* 21, no. 5 (1998): 310.
- Krieger, Dolores. *The Therapeutic Touch: How to Use Your Hands to Help to Heal*. New York: Simon & Schuster, 1979.
- Krippner, S., and A. Villoldo. "The Realms of Healing." Millbrae, Calif.: Celestial Arts, 1976.
- Kunz, Dora. *Spiritual Aspects of the Healing Arts*, ed. Dora Kunz. Wheaton, Ill.: Quest Books, 1985.
- Levin, J. *God, Faith, and Health: Exploring the Spirituality-Healing Connection*. New York: John Wiley & Sons, Inc., 2001.
- Levin, J. S., and J. Coreil. "New Age' Healing in the U.S." *Social Science and Medicine* 23, no. 9 (1986): 889-97.
- Levine, S., and P. Kidd. *Antioxidant Adaptation*. San Leandro, Calif.: Biocurrents, 1986.
- Liebert, M. A. "The Middle Way: Realistic Random Controlled Trials for the Evaluation of Spiritual Healing." *Alternative & Complimentary Medicine* 7, no. 1 (2001): 3-8.
- Lin, David J. *Free Radicals and Disease Prevention: What You Must Know*. New Canaan, Conn., 1993.
- Lin, Y. S., and A. G. Taylor. "Effects of Therapeutic Touch in Reducing Pain and Anxiety in an Elderly Population." *Integrative Medicine* 1, no. 4 (1998): 155-62.
- Lomax, E. "Manipulative Therapy: A Historical Perspective from Ancient Times to the Modern Era." In *The Research Status of Spinal Manipulative Therapy*, ed. M. Goldstein, 11-17. Washington, D.C.: U.S. Government Printing Office, 1975.
- Lugenbeel, Barbara D. *Virginia Samdahl: Reiki Master Healer*. Norfolk, Va.: Grunwald and Redcliff Publishers, 1984.
- Lykkesfeldt, J. "Determination of Malondialdehyde as Dithiobarbituric Acid Adduct in Biological Samples by HPLC with Fluorescence Detection: Comparison with Ultraviolet Visible Spectrophotometry." *Clinical Chemistry* 47, no. 9 (2001): 1725-27.

- Mack, A. "Trying to Unlock the Mysteries of Free Radicals and Antioxidants." *The Scientist* 10, no. 19 (1996).
- Mansour, Ahlam A., Marion Beuche, Gail Laing, Anne Leis, and Judy Nurse. "A Study to Test the Effectiveness of Placebo Reiki Standardization Procedures Developed for a Planned Reiki Efficacy Study." *Journal of Alternative and Complementary Medicine* 5, no. 2 (1999): 153-64.
- "Mark 9: 14-29." In *Bible, New Testament. New International Version*. Grand Rapids, MI: Zondervan Publishing House, 1995.
- Marler, P. L., and C. K. Hadaway. "Being Religious or Being Spiritual in America: A Zero-Sum Proposition?" *Journal for the Scientific Study of Religion* 41, no. 2 (2002): 289-301.
- Meadows, Kenneth. *Shamanic Experience*. Boston: Element Books Limited, 1991.
- Melhorn, R. J., and G. Cole. "The Free Radical Theory of Aging." *Advances in Free Radical Biology and Medicine* 1 (1985): 165-223.
- Micozzi, M. S. "Historical Aspects of Complementary Medicine." *Clinics in Dermatology* 16, no. 6 (1998): 651-58.
- Miles, Pamela, and Carla True. "Reiki-Review of a Biofield Therapy History, Theory, Practice and Research." *Alternative Therapies* 9, no. 2 (2003): 61-72.
- Miller, Robert N. "Study of Remote Mental Healing." *Medical Hypotheses* 8, no. 5 (1982): 481-90.
- Money, M. "Shamanism as a Healing Paradigm for Complementary Therapy." *Complementary Therapies in Nursing and Midwifery* 7, no. 3 (2001): 126-31.
- Morris, Joyce. *Reiki, Hands That Heal*. Encino, Calif.: The Center Bookstore, 1993.
- Murphy, P. A., F. Kronenberg, and C. Wade. "Complementary and Alternative Medicine in Women's Health." *Journal of Nurse-Midwifery* 44, no. 3 (1999): 192-204.
- Null, Gary. *Reverse the Aging Process Naturally*. New York: Villard Books, 1993.
- Olson, K., and J. Hanson. "Using Reiki to Manage Pain: A Preliminary Report." *Cancer Prevention and Control* 1, no. 2 (1997): 108-13.
- Orhan, I., A. Aydin, A. Cölkesen, B. Sener, and A.I. Isimer. "Free Radical Scavenging Activities of Some Edible Fruit Seeds." *Pharmaceutical Biology* 41, no. 3 (2003): 163-65.

- Oschman, James. *Energy Medicine: The Scientific Basis*. New York: Harcourt Publisher Limited, 2000.
- Owen, Robert. *Qualitative Research: The Early Years*. Salem, Ore.: Grayhaven Books, 1988.
- Oye, Robert, and Martin Shapiro. "Reporting Results from Chemotherapy Trials. Does Response Make a Difference in Patient Survival?" *Journal of the American Medical Association* 252 (1984): 2722-25.
- Pawlak, W., J. Kedziora, and K. Zolynski. "Effect of Long Term Bed Rest in Men on Enzymatic Antioxidative Defence and Lipid Peroxidation in Erythrocytes." *Journal of Gravitational Physiology* 5, no. 1 (1998): 163-64.
- Peng, Y., S. He, X. Zhang, G. Liu, and J. Xie. "Effects of Hypoxia and Qigong on Urine Malondialdehyde, Superoxide Dismutase and Circulating Endothelial Cell in Humans During Simulated Weightlessness." *Space Medicine and Medical Engineering (Beijiing)* 11, no. 2 (1998): 136-38.
- Petkau, A. "Effects of $^{22}\text{Na}^+$ on a Phospholipid Membrane." *Health Physics* 22, no. 3 (1972): 239-44.
- Poulsen, H. E., A. Weimann, and S. Loft. "Methods to Detect DNA Damage by Free Radicals: Relation to Exercise." *Proceedings of the Nutrition Society* 58, no. 4 (1999): 1007-14.
- Prasad, K. N., W. C. Cole, B. Kumar, and K. C. Prasad. "Scientific Rationale for Using High-Dose Multiple Micronutrients as an Adjunct to Standard and Experimental Cancer Therapies." *Journal of the American College of Nutrition* 20, no. 5 Suppl (2001): 450S-63S, 73S-75S.
- Pryor, W. A. "Free Radical Biology: Xenobiotics, Cancer and Aging." *New York Academy of Science Annals* 393, no. 1 (1982): 1-22.
- Quest, Penelope. *An Introduction to Reiki*. London: Piatkus Books, 2001.
- _____. *Reiki for Life: A Complete Guide to Reiki Practice*. London: Piatkus Books, 2004.
- Raisler, J. "Alternative Healing in Nurse-Midwifery Practice." *Journal of Nurse-Midwifery* 44, no. 3 (1999): 310-19.
- Rand, William. "An Interview with James Oschman." *Reiki News* 1, no. 3 (2002).
- Rand, William L. *Reiki for a New Millennium*. Southfield, Mich.: Vision Publications, 1998.

- _____. "A Meeting with Phyllis Furumoto." *Reiki News* (1999): 2.
- Reddy, Manju B., and Laura Clark. "Iron, Oxidative Stress, and Disease Risk." *Nutrition Reviews* 62, no. 3 (2004): 120-24.
- Risberg, T., E. Wist, S. Kaasa, E. Lund, and J. Norum. "Spiritual Healing among Norwegian Hospitalized Cancer Patients and Patients' Religious Needs and Preferences of Pastoral Services." *European Journal of Cancer* 32, no. 2 (1996): 274-81.
- Rogers, Sherry A. "The Antioxidant Miracle." *Journal of Nutritional and Environmental Medicine* 10, no. 3 (2000): 241-42.
- Rosa, L., E. Rosa, L. Sarnier, and S. Barrett. "A Close Look at Therapeutic Touch." *Journal of American Medical Association* 279, no. 13 (1998): 1005-10.
- Ruttenberg, J. "Hands on Healing." *Better Nutrition* 63, no. 4 (2001): 60-62.
- Sacheck, J. M., and J. B. Blumberg. "Role of Vitamin E and Oxidative Stress in Exercise." *Nutrition and Cancer* 27, no. 10 (2001): 809-14.
- Salonen, J. T. "Markers of Oxidative Damage and Antioxidant Protection: Assessment of Ldl Oxidation." *Free Radical Research* 33, no. Suppl (2000): S41-6.
- Sanders, H., M. F. Davis, B. Duncan, F. J. Meaney, J. Haynes, and L. B. Barton. "Use of Complementary and Alternative Medical Therapies among Children with Special Health Care Needs in Southern Arizona." *Pediatrics* 111, no. 3 (2003): 584-87.
- Sanford, A. *The Healing Light*. New York: Ballantine Books, 1947.
- Sappey, C, A Favier, P Leclercq, M Micoud, P Faure, and F Pelen. "Relative Decrease in Antioxidant Status During Evolution of HIV Infection: Effect on Lipid Peroxidation." In *International AIDS Conference*, abstr PuB 7502. Amsterdam, 1992.
- Sappey, C., and et al. "Of the Grepo Laboratory in Grenoble, France, Paper Given at the VIII International Conference on AIDS," 1992.
- Schmeidler, Gertrude. *Parapsychology: Its Relation to Physics, Biology and Psychiatry*, ed. Gertrude Schmeidler. Metuchen, N.J.: Scarecrow, 1976.
- Schwartz, G E., and L. G. Russek. *The Living Energy Universe*. Charlottesville, Va.: Hampton Roads Publishing Company, Inc., 1999.

