INTEGRATIVE HEALTH PRACTICES IN THE AGING:
DHEA, EXERCISE, GRACE THERAPY, AND SELF-ACTUALIZATION

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Submitted to the Faculty of
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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.

Jayne E. Selby
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ABSTRACT

Integrative Health Practices in the Aging: DHEA, Exercise, Grace Therapy, and Self-Actualization

The purpose of this experimental study was to examine and compare the holistic relationship and potential correlation between integrative practices representing physical, mental, emotional, and spiritual health in men and women ages 65 to 75. The blood assay of the human steroid dehydroepiandrosterone (DHEA) was the dependent and repeat measure in this pretest and posttest, double-blind experiment with control group. Seventy-seven participants were selected through stratified random sampling based on gender and their exercise or non-exercise status, which represented the physical health practice in the study. The participants were randomly assigned to experiment and test groups. Grace therapy, a form of holistic, intercessory, uninformd, and non-specific meditative prayer, was the intervening variable representing spirit. Thirty-four grace therapists, 14 in Memphis, TN and 20 in Seattle, WA conveyed grace therapy to randomly assigned participants in the experimental group during the course of 7 days between the pretest and posttest DHEA sampling. Self-actualization, the psychological and emotional measure, was then evaluated through the administration of the Personal Orientation Inventory (POI). Two areas of statistical significance and a possible trend were indicated. The first finding of significance was that the women who exercised prior to and throughout the study, in both the control and experimental groups, demonstrated a higher level of DHEA than the women who did not exercise or the men who exercised or did not exercise prior to and throughout the study. This was statistically significant at the alpha level of .05. The second finding of significance was that the men and women who exercised prior to and throughout the study, in both the control and experimental groups, demonstrated a higher association with the Nature of Man Constructive (Nc) scale of the POI than those men and women who did not exercise prior to and throughout the study. This was also significant at the alpha level of .05.

Third, given the small sample size, there appeared to be a potential trend developing in the movement of the DHEA levels of those men and women who exercised prior to and throughout the study who also received the grace therapy treatment. The findings indicate an opportunity for expanded, future study using a larger sample to evaluate potential correlations.
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LIST OF ABBREVIATIONS

ACTH: adrenocorticotropic hormone
AMA: American Medical Association
CAM: complementary and alternative medicine
DHEA: dehydroepiandrosterone
EDITS: Educational and Industrial Testing Service
HCFA: Health Care Finance Administration
HHS: Department of Health and Human Services
IM: Institute of Medicine
ISSSEEM: International Society Study of Subtle Energies and Energy Medicine
NCCAM: National Center for Complementary and Alternative Medicine
NIA: National Institute on Aging
NIH: National Institutes of Health
POI: Personal Orientation Inventory
TM: traditional medicine
TLS: Total Life Stress Test
CHAPTER ONE

Introduction

Completing two years of work authorized by Executive order, the White House Commission on Complementary and Alternative Medicine Policy (Commission) presented its Final Report (Report) to the President in March 2002. The Report provided through the U.S. Department of Health and Human Services (HHS), contained administrative and legislative recommendations “to maximize the benefits of complementary and alternative medicine (CAM) to all Americans.”

The U.S. first established a government agency to coordinate CAM research in 1992 when the Office of Alternative Medicine was launched at the National Institutes of Health (NIH), followed by the National Center for Complementary and Alternative Medicine (NCCAM) in 1998. This momentum has continued and the Report addressed the progression as Americans “have begun to look for health care answers in complementary and alternative approaches, not turning their back on conventional medicine – but they are very much aware of its limitations and side effects.”

In May 2002, subsequent to the Commission’s report, the World Health Organization (WHO), a United Nations agency that represents 191 nations, recommended its first global strategy to provide “a framework for policy to assist countries to regulate traditional medicine (TM) or complementary/alternative medicine (CAM) to make its use safer, more accessible to their populations and sustainable.” For the majority of the planet’s 6.3 billion inhabitants, TM or CAM is
the primary and often singular health care offering, contrary to the U.S. healthcare system.

WHO strategy, coupled with the Commission’s Report established a global platform with the intent to “tap into the real potential for people’s health and well-being, while minimizing the risks of unproved and misused remedies.” The evidenced based, scientific method of mainstream medicine was designated the agent of integration and standardization by both organizations while philosophically both WHO and the Commission also committed to protect and honor the ethnicity and traditions of native medicine. While this may be the case, the burden of proof, as determined by Western medicine, will remain on the array of CAM treatments that historically have been proven in practice and outcome.

As with apples and oranges or a round peg in a square hole, CAM is often difficult and impractical to conform to the existing precedent of conventional evidential method. This continues to be a concern in the realistic potential of an equitable and representative integrative health care system derived from a separate but equal philosophy. “There cannot be two kinds of medicine—conventional and alternative. There is only medicine that has been adequately tested and medicine that has not, medicine that works and medicine that may or may not work. Once a treatment has been tested rigorously, it no longer matters whether it was considered alternative at the outset. If it is found to be reasonably safe and effective, it will be accepted.” In some discussions of integrative health, it is assumed that conventional medicine, because it is more readily quantifiable, is more effective than CAM. This broad perception has not been proven.
The Commission and WHO reports concurrently presented agendas that sanctioned the developmental focus on a reformed U.S. health care system, an integrative health and medical system. Stephen E. Straus, M.D., Director of NCCAM, stated that, as CAM interventions are incorporated into conventional medical education and practice, the exclusionary term, “complementary and alternative medicine,” will be superseded by the more inclusive, “integrative medicine.” Anticipated by proponents to enhance substantively the healing arts, “integrative medicine will be seen as providing novel insights and tools for human health, practiced by healthcare providers skilled and knowledgeable in the multiple traditions and disciplines.”

_The Report_

Based on 20 months of public testimony and discussion with a majority of conventional and CAM organizations, the 20 Commission members appointed by former President Bill Clinton presented a directional assessment of the benefits of CAM “and its broader, more holistic perspective” relative to conventional Western medicine. The assignment of the Commission encompassed the enlargement and refocusing of attention from the current emphasis on expensive, high-tech interventions to a better balance between the search for “‘magic bullets’ – single drugs, procedures or, indeed, single alternative therapies – and the creation and investigation of comprehensive therapeutic approaches that combine the best of convention, complementary and alternative therapies.” As of this writing, the Report is being studied by the White House and “will soon be on the desks of all members of Congress.” Calling for consensus among health care industry stakeholders, the
Commission’s plan presented an in-depth and comprehensive set of objectives addressing the growing momentum of CAM in America. The Commission’s recommendations, although non-binding and not signed into law, reflected accelerating societal interest in CAM and sparked political and philosophical debate over the future of CAM and integrative medicine in America.

At center in the discussions are numerous issues stretching across the nation’s sectors. From within the Committee itself, concerns were reported regarding the exclusion from the document of the “limitations of unproven CAM interventions.”10 Also from within the Committee was constructive criticism that the Report did not address more specific research priorities and “failed to define which CAM practices and products lack scientific credibility and are demonstrably unsafe.”11 Further of concern to several of the Commission members was the “inclusion of spirituality as a CAM modality, insisting that neither mainstream nor unconventional medicine can claim prayer as a treatment technique.”12 Even Commission member Dean Ornish, M.D., known for his CAM work with nutrition and heart disease, also “had some reservations”13 and argued in favor of research into safety and efficacy of unproven CAM with follow-up research into cost-effectiveness prior to incorporating the topics of insurance reimbursement and therapy licensing into the forum.14

Considering the personal nature of health care, it is not surprising that a controversial Commission generated a controversial Report. Controversy has continued even prior to the Report’s presentation to Congress; and, it is suggested by some that this Report is a stalling technique to table CAM through the predictable lack of legislative consensus that traditionally accompanies health care reform issues
such as Medicare. No doubt CAM will take a backseat to the Administration’s war on terrorism. Delays may be seen as positive to advocates of less government regulation, as the feeling is that restrictions imposed by the legislature may stifle, not improve CAM and potentially severely limit CAM practices through burdensome controls. This was the case with the tight education and training requirements enacted to discourage homeopathic medical schools and hospitals at the turn of the twentieth century.  

Other discourse includes that of free market advocates questioning the appropriateness of the Federal government dictating its potentially imperialistic version of a formalized integrative medicine system as the solution to national and global health care reform. This is followed by the libertarian perspective that anticipates increased Federal regulation that limits or inhibits CAM and personal health care freedom of choice. Proponents of availability, choice, and access clamor for non-approved Food and Drug Administration (FDA) treatments and practices delivered in professional medical environments. Socially inclined scientists wrestle with the assumption of Western dictated epistemology and its evidence-based determinants of proof of effect as the measure to evaluate CAM and the foundation of integrative health care. Meanwhile, consumer protectionists, reeling from incidents such as the recent study contradicting hormone replacement therapy (HRT) as preventative and now suspect in heart disease, 16 lobby for medical guidance and regulation to safeguard the public from similar dangerous discrepancies and the inevitable probability of irresponsible market opportunists espousing contraindicative prescriptions and treatments. Health care providers, under increased medical
malpractice pressure as well as fiduciary scrutiny by the Health Care Finance Administration (HCFA) and medical insurers, proceed cautiously in daily practice as their personal livelihoods and professional liability are constantly at risk.

Amid all the discourse, Gordon reflected in the Report on the purpose of the Commission. “Finally, at a time when the incidence of chronic illness among Americans is rising, and health care costs are predicted to double in the next 10 years, it is vital that all of us work together to find better ways to enhance the American people’s health and treat our illnesses. The White House Commission’s work was to explore ways that CAM therapies, properly evaluated and thoughtfully integrated into our health care system, could help accomplish this goal.”

Realistically and practically, an integrative working partnership between governmental, public, and private CAM advocates, as called for in the Report, appears more expeditious and efficient than autonomous and non-strategic development.

Challenge

Implicit in the Commission’s Report were 1) the endorsement of CAM and integrative medicine as the key strategy in American health care reform, 2) the assumption that directed Federal intervention or involvement is required to precipitate an integrative health care system, and 3) inclusion of research as a strategic component in the development of safe and effective integrative health care. Moving beyond the discourse to the consideration of the inherent healing nature of CAM practices and treatments, the Commission that represented both conventional and CAM interests endorsed “a wholeness orientation in health care delivery.”

Stating that all aspects of life-mind, body, spirit and environment must support care of the
whole person,\textsuperscript{19} this endorsement conveyed preeminent respect for the self-healing capacity of individuals and respect for the patient’s right of choice of health care treatments, conventional and CAM included.

Gordon, in the Chairman’s Vision,\textsuperscript{20} discussed the care and dedication that was put into the Commission assignment, essentially to set a course for policy and legislation promoting holism. Whether or not the Report actually arrives in Congress to be accepted in total or in part, the Commission process of discovery, assessment, and deliberation set an energetic path furthering the awareness and recognition of CAM in American health care. The prospect of an evolved health care system that recognizes the complete well-being of mind, body, and spirit is certainly one of hope; and, the timing for escalating CAM and integrative medicine may never be as ripe.

Beyond the outcome of the current CAM political process, successful partnership between CAM and conventional medicine, in any structure, depends in large part on the consciousness of the public and their perception of the nature of CAM and holism. It is wise to consider that in the integrative model as “in holistic therapies the patient’s willingness to participate fully in his own healing is necessary for its success.”\textsuperscript{21} The public’s willingness and participation in the consciousness of holism is one of the critical intervening variables in the success of CAM and integrative medicine. Nearly as critical is the health care provider’s willingness to consider CAM and integrative practices in response to the patient’s inquiry, thus fostering opportunities for increased patient experience.