- Seto, A., C. Kusaka, S. Nakazato, W. Huang, T. Sato, T. Hisamitsu, and C. Takeshige. "Detection of Extraordinary Large Bio-Magnetic Field Strength from Human Hand." *Acupuncture and Electro-Therapeutics Research International Journal* 17, no. 2 (1992): 75-94.
- Shannon, Sara. *Good Health in a Toxic World: The Complete Guide to Fighting Free Radicals*. New York: Warner Books, Inc., 1994.
- Shealy, C. N., V. Borgmeyer, and P. Thomlinson. "Intuition, Neurotensin and the Ring of Air." *Subtle Energies and Energy Medicine* 11, no. 2 (2002): 241-48.
- Shealy, C. N., and C. M. Myss. "The Ring of Fire and Dhea: A Theory for Energetic Restoration of Adrenal Reserves." *Subtle Energies* 6, no. 2 (1995): 167-75.
- Shealy, C. N., C. M. Myss, R. K. Cady, L. Dudley, and R. Cox. "Electrical Stimulation Raises Dhea and Improves Diabetic Neuropathy." *Stress Medicine* 11, no. 4 (1995): 215-17.
- Shealy, C. Norman, Vera Borgmeyer, and K. Paul Thomlinson. "Reduction of Free Radicals by Electrical Stimulation of Specific Acupuncture Points." *Subtle Energies and Energy Medicine Journal* 13, no. 3 (2002): 251-59.
- Shealy, Norman C. *Sacred Healing: The Curing Power of Energy and Spirituality*. Boston: Elements Books, Inc., 1999.
- Signorelli, S. S., S. Neri, S. Sciacchitano, and et al. "Duration of Menopause and Behavior of Malondialdehyde, Lipids, Lipoproteins and Carotid Wall Artery Intima-Media Thickness." *Maturitas* 39, no. 1 (2001): 39-42.
- Sjodin, T., Y. H. Westing, and F. S. Apple. "Biochemical Mechanisms for Oxygen Free Radical Formation During Exercise." *Sports Medicine* 10, no. 4 (1990): 236-54.
- Skrzydowska, E., A. Stankiewica, M. Sulkowska, S. Sulkowski, and I. Kasacka. "Antioxidant Status and Lipid Peroxidation in Colorectal Cancer." *Journal of Toxicology and Environmental Health. Part A* 64, no. 3 (2001): 213-22.
- Smith, R. C., and C. D. Lay. "State and Trait Anxiety: An Annotated Bibliography." *Psychological Reports* 34, no. 2 (1974): 519-94.
- Spielberger, C. D., R. L. Gorsuch, and R. E. Lushene. *Stai Manual for the State-Trait Anxiety Inventory*. Palo Alto, Calif.: Consulting Psychologists Press, 1969.
- Stadtman, E. R. "Protein Oxidation and Aging." *Science* 257, no. 5074 (1992): 1220-24.
- Stein, Diane A. *Essential Reiki: A Complete Guide to an Ancient Healing Art*. Freedom, Calif.: The Crossing Press Inc., 1995.

- Stewart, Judy-Carol. *The Reiki Touch*. Houston: The Reiki Touch, Inc., 1988.
- Stockmeier, C. A. "Involvement of Serotonin in Depression: Evidence from Postmortem and Imaging Studies of Serotonin Receptors and the Serotonin Transporter." *Journal of Psychiatric Research* 37, no. 5 (2003): 357-73.
- Sullivan, Colleen, and Brett Hill. "Get Mind, Body, and Spirit in Sync." *Health* 17, no. 5 (2003): 28-30.
- Sunde', Merle. *Reiki: Universal Life Force Energy*. California, USA: A.R.T. Productions, 1998.
- Suzuki, E., G. Yagi, T. Nakaki, S. Kanba, and M. Asai. "The Role of Nitric Oxide and Depressive States." *Journal of Affect Disorder* 63, no. 1-3 (2001): 221-4.
- Targ, Russell, and Jane Katra. *Miracles of Mind, Exploring Non-Local Consciousness and Spiritual Healing*. Novato, Calif.: New World Library, 1998.
- Tiller, W. A. *Science and Human Transformation: Subtle Energies, Internationality and Consciousness*. Walnut Creek, Calif.: Pavior Publishing, 1997.
- Tiller, W. A., W. E. Dibble, and M. J. Kohane. *Conscious Acts of Creation: The Emergence of a New Physics*. Walnut Creek, Calif.: Pavior, 2001.
- Totan, Y., O. Cekic, M. Borazan, E. Uz, S. Stout, and O. O. Akyol. "Plasma Malondialdehyde and Nitric Oxide Levels in Age Related Macular Degeneration." *The British Journal of Ophthalmology* 85, no. 12 (2001): 1426.
- Trevisan, M., R. Browne, and M. Ram. "Correlates of Markers of Oxidative Status in the General Population." *American Journal of Epidemiology* 154, no. 4 (2001): 348-56.
- Trichopoulou, A., A. Naska, and E. Vasilopoulou. "Guidelines for the Intake of Vegetables and Fruit: The Mediterranean Approach." *International Journal for Vitamin and Nutrition Research* 71, no. 3 (2001): 149-53.
- Truant, T., and J. L. Bottorff. "Decision Making Related to Complementary Therapies: A Process of Regaining Control." *Patient Education and Counseling* 38, no. 2 (1999): 131-42.
- Turner, J. G., A. J. Clark, D. K. Gauthier, and M. Williams. "The Effect of Therapeutic Touch on Pain and Anxiety in Burn Patients." *Journal of Advanced Nursing* 28, no. 1 (1998): 10-20.

- Updike, P., M. J. Cleaveland, and J. Nyberg. "Complementary Caring-Healing Practices of Nurses Caring for Children with Life-Challenging Illnesses and Their Families: A Pilot Project with Case Reports." *Alternative Therapies in Health and Medicine* 6, no. 4 (2002): 112; 08-11.
- Van Der Ploeg, H. M. "The Development and Validation of the Dutch State-Trait Anxiety Inventory." In *Anxiety and Behaviour*, 129-39. New York: Academic Press, 1976.
- Vanharanta, M., S. Voutilainen, T. Nurmi, J. Kaikkonen, J. L. Roberts, J. D. Morrow, H. Adlercreutz, and J. T. Salonen. "Association between Low Serum Enterolactone and Increased Plasma F2-Isoprostanes, a Measure of Lipid Peroxidation." *Atherosclerosis* 160 (2002): 465-69.
- Vanhoutte, P. M. *Serotonin and the Cardiovascular System*. New York: Raven Press, 1985.
- Vayalil, Praveen K., Girija Kuttan, and Ramadasan Kuttan. "Rasayanas: Evidence for the Concept of Prevention of Diseases." *American Journal of Chinese Medicine* 30, no. 1 (2002): 155-71.
- Velander, Peter. "Are You Ready to Be Healed." *Clergy Journal* 79, no. 5 (2003): 17-18.
- Walsh, R. "Shamanic Experiences: A Developmental Analysis." *Journal of Humanistic Psychology* 41, no. 3 (2001): 31-53.
- Warcollier, Rene. *Mind to Mind*. New York: Collier Books, 1963.
- Wardell, D. W., and J. Engebretson. "Biological Correlates of Reiki Touch (sm) Healing 2-1." *Journal of Advanced Nursing* 33, no. 4 (2001): 439-45.
- Weil, A. "The Significance of Integrative Medicine for the Future of Medical Education." *The American Journal of Medicine* 108, no. 5 (2000): 441-43.
- Wells, L. *The Greek Language of Healing*. Hawthorne, N.Y.: Walter de Gruyter, Inc., 1998.
- Wetzel, Wendy S. "Reiki Healing: A Physiologic Perspective." *Journal of Holistic Nursing* 7, no. 1 (1989): 47-54.
- Whelan, K. M., and G. S. Wishnia. "Reiki Therapy: The Benefits to a Nurse/Reiki Practitioner." *Holistic Nursing Practice* 17, no. 4 (2003): 209-18.
- Williams, A. "Therapeutic Landscapes in Holistic Medicine." *Social Science and Medicine* 46, no. 9 (1998): 1193-203.

- Wirth, D. P. "The Significance of Belief and Expectancy within the Spiritual Healing Encounter." *Social Science & Medicine* 41, no. 2 (1995): 249-60.
- Wirth, Daniel P., and Jeffery R. Cram. "Multi-Site Electromyographic Analysis of Non-Contact Therapeutic Touch." *International Journal of Psychosomatics* 40, no. 1-4 (1993): 47-55.
- Wong, S. H. Y., J. A. Knight, S. M. Hopfer, O. Zaharia, C. N. Leach, and F.W. Sunderman. "Lipoperoxides in Plasma as Measured by Liquid-Chromatographic Separation of Malondialdehyde-Thiobarbituric Acid Adduct." *Clinical Chemistry* 33, no. 2 (1987): 214-20.
- Zimmerman, J. E., Paul Thiene, and J. T. Harding. "Design and Operation of Stable Rf-Biased Superconducting Point-Contact Quantum Devices, and a Note on the Properties of Perfectly Clean Metal Contacts." *Journal of Applied Physics* 41, no. 4 (1970): 1572-80.
- Zimmerman, John. "New Technologies Detect Effects of Healing Hands." *Brain/Mind Bulletin* 10, no. 16 (1985): 3.
- _____. "Laying-on-of-Hands Healing and Therapeutic Touch: A Testable Theory. Bemi Currents." *Journal of the Bio-Electro-Magnetics Institute* 2, no. 1 (1990): 8-17.

**APPENDIX A:
Reiki Coupon**

This coupon was given to control group subjects.



APPENDIX B:
State Trait Anxiety Inventory Form and Description

STAI - State Anxiety Form

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you feel *right* now, that is, *at this moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
1. I feel calm	1	2	3	4
2. I feel secure	1	2	3	4
3. I am tense	1	2	3	4
4. I feel strained	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes	1	2	3	4
8. I feel satisfied	1	2	3	4
9. I feel frightened	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel indecisive	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel confused	1	2	3	4
19. I feel steady	1	2	3	4
20. I feel pleasant	1	2	3	4

STAI--Trait Anxiety Form

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then circle the appropriate number to the right of the statement to indicate how you *generally* feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant	1	2	3	4
22. I feel nervous and restless	1	2	3	4
23. I feel satisfied with myself	1	2	3	4
24. I wish I could be as happy as others seem to be	1	2	3	4
25. I feel like a failure	1	2	3	4
26. I feel rested	1	2	3	4
27. I am "calm, cool and collected"	1	2	3	4
28. I feel that difficulties are piling up so that I cannot overcome them	1	2	3	4
29. I worry too much over something that doesn't really matter	1	2	3	4
30. I am happy	1	2	3	4
31. I have disturbing thoughts	1	2	3	4
32. I lack self-confidence	1	2	3	4
33. I feel secure	1	2	3	4
34. I make decisions easily	1	2	3	4
35. I feel inadequate	1	2	3	4
36. I am content	1	2	3	4
37. some unimportant thought runs through my mind and bothers me	1	2	3	4
38. I take disappointments so keenly that I can't put them out of my mind	1	2	3	4
39. I am a steady person	1	2	3	4
40. I get in a state of tension or turmoil as I think over my recent concerns and interests	1	2	3	4

APPENDIX C: State Trait Anxiety Inventory for Adults Scoring Key (Form Y-1, Y-2)

mind garden

State-Trait Anxiety Inventory for Adults Scoring Key (Form Y-1, Y-2)

Developed by Charles D. Spielberger in collaboration with R.L. Gorsuch, R. Lushene, P.R. Vagg, and G.A. Jacobs

To use this stencil, fold this sheet in half and line up with the appropriate test side, either Form Y-1 or Form Y-2. Simply total the scoring **weights** shown on the stencil for each response category. For example, for question # 1, if the respondent marked 3, then the **weight** would be 2. Refer to the manual for appropriate normative data.

Form Y-1	NOT AT ALL SOMEWHAT MODERATELY SO VERY MUCH SO	Form Y-2	ALMOST NEVER SOMETIMES OFTEN ALMOST ALWAYS
1.	4 3 2 1	21.	4 3 2 1
2.	4 3 2 1	22.	1 2 3 4
3.	1 2 3 4	23.	4 3 2 1
4.	1 2 3 4	24.	1 2 3 4
5.	4 3 2 1	25.	1 2 3 4
6.	1 2 3 4	26.	4 3 2 1
7.	1 2 3 4	27.	4 3 2 1
8.	4 3 2 1	28.	1 2 3 4
9.	1 2 3 4	29.	1 2 3 4
10.	4 3 2 1	30.	4 3 2 1
11.	4 3 2 1	31.	1 2 3 4
12.	1 2 3 4	32.	1 2 3 4
13.	1 2 3 4	33.	4 3 2 1
14.	1 2 3 4	34.	4 3 2 1
15.	4 3 2 1	35.	1 2 3 4
16.	4 3 2 1	36.	4 3 2 1
17.	1 2 3 4	37.	1 2 3 4
18.	1 2 3 4	38.	1 2 3 4
19.	4 3 2 1	39.	4 3 2 1
20.	4 3 2 1	40.	1 2 3 4

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STAIP-AD Scoring Key

APPENDIX D: OxiData™ Test Instructions

OxiData™ Test measures free radical activity by-products in urine. Full instructions are included with every test kit.

Step 1: Fill cup half-full of urine.

Step 2: Break of top of ampoule.

Step 3: Draw urine into dropper tube up to level indicated on tube.

Step 4: Squeeze urine from dropper into ampoule, turn several times to mix.

Step 5: Wait five minutes; then compare the color of ampoule solution with color chart and record reading and date.

Contents of kit: Test ampoules with colormetric substance, dropper tubes, color charts.

Manufactured by Apex Energetics

APPENDIX E: Excel Worksheet Directions

This form is offered to explain any questions you may have about filling out the Excel Worksheet you are asked to fill out as a Reiki Master Practitioner and Research Assistant in the Study. Please feel free to email or call me with any further questions you may have prior to or during the Study. Thank you for your participation!

- A. Subject #: Leave this space blank. The Primary Investigator (PI) will fill out this space.
- B. Group A or B: Enter the outcome of the randomization process. This shows whether the subject was randomized to Group A or Group B.
- C. Name: Enter the name of the study subject in this space.
- D. Date 1: Enter the date you first meet with the subject for study participation (filling out forms and initial urine test).
- E. Consent Y/N: Enter Y for yes, or N for no to indicate whether or not the subject has filled out and returned to you a consent form (to be sent to the PI after the study).
- F. Q 1 Y/N: Enter Y for yes, or N for no to indicate whether or not the subject has filled out and returned the STAI Questionnaire to you. The STAI's will be returned to the PI after the study.
- G. Ur 1 Y/N: Enter the number related to the color indicated on the Oxidata Urine Test Kit color chart matching the subject's result. (Complete directions for urine testing are provided in the kit.)
- H. Reiki Y/N: Enter Y for yes, or N for no to indicate whether or not a Reiki Session is given on Date 1. Group A will have their first Reiki Session today. Group B will not receive their Reiki Session until after the second urine test and questionnaire are completed.
- I. Date 2: Group A will be receiving a Reiki Session today. Group B will not.
- J. Reiki Y/N: Enter Y for yes, or N for no to indicate whether or not a Reiki Session is given on Date 2. Group A will receive a Reiki Session today. Group B will not.
- K. Date 3: Enter the date of the third meeting for study participation.
- L. Reiki Y/N: Enter Y for yes, or N for no to indicate whether or not a Reiki Session is given on Date 2. Group A will receive a Reiki Session today. Group B will receive the one hour Reiki Session for participation in our Study, after they have had the second urine test and filled out the second questionnaire. A coupon for a one-hour Reiki Session, may be given for use within one month, or the session may be given at this time.
- M. Ur 2 Y/N: Enter the number related to the color indicated on the Oxidata Urine Test Kit color chart matching the subject's result.
- N. Q 2 Y/N: Enter Y for yes, or N for no to indicate whether or not the subject has filled out and returned the STAI questionnaire to you. This STAI will be sent to the PI after completing the study.
- O. Reiki Master Name: Enter your name here as the Reiki Master/Research Assistant working with these study subjects.