Making this point, Gordon urged the rethinking of alternative options rather than blindly accepting medical ‘cures.’ Two cases demonstrating this point are the
recent and disturbing HRT study reporting conflicting safety concerns and the recent placebo and osteoarthritis study indicating that a placebo group of knee "patients who only thought they had surgery actually did as well as those who were operated on."22 Again, this point was emphasized by a summary of several major studies that "show more conventional health care and more medical specialists do not necessarily produce improvement in health status for both older people and newborns."23 If quantity of medicine may not be better and placebo may be equal to orthopedic surgery, then a health variable appears to exist that is difficult to quantify. Holistic philosophy suggests that this variable may be the consciousness of an individual regarding one's innate capacity and responsibility for well-being. An understanding and realization of the linkage between body, mind, emotions and spirit may very well influence one's choice of behavior and lifestyle; and this attitude may be a potentially powerful influencer of positive outcome from chosen health care treatments.

Curing which is what doctors are called upon to do, usually consists of an external treatment: medication or surgery is used to mask or eliminate symptoms. This external treatment doesn't necessarily address the factors that contributed to the symptoms in the first place. Healing goes deeper than curing and must always come from within.24

Without a shifting of the general public's tendency to abdicate its holistic power in favor of medical management and without a shifting from passive dependence upon health care providers to partnership with providers, it appears doubtful that the Commission's Report or subsequent reports will assist in generating improved health care status in America. Because of this, an effectively implemented
health care reform or improvement program must include, in additional to research and development, substantial public awareness and education tactics promoting self-health and holistic self-care. Renewing the public health care mind-set represents one of the single most important challenges in the goal of improved societal well-being.

Thanks to the years invested by committed industry stakeholders in bringing CAM to the forefront of discussion, the backdrop of current political attention primes the environment for enlightened health care providers and institutions to accelerate in mass the development of holism. For individuals receptive to a consciousness of well-being versus cure, the current climate also offers an opportunity to benefit through increased exposure to the CAM healing philosophies and treatments offered in concert and equity with conventional medicine.

If the Federal government agrees to support the Commission’s recommendations, an increased emphasis on CAM and integrative medicine research will provide increased information reporting to help educate the public, a key strategy in health care reform. If the Federal government chooses to curtail or minimize CAM support, it is likely that the awareness created from the accompanying political and societal dialog will also serve to spike private and non-governmental interest in ongoing CAM development. In either case, it is anticipated that CAM public awareness will continue to rise.

Now in 2002, with an apparent consensus to address CAM’s formal place in American health care and with an apparent lack of consensus as to the manner, the beneficiary is the American public. With due respect to the potency of governmental policy and fiscal endorsement, the tactical protocol to develop and establish an
equitable, effective, and efficient integrative health care system still remains formidable. The onerous structure of the existing health care system is in deep need of restructuring without the addition of a full-blown CAM system. Perhaps favorably however, an expanded and effective CAM system is dependent in large measure upon the individual American consciousness and willingness to participate in their own well-being of body, mind, emotions and spirit.

Format

This dissertation addresses the need to define and demonstrate the critical interaction of holistic components of body, mind, emotions and spirit that are both the theoretical base of CAM and a growing, conceptual consideration in conventional medicine. With the integrative challenge to identify and assimilate the best of both CAM and conventional medicine, it is the author’s opinion that holism is the common and potentially unifying value in the seeming duality of two health care systems. Regardless of the outcome of the Commission’s Report and the direction of American health care integration, the intent in this study included the desire to explore preliminarily the holistic link between body, mind, emotions, and spirit with emphasis upon the emotional, psychological and spiritual components of health and healing. Increasing awareness of the definition of health to include the critical role of mind, emotions, and spirit as an intricate factor in overall health assessment was also the intent of this study. Especially as health relates to spirituality, this study was geared to explore the empowerment residing within individual consciousness and the trail of the soul within our well-being.
In the remainder of the first chapter, the context of the current CAM and integrative health care environment will be discussed as well as the purpose and variables of the research study. In the second chapter, an overview of the literature, philosophy and scope of Energy Medicine and holism will be addressed, including a focus on the nature of self-esteem, self-actualization, and consciousness. The third chapter will present the research design and methods of the study that will then be followed by the fourth and fifth chapters that will report and discuss the findings.

*From TM and CAM to Integrative*

The distinction and status of the WHO and Commission strategies to develop integrative health care systems is marked by semantics and status of the terms "traditional medicine" (TM) and "complementary or alternative medicine." (CAM). “For the most part, traditional medicine (TM) remains widespread in developing countries, while use of complementary and alternative medicine (CAM) is increasing rapidly in developed countries.”25 Generally, in countries that the West terms as developing, TM is root health care with opportunity to enfold the strengths of conventional medicine; in more developed countries, conventional medicine is root health care with the opportunity to enfold the strategies of CAM. Theoretically, these strategies, as presented by the Commission and the WHO positions, indicate that the optimum in reform or enhancement of both predominant TM and predominant conventional systems includes a compilation of the most effective practices and procedures of both health care systems. Hypothetically then, from a quality of care perspective, the partnering of the two approaches into a safe, efficient, and cost-
effective integrative health care system will provide the public increased health care access and treatment options.

*TM Market*

WHO describes TM as diverse health practices geared to maintaining well-being; in addition, TM treats, diagnoses, and prevents illness. While Western medicine derives from the modern laboratory, TM systems are intimately tied to ethnicity and ancient cultures. “About 80% of the people in Africa use traditional medicine.”

Developed over thousands of years by Asian, African, Arabic, Native American, Oceanic, Central and South American civilizations, TM systems with varied therapies thus emerged worldwide. “There are many TM systems, including traditional Chinese medicine, Indian ayurveda and Arabic unani medicine.” TM also has been integrated fully from an access perspective into more advanced Eastern health systems, including China, North and South Korea and Viet Nam. Still, even in these progressive regions “many countries have not collected and standardized evidence on this type of health care;” and, collection and standardization is key to the WHO’s global strategy. TM continues to gain momentum as big business with about $600 billion in total spending.

*CAM Market*

In the wealthier countries of Australia, Europe, and North America, CAM is “increasingly used in parallel to allopathic medicine, particularly for treating and managing chronic disease.” It is reported that in the U.S., 42% of the population has used CAM at least once; in Canada 70% and in France 75% have tried an alternative
treatment at least once.\textsuperscript{31} Out-of-pocket 1997 CAM expenditure in the U.S. was estimated at $2.7 billion, exceeding out-of-pocket hospitalization expenditures and comparable to out-of-pocket expenditures for physician services.

Maintaining long-standing popularity in developing countries and now penetrating the developed, the affordability of TM or CAM due to low cost and low technology basis has made it especially attractive to the U.S. with overall U.S. health care expenditures surging to $1.2 trillion in 2000, up from a mere $130 billion in 1975. By 2010, dramatic increases in expenditures are projected to top $2.6 trillion. If proven and safe, an integrative medical system incorporating the cost-effective CAM treatments offers potentially vast fiscal relief.\textsuperscript{32}

In tandem with rising U.S. health care expenditures is U.S. life expectancy. The Centers for Disease Control (CDC) reports that in 2000, the American life expectancy rose to 76.9 years, up from 76.7 years in 1999. Conventional medicine seems to be keeping the U.S. population alive longer yet the extended disease process, including death rates from Alzheimer’s, infectious disease, pneumonia, kidney disease, and high blood pressure, is also on the rise. This leaves the public searching for treatment options to cope with the associated issues of aging like pain management and osteoarthritis.

“It is imperative to acknowledge and affirm the essential role of conventional medicine with its capability to respond competently in the care of acute disease and trauma, its technical innovations in diagnosis and treatment and the escalating clinical applications of basic science discoveries. However, it is in the areas of comprehensive care and the management of chronic disease conditions that the more reductionistic,
mechanistic, and organ-specific approach of conventional medicine can be lacking.\textsuperscript{33} Without question, accidents and trauma indicate immediate transport to the nearest emergency room and "for treatment of significant acute illnesses, conventional medicine is virtually the only reasonable choice."\textsuperscript{34} Yet, conventional medicine indisposition also pertains to health maintenance, disease prevention, stress management, and non-chemical drug substitution. "Fortunately, allopathic and complementary medicine have begun to join forces... The advantage to remaining open to both medical possibilities is a much wider range of healing energy from which to choose."\textsuperscript{35}

CAM momentum is therefore a market force with which to reckon. Since most CAM practices have developed independently of the conventional health care system and are not uniformly regulated by the states or the Federal government, the business of CAM is a wide-open playing field. "A variety of market mechanisms and other arrangements have developed to pay for these services, including out-of-pocket payments, discounted fees, insurance reimbursement, and donated services."\textsuperscript{36} The currently limited consumer protection by regulation and legislation is not keeping pace with the velocity of CAM market direction as the majority of CAM products and practices carry little assurance of safety, efficacy, and evidence of usage benefit.

As a result, it is said in the Report, that the public clamors for information to help in sifting through the proliferation of CAM products and services. For example, an estimated $700 million was spent on television and print advertising in 2000 by more than 1,500 businesses in the U.S. that manufacture dietary supplements. “Almost $192 billion was spent on direct marketing of all health care products in
2000, including mail, catalogs, teleservices, and the Internet. This marketing is estimated to have generated $1.7 trillion in sales. There is no reason to anticipate that either consumer interest in CAM or promotion of health care products will be slowing in the near future, indicating the public need for responsible reporting will continue.

In response to what is reported to be a swelling of public interest, NCCAM’s Scientific Databases Program and the Public Information Clearinghouse were established to address professional, investigator and public issues regarding published scientific literature on CAM practices. These programs have recently been expanded to include free, web-based access to CAM sources through PubMed, a system of the National Library of Medicine (NLM). PubMed offers over eleven million citations and abstracts in the MEDLINE database and over 4,500 published journals. In addition, the Combined Health Information Database (CHID) Online, the International Bibliographic Information on Dietary Supplements (IBIDS), and the Computer Retrieval of Information on Scientific Projects (CRISP) databases provide over curious consumers a huge amount of information to sort and process.

**Integrative Health Care Systems**

Defined by the American Association of Integrative Medicine (AAIM) as “a dynamic alliance combining approaches to health care,” integrative medicine includes the practice of conventional, natural, alternative, complementary, and herbal remedies. In addition to the blending of the most appropriate treatments of care, “traditional and non-traditional modalities can work together, resulting in safer, faster and more effective remedies at less cost. Integrative medicine is centered on the
provider and patient relationship, using science-based, holistic treatment that honors the total person's capacity of health and illness prevention."  

To track the progress of integrative medicine in the U.S. and among its member nations, WHO monitors global penetration of health care reform using eight benchmarks indicative of national health integration. Depending on a nation's score, assignments are made to categories describing the country's approach to TM and CAM.

"Integrative countries" are those that have a TM or CAM national policy and department within the ministry of health. In these countries, there is regulation of the herbal products industry, professional TM or CAM practitioners, health insurance coverage, and university level TM or CAM education for physicians, nurses, and pharmacists. TM or CAM national research institutes have also been established. China, the Republic of Korea and Viet Nam rank high as integrative countries. 

The second WHO designation of 'inclusive' identifies countries like Canada and Nigeria. While not offering significant university-level education in CAM, national policies on TM and CAM exist in these countries in addition to the presence of criteria like national or university level research programs. Today, the U.S. is considered an inclusive health care nation. The Commission recommendations to establish a national CAM policy and CAM unit within HHS will improve the U.S. ranking within the inclusive category; nonetheless, the U.S. falls behind in regulation of CAM products and services, health insurance coverage, licensing and recognition of CAM medical professionals, and official CAM education for medical
professionals. The third designation of nations is that of a ‘tolerant system’ with tight control that allows select CAM practices only by law.\textsuperscript{41}

\textit{Global Integrative Research Strategy}

For millions of people globally, particularly the poor and disadvantaged, WHO indicates the intent to help close the huge gap between the potential that TM and CAM offer and the health care reality of a vast population. For this group, medicine and health care treatment are unavailable, unaffordable, and unsafe. Global standards, “technical guidelines, and methodologies for research into TM/ CAM therapies and products, and for use during manufacture of TM/CAM products”\textsuperscript{42} offer huge hope, “reducing excess mortality and morbidity, especially among impoverished populations.”\textsuperscript{43} Through increased availability of qualified integrative practices and facilitation of the accompanying safety and efficacy information on TM and CAM, a vision of planetary well-being begins to crystallize.