APPENDIX F: Excel Spreadsheet Sent to Statistician for Processing

M or F	STAI-Trait Pre	STAI-Trait Post	UrTestDate	Consent	STAI 1	Ur 1	Reiki 1	Reiki 2	Reiki 3	Ur 2	STAI 2
M	34	30	12-Apr	Y	23	5	12-Apr	14-Apr	16-Apr	5	25
M	40	38	10-Apr	Y	45	3	10-Apr	12-Apr	14-Apr	4	38
F	41	42	10-Apr	Y	33	1	10-Apr	12-Apr	14-Apr	2	25
M	42	28	12-Apr	Y	29	2	12-Apr	14-Apr	16-Apr	0	30
M	32	30	11-Apr	Y	28	5	11-Apr	13-Apr	15-Apr	5	22
M	37	39	11-Apr	Y	38	3	11-Apr	13-Apr	15-Apr	3	35
F	40	38	13-Apr	Y	34	5	13-Apr	15-Apr	17-Apr	4	28
M	53	56	13-Apr	Y	51	5	13-Apr	15-Apr	17-Apr	5	41
F	25	25	13-Apr	Y	28	5	13-Apr	15-Apr	17-Apr	3	24
F	37	36	13-Apr	Y	43	1	13-Apr	15-Apr	17-Apr	1	34
M	26	30	13-Apr	Y	30	5	13-Apr	15-Apr	17-Apr	4	29
F	32	30	11-Apr	Y	35	5	11-Apr	13-Apr	15-Apr	1	30
F	33	31	11-Apr	Y	34	5	11-Apr	13-Apr	15-Apr	3	29
F	35	29	11-Apr	Y	31	4	11-Apr	13-Apr	15-Apr	3	27
F	50	41	11-Apr	Y	50	5	11-Apr	13-Apr	15-Apr	4	34
M	29	29	11-Apr	Y	34	4	11-Apr	13-Apr	15-Apr	3	21
F	20	20	14-Apr	Y	23	4	14-Apr	16-Apr	18-Apr	3	20
F	20	20	14-Apr	Y	19	5	14-Apr	16-Apr	18-Apr	4	23
F	38	31	14-Apr	Y	46	5	14-Apr	16-Apr	18-Apr	2	24
F	25	28	14-Apr	Y	21	4	14-Apr	16-Apr	18-Apr	2	46
M	28	28	13-Apr	Y	22	4	13-Apr	15-Apr	17-Apr	5	24
F	30	21	13-Apr	Y	34	4	13-Apr	15-Apr	17-Apr	1	20
M	52	48	11-Apr	Y	54	2	11-Apr	13-Apr	15-Apr	1	34
F	36	34	11-Apr	Y	37	2	11-Apr	13-Apr	15-Apr	0	26
M	41	39	16-Apr	Y	30	2	16-Apr	18-Apr	20-Apr	0	27
F	59	41	16-Apr	Y	52	4	16-Apr	18-Apr	20-Apr	3	31
F	56	42	18-Apr	Y	32	0	18-Apr	20-Apr	22-Apr	2	25
M	28	25	18-Apr	Y	50	5	18-Apr	20-Apr	22-Apr	3	29
F	37	31	11-Apr	Y	40	2	11-Apr	13-Apr	15-Apr	0	21
F	50	46	11-Apr	Y	48	0	11-Apr	13-Apr	15-Apr	0	36
F	36	36	11-Apr	Y	39	5	11-Apr	13-Apr	15-Apr	0	34
M	45	31	10-Apr	Y	36	0	10-Apr	12-Apr	14-Apr	0	25
M	25	21	10-Apr	Y	33	4	10-Apr	12-Apr	14-Apr	4	26
M	40	38	10-Apr	Y	43	4	10-Apr	12-Apr	14-Apr	2	33
M	30	37	11-Apr	Y	30	2		15-Apr		2	38
F	34	38	11-Apr	Y	42	0		15-Apr		0	47
M	47	50	14-Apr	Y	59	4		18-Apr		4	40
F	20	26	14-Apr	Y	27	5		18-Apr		5	20
M	20	22	14-Apr	Y	20	5		18-Apr		5	20
M	28	34	14-Apr	Y	32	4		18-Apr		4	40
M	25	25	13-Apr	Y	20	0		17-Apr		3	20
F	24	23	13-Apr	Y	21	4		17-Apr		4	20
M	44	44	18-Apr	Y	45	5		22-Apr		5	41
F	31	38	18-Apr	Y	23	4		22-Apr		5	38
F	34	35	18-Apr	Y	37	4		22-Apr		5	34
M	30	30	18-Apr	Y	30	4		22-Apr		4	29
M	40	40	10-Apr	Y	29	2		14-Apr		3	25
M	48	50	10-Apr	Y	46	1		14-Apr		4	52
M	38	47	10-Apr	Y	27	1		14-Apr		4	35
F	35	40	11-Apr	Y	39	0		15-Apr		4	30
F	37	39	11-Apr	Y	26	4		15-Apr		4	38
F	35	32	10-Apr	Y	32	4		15-Apr		4	20
F	32	29	13-Apr	Y	21	0		17-Apr		1	24
M	30	29	13-Apr	Y	23	5		17-Apr		4	20
F	30	30	12-Apr	Y	30	4		16-Apr		4	32
M	40	40	13-Apr	Y	40	5		17-Apr		5	45
M	40	42	12-Apr	Y	45	5		16-Apr		5	52
F	26	27	10-Apr	Y	24	2		14-Apr		2	26
M	30	30	10-Apr	Y	38	2		14-Apr		2	41
M	44	44	11-Apr	Y	48	1		15-Apr		2	44
F	36	35	12-Apr	Y	32	2		16-Apr		5	28
M	35	32	11-Apr	Y	27	3		15-Apr		5	31
F	35	33	13-Mar	Y	28	5		17-Mar		4	23
M	25	29	11-Apr	Y	31	5		15-Apr		5	29
M	41	42	11-Apr	Y	42	5		15-Apr		5	45
M	34	35	11-Apr	Y	35	5		15-Apr		5	38
F	42	43	11-Apr	Y	42	5		15-Apr		5	46

**APPENDIX G:
Internal Review Board Application, with Approval**

STUDY ID#: 427

DATE APPROVED BY THE IRB: March 31, 2005

DATE STUDY TO BEGIN: April 10, 2005

PRINCIPAL INVESTIGATOR: NANCY GARRISON

**PROTOCOL RESEARCHING THE EFFECT OF REIKI
ON THE LEVEL OF FREE RADICALS**

Location: Primary Researcher's location is Seattle, Washington; Research Assistant locations will be multiple.

1. STUDY CONDUCT

1.1 Background: High levels of free radicals are shown to be present in many diseases and illnesses. Reiki has been shown to facilitate relaxation and to reduce heart rate and blood pressure. The Oxidata Urinalysis gives the best, most simple method for measuring free radicals.

1.2 Objective: An assessment of individual free radical levels will be completed before and after Reiki sessions. Changes in these levels will be determined by urine testing. The investigators expect to demonstrate the reduction of free radicals with Reiki, a noninvasive complementary Alternative e healing intervention. If reduction of free radicals can be accomplished with this simple technique, people could easily be taught to improve their own health with minimum effort and expense.

1.3 Study Design: This study is a Pre-Post Control Test Design.

1.4 Subject Population:

1.4.1 Inclusion Criteria: Individuals, male and female, 18 years of age and older, who agree to participate and who can be available for all sessions will be included.

1.4.2 Exclusion Criteria: Anyone who is currently under treatment for a psychotic disorder, or has been hospitalized within the last year for mental illness will be excluded from this study.

1.4.3 Potential Risks: Risks are limited to disappointed expectations. There are no known risks from Reiki treatments.

1.4.4 Discontinuation Criteria: Subjects who require immediate medical intervention will be eliminated from the study. Study participants have the right to discontinue the study at any time, for any reason.

1.5 Evaluations

1.5.1 Safety: No safety considerations are known.

1.5.2 Efficacy: No previous statistics are available on this practice.

1.5.3 Statistical Analyses: No previous statistics are available on this practice.

1.6 Special Instructions: Informed consent will be obtained from all participants before the study begins. Care will be taken to be sure that participants understand any potential risks that may be possible.

STUDY ID#: 427

DATE APPROVED BY THE IRB: March 31, 2005

DATE STUDY TO BEGIN: April 10, 2005

PRINCIPAL INVESTIGATOR: NANCY GARRISON

PROTOCOL RESEARCHING THE EFFECT OF REIKI ON THE LEVEL OF FREE RADICALS

Research Assistant Information Form

The principal investigator in this study is Nancy Garrison, a graduate student at Holos University. A research advisor has approved all procedures in this study, as has an Institutional Review Board. Please do not hesitate to ask any questions you may have at any time by contacting the principal investigator.

The following information is provided for you so that you can have exact protocol to follow for use in this study. Practitioners trained to a Master Level in the Usui Method of Reiki will perform all Reiki sessions in this study.

Before beginning the study, you will receive a packet containing Subject Information and Consent Forms, Statistics Reporting Forms, and Oxidata Urine Testing Kits (Kits include all pertinent information for administering the kits), State-Trait Anxiety Inventory For Adults forms, and vouchers good for one 1-hour Reiki Session to be provided by you at a

later date, and a form to record any other information you find interesting and/or pertinent. The number of Oxidata testing kits will be equal to the number of participants you have agreed to work with for this Study.

This study is a Pre-Post Control Test Design, and is being used to determine the results of Reiki on free radicals as measured by the Oxidata Urine Test. The Oxidata Urine Test is a colorimetric testing kit that is simple to use, and gives accurate measurement. Instructions are included in the test kits and are to be followed exactly.

For this study you are required to:

- Choose subjects you will be working with by asking for volunteers
- Inform subjects of all protocol
- Have Study Participants sign and return consent forms to you
- Randomize volunteers to one of two groups*, by flipping a coin
- Set and keep all appointments with Study Participants assigned to you
- Administer the State-Trait Anxiety Inventory For Adults, twice
- Administer urine tests
- Provide Reiki sessions
- Answer any questions that participants may have as directed by Primary Investigator
- Not pressure subjects in any way to participate
- Write down on the excel worksheet or a journal page anything that has to do with the study, participants, protocol, and any observations or findings
- Return all information regarding the study to Primary Investigator in a timely manner (within 3 days after your participation in the study is completed)
- Respect the confidentiality of Study Participants, Practitioners and the Primary Investigator
- Return supplies provided but not used in your part of the study, as agreed.
- Keep in contact with the Primary Investigator as often as is necessary during the study. Phone contacts with the Primary Investigator can be arranged by email and she will contact you by phone at the appointed time, so that phone charges will be at her expense. The Primary Investigator will answer email contacts promptly, usually within a few hours, always within a day.

On the initial study contact (**Day 1**), for **all Study Participants**:

You will give the subject an **information and consent** form. You will **review it with them and answer any questions** they may have at that time. They are **required to sign** two copies of the consent and information form before continuing with the study. They will **keep one information and one consent form** for their files, and **return one copy to the Research Assistant** for Study files. In order to measure the effect, if any, on the participant's State of Anxiety in this study, you will ask the participants to fill out a **State-Trait Anxiety Inventory For Adults****. You will then administer **an Oxidata Urine Test.*****

At that time, you will **set appointments** for all subsequent study meetings****.

For Group A: You will set appointments for the following 2 Study Dates. At that time you will give the first ½ hour Reiki session.

On Day 2 of the Study, you will give the second ½ hour Reiki session.

On Day 3 of the Study, you will give the third ½ hour Reiki session, a second Oxidata urine test, and have the participant fill out the second State-Trait Inventory For Adults.

For Group B: On **Day 1**, after the first urine test is given and the first State-Trait Inventory for Adults is given, you will make an appointment for them to return five days later. On **Day 5** you will administer a urine test and ask them to fill out another State-Trait Inventory for Adults. You will then give them a voucher for a one hour Reiki Session with you at a later date, to be agreed upon by the Research Assistant/Reiki Master and the Study Participant.

***Randomizing volunteers:** You will select an equal number of male and female volunteers. The males and females will be separated into separate groups. Study group randomization will be accomplished by flipping a coin. Those getting Heads will be in one group, and those getting Tails in the other. This will accomplish supplying an equivalent number of each gender to Groups A and B.

****To administer the Oxidata Urine Test:** You will ask the subject to catch a urine sample in the cup provided. The research assistant will, wearing rubber gloves, then draw a small amount of urine into a dropper and add it to the content of the test vial. The contents will either remain the same color or change to a color between pale pink and dark red. After a maximum five minute waiting period the color of the vial will be compared to the color selection chart provided in the Oxidata Urine Testing Kit. The number corresponding to the color on the chart will then be recorded on the sheet provided for that purpose.

***** State-Trait Anxiety Inventory For Adults:** The STAI is a 40-question self-evaluation questionnaire for determining anxiety levels, to be used before the first, and after the third, Reiki sessions. You will read the directions to the study participant and answer any questions they may have. You will then ask them to mark their answers and return the form to you when finished. This form will be placed in the file envelope and returned to the Principal Investigator at the end of you part of the study.

******Choose your start date** with the follow-up dates in mind. The study will encompass 5 days for each subject. Participants must all be studied in the same two-week period, to avoid compromising study validity.

Study interventions take place as follows for Group A:

Choose a day for Appointment 1, and follow required processes for that day.

Appointment 2 will be two days after Appointment 1, and will require a ½ Reiki session only.

Appointment 3 will be two days after Appointment 2. It will require a ½ hour Reiki session, and filling out an STAI.

Ahead of the time indicated for the study, you must be sure you and the subject will both be able to be available for all 3 appointments.

For example: In **Group A**, if Appointment 1 is **April 1**, Appointment 2 needs to be **April 3**, Appointment 3 would be **April 5**, Another example would be **Monday**, the following **Wednesday**, and **Friday** of that same week.

In **Group B**, On the **Day 1**, Participants will fill out all initial study paperwork and make an appointment for the follow-up on the **Day 5**. On the **Day 5** an appointment should be set for the Free Reiki Session, as indicated on the voucher.

It will be best if we can synchronize the starting date of the study with all Research Assistants/Reiki Master Practitioners providing the interventions onto dates close to one another. It is vital that all sessions happen within a two-week period; in order strengthen the validity of the study.

All information will be recorded and sent to the Principal Investigator as soon as possible after the study has been completed.

STUDY ID#: 427

DATE APPROVED BY THE IRB: March 31, 2005

DATE STUDY TO BEGIN: April 10, 2005

PRINCIPAL INVESTIGATOR: NANCY GARRISON

**PROTOCOL RESEARCHING THE EFFECT OF REIKI
ON THE LEVEL OF FREE RADICALS**

Subject Informed Consent Form

All Reiki sessions will be performed by a practitioner trained to a Master Level in the Usui method of Reiki. The principal researcher is a graduate student at Holos University. A research advisor has approved all procedures in this study, as has an Institutional Review Board. Your participation is strictly voluntary. Please do not hesitate to ask any questions you may have at any time.

The following information is provided for you so that you can better decide whether you wish to participate in this study. This study measures and compares the levels of free radicals in your urine before and after Reiki sessions. If you agree to participate, you are free to withdraw at any time.

Purpose: The purpose of this study is to find out if free radical levels can be affected using Reiki. It also includes a self-evaluation questionnaire called the State-Trait Anxiety Inventory For Adults, designed to evaluate your anxiety level, in this case, before and after Reiki sessions.

Who will be included in this study? Anyone 18 years or older can participate in this study.

Who will not be included in this study? Anyone currently under treatment for a psychotic disorder, or who has been hospitalized for mental illness in the last year will be excluded from this study.

Procedures: On the first day of your participation in the study: You will be given an Information and Consent Form. You will be asked to sign a copy and return it to the Research Assistant that you are working with. You will be asked to catch a urine sample in a plastic cup that is provided. The research assistant will then draw a small amount into a dropper and add it to the content of a test vial. The mixed contents will then either remain the same color or change to a color between pale pink and dark red. After a five minute waiting period the number related to the color will be recorded. In order to measure your state of anxiety, you will be asked to complete a questionnaire before the first Reiki session.

You will be asked to return on each of two alternate days following your first day of participation in this study. On each of these days you will receive a ½ hour Reiki session. On the last visit, you will be asked for another urine sample (one hour after the end of your Reiki session). During your waiting time, you will again fill out a STAI. This will determine the level of free radicals in your urine after the series of Reiki sessions.

If you are randomly selected into Group A of the study: You will be the intervention group, and will be given the first Reiki session on that day.

If you are randomly selected into Group B of the study: You will be asked to wait until your return day 5 days after your original urine test, to fill out a second questionnaire and give a second urine sample. You will receive a voucher redeemable for a one hour Reiki Session to be given by the Reiki Master/Research Assistant to which you are assigned. Appointments will be made directly with that person. This voucher is nontransferable and has no monetary value.

Possible benefits: You may experience relaxation, reduction of stress, anxiety, and heart rate. Free radicals may be reduced.

Possible Risks: There are no known risks associated with Reiki.

Right to Leave the Study: You will be participating in this study of your own free will. You have the right to leave the study at any time, for any reason, with no penalty of any sort, and you will not relinquish any rights you may have.

Confidentiality of Records: Your identity as a part of this study will be kept confidential, and will not be disclosed to anyone else, unless required by law. Your personal information including your name and contact information will be kept on file only with the primary researcher. Your name will not be associated with the research findings in any way. If results of the study are reported in scientific or academic presentations or publications, you will not be identified.

Questions: If you have any questions or comments, positive or negative, regarding this study, please contact the Primary Investigator, Nancy Garrison. She may be reached at 206-364-7344, any time between 9 am and 10 pm Pacific Standard Time.

Subject Statement: I am signing this consent freely and I am not being forced to do so. I understand that, by signing this form, I do not lose any rights to which I am entitled, including the right to leave this study at any time.

I hereby state that I am at least 18 years of age. I have the legal capacity to enter into contract, and no guardian has been appointed for me.