Assisting its member nations in developing international guidelines to stimulate TM and CAM integration, the WHO primary emphasis is on the saving of lives and improvement of health through facilitating rigorous testing of TM and CAM medicinals. This emphasis was expanded into its 2002-2005 strategy to include an emphasis on the total segment of TM and CAM therapies both non-medicinal and medicinal.

There is “an urgent need to establish through rigorous scientific testing what (CAM practice) works for what purpose and what doesn’t. One cannot marginalize this area. . . (this area) needs to be brought into the light . . . to take away unsafe practices.”\textsuperscript{44} For example, the herb Ma Huang (ephedra), a traditional Chinese
supplement for short-term respiratory congestion, was marketed recently in the U.S. for weight reduction and other uses. Deaths, heart attacks and strokes resulted from and were attributed to the long-term usage of Ma Huang.\textsuperscript{45} Today, recent media reports contradict this finding with industry leaders at odds over the actual danger of ephedra use.\textsuperscript{46} Enough substance exists to the previous warnings that the National Football League has started testing for banned ephedra. Falkenberg’s comment “to take away unsafe practices” also may refer to the misuse of an herb or botanical, such as Ma Huang, for treatment differing from the traditional condition.\textsuperscript{47}

In positive contrast, the Chinese herbal remedy \textit{Artemisia annua}, dating in usage back 2000 years, has now been shown effective in resisting malaria, providing hope in the prevention of 800,000 child deaths per year.\textsuperscript{48} Numerous other examples of life enhancing or life saving medicinals are anticipated to exist beyond the knowledge of Western or conventional medicine. Hopefully, altruism as well as capitalism will prevail with prioritization of market introduction geared to include society’s health needs in addition to the manufacturer’s profit potential.

The hope and marketability underlying the medicinal claims and anecdotes has fueled the WHO’s consortium to monitor and regulate bio-botanicals. WHO indicates that this initiative to monitor and regulate medicinal therapies also will be extended to include non-medicinal treatments. The inclusion of non-medicinal treatments will be interesting to observe given the subjective nature and practitioner nuances of the individual nature of the numerous therapies. It is to be noted, however, that successful implementation of WHO’s aggressive global monitoring initiative is contingent on the participation and collaboration of: traditional and native healers and
practitioners, member nations, the consuming public, research centers, academic institutions, UN agencies, numerous non-governmental support groups, and specifically the U.S. with its regulatory, economic, and commercial support. Whether WHO possesses the muscle and resources to drive such an extensive collaboration of stakeholders remains to be seen.

_U.S. CAM Research Coordination_

Beneath the Commission's course toward 1) coordination of CAM research activities within the multiple federal agencies currently participating in CAM studies, 2) education and training of CAM practitioners, 3) provision of CAM information to health care professionals, and 4) provision of public information and guidance as to appropriate access and delivery of CAM, is Gordon's personal intent.

My larger concern – and that of the Report – is not, of course, complementary and alternative therapies, but the health and wellness of all Americans. I believe that this Report helps create the foundation for a more comprehensive health care system, a system responsive to the unique needs of each person.

With these recommendations, the Commission also emphasized the facilitation of CAM research approaches that are first-class quality, scientific, well-designed demonstrations, comparable to those required for conventional approaches. While this may be a realistic assessment of the credentials required to introduce CAM into a closed medical model, it presents a huge challenge for proponents of CAM. If the viability of assimilating CAM into the U.S. health care system is strictly contingent on modality by modality evaluation as part of "developing a body of"
evidence-based knowledge about CAM, vast economic resources and years of study by conventionally trained medical researchers may impede the evolution of public interest.

Without noticeable documentation excerpted from a consumer opinion research regarding the public’s feelings, the comment was made in the Report that “a wide cross-section of the population wants the Federal government to take the lead in integrating safe and effective complementary and alternative health care practices and products into the nation’s health care system.” If this is in fact the result of consumer research, the feeling may be due to the substantial out of pocket expenditures going toward CAM and the desire by consumers to have an advocate in dealing with these unregulated areas.

Along the lines of Federal control, the Commission recommended that the various CAM research projects being planned and implemented throughout government agencies be coordinated by a CAM, trans-department, Federal committee. Historically, NCCAM and other government agencies have concurrently conducted research into CAM therapeutics that organizationally falls into the agency’s specific area of responsibility. These include, among others, the Office of Dietary Supplements at NIH, the National Cancer Institute Office of Cancer Complementary and Alternative Medicine, the Office of Behavioral and Social Sciences Research, the Department of Veteran Affairs, the Department of Defense, and the Agency for Health Care Research and Quality.3

Coordinating the agencies’ research into CAM is intended to allow the Federal government to manage, prioritize and control areas of study. The proliferation
of agencies performing CAM research has increased as the broad offering and popularity of CAM services has increased. This interest and potential acceptance of new modalities has lead to overlap among the various agencies that deal with the popular CAM topics.

The merger of individual therapeutics into conventional medicine has also occurred as therapeutics have been researched, tested, introduced, and then embraced as standard treatment by conventional practitioners. While staunch conventional and alternative advocates may protest the integrative union of CAM and mainstream, commonality exists between the two medical tracts, especially in the area of prevention and rehabilitation. This commonality is especially noticeable in programs geared to

... immunizations, healthier mothers and babies, family planning, safer and healthier foods, fluoridation of drinking water, control of infectious diseases, reduction of deaths from heart disease and stroke, decrease of the use of tobacco products, and the promotion of motor vehicle safety and safer workplaces.54

Research Directive

Underlying American governmental initiative is the conviction that “first-class scientific research on these approaches and well-designed demonstration projects of the same high quality required for conventional approaches is crucial to helping all Americans, and those who care for them, make the wisest healthcare decisions.”55 Annual increases in research funding have occurred as a result of this objective; and, effective prioritization of CAM research topics and allocation of financial and
scientific resources require wisdom and judicious planning by management infused with consciousness and awareness of the true nature of CAM.

Strictly approaching the study of CAM using the bio-scientific method without regard to the base of knowledge built through thousands of years of practical application and accumulated outcome experience will effectively set CAM up for failure and minimize the contributions to health and well-being of the American public. If the strategy is to study and evaluate CAM in light of conventional medicine, an emphasis to keep in mind is not necessarily how CAM works but rather, does it work and what works for what condition.

"In general, increased use of TM and CAM has not been accompanied by an increase in the quantity, quality and accessibility of clinical evidence to support TM and CAM claims." Although the Report does not provide specific information regarding this statement, perhaps the comment references the rapid growth pace of CAM in the U.S. and the disproportionate research funding compared to conventional medicine. While the application of the conventional medicine research standard is at times out of context with CAM, the necessity to continue the campaign for increased CAM research attention and, perhaps, modified or customized methodology is critical if the scientific conventional method is to be held as the standard and knowledge pool to evaluate CAM.

The importance of generating CAM data is further indicated by the need to provide a basis for the nation’s insurance coverage and reimbursement model, an issue critical to CAM public trial and acceptance. Even though out-of-pocket expenditures on CAM are substantial, most likely patient usage and professional
referral would significantly escalate with improved and more inclusive insurance coverage.

Due to this importance of generating the maximum quantity of pertinent CAM research balanced with the broad CAM scope of modalities, medicinal and non-medicinal alike, an arbitrary approach to resource allocation is not sufficient. The Commission addressed this feasibility issue by requesting that NCCAM, assisted by the Institute of Medicine (IM), develop guidelines for establishing research priorities in CAM and distributing funding toward viable study targets. These guidelines, when and if published, will provide insight into the strategic philosophy behind the Federal positioning of CAM into the perceived integrative model.\textsuperscript{57}

Total national funding for CAM has increased from $116.0 million in 1999 to $247.6 million in 2002. This includes the bulk of the funding which is the NCCAM budget for 2002 of $104.6 million.\textsuperscript{58} Despite the increased spending commitment, the percentage of project applications approved for funding has declined due to the growing number of requests for new awards. To compensate and to continue the CAM research momentum, a concerted and coordinated awareness building program to stimulate private and non-profit sector research interest would be optimal at this point in the market development cycle of CAM and the integrative health care model. For even with “the broad use of alternative therapies, health care professionals and the public need more substantial scientific information to demonstrate convincingly whether CAM practices lead to positive clinical outcomes; improve quality of life; and are effective; safe, and/or beneficial.”\textsuperscript{59}
**CAM Domains**

The roots of current CAM systems and practices evolved concurrently, over thousands of years, throughout cultures, throughout the globe. The Ayurvedic, Chinese and Asian, Native American, Shaman, Tibetan, and Greek systems, among others, demonstrated the principles of holism, self-care and healing. Interaction of mind and body, spirituality in illness and healing, prevention, and vital force stimulation were exhibited as the ancients forefathers of integrative medicine grounded into “the inherent relationship between individual and cosmic spirit, individual and cosmic consciousness, energy and matter.”

To better organize and clarify the diverse range of CAM offerings, NCAAM and the Commission have outlined six major CAM domains. These are: 1) alternative health care systems, 2) mind-body interventions, 3) biological based therapies, 4) therapeutic massage, body work and somatic movement therapies, 5) energy therapies and, 6) bio electrical magnets. Overlaps are apparent among CAM domains; for instance, the domain of ‘alternative health care systems’ may encompass individual interventions from the mind-body or energy therapies domains.

Just as the definitions within CAM domains shift, so do CAM practices and therapies shift toward definition as mainstream medicine. Historically, this has been the case with treatments such as biofeedback, meditation, guided imagery, art and music therapy that have expanded into the fields of conventional behavioral psychology and sociology. Behind much of the CAM research has been the intent to identify and legitimize CAM therapies that will eventually integrate into the mainstream. This can be seen with “pharmacological agents, techniques, or
application, such as exercise/diet/lifestyle therapies, herbal/nutritional supplements, behavioral/mind-body methods, pain management, the effect of culture on health and treatment, and the ability of the body to heal." By nature of the health care integration process by which CAM serves as a development force, CAM practice innovations can be considered as introductory products, although most have been around in theory if not form, for thousands of years. To convert from introduction and subsidized market existence to mainstream acceptance and economic viability, CAM practices first must be proven safe and effective.

Areas of CAM Research

In several years, NCCAM has expanded its research portfolio "to emphasize the expansions of investigator-initiated studies on the basic mechanisms of action and clinical applications for many different, widely used, CAM therapies." This emphasis is said to continue as the Commission believes that conventional and CAM systems of health and healing should be held to the same rigorous standards of good science.

In 2003, with a proposed budget of $113,823,000 and an eight percent increase over 2002, NCCAM has targeted the following areas: neurosciences; cancer, HIV/AIDS, international health and women’s health at mid-life. Health disparity between minorities will be a topic as well as NCCAM’s work to coordinate and facilitate collaboration efficiency between and within other Institutes and Research Centers.