The consent form has been read by or to me, and the study information has been fully explained to me. Any questions that have occurred to me have been fully answered by the Primary Investigator, in charge of the study, or a Research Assistant. I may request a signed copy of this form, by asking the Research Assistant to whom I am assigned, or by contacting the Primary Investigator.

I understand that this is an academic research study. I agree to cooperate with all research personnel and to follow the procedures as outlined to me.

Subject's Name

Date

Subject's Printed Name

Witness's Signature (If Statement Was Read to Subject)

Witness's Printed Name

Date

2. Management and Regulation

2.1 Monitoring: Nancy Garrison, Primary Investigator.

2.2 Monitoring Personnel: Nancy Garrison, Primary Investigator.

2.3 Regulatory Considerations

None.

2.3.1 Protocol Agenda:

This is a before and after design that will measure any change in free radical levels in the urine of participants. Two consent forms will be signed; one will be kept for the study file and a copy given to the participants. A STAI questionnaire will be filled out by the participants and returned to the researcher. This is to determine changes in the perceived anxiety level of the participant before and after the Reiki interventions. An initial urine test will be done followed by a ½ hour Reiki treatment. On each of the next two alternating days, another ½ hour Reiki treatment will be done. One final urine test will be given after the third Reiki treatment. A second STAI will be filled out at the end of the interventions.

2.3.2 Subject Report Form Completion And Submission

Reports of progress or lack of progress will be sent to the IRB: by the end of July 2005.

Subject Report Forms will be completed at: Seattle, WA, by the end of July 2005.

APPENDIX H: Reiki Research Request for Assistance

I am RESEARCHING THE EFFECT OF REIKI ON THE LEVEL OF FREE RADICALS.

I will need about 60 participants to be studied. The more Reiki Masters that assist in the process, the more quickly it will go.

I hope to begin the study as soon as the Internal Review Board signs off on the study. Hopefully, that will be by the end of March 2005, or before. Ideally, all interventions would be completed by the end of April, or earlier.

The study is short. We will probably not have much attrition.

Protocol: You will be asked to give each of your participants a consent form, an information form, and a questionnaire that will take approximately 15 minutes to fill out. You will then ask them to catch a urine sample. Wearing rubber gloves you will take a dropper and place a small amount of urine into a vile containing a colormetric testing liquid. The contents may change color. You will match the vial color to a chart supplied to you and note the color you observe. One week later, you will repeat the urine test. After that second urine test you will provide a ½ hour Reiki session. On two alternate days following the first Reiki session you will again provide a ½ hour Reiki session. Following the third Reiki session you will again test their urine. You will return all information gathered to the Primary Investigator who will determine the results.

The Primary Investigator, Nancy Garrison, will supply everything necessary for the study to you.

If you would like to participate in this study as a Reiki Master, providing the interventions described above please contact me:

by phone at (206) 364-7344 between 10 am and 10 pm, Pacific time,
by email at **healhanz@comcast.net** , or
by US Postal Service, as 1843 NE Perkins Way, Shoreline, WA, 98155.

APPENDIX I: Research Assistant Information

The principal investigator in this study is Nancy Garrison, a graduate student at Holos University. A research advisor has approved all procedures in this study, as has an Institutional Review Board. Please do not hesitate to ask any questions you may have at any time by contacting the principal investigator.

The following information is provided for you so that you can have exact protocol to follow for use in this study. Practitioners trained to a Master Level in the Usui Method of Reiki will perform all Reiki sessions in this study.

Before beginning the study, you will receive a packet containing Subject Information and Consent Forms, Statistics Reporting Forms, and Oxidata Urine Testing Kits (Kits include all pertinent information for administering the kits), State-Trait Anxiety Inventory For Adults forms, and vouchers good for one 1-hour Reiki Session to be provided by you at a later date, and a form to record any other information you find interesting and/or pertinent. The number of Oxidata testing kits will be equal to the number of participants you have agreed to work with for this Study.

This study is a Pre-Post Control Test Design, and is being used to determine the results of Reiki on free radicals as measured by the Oxidata Urine Test. The Oxidata Urine Test is a colorimetric testing kit that is simple to use, and gives accurate measurement. Instructions are included in the test kits and are to be followed exactly.

For this study you are required to:

- Choose subjects you will be working with by asking for volunteers
- Inform subjects of all protocol
- Have Study Participants sign and return consent forms to you
- Randomize volunteers to one of two groups*, by flipping a coin
- Set and keep all appointments with Study Participants assigned to you
- Administer the State-Trait Anxiety Inventory For Adults, twice
- Administer urine tests
- Provide Reiki sessions
- Answer any questions that participants may have as directed by Primary Investigator
- Not pressure subjects in any way to participate
- Write down on the excel worksheet or a journal page anything that has to do with the study, participants, protocol, and any observations or findings
- Return all information regarding the study to Primary Investigator in a timely manner (within 3 days after your participation in the study is completed)
- Respect the confidentiality of Study Participants, Practitioners and the Primary Investigator
- Return supplies provided but not used in your part of the study, as agreed.

- Keep in contact with the Primary Investigator as often as is necessary during the study. Phone contacts with the Primary Investigator can be arranged by email and she will contact you by phone at the appointed time, so that phone charges will be at her expense. The Primary Investigator will answer email contacts promptly, usually within a few hours, always within a day.

On the initial study contact (**Day 1**), for all Study Participants:

You will give the subject an **information and consent** form. You will **review it with them and answer any questions** they may have at that time. They are **required to sign** two copies of the consent and information form before continuing with the study. They will **keep one information and one consent form** for their files, and **return one copy to the Research Assistant** for Study files. In order to measure the effect, if any, on the participant's State of Anxiety in this study, you will ask the participants to fill out a **State-Trait Anxiety Inventory For Adults****. You will then administer an **Oxidata Urine Test.*****

At that time, you will **set appointments** for all subsequent study meetings****.

For Group A: You will set appointments for the following 2 Study Dates. At that time you will give the first ½ hour Reiki session.

On Day 2 of the Study, you will give the second ½ hour Reiki session.

On Day 3 of the Study, you will give the third ½ hour Reiki session, a second Oxidata urine test, and have the participant fill out the second State-Trait Inventory For Adults.

For Group B: On **Day 1**, after the first urine test is given and the first State-Trait Inventory For Adults is given, you will make an appointment for them to return five days later. On Day 5 you will administer a urine test and ask them to fill out another State-Trait Inventory For Adults. You will then give them a voucher for a one hour Reiki Session with you at a later date, to be agreed upon by the Research Assistant/Reiki Master and the Study Participant.

***Randomizing volunteers:** You will select an equal number of male and female volunteers. The males and females will be separated into separate groups. Study group randomization will be accomplished by flipping a coin. Those getting Heads will be in one group, and those getting Tails in the other. This will accomplish supplying an equivalent number of each gender to Groups A and B.

****To administer the Oxidata Urine Test:** You will ask the subject to catch a urine sample in the cup provided. The research assistant will, wearing rubber gloves, then draw a small amount of urine into a dropper and add it to the content of the test vial. The contents will either remain the same color or change to a color between pale pink and dark red. After a maximum five minute waiting period the color of the vial will be compared to the color selection chart provided in the Oxidata Urine Testing Kit. The number corresponding to the color on the chart will then be recorded on the sheet provided for that purpose.

***** State-Trait Anxiety Inventory For Adults:** The STAI is a 40-question self-evaluation questionnaire for determining anxiety levels, to be used before the first, and after the third, Reiki sessions. You will read the directions to the study participant and answer any questions they may have. You will then ask them to mark their answers and return the form to you when finished. This form will be placed in the file envelope and returned to the Principal Investigator at the end of your part of the study.

******Choose your start date** with the follow-up dates in mind. The study will encompass 5 days for each subject. Participants must all be studied in the same two-week period, to avoid compromising study validity.

Study interventions take place as follows for Group A:

Choose a day for Appointment 1, and follow required processes for that day.

Appointment 2 will be two days after Appointment 1. It will require a ½ Reiki session only.

Appointment 3 will be two days after Appointment 2. It will require a ½ hour Reiki session, and filling out an STAI.

Ahead of the time indicated for the study, you must be sure you and the subject will both be able to be available for all 3 appointments.

For example: In **Group A**, if Appointment 1 is **April 1**, Appointment 2 needs to be **April 3**, Appointment 3 would be **April 5**, Another example would be **Monday**, the following **Wednesday**, and **Friday** of that same week.

In **Group B**, On the **Day 1**, Participants will fill out all initial study paperwork and make an appointment for the follow-up on the **Day 5**. On the **Day 5** an appointment should be set for the Free Reiki Session, as indicated on the voucher.

It will be best if we can synchronize the starting date of the study with all Research Assistants/Reiki Master Practitioners providing the interventions onto dates close to one another. It is vital that all sessions happen within a two-week period; in order strengthen the validity of the study.