The majority of the 2003 budget, 42 percent or about 48 million dollars, has been allocated to research and development contracts. Thirty three percent or
approximately 38 million dollars, has been budgeted toward intramural research. Extramural research and other categories of study received 18 percent of the budget or 21 million dollars. Twenty-three research centers located across the U.S., specializing in areas such as aging, botanical products, pediatrics, cancer therapies, cardiovascular disease treatments, and women's health approaches, have been designated to receive 4% or 5 million dollars. Substantive research training programs including the NIH major training mechanisms geared to fellows, practitioners, individuals, and institutions were funded with about 3% of the annual budget. After administrative expenses, the category of research project grants received the remainder of one tenth of one percent of the budget or a little over one million dollars. 65

*Balanced Research Portfolio*

Still, NCCAM's portfolio does not reflect the desired balance of CAM practices because of the lack of research methodology and expertise to study many of the fields. "The extensive use of untested CAM practices by the public dictates that NCCAM make clinical research its highest priority and the centerpiece of its research portfolio."66

In the 2003 NCCAM budget report, the broad priorities of cancer, neurosciences, HIV/AIDS, and international health predominate. NIH areas of emphasis are also an NCCAM focus: biology of brain disorders, new preventive strategies against disease, and new avenues for the development of therapeutics. 67

Compared to other NIH Institutes with focused interest in new topics of knowledge discovery, NCCAM is focused on current safety and effectiveness before
"knowledge becomes available about their active ingredients, mechanisms of action, stability and bioavailability."\(^{68}\) Immediately, the objective is that of "ensuring safety of products and practices that had been, or might be, labeled 'CAM,' as well as to maximize potential benefits of these approaches to the public."\(^{69}\)

This objective has now been expanded to encompass therapeutic activity that "refers to the successful prevention, diagnosis and treatment of physical and mental illnesses; improvement of symptoms of illnesses; as well as beneficial alteration or regulation of the physical and mental status of the body."\(^{70}\) Specifically, "frontier medicine," as NCCAM generically has termed spirituality in healing, vibrational medicine, subtle energies, and alternative diagnostics of the human energy field, has been sited for study.

Interestingly, the use of the term "frontier medicine" may be considered ironic when the ancient origins of CAM are contrasted to those of its Western legacy conventional medicine. The concern in the use of this term by some CAM theorists is that herein lays the challenge in the development of an equitable partnership between CAM and conventional medicine. If the long-run vision and version of American integrative health care is simply taking the existing conventional system and symptomatically selecting individual CAM treatments and therapies, then CAM remains alternative. Then, the essence of holism that is the consciousness of CAM is denied access into American health care and the American public is denied access to the healing potential in CAM.
Frontier medicine can be defined as those CAM practices for which there is no plausible biomedical explanation. Growing interest by conventional medicine in complete biological system interaction, the placebo effect, spirituality, consciousness, and electromagnet fields coupled with the challenges to conventional thinking of homeopathy, bioenergy, (chi), bioelectromagnetic therapy, and therapeutic prayer provide a plethora of relevant, timely exploratory opportunities.\footnote{71}

Application of the conventional scientific method to find “plausible biomedical explanation” of frontier medicine may require a wide variety of mainstream experts in collaborative CAM research partnerships that link, among others, the disciplines of physics, cell and molecular biology, genetics, immunology, chemistry, physiology, neurobiology, epidemiology, psychology, sociology, and engineering.\footnote{72} Collaboration with native or Eastern scientists and practitioners skilled in TM and CAM would provide creative solutions to the measurement of effect of the frontier medical disciplines. Again, the emphasis on holism, traditional experience and practice must be represented in the evaluation of CAM by conventional medicine. Examples of frontier medicine study include such interventions as magnet therapy, energy healing, homeopathy, and therapeutic prayer. “In spite of the fact that the U.S. public uses these therapies extensively, little high-quality research has investigated their efficacy and safety.”\footnote{73}

The following are examples of current research into the domains of non-medicinals that may be considered ‘frontier therapies. Theses are:
1) basic mechanisms of meditation and cardiovascular disease in older blacks, 2) self-transcendence in breast cancer support groups, 3) effect of transcendental meditation on hypertension, 4) effect of mind/body techniques on fibromyalgia, 5) effect of Reiki on non-insulin diabetes mellitus patients, 6) effect of Qi gong and spirituality/psychosocial factors on cardiac patients wound healing, 7) effect of hatha yoga on the cognitive and behavioral changes in the aging and on neurological disorders in multiple sclerosis and healthy elderly, 8) effects of meditation on coronary heart disease, 9) nonpharmacologic analgesia for invasive procedures, and 10) extensive study of the placebo effect.74

*Expanding Research Areas*

NCCAM is also looking at “fertile areas for clinical investigation and the appropriate investment into these areas . . . evidence–based review.”75 It is reported that the best research ideas present from a wide base of stakeholders, investigators, and practitioners from mainstream and CAM disciplines and fields will be solicited to encourage balanced domain coverage.76

Beyond those areas previously mentioned, clinical interventions consisting of multiple, combined treatments have been cited as attractive for study. Other areas of interest include studies involving patient-practitioner interactions affecting individualized CAM treatments; and, self-care and wellness modalities influencing behaviors and expanding our understanding of health and disease.77 New research interest in the exploration of CAM diagnostic methods and the study of implementing CAM modalities in varied health care offices are of interest to be explored.78
Study of CAM usage and application among the aging holds great promise in the alleviation of conditions in the aging. As Gordon stated in the White House Commission Report: “the aging, those with chronic diseases, and the dying need to have approaches available that can reduce their stress and suffering, especially since they are requesting it.”

Complications and Interactions

Another relative area of study is that contraindications and complicating circumstances, herbs and supplements that interact during surgery and recovery present huge potential problems for the patient. Serious complications may result in excessive bleeding, cardiovascular instability, and hypoglycemia, among multiple other interactions. There is also evidence that some herbs may increase the strength of anesthetics and the metabolism of many drugs used during and after surgery.

While evidence may indicate that a specific CAM medicinal alone is safe and effective in treating a certain condition, new safety concerns arise when the same is used in conjunction with conventional medications. Since most people do not tell their conventional health care providers they are using CAM, there is potential adverse interaction of CAM and conventional treatment. Another survey, as reported in the Report, found that physicians were unaware of CAM usage by the majority (57%) of their patients, making it difficult for providers to anticipate contraindications.

Cost Effective

In addition to assessing a modality’s medical effectiveness, the criteria for evaluating the feasibility of a study topic is influenced by the potential to gain data
regarding a modality’s cost basis which can then be used to contrast the cost benefit of the therapy. “Well-designed scientific research and demonstration projects can help determine which CAM modalities and approaches are clinically effective and cost-effective.”\textsuperscript{83} Considered in this calculation is the projected extent of potential consumer utilization versus the comparable cost benefit and utilization of a comparable therapy. Attention is being paid to the production of comparable or higher quality products at a lower cost, to replace existing therapies. Other data factored in is the residual impact of the modality on public health and the estimated expense to implement the research versus the anticipated contribution to the field.

Importantly, the Report cites the seriousness of favoring the for-profit sector in the development and research of CAM, thus ignoring promising and pertinent non-manufactured or non-patentable therapies. A research portfolio weighted in its coverage of the domains must include an emphasis on the holistic therapies at the heart of CAM, such as those dealing with bodywork, mind body interventions, and psycho-spiritual development. “Treatments such as biofeedback, meditation, guided imagery, art therapy and music therapy, which appear to be effective but may not be profitable to private investors, should also receive Federal support.”\textsuperscript{84} Although difficult to measure, the power for contribution of these modalities in the health and healing mix appears to be significant and especially cost-effective.

A case in point is reported by the Commission: a self-management course designed to help arthritis patients handle disability, pain, depression and anxiety impacted physicians visits after four years by 43%, for a savings of $648 per person with rheumatoid arthritis. Another study reported by the Commission dealt with a
chronic pain group that received interventional, behavioral treatment approaches, as well as yoga, relaxation techniques, and life coping skills. Decreased anxiety, depression and hostility resulted and estimates savings from reduced clinic visits were $110 per patient the first year and $210 per patient the second year, excluding savings in prescription drugs and diagnostic tests. 

Data to evaluate outcomes of CAM interventions, to measure utilization, and to develop cost reduction models are mandatory to the development of integrative health care. This information is required to negotiate through the existing barrier to insurance coverage and to assist administrators in building the business infrastructure required for CAM practices.

Studies are also needed to compare conventional versus CAM treatments for specific conditions and to test CAM in conjunction with conventional therapies. “Likewise, research is needed on whether CAM, health promotion programs and prevention efforts increase worker morale, reduce stress, lessen the incidence of workplace disabilities and workmen’s compensation claims, shorten treatment duration for illness and injuries, and improve productivity.” An excellent example is contained in a Mutual of Omaha study that demonstrated that lifestyle changes may be used to avoid invasive interventions for at least three years without increasing the risk of a heart attack, stroke, or death with reduced expense of $29,500 per patient. For, “with information from these studies, the public can make informed, intelligent decisions about their own health and well-being and the appropriate use of CAM interventions, conventional and CAM practitioners also will benefit from the dissemination of this information.”
Public Role in CAM

While the Report and WHO concur that integrative health care is in the best interests of the American and global publics, successful strategies and programs geared to make these versions of integrative health a reality should include an emphasis on the promotion of holistic self-care and health responsibility. If this is not the case, it seems that the success of integration, even if precisely designed and executed, may be minimized. Gordon, in his statements, indicated his support of this participative philosophy in health care and it is the hope of this author that Gordon’s enlightened perspective will step down to those charged with implementing integrative or CAM programs.

In essence, participation by the individual American in the integrative health agenda is mandatory for its effectiveness. This is true not only in subscription to the prescriptions of CAM treatments and practices but also, and more importantly, in the individual American’s conscious ability to relate the factors of body, mind, emotions and spirit to the resulting outcome of health, well-being and potentially healing, in their lives and their family’s lives. Because of this, the process of understanding the consciousness level of the American public relative to integrative health and well-being is of extreme importance to the holistic mission and vision of integrative health care.

Patient Perception and Usage

It is reported that while only a small percentage (4%) of people use CAM therapies as alternatives to conventional medicine, evidence suggests that CAM is used because patients believe it is more effective than conventional. In a survey of
rheumatology clinic patients, 50% reported turning to CAM because they perceived their conventional drug treatment as ineffective.\textsuperscript{88} One survey among cancer patients found that the majority of respondents used CAM therapies but did not divulge this use to the physicians, assuming the physicians would not be interested, would respond negatively, would not understand, or would dominate the conversation due to assumed disinterest.\textsuperscript{89}

Consumer perception regarding the use of CAM and conventional therapies is essential information for health care providers that are introducing CAM of their patients. This is especially important considering the holistic premise of integrative health care and the American society's general lack of holistic living experience and orientation. A tremendous amount of patient education will be necessary to influence patient behavior modification, and health care providers may be looked to as mentors or holistic "gurus."

A recently published 25-year study conducted on the island of Okinawa, situated in the East China Sea in the area where the ancient Chinese historical texts described the "land of the immortals" . . . a Shangra-La.\textsuperscript{90} provides insight into the quality of life and well-being associated with a holistic lifestyle. On the island, life span is extended, as is well-being and quality of centurian life. The study shows that the culture's lifestyle gives the population at least another 10 years of quality living, compared to the American lifestyle.

In contrast, the American public has been inundated by the media with bits and pieces of CAM information while possessing minimal practical experience with the consistent and long-term incorporation of the holistic practices of mental,
emotional, spiritual and physical health. To encourage patient compliance of integrative protocols, providers will require a level of understanding as to what the mind-set is of the public and how information regarding integrative health care can best be positioned to their patient base and the community at large.