All information will be recorded and sent to the Principal Investigator as soon as possible after the study has been completed.

APPENDIX J:

Subject Information and Consent Form

All Reiki sessions will be performed by a practitioner trained to a Master Level in the Usui method of Reiki. The principal researcher is a graduate student at Holos University. A research advisor has approved all procedures in this study, as has an Institutional Review Board. Your participation is strictly voluntary. Please do not hesitate to ask any questions you may have at any time.

The following information is provided for you so that you can better decide whether you wish to participate in this study. This study measures and compares the levels of free radicals in your urine before and after Reiki sessions. If you agree to participate, you are free to withdraw at any time.

Purpose: The purpose of this study is to find out if free radical levels can be affected using Reiki. It also includes a self-evaluation questionnaire called the State-Trait Anxiety Inventory For Adults, designed to evaluate your anxiety level, in this case, before and after Reiki sessions.

Who will be included in this study? Anyone 18 years or older can participate in this study.

Who will not be included in this study? Anyone currently under treatment for a psychotic disorder, or who has been hospitalized for mental illness in the last year will be excluded from this study.

Procedures: On the first day of your participation in the study: You will be given an Information and Consent Form. You will be asked to sign a copy and return it to the Research Assistant that you are working with. You will be asked to catch a urine sample in a plastic cup that is provided. The research assistant will then draw a small amount into a dropper and add it to the content of a test vial. The mixed contents will then either remain the same color or change to a color between pale pink and dark red. After a five minute waiting period the number related to the color will be recorded. In order to measure your state of anxiety, you will be asked to complete a questionnaire before the first Reiki session.

You will be asked to return on each of two alternate days following your first day of participation in this study. On each of these days you will receive a ½ hour Reiki session. On the last visit, you will be asked for another urine sample (one hour after the end of your Reiki session). During your waiting time, you will again fill out a STAI. This will determine the level of free radicals in your urine after the series of Reiki sessions.

If you are randomly selected into Group A of the study: You will be the intervention group, and will be given the first Reiki session on that day.

If you are randomly selected into Group B of the study: You will be asked to wait until your return day 5 days after your original urine test, to fill out a second questionnaire and give a second urine sample. You will receive a voucher redeemable for a one hour Reiki Session to be given by the Reiki Master/Research Assistant to which

you are assigned. Appointments will be made directly with that person. This voucher is nontransferable and has no monetary value.

Possible benefits: You may experience relaxation, reduction of stress, anxiety, and heart rate. Free radicals may be reduced.

Possible Risks: There are no known risks associated with Reiki.

Right to Leave the Study: You will be participating in this study of your own free will. You have the right to leave the study at any time, for any reason, with no penalty of any sort, and you will not relinquish any rights you may have.

Confidentiality of Records: Your identity as a part of this study will be kept confidential, and will not be disclosed to anyone else, unless required by law. Your personal information including your name and contact information will be kept on file only with the primary researcher. Your name will not be associated with the research findings in any way. If results of the study are reported in scientific or academic presentations or publications, you will not be identified.

Questions: If you have any questions or comments, positive or negative, regarding this study, please contact the Primary Investigator, Nancy Garrison. She may be reached at 206-364-7344, any time between 9 am and 10 pm Pacific Standard Time.

Subject Statement: I am signing this consent freely and I am not being forced to do so. I understand that, by signing this form, I do not lose any rights to which I am entitled, including the right to leave this study at any time.

I hereby state that I am at least 18 years of age. I have the legal capacity to enter into contract, and no guardian has been appointed for me.

The consent form has been read by or to me, and the study information has been fully explained to me. Any questions that have occurred to me have been fully answered by the Primary Investigator, in charge of the study, or a Research Assistant. I may request a signed copy of this form, by asking the Research Assistant to whom I am assigned, or by contacting the Primary Investigator.

I understand that this is an academic research study. I agree to cooperate with all research personnel and to follow the procedures as outlined to me.

Subject's Name

Date

Subject's Printed Name

Witness's Signature (If Statement Was Read to Subject)

Witness's Printed Name

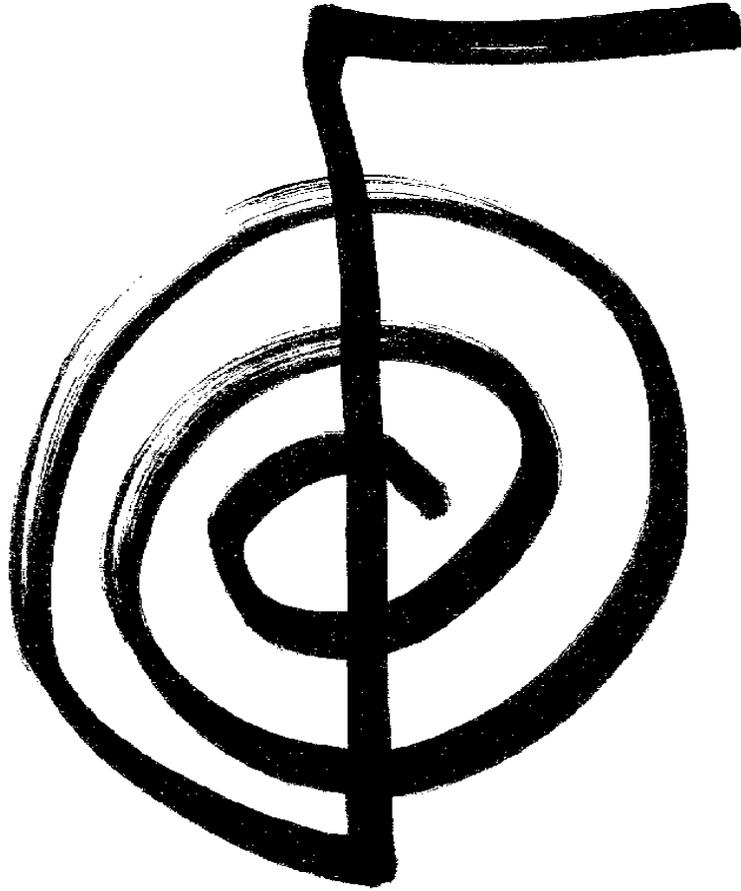
Date

APPENDIX K: Japanese Words

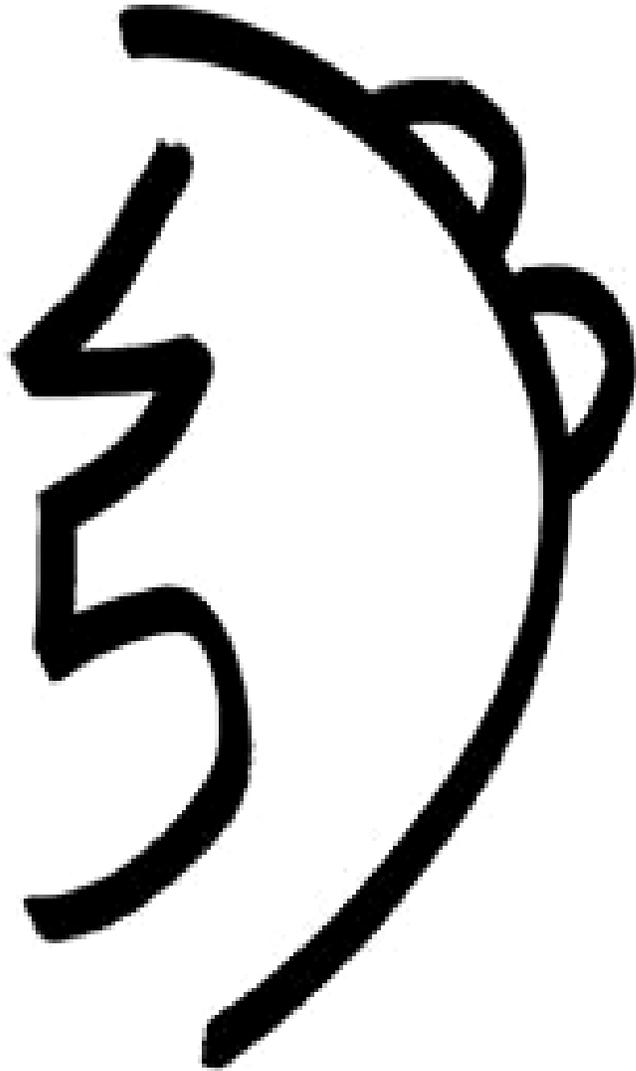
Reiki



Cho-Ku-Rei



Sei-He-Ki



Hon-Sha-Ze-Sho-Nen

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Dia-Ko-Myo



Raku



APPENDIX L: Results General Linear Model

Notes		
Output Created	30-JUN-2005 15:00:46	
Comments		
Input	Data	C:\Documents and Settings\pthomli\Desktop\Current Data Analysis Projects\Garrison Data.sav
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	67
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data for all variables in the model.
Syntax	GLM trait1 trait2 BY group /WSFACTOR = trait 2 Difference /CONTRAST (group)=Difference /METHOD = SSTYPE(3) /PLOT = PROFILE(trait*group) /CRITERIA = ALPHA(.05) /WSDESIGN = trait /DESIGN = group .	
Resources	Elapsed Time	0:00:00.30