Individual Responsibility for Health and Well-being

People are seeking "a sustained, healing partnership . . . and an opportunity to participate in their own care as well as to follow doctor's orders." 91 Partnership between patient and provider is critical to a positive experience yet a patient not willing to participate in his or her own healing is not an ideal candidate for CAM. Regardless of the quality of the patient and physician relationship, "healing is above all, a solo task. No one can heal on behalf of another person. We can assist others, to be sure, but no one can, for instance, forgive someone on behalf of someone else." 92

Notably, the goal of motivating the American people to participate in the management of their overall health was intrinsic throughout the White House Report. While holistically highlighting the promotion of health and disease prevention, the long-term wellness of an aging American population with increasing incidence of chronic illness was paramount. Specifically of interest were approaches that recognize the individual's spiritual as well as physical and emotional dimensions.

Wellness is defined in many different ways, but all agree that it is more than the absence of disease. For some it is the achievement of one's fullest potential, for others it is an integration of body, mind, and spirit. Wellness can include a broad array of activities and interventions that focus on the physical, mental, spiritual and emotional aspects of one's life. 93
Predisposition to CAM

A serious priority for scientific evaluation due to the impact it will have on medical outcomes of this important CAM development policy is the patient’s predisposition to CAM therapies. It cannot be assumed that because a patient agrees to undergo CAM treatment based on a provider’s recommendation that the treatment will be effective, even at the rate indicated by clinical study of subjects willing to engage in nontraditional approaches. Effective CAM will involve the “aspects of life-mind, body, spirit, and environment-and high-quality health care support of the whole person.”94 The premise that “people have a remarkable capacity for recovery and self-healing, and that each person is unique and has the right to health that is appropriately responsive to him or her, respecting for preferences and dignity”95 is fundamental to the Report on CAM. However, it is important to acknowledge that CAM may not be appropriate for many Americans; a significant percentage of patients are still better suited for conventional medicine than CAM at this point in the evolution of integrative health care.

This is apparent when considering that “[n]o matter what has happened in her life, a woman (or man) has the power to change what that experience means to her and thus change her experience, both emotionally and physically. Therein lies her healing.”96 Evaluation of a patient’s willingness to make changes in habits, behavior, and attitude marks one’s propensity to healing through CAM. For some patients, chemical medicine is the only alternative, as individuals possess varied levels of conscious awareness of the individual nature of their holistic well-being. This is not to say that even the holistically conscious individual does not experience a blockage
in the conscious management of holistic energies that may interfere with health and well-being. However, the “self-actualizing individual, by definition gratified in his basic needs, is far less dependent, far less beholden, far more autonomous and self-directed.”

_Acquisitioners_

As Myss describes it, the issue of a patient’s suitability to healing through CAM treatment is often dependent on emotional health. In speaking of a patient’s style of seeking health care, acquisitioners of energy are almost programmed for conventional medical treatment. “This is not necessarily always negative; conventional medicine is the most appropriate form of healing for them as long as they remain passive.” Acquisitioners are those who are primarily outer-directed, seeking passive life purpose and abdicating personal identity and power through habitual attachment to the perceived, more attractive power in others, things, or the environment. This addictive dependence carries over to an acquisitioner’s capacity to health. Maslow discussed this individual quality saying that the dependent one cannot really be said to be governing himself or in control of his own fate due to the fact that he must be dependent on the sources of supply of need for gratification. “He is the dependent variable; the environment is the fixed, independent variable.”

The dependent’s attitude that all healing power exists externally, outside of one’s self, under the authority of a medical doctor or practitioner, does not promote healing in an alternative or conventional setting. “Our relationship to power is the core of our health.” The complexity of the personal power issue is magnified when the corresponding pattern to the acquisitioner is considered. In the exchange of
energy from the external source to the acquisitoner, the individual who is the source of power must also deal with the loss of energy donated either consciously or unconsciously. Projecting an overly generous amount of compassion or avoidance of enforcing individual integrity in oneself or another is not a virtue as there is no taking the path of healing for another. In fact,

\[ \ldots \text{not allowing people to go through their pain, and protecting them from it,} \]
\[ \text{may turn out to be a kind of over-protection, which in turn implies a certain} \]
\[ \text{lack of respect for the integrity and the intrinsic nature and the future} \]
\[ \text{development of the individual.}^{101} \]

By this, Maslow is not referring to physical pain; the reference is toward situational discomfort and short-term suffering or grieving that often accompanies making choices and changes to attain higher levels of well-being and holistic fulfillment. As "healing is a solo task,"\textsuperscript{102} power losses resulting from fueling an acquisitoner, regardless of the intent, also produce disempowerment for both parties. "If the essential core of the person is denied or suppressed, he gets sick sometimes in obvious ways, sometimes in subtle ways, sometimes immediately, sometimes later."\textsuperscript{103}

\textit{Energy Accounting}

The Myss bank account analogy provides another tangible exercise in the conscious aspiration to manage and nurture the individual energy anatomy. If one has 100 units of energy at the beginning of the day, and then gives 50 units to a needy family member, 30 to a demanding job, and 25 to worries of finances, the math indicates that there is a deficit of 5 units at the end of the day.\textsuperscript{104} This leaves no units
to invest in supporting the immune system much less healing, creativity, self-expression. In fact, the deficit units then roll into the next day power account and reduce the starting balance to 95 units. The ability to manage these holistic disbursements more effectively and efficiently could have resulted in a favorable day ending balance of health and well-being.

The reality and responsibility in this accounting method is significant to the Americans choosing to embark on the shift toward integrative health and well-being. Regardless of one’s perceived concept of self, there is a limited amount of personal energy to work with on any given day. Reams of health care research data will not generate holistic consciousness, and even then, according to Myss,

\[ \ldots \text{accepting the idea that every part of your life, from your physical history to your relationships to every attitude, opinion, and belief you carry inside yourself, affects your biological makeup is only part of the healing process. You also have to get that acceptance to move from the mental level into the physical level, into your body, to feel the truth viscerally and cellurally and believe it wholly.} \]

\[^{105}\]

**Purpose of the Study**

In recent years, life expectancy has continued to rise in America among both men and women as well with minority groups. While improvements have been made in battling two of the major causes of disease, heart disease and cancer, these two conditions still account for half of all U.S. deaths every year. Other rates of the common causes of death including stroke, diabetes, emphysema, liver disease and HIV/AIDS have been maintained but still have contributed their share. In the
meantime, immune disorders and muscular skeletal conditions have been on the rise while death rates have increased from Alzheimer’s disease, kidney disease, high blood pressure, pneumonia and infectious disease, among others.\textsuperscript{106}

Even as life expectancy continues to increase due to advances in the support of medical science, health and well being issues will continue to surface as the baby-boomer populations explodes into seniority. It has now been shown that making even modest changes in lifestyle like diet and exercise may add five to ten years to life.\textsuperscript{107} Populations that have followed what is described to be health behaviors live well and profoundly longer, up to five and ten years longer than those who did not follow these behaviors; encouragingly, many of these years were reported to be disability-free.\textsuperscript{108}

Maslow discussed the importance of studying healthy people rather than the diseased to understand the nature of integrative health. He makes a good point: in working toward health, is it not preferable to study the values and behaviors of healthy people to reinforce those traits with the unhealthy? “Only the choices and tastes and judgments of healthy human beings will tell us much about what is good for the human species in the long run.”\textsuperscript{109}

Gordon followed this directional perspective with the comment that the next singular important issue to the long-term health of the American people is disease prevention, followed by promotion of health and wellness, and promotion of each person’s capacity for self-healing.

It seems to me that this Report is shaped by the Commission’s particular concern for an aging population with an increasing incidence of chronic illness for precisely those people who are among the most frequent users of
CAM products and services. It makes clear that people with chronic illness and those who are dying need to have available approaches that can reduce their stress and suffering, approaches – including CAM therapies – that recognize the spiritual, as well as the physical and emotional dimensions of their lives.\textsuperscript{110}

To understand more about the condition of individual health and well-being of the American public with the intent to study the interactive and energetic holistic component that is theorized to be the base of CAM and integrative health, the demographic of men and women ages sixty-five to seventy-five was the subject of this research. The purpose of this experimental study was to examine and compare the holistic relationship and potential interaction between representative health measures indicative of body, mental, emotional, and spiritual energies and a measure of physiological well-being

\textit{Overview of Study}

To do this, the blood assay of the human steroid dehydroepiandrosterone (DHEA) was selected as a dependent variable. Then, a variable mix of three measures was selected to represent the multi-modality holistic connection and interface of body, mind, and spirit. DHEA, a steroid produced by the adrenal glands of the third chakra in the human energy anatomy, was evaluated in relation to the variables of exercise (as physical energy), grace therapy (as spiritual energy) and self-actualization (as mental and emotional energy). Gender was also considered as a variable.
*Dependent Variable DHEA*

The most abundant hormone produced by the human body is DHEA.\(^{111}\) Currently under active study by the National Institute on Aging (NIA) as an anti-aging hormone, what is most interesting is that "DHEA levels decline in direct ratio to age, so it may be the best marker of biological age we have. Measuring DHEA levels in people may be akin to counting tree rings for trees."\(^{112}\)

DHEA deserves due diligence in the search for relief and prevention of physical, emotional and mental suffering continues. Ironically, heightened public interest in DHEA has been fueled by the marketer's superficial and quite general claims of vitality, sexual appeal, and physical youthing. "However, research shows that DHEA may be the most critical single chemical in the body in predicting disease or health."\(^{113}\)

Physical, emotional and spiritual responses to stress are believed by Shealy and other authorities to be the major factor in the demise of DHEA levels as we age. Clinical observations of those in their seventies and eighties under low stress levels and with optimal health have been shown to have higher DHEA blood levels than many thirty year-olds with unhealthy and highly stressful lifestyles.\(^{114}\)

DHEA's activity as a stress hormone responds to the levels of cortisol released during the stress cycle or "fight or flight" response in the body. Stress is composed of physical, environmental, emotional, psychological and spiritual interactions. Management of stress assists in maintaining the physiological balance and homeostasis, which is required to support DHEA at youthful levels. In balancing the holistic components that contribute to stress, it is possible that DHEA as the
"reservoir of life energy," will respond. The challenge of balance in the maintenance of physical mortality requires modulation and conscious intent.

... [T]he body is supposed to coordinate the spiritual, mental and physical. But keep a normal balance, not by being an extremist in any direction, whether in diet, exercise, spirituality, or mentality—but in all let there be a coordinate influence. For, every phase of the physical, mental and spiritual life is dependent upon the other. They are as one... Independent Variable Exercise

In this study, exercise status was determined in pretest selection based on self-reported activity by participants, as an average of twenty-five minutes of activity for at least two to three times per week. No requirement was placed on the type of exercise as minimal amounts of varied activities have been seen to positively influence health. In The Okinawa Program, reported to be the first evidenced based study of aging, longevity and well-being, it is recommended that an exercise program include a minimum of three walks per week, with a minimum of fifteen minutes and a maximum of two hours with the heart rate in the training zone.

"Most of us are aware of the health benefits of exercise, yet fewer than 40 percent of North Americans actually do so." Structured exercise is not necessary and even a moderate amount of regular exercise substantially reduces the risk of dying from heart disease, cancer and other medically-related maladies. Walking exercise or gardening for more than 60 minutes weekly has been shown to reduce the risk of heart attack similarly to high-intensity leisure time physical activity.
Intervening Variable Grace Therapy

As the treatment and intervening variable in the experiment, grace therapy was specifically designed for this study as a structured program of positive, holistic, intercessory, distance healing. The concept of grace therapy developed partially in response to Myss’s commentary on the nature of grace and the “grace bank account”\textsuperscript{120} of the seventh chakra and Dossey’s work on the positive and negative effect of the power of prayer.\textsuperscript{121}

As the connection to our spiritual nature, the seventh chakra contains the purest form of the energy of grace, that of prana. Also as the center receptive to divine intervention and consciousness, spiritual insight and vision, Myss says that the seventh chakra actually stores the positive energy generated through our prayers and meditation and “safeguards our capacity for symbolic sight.”\textsuperscript{122} Dossey maintains that “if we are guided by love, compassion, and good intent, and if we set our personal agendas aside to the greatest extent possible, it is unlikely that we will take a wrong step.”\textsuperscript{123}

In this study, grace therapy entailed seven days of uninformed, non-local, individual meditation or prayer combined with several group meditations by the thirty-four grace therapists located in Memphis, TN and Seattle, WA. Therapists directed non-specific positive energy for well-being and blessings for the highest good of their assigned recipients three times per day. Each therapist was given the first names and ages of two, three or four individuals through random assignment. Therapists kept diaries of their meditations and completed a record of their
experience. Before the intervention and after the invention of therapy, the DHEA of participants that were “graced” was measured for variance.

\textit{Dependent Variable Self-Actualization}

Based on the concept that people’s range of personal needs build upward from a foundation base of physiological gratification to personal safety, to love and belonging, to self-esteem, and further upward to self-actualization, Maslow described this hierarchal peak as finding one’s calling.\textsuperscript{124} “Our divine potential calls us above the Self’s basic needs for survival in the physical world. We’re called to grow beyond our Self.” \textsuperscript{125}

Maslow’s theory of self-actualization combined with other notable theories by Riesman, Rogers, Shoestrom and Perls merged into the psycho spiritual concept facilitated by the Personal Orientation Inventory (POI),\textsuperscript{126} which was the test administered in this research study. The POI incorporates Humanistic, Existential, and Gestalt schools of therapy. “The basic American commitment is not to affluence, not to power, not to all the marvelously cushioned comforts of a well-fed nation, but to the liberation of the human spirit, the release of human potential . . . and self-fulfillment.”\textsuperscript{127}

The POI differs from the medical model of psychological testing that gauges movement from illness to normalcy. Self-actualization expands one toward one’s individual potential to become more effective and more self-fulfilled, from a place of normalcy. The path of self-actualization is totally that of individual responsibility and inner direction and competence versus dependence on sources outside of one’s self. Shoestrum\textsuperscript{128} discusses in the therapeutic process toward self-actualization, that
exploration and discipline shifts one to evaluate and accentuate one’s specific purpose in life, moving toward the higher realization point of joy and fulfillment through identification with an individual’s life mission. Similar to the process of the “Sacred Contract” as Myss discusses, self-actualization development is a journey of “self-esteem-your knowledge of yourself.”

The POI was designed to evaluate values and behavior of importance in the self-actualizing individual. In general, “such persons may be described as those who utilize their talents and capabilities more fully than the average person, live in the present rather than dwelling on the past or the future, function relatively autonomously, and tend to have a more benevolent outlook on life and on human nature than the average person.”

Summary

The first chapter of this dissertation discussed the current environment relative to the governmental strategies and initiatives to integrate CAM into the conventional health care system. The political, economic, medical, scientific, and social challenges require and justify a partnered campaign by multiple stakeholders. The potential for health care reform and the potential for improved public well-being appears contingent on the assimilation of the holistic components of health by increasing numbers of Americans. This holds true whether there is support of CAM by the Federal government, whether there is support of CAM by the American Medical Society (AMA), or whether CAM develops free standing.

Expanded CAM or an integrative healthcare system that will truly reform the American health care system will require participation not as much through trial and
usage of CAM as through a change in the health care philosophy and behavior of the individual American.

The holistic agenda of the body, mind, emotions, and spirit modified to a contemporary American society is needed. For this to transpire, health care practitioners will be called to expand their professional and personal knowledge base and to walk the walk of holism in their daily practices. America is a long way from Okinawa, yet the principles of holism and well-being demonstrated on the tiny island in the Pacific hold wisdom for the American public.

Moving forward, Chapter Two will provide a review of the literature and additional rationale in support of this study of integrative health practices. Chapter Three will then present the Method of the study. Chapters Four and Five contain the Findings and Discussion of results.

Hypotheses

These were the hypotheses that were considered in this research.

1. Physical exercise correlates with higher DHEA in the aging.

2. Receiving grace therapy correlates with a variance in DHEA in the aging.

3. DHEA levels correlate to emotional and psychological self-actualization in the aging.

4. Physical exercise, receiving grace therapy, DHEA, and emotional and psychological self-actualization correlate in the aging
Endnotes

Chapter One


4 Suzuki, Yasuhio, M.D. WHO Executive Director for Health Technology and Pharmaceuticals, 2002.


33 World Health Organization (2002).


41 World Health Organization (2002).

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78 World Health Organization (2002).


CHAPTER TWO

Literature Review

Science of Energy Medicine

Although not specifically named in the Report, the field of Energy Medicine encompasses the CAM domains and practices cited by NCCAM and “The Report’s vision is holistic. It is shaped by attention to the mind, body and spirit of each person, and to the social and ecological world in which we all live … “biopsychosocial”.”

As the rate and number of TM and CAM modalities shifting into mainstream medicine increase, “[t]he major theme of the next decade will be human energy systems.”

In the following Literature Review will be an overview of the field of Energy Medicine. There will be a cursory look at the nature of the energy system and discussion of the principles of energy anatomy and Energy Medicine. From there, the third chakra will be described followed by information regarding the nature of intuition, self-esteem, and self-actualization in the process of health and well-being.

Definition and Scope

Generally defined, the field of Energy Medicine includes the numerous and varied traditional, complementary, alternative and mainstream healing practices that treat the body, mind and spirit, as well as electromagnetic, imaging therapies and electrotherapy. “Energy Medicine is the art and science of fostering physical, psychological, and spiritual health and well-being. It combines a rational knowledge and intuitive understanding of the energies in the body and in the environment.”

While not limited to the components of the six CAM domains, the broader study of
Energy Medicine incorporates the philosophy, theory, psychology, procedure, art, science, intuition, and mechanics behind TM and CAM medicinal and non-medicinal treatments and therapies. Regardless of the modality, “the intention behind using energy medicine is to treat the body and spirit as equal.”

The International Society for the Study of Subtle Energies and Energy Medicine (ISSSEEM) defines Energy Medicine as including all energetic and informational interactions resulting from self-regulation or brought about through other energy linkages to mind and body; these environmental energy pulses of magnetic, electric, electromagnetic, acoustic and gravitational fields and frequencies impact biology and psychology. This definition of Energy Medicine also recognizes that as complex energy systems, humans are capable of generating, conducting, transferring, and transmitting subtle energies. These energies constantly interact with the human holistic anatomy even if an individual is unaware.

The term ‘subtle energies’ “describes human bioenergies referred to by many names (e.g., chi, ki, prana, etheric energy, fohat, orgone, odic force, mana, homeopathic resonance) that are believed to move throughout the so-called “etheric” (or subtle) energy body and thus difficult to measure using conventional instrumentation.” (ISSSEEM) Although not visible third dimensionally with the human eye, subtle energies flow through the dense physical body in response to the many CAM therapies and in response to expansions of consciousness.

“Vibrational medicine” describes the model of Energy Medicine that is “based upon modern scientific insights into the energetic nature of the atoms and molecules making up our bodies, combined with the mystical observations of the body’s unique
life-energy systems that are critical but less well understood aspects of human functioning. In comparison to conventional medicine, the vibrational medicine model is based on Einsteinian and Quantum Physics versus Newtonian Physics. Conventional medicine views the body as a biomachine that generates consciousness as a by-product of the brain’s electrical activity; vibrational medicine views the body as a dynamic energy system with mind and spirit as the true sources of consciousness that in turn operates the brain or biocomputer. Expanding on the concept held by conventional medicine that emotions influence illness through neurohormonal connections between brain and body, vibrational medicine supports the concept that emotions and spirit influence illness via energetic connections in addition to neurohormonal connections. These energetic connections connect body, mind and spirit versus just the connections between brain and body.

Complex Energy Systems

At this point in the evolution of integrative health care, topics regarding energy anatomy such as interaction of prana directed through the seven chakra and nadis system, or the interaction of etheric, astral, mental and higher spiritual energies directed through the corresponding subtle bodies, are not usual and customary conventional medical discussion. As well, descriptions of the workings and healing mechanics of the human energy system range from an over-generalized popular press description of simplistic energy transference through the “beginning . . . of useful theorizing, such as in extensions of studies of the “energy of the vacuum” and how it might account for subtle healing, by theorists such as William Tiller. As the author is not skilled in background or knowledge to discuss the actual ‘science’ behind how
Energy Medicine works, we will not discuss the models of physical theory or the nature of the expression of energy beyond saying that “there are multiple forms of energy, not just a range of ‘higher’ or ‘lower’ frequency vibrations”\(^8\) and beyond referencing general concepts of consciousness in healing later in the chapter. To mainstream, non-scientist, practitioners and those believers that energy medicine holds healing and health resources unavailable through conventional medicine, it may be accurate that the simplistic concept of energy transference is the easiest to grasp. The concept that all forms of energy are the same content except for the rate of oscillation or frequency\(^9\) and that “all matter is really a form of frozen energy”\(^10\) may be attractive and over simplified to the average follower of Energy Medicine. Just as turning the key in the ignition without knowing the workings of the engine, a malfunctioning or flat tire can harm the driver. “EM (Energy Medicine) has an enormous range of frequencies also, and the very high ones are too energetic for living tissues. Interaction with gamma rays will destroy chemical bonds in living tissues, for example.”\(^11\)

*Energy Medicine Principles*

It can be expected that as the American public is increasingly exposed to holism and the concepts of self-care and well-being, the question will continually be asked: If a body can heal, then why doesn’t it?\(^12\) Disease, which is defined as “an unhealthy condition of the body (or part of it) or the mind,”\(^13\) has a root connection with the emotional, mental, or spiritual anatomy and exists to assist in discovering unhealthy or untrue perceptions and attitudes contrary to the Divine blueprint of holism.
Disease will never be cured or eradicated by present materialistic methods, for the simple reason that disease in its origin is not material. . . . Disease is in essence the result of conflict between Soul and Mind, and will never be eradicated except by spiritual and mental effort.\textsuperscript{14}

The intrinsic assumption of the Report is the inherent responsibility of the individual for health and well-being and the expectation on the individual of participation in the process of health and well-being. By definition, this includes the total management of the body's energy field that "surrounds us and carries with us the emotional energy created by our internal and external experiences—both positive and negative. This emotional force influences the physical tissue within our bodies."\textsuperscript{15}

Practitioners of Energy Medicine know that the human energy field contains and reflects emotional, mental and spiritual issues; and that the energy field is reflected in the subtle energies of life force, and the corresponding energetic pathways and energetic centers called chakras. Myss discusses three general tenants that can assist individuals in understanding the level of participation that is required of them in working with holism and CAM.

The foundation concept, that of "[i]n this way, your biography—that is, the experiences that make up your life, becomes your biology,"\textsuperscript{16} communicates succinctly the universal law of holistic karma, of emotions, mind, spirit and environment, that steps down to the physical body level. Although the premise may be taken in faith by those not seeing the relationship of karma in their lives yet still seeking CAM, the majority of Americans relate to consequences of action and most likely accept the merit in taking responsibility for their health habits. Whether there is
motivation and willingness to delve into and to deal with the areas of emotional, mental and spiritual origin as it relates to physical health becomes an issue in evaluating the effectiveness of CAM and integrative health practice outcomes.

Second, Myss discusses the principle of energy medicine that addresses the level of individual empowerment required to heal and to balance the residual biologic of accumulated life experience. These identifying, releasing, clearing and balancing abilities are a product of consciousness and individual personal will. Although this is the case, the benefit of medical assistance or necessity of help from the health care practitioner is not minimized as the provider's effort is maximized through enhanced momentum and resulting frequency. From a healing perspective, it is totally the individual's responsibility to generate enough internal emotional power to open up in consciousness to the healing energies of the alternative or complementary practices and practitioners. For most Americans who are accustomed to turning over health power to the medical community, reclaiming this authority may prove to be a difficult and an uncomfortable concept.