Within-Subjects Factors Measure: MEASURE_1	
trait	Dependent Variable
1	trait1
2	trait2

Between-Subjects Factors			
		Value Label	N
group	1.00	Group A	34
	2.00	Group B	33

Tests of Within-Subjects Effects						
Measure: MEASURE_1						
Source		Type III Sum of Squares	df	Mean Square	F	Sig.
trait	Sphericity Assumed	42.641	1	42.641	4.481	.038
	Greenhouse-Geisser	42.641	1.000	42.641	4.481	.038
	Huynh-Feldt	42.641	1.000	42.641	4.481	.038
	Lower-bound	42.641	1.000	42.641	4.481	.038
trait * group	Sphericity Assumed	193.089	1	193.089	20.292	.000
	Greenhouse-Geisser	193.089	1.000	193.089	20.292	.000
	Huynh-Feldt	193.089	1.000	193.089	20.292	.000
	Lower-bound	193.089	1.000	193.089	20.292	.000
Error(trait)	Sphericity Assumed	618.508	65	9.516		
	Greenhouse-Geisser	618.508	65.000	9.516		
	Huynh-Feldt	618.508	65.000	9.516		
	Lower-bound	618.508	65.000	9.516		

Tests of Within-Subjects Contrasts						
Measure: MEASURE_1						
Source	trait	Type III Sum of Squares	df	Mean Square	F	Sig.
trait	Level 2 vs. Level 1	85.282	1	85.282	4.481	.038
trait * group	Level 2 vs. Level 1	386.178	1	386.178	20.292	.000
Error(trait)	Level 2 vs. Level 1	1237.016	65	19.031		

Tests of Between-Subjects Effects						
Measure: MEASURE_1						
Transformed Variable: Average						
Source	Type III Sum of Squares	df	Mean Square	F	Sig.	
Intercept	81626.833	1	81626.833	1258.943	.000	
group	1.520	1	1.520	.023	.879	
Error	4214.443	65	64.838			

Notes		
Output Created	30-JUN-2005 15:04:38	
Comments		
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	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	67
Missing Value Handling	Definition of Missing	For each dependent variable in a table, user-defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.
Syntax	MEANS TABLES=STAI1 Ur1 Ur2 STAI2 trait1 trait2 BY group /CELLS MEAN COUNT STDDEV .	
Resources	Elapsed Time	0:00:00.03

Means

Notes		
Output Created	30-JUN-2005 15:05:42	
Comments		
Input	Data	C:\Documents and Settings\pthomli\Desktop\Current Data Analysis Projects\Garrison Data.sav
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	67
Missing Value Handling	Definition of Missing	For each dependent variable in a table, user-defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.
Syntax	MEANS TABLES=Ur1 Ur2 trait1 trait2 STAI1 STAI2 BY group /CELLS MEAN COUNT STDDEV .	
Resources	Elapsed Time	0:00:00.05

Report							
group		Ur 1	Ur 2	Trait Pretest	Trait Posttest	STAI 1	STAI 2
Group A	Mean	3.50	2.41	36.8235	33.2941	36.03	28.71
	N	34	34	34	34	34	34
	Std. Deviation	1.674	1.690	9.99840	8.32859	9.571	6.177
Group B	Mean	3.24	3.88	34.1212	35.3939	33.06	33.67
	N	33	33	33	33	33	33
	Std. Deviation	1.803	1.317	7.10087	7.59498	9.470	9.986
Total	Mean	3.37	3.13	35.4925	34.3284	34.57	31.15
	N	67	67	67	67	67	67
	Std. Deviation	1.731	1.678	8.73407	7.98557	9.567	8.583

Notes		
Output Created		30-JUN-2005 15:07:08
Comments		
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	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	67
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.
Syntax	CROSSTABS /TABLES=MorF BY group /FORMAT= AVALUE TABLES /STATISTIC=CHISQ /CELLS= COUNT /COUNT ROUND CELL.	
Resources	Elapsed Time	0:00:00.02
	Dimensions Requested	2
	Cells Available	116508

Crosstabs

Notes		
Output Created		30-JUN-2005 15:07:45
Comments		
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	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	67
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each table are based on all the cases with valid data in the specified range(s) for all variables in each table.
Syntax		CROSSTABS /TABLES=MorF BY group /FORMAT= AVALUE TABLES /STATISTIC=CHISQ /CELLS= COUNT ROW COLUMN TOTAL /COUNT ROUND CELL.
Resources	Elapsed Time	0:00:00.03
	Dimensions Requested	2
	Cells Available	116508

M or F * group Crosstabulation					
			group		Total
			Group A	Group B	
M or F	F	Count	19	14	33
		% within M or F	57.6%	42.4%	100.0%
		% within group	55.9%	42.4%	49.3%
		% of Total	28.4%	20.9%	49.3%
	M	Count	15	19	34
		% within M or F	44.1%	55.9%	100.0%
		% within group	44.1%	57.6%	50.7%
		% of Total	22.4%	28.4%	50.7%
Total	Count	34	33	67	
	% within M or F	50.7%	49.3%	100.0%	
	% within group	100.0%	100.0%	100.0%	
	% of Total	50.7%	49.3%	100.0%	

Chi-Square Tests					
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	1.214(b)	1	.271		
Continuity Correction(a)	.735	1	.391		
Likelihood Ratio	1.217	1	.270		
Fisher's Exact Test				.332	.196
N of Valid Cases	67				

a Computed only for a 2x2 table

b 0 cells (.0%) have expected count less than 5. The minimum expected count is 16.25.

General Linear Model Within-Subjects Factors

Within-Subjects Factors

Measure: MEASURE_1

urine	Dependent Variable
1	Ur1
2	Ur2

Between-Subjects Factors

group	Value Label	N
1.00	Group A	34
2.00	Group B	33

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
urine	Sphericity Assumed	1.710	1	1.710	1.846	.179
	Greenhouse-Geisser	1.710	1.000	1.710	1.846	.179
	Huynh-Feldt	1.710	1.000	1.710	1.846	.179
	Lower-bound	1.710	1.000	1.710	1.846	.179
urine * group	Sphericity Assumed	24.904	1	24.904	26.896	.000
	Greenhouse-Geisser	24.904	1.000	24.904	26.896	.000
	Huynh-Feldt	24.904	1.000	24.904	26.896	.000
	Lower-bound	24.904	1.000	24.904	26.896	.000
Error(urine)	Sphericity Assumed	60.186	65	.926		
	Greenhouse-Geisser	60.186	65.000	.926		
	Huynh-Feldt	60.186	65.000	.926		
	Lower-bound	60.186	65.000	.926		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	urine	Type III Sum of Squares	df	Mean Square	F	Sig.
urine	Linear	1.710	1	1.710	1.846	.179
urine * group	Linear	24.904	1	24.904	26.896	.000
Error(urine)	Linear	60.186	65	.926		

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	1422.248	1	1422.248	323.097	.000
group	12.248	1	12.248	2.782	.100
Error	286.125	65	4.402		

General Linear Model

Within-Subjects Factors

Measure: MEASURE_1

stai	Dependent Variable
1	STAI1
2	STAI2

Between-Subjects Factors

group	Value Label	N
1.00	Group A	34
2.00	Group B	33

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.
stai	Sphericity Assumed	377.833	1	377.833	11.787	.001
	Greenhouse-Geisser	377.833	1.000	377.833	11.787	.001
	Huynh-Feldt	377.833	1.000	377.833	11.787	.001
	Lower-bound	377.833	1.000	377.833	11.787	.001
stai * group	Sphericity Assumed	526.489	1	526.489	16.424	.000
	Greenhouse-Geisser	526.489	1.000	526.489	16.424	.000
	Huynh-Feldt	526.489	1.000	526.489	16.424	.000
	Lower-bound	526.489	1.000	526.489	16.424	.000
Error(stai)	Sphericity Assumed	2083.660	65	32.056		
	Greenhouse-Geisser	2083.660	65.000	32.056		
	Huynh-Feldt	2083.660	65.000	32.056		
	Lower-bound	2083.660	65.000	32.056		

Tests of Within-Subjects Contrasts

Measure: MEASURE_1

Source	stai	Type III Sum of Squares	df	Mean Square	F	Sig.
stai	Linear	377.833	1	377.833	11.787	.001
stai * group	Linear	526.489	1	526.489	16.424	.000
Error(stai)	Linear	2083.660	65	32.056		

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	144707.911	1	144707.911	1138.800	.000
group	33.224	1	33.224	.261	.611
Error	8259.582	65	127.070		