Reestablishing individual power for health and well-being requires prioritization of those things of value in life and the evaluation of the relative benefit that is received from the energy expensed, in contrast to another investment. This process boils down to self-esteem: what do I need to feel good about myself and what will best support my worth? What is my individual value and how can I allocate my life energy and personal power in support of my value? What in my life is supporting to my worth and what is life draining to my value? Disengaging or detaching from the emotional and mental cords and attachments that siphon off precious life frequency-
be it money, career, lifestyle, addictions, or relationships—provide incremental frequencies for advancing and evolving health and well-being. Still, detachment is not a simple task in a society with an “external orientation” of power.\textsuperscript{18}

Locus of control is hypothesized to be a personality dimension referring to the way an individual characteristically perceives himself in interactions with the environment. Persons with an \textit{internal} orientation perceive themselves as having personal control over their reinforcements as a consequence of their behavior. Those with an \textit{external} orientation perceive reinforcement as being independent of their behavior and beyond their personal control.\textsuperscript{19}

External orientation in our society is contrasted with the internal orientation presented by Willcox, Willcox and Suzuki.\textsuperscript{20} The 25-year integrative health care study considered both conventional medical and holistic markers in an evaluation of the factors that have promoted the increased longevity demonstrated on the island of Okinawa. In Okinawa, there are 34 centurions per hundred thousand population compared to the 5 to 10 centurions per hundred thousand in the U.S. Additionally, the average life span on the island is about 81 years of age, compared to the U.S. of 78. During the course of the study, over 600 Okinawans in there 70’s, 80’s and 90’s were followed and ten characteristics of the aging were compiled. Overwhelmingly, the group scored high in self-confidence and unyieldingness, two attributes of an internalized source of empowerment.

Myss’ third principle addresses the concept of “you alone can help yourself heal,”\textsuperscript{21} and reinforces the difference between healing and curing. Intention to heal and to actively participate in the healing process establishes a link in consciousness
between patient and the healer. This link allows an interchange that may help identify the source of the condition and thus provides an opportunity to act on the condition. “If spiritual healers can assist in the belief or faith of a patient, then they may be more important than any drug or surgery. If they can channel Grace, even more so.”

Curative treatments, however, require no conscious participation from the patient, as essentially, with curing, the attitude between patient and healer is that of the patient being “fixed.” While improvements in condition may occur through curative treatment, unless the patient resolves the underlying emotional cause of illness, the illness or condition will return, in some form at some level. This also holds true for CAM or integrative treatments. If the causal issue resurfaces after its clearing, in most cases, similar or energetically related symptoms and conditions will again appear.

Myss’ principles of energy medicine encourage the realistic evaluation of individual motivation for health. Even with positive intention, getting to the emotional heart of illness and unfavorable health conditions challenges individuals working with the best of holistic teachers, enlightened therapists and strong personal spiritual practice. As individuals are in a continual state of momentum, either toward growth and evolution or toward the past, the Universe provides on-going, personalized assignments to demonstrate individuation in a multiple choice exam of life.

As consciousness of CAM develops into practice and public awareness, patients will be energetically motivated to look within simply by the nature of the expanded connection in consciousness that the practitioners and therapies transmit.
Expanded availability of holistic frequencies will attract those patients that are prepared at some level, to address holistic issues as part of their individual and sacred journey toward well-being and self-fulfillment.

For this reason, practical resources and professional support to assist health care providers in dealing with their patient’s emotional, psychological and spiritual issues, as well as their own, are a critical component to the integrative health care movement. In mass, individuals will be embarking on their journey into individuation often without therapeutic history to draw upon. “The higher the need level the easier and more effective psychotherapy can be; at the lowest need levels it is of hardly any avail. Hunger cannot be stilled by psychotherapy.”²³ As awareness of CAM increases and opportunities for integrative health care develop, Americans will be faced with pursuing the multiple holistic choices for health and well-being that will be more readily available to them. In the human energy anatomy, choice is a function of the third chakra. “The energies that come together in this chakra have but one spiritual goal: to help us mature in our self-understanding—the relationship we have with ourselves and, and how we stand on our own and take care of ourselves.”²⁴

Third Chakra

The strengths of the third chakra read as copy from a U.S. Marine recruiting commercial and strike the patriotic qualities of America’s forefathers and mothers: these are the strong, the proud, the self-disciplined, the ambitious, the respected, the respectful, the capable, the dependable, the effective, the courageous, the active, the personable, the ethical, the affable, the competent, the honest, the moral, the generous, the distinct, the certain, the centered, the conscious, and the independent.²⁵
In short, the perceptual traits of the archetypal individualized American and individualized America.

Psychologically demanding, complex issues of empowered well-being reside in the belly or the hidden jewel, the ‘manipura’ as the ancient yogis called the third chakra. “Higher need gratifications produce more desirable subjective results, that is more profound happiness, serenity and richness of the inner life.”

Literally buried within the human energy anatomy in the solar plexus region, the third chakra is connected to the stomach, pancreas, adrenals, upper intestines, gallbladder liver, and the middle spine. Some of the physical conditions associated with third chakra imbalance include but are not limited to: arthritis, gastric or duodenal ulcers, colon and intestinal problems, pancreatitis and diabetes, indigestion, anorexia or bulimia, liver dysfunction, hepatitis, adrenal dysfunction and kidney problems, chronic fatigue, hypoglycemia, muscle spasms and muscular disorders. Resolving power issues of the third chakra improve health probabilities as “[l]iving at the higher need level means greater biological efficiency, greater longevity, less disease, better sleep, appetite, and so on.”

Yellow is the resonance of the power chakra and it is no coincidence that the terms ‘yellow belly’ or ‘chicken’ correspond to the deficit side of this chakra. In sharp contrast to the nationalistic strengths of the third chakra are the characteristics of an American’s underbelly: fearful, passive, secretive, paranoid, shy, cowardly, drifting, undisciplined, unmotivated, lazy, delusional, unreliable, whining, victimized, shameful, blamable, passively aggressive. In the situation of excessive third chakra energy, these are also characteristics of the underside: hyperactive, grandiose, falsely
proud, addictive, compulsive, over reactive, dominating, controlling, aggressive, hostile, manipulative, deceitful, power hungry, stubborn, vengeful, vindictive, overly competitive, arrogant, irrational, and lacking in respect for the authority of body, mind, emotions or spirit.  

Considering the dichotomy of the third chakra, it is natural that duality rages in American society. “The higher needs and the lower needs have different properties, but they are the same in that both higher needs as well as lower needs must be included in the repertory of basic and given nature.”

Defined as a good opinion of oneself or self-confidence, self-esteem also rages between the dichotomies of antonyms. The third chakra, symbolically contains the capacity to balance the earth and water energies of the first and second chakra with the element of transforming fire. Third chakra energies are integrative by nature and balance the duality of yin and yang in the second chakra with the legacies of family of origin and culture from the first chakra. Further balancing ensues as the energies of the higher chakras, four through seven, descend to merge with the energies of the first and second. This combined third chakra dynamic of balance incorporates the assets and liabilities of the seven chakra system and accumulates and nurtures the customized individual power and frequency of personality that is unique to the soul. When charged, the manipura within spawns the emergence of the “conscious self, or that part of the human personality that is eternal and naturally aligned to the sacred.”

The nature of the third chakra “assists us and supports those choosing to actively exercise their personal power for individuation in health and well-being...
in the process of individuation, of forming a “self,” ego, and personality separate from our inherited identity.\textsuperscript{32} Here resides the capacity for the strength and endurance to resolve the holistic legacies of our own karmic creations and issues of self-respect and the inner guidance of intuition. “Higher needs are less urgent subjectively. They are less perceptible, less unmistakable, more easily confounded with other needs by suggestion, imitation, by mistaken belief or habit. To be able to recognize one’s own needs, (i.e., to know what one really wants) is a considerable psychological achievement. This is doubly true for the higher needs.”\textsuperscript{33}

Also indwelling in the third chakra interface with the world is the manifestation of the distinct, creative and capable personality. Zukav states that when energy leaves this center in love and trust, what one needs to accomplish, can be accomplished. One is competent, relaxed, and confident.\textsuperscript{34} The contrast in theory and truth behind the third chakra and the third dimensional reality of living smacks us through the media reflection of power symbols. “All culture, with all its instruments, is seen from such a point of view as on the side of the higher and against the lower. It is therefore necessarily an inhibitor and a frustrator, and is at best an unfortunate necessity.”\textsuperscript{35} A challenge of the third chakra is the development of the strength of character and the discipline of spirit to pull back from external cords of dependence to the confidence and assuredness of self-containment.

The greater our need for food or safety or affection or self-esteem, the more we will see and treat the items of reality, including ourselves and other people, in accordance with their respective abilities to facilitate or obstruct the satisfaction of that need.\textsuperscript{36}
Yet, potentially the third chakra is filled with personal discovery and attainment culminating in the joy of human experience, heightened "peak experiences." For an individual on the healthy path of the third chakra, peak experiences seem to sprout from the successful integration of duality. At other times, peak experiences appear as grace to the individuating soul. In either case, the experience serves to expand and support the on-going empowerment of the actualizing individual. Maslow discusses the peak experience as a by-product and motivator of personal integration, at which one's identity is most refined, at that time or moment.

Not only do peak experiences, grace the individual: they also grace society. "Self-actualizing people, those who have come to a high level of maturation, health, and self-fulfillment, have so much to teach us that sometimes they seem almost like a different breed of human beings." People who have enough basic satisfaction to look for love and respect (rather than just food and safety) tend to develop such qualities as loyalty, friendliness, and civic consciousness, and to become better parents, husbands, teachers, public servants, and so on.

On the tract of developing integrative personal power, a subtle, intuitive yearning for more-creative expression, freedom of spirit, enhanced joy of living, and peace of mind stirs personal esteem to forward motion. Notwithstanding this, "[t]he higher the need the less imperative it is for sheer survival, the longer gratification can be postponed, and the easier it is for the need to disappear permanently . . . respect is a dispensable luxury when compared with food or safety." From Maslow's
perspective, it is not a positive idea for individual Americans to get too comfortable and rest on their hierarchal achievement, whatever that level may be. Regardless of a person’s achievements or enlightenment status, the theory of fulfillment through attainment of growth values indicates that it is “preferred, chosen, good for the organism’ for the person to grow toward full humanness, toward actualization of potentialities, toward greater happiness, serenity, peak experiences, toward transcendence, toward richer and more accurate cognition of reality, and so on.”

*Intuition*

Maslow indicated that there appear to be good choosers and bad choosers in life and “only the choices and tastes and judgments of healthy human beings will tell us much about what is good for the human species in the long run.” Intuitive health choices directly influence the creation of disease or health stem through an individual’s sensitive connection to the energy anatomy of mind, emotion, and spirit. “Treat yourself and the voice of your psyche with respect, because it is a living force that yearns for channels through which it can communicate.”

Through the direct perception or knowingness of truth of fact received from outside the five third-dimensional senses, data is received independent of reason. “Intuition is something we see and hear and feel within, an internal language that facilitates insight and understanding.” The ancient Greeks believed that intuition was attributable to the gods and that when intuitive insight was received, it came from the heavens. Intuitive insight comes from unlimited “energy data: emotional, psychological, spiritual components have a given situation” and Myss says that intuition is the ability to use energy data to make decisions in the immediate
moment. Intuition presents differently to each individual. People, places, things, events, feelings, or spiritual practices may all be conductors of intuitive signals and symbols with which to gain access to the unconscious mind and harness the valuable intuition locked within.

Discerning the empowering flashes, feelings, or guidance of the higher self versus the drone of low self-esteem is an on-going challenge that accompanies the management of each individual’s consciousness. While intuitive messages are neither good nor bad, but neutral, “the quality of the guidance that you receive depends on the intention and attitude which you approach the tool.” Quality intuitive guidance provides clarity of understanding that allows the dissection and transmutation of personal energetic disturbances providing that choice is exercised and action taken on this information. Being in integrity and alignment with guidance does not guarantee the easiest path, the largest bank account or other third dimensional perceived modes of comfort and security. As Myss discusses, “the universe measures our success by how much we have learned.”

In fact, in the short run, choice inspired by individual intuition may be uncomfortable as choice can bring change and new circumstances. Yet choice is our greatest power, an even greater power than love, “because you must first choose to be a loving person.” Choosing, or setting the power of the mind toward listening and then following the direction of intuitive guidance empowers and sets in motion the energy of personal will. In health matters, the choice to follow intuition may or may not result in healing: yet, prospects for future well being dramatically improve.
In speaking of the nature of intuitive guidance, Myss stated that often her workshop participants were in touch with their intuition—but they assumed that intuition meant clear direction rather than intuitive guidance. They hoped that one good intuitive “hit” would give them the power to reorder their lives in complete health, harmony, and happiness. Myss is clear that intuitive guidance does not mean following a voice to the Promised Land. Rather it means matching the guidance with the necessary self-esteem to recognize that the discomfort or confusion that a person feels is actually directing the individual to take charge of his life and make choices that will break him out of stagnation or misery.\textsuperscript{52}

Intuition also reveals the symbolic meaning to illness, physical conditions and life events, which is critical to engaging life force for health. Symbolic sight intuitively interprets power symbols in life, revealing where personal energy has been invested. This vision helps to uncover the greater meaning of life’s challenges apart from the literal events, and helps one discover the connection to health.\textsuperscript{53} By grasping the personal power issues surrounding health and well-being and by seizing the insight to act on intuitive guidance, potential health and healing opportunities of emotions, mind, spirit or body appear.

For “the information about the intuitive network, the body’s seven emotional centers (chakras), and the emotionally-charged memories of wisdom and trauma stored in the brain and the body together form a kind of instruction manual for the body. The language of intuition—the signs and symptoms by which your body signals that a certain emotion needs to be attended to in your life—is like an instruction manual for a car.”\textsuperscript{54} As with a vehicle, daily maintenance of physical, emotional, mental, and
spiritual frequencies keep the energy vehicle functioning smoothly. Without regular
maintenance and alignment, intuitive performance is clouded or blocked by energetic
sludge that accumulates and compounds energetic karma.

Conscious awareness of intuition and respect for the human body’s capability
to heal and repair itself applies to the emotional, mental and spiritual bodies as well as
the physical. As Weil discusses:

Healing is an inherent capacity of life. DNA (the macromolecule that defines
life) has within it all the information needed to manufacture enzymes to repair
itself. The healing system operates continuously and is always on call. The
healing system has a diagnostic capability; it can recognize damage. The
healing structure can remove damaged structure and replace it with normal
structure. The healing structure not only acts to neutralize the effects of
serious injury, it also directs the ordinary, moment-to-moment corrections that
maintain normal structure and function. Healing is spontaneous. It is a natural
tendency arising from the internal nature of DNA.55

With the seat of “gut instinct” or intuition residing in the third chakra, “the
power center of your self-esteem, personality and ego,”56 experiences of low self-
esteeem predispose individuals to being intuitively challenged further influencing
health. Depleted self-esteem hinders the reception of intuitive frequencies and
depletion clouds and distorts the quality and interpretation of the frequencies that are
received. It is a vicious cycle to break, between low self-esteem and impaired
intuition, resulting in energetic health and well-being exposure. Conversely, healthy
self-esteem advances intuitive proclivity that theoretically and potentially advances health and well-being.

**Self-esteem**

Self-esteem, “[a] sense of self-worth; the valuing of oneself as a person,” is a core element of mental health and fundamental for future individuation and development of the complex of personality and soul. “As we gain the strength and stamina that come from living with self-esteem, our intuitive abilities emerge naturally.” Then, one’s level of self-esteem, defined as “a good opinion of oneself or self-confidence,” may be related to one’s intuitive capacity. Hales describes self-esteem as the sense of belief or pride in oneself that gives each person confidence to strive toward a goal or to reach out to others in friendship or close relationship.

Maslow cites self-esteem in the hierarchal study of self-actualization, preceding self-actualization and transcendence in human evolution. This theory discusses negative need deficiency as motivation for ascending to higher levels of growth. In later theory, Maslow incorporated the need to know and understand and the need for aesthetics as consecutive needs for fulfillment following self-esteem yet prior to self-actualization.

Maslow cites characteristics of desire that motivate the development of positive self-esteem. These are 1) a desire for strength, achievement mastery, competence, confidence in the face of the world, independence, and freedom, and 2) a desire for reputation, prestige, status, fame, glory, dignity, importance, and attention. Maslow makes a point of stressing that healthy self-esteem is based on accomplishments or beingness rather than inheritance of money, social status or
beauty. The thwarting of the drive for self-esteem results in inferiority, weakness and helplessness, leading to basic discouragement, depression, or neurotic trends.63

"When you are not detached from your emotions, you cannot separate yourself from them and they possess you."64 On the other hand, positive self-esteem also opens the door, enabling for the self the possibility of recognizing the potential in the divine and holistic blueprint of the energy anatomy.

Myss65 discusses that impersonal mind or “symbolic sight” is necessary to guide the psyche to the highest and most consciously aware perspective. Confidence in self allows a state of non-judgment and serenity that must preclude the perception and function of “triple vision.” At the detached center point of poise and pause, integrity of self is maintained and experiences are interpreted archetypically beyond basic survival needs through a higher perception. Symbolic site provide a manner to consolidate perceptions into a high-power prism that reveals the symbolic interconnection of experiences66 that allow one to keep emotions fluid and self-esteem intact.

“"You cannot grow spiritually without learning how to detach from your emotions and understand them as products of the way energy is processed in your energy system."67 Keeping self-esteem intact promotes intuitive capability, which in turn promotes self-esteem. In turn, healthy self-esteem promotes healthy emotional reactions that promote energetic and physical health. “The core cause of anger is lack of self-worth.”68

However, intact self-esteem is not complacent or passive. Pert states that all emotions are healthy, because emotions are what unite the mind and body. Anger,
fear, and sadness, the so-called negative emotions, are as healthy as peace, courage and joy. To repress these emotions and not let them flow freely is to set up dis-integrity in the system, creating stress, which forms blockages and insufficient flow of peptide signals. This in turn sets up the weakened conditions that can lead to disease. Pert believes that all honest emotions are positive emotions and that withholding, denying and repressing them causes cancer.° Health is not sticking one’s head in the sand and it is not simply thinking nice thoughts. It seems that sometimes bursts of long-suppressed anger may serve to jump-start the immune system: however, the challenge of the expression of anger, as well as other suppressed emotions, is in constructive and productive exchange. Notwithstanding this, the key is expression and managing the energy anatomy before it becomes emotionally, mentally and physically unwieldy. “You are a soul that is temporarily using your body.”

Just as honest emotions have a dual nature, so does archetypal expression of the individuating person. With the goal being to express honest emotions as part of healthy self-esteem, the archetypal goal is to express honest personalization of the characterized influential patterns that shape the psyche, be it prostitute, child, warrior or magician. “Jung’s best-known disciple, Joseph Campbell, wrote, “since archetypes or norms of myth are common to the human species, they are inherently expressive of common human needs, instincts, and potentials.”

With basis in eastern thought, the sacred contract and the personal archetypes that Myss discusses throughout her works are an intuitive guidance system that helps us remember our spiritual identity, our purpose and potential in life, and to take action
on that purpose. In effect, we are born knowing all we need to know to accomplish our purpose. Healthy self-esteem clears the path beyond the lower self-judgment of good and bad, black and white of antonymous living, liberating the shadow from the confines of shame, regret and fear to yield the hidden jewels and unrealized treasure of the third chakra. The archetypal journey of self-discovery acknowledging and respecting the shadow, including the repressed emotional and psychological patterns and issues of our secret underbellies, takes courage and self-esteem. "This is, actually, the intent of a spiritual practice-to see through the seeming disorder of everyday life, past your illusions, and into the underlying divine order." 

Clear flowing emotional energy that crystallizes the underlying divine order in life originates as the energy of unconditional love in the fourth chakra. It surfaces to empower personal intention and will and to assist in motivating action based on the projections of our mind. Emotions follow the projection of mind including the energy of self-esteem. Distortions in the heart center affect an individual’s sensing and understanding of the divine nature of love, further convoluting the emotional surges that are meant to reinforce individuality and expression of the higher self, not reinforce. When self-esteem is low and emotions are distorted resulting in compounded distortion, the result is a churning drama of misspent energy units ill invested as, at the end of the day. "Emotional awareness gives you the opportunity to make life-changing alterations without the experience of physical dysfunctions to force the issues." 

Another component of personal empowerment and self-esteem, the mental energy of imagination "is the ruler of emotions." Free of the limitations of the
negative programming of the lower instinctual mind that signals the archaic adrenalin rush of fear and flight, imagination properly used serves to assist individuals to visualize the highest, the potential, the possibility, the hope, the well being beyond third dimensional vista. Interfacing with the emotions, the balanced mental imagination that remembers beyond limited cellular programming and extreme polarity—through the duality of pleasure or pain, win or lose, freedom or slavery, pride or shame, responsibility or blame, elation or regret, life or death, abundance or limitation, beginning or end, separation or union—is capable of clear and unfettered projection without attachment or appendage. On the clear stream of higher mental energy, possibilities emerge as intuition and well-being are allowed to flow.

Hales discusses that self-esteem is not based on external factors and individuals are not born with it. It cannot be obtained from others or outside oneself. Self-esteem develops over time, building since infancy.\(^7^7\)

Specific actions can improve self-esteem in a willing and consciously open individual. When you are aware of the present moment, you have access to your emotions and what is occurring around you including all the possibilities that the present moment offers.\(^7^8\) The following are components of a self-care program to promote self-esteem and mental health: 1) exercise, 2) nutritional and healthy eating, 3) positive, encouraging self-talking and affirmation, 4) psychological journal, 5) optimism, 6) humor, 7) reaching out to others, 8) self-help groups, and 9) stress management techniques.\(^7^9\) “The Universe provides you with opportunities, again and again, without cessation, to move into the fullness of your power—into the unobstructed perception of your worth, value, and responsibilities.”\(^8^0\)
Self-actualization

Whereas self-esteem reflects one’s opinion of oneself, one’s confidence in oneself and one’s perceived self-worth; self-actualization refers to personal self-fulfillment. This term fulfillment implies the meaning “consummation” or “realization” in one scenario and “satisfaction” or “achievement” in another.81 Both of these definitions partially encompass the scope of self-actualization and its values and behaviors as Maslow considered full humanness to be “an evolutionary experience motivated by ascending needs, an exploration and expansion of emotional, psychological and spiritual nature, and the openness to and expectation of peak or climatic joys of living.”82 “Our divine potential calls us to rise above the Self’s basic needs for survival in the physical world. We’re called to grow beyond our Self.”83 Self-actualizers “may be described as those who utilize their talents and the capabilities more fully than the average person, live in the present rather than dwelling on the past or the future, function relatively autonomously, and tend to have a more benevolent outlook on life and on human nature than the average person.”84 The concept is about the ability to maximize the human experience since “[w]hat humans can be, they must be.”85

Self-actualization is not an end but a means to fulfillment, and theoretically, life satisfaction. Having met the physiological, safety, love and esteem needs, one ascribes to increased higher-level gratification. In this ascension, Maslow discusses the distinct differentiation in each actualizing experience; in fact, as actualization proceeds, the contrast in the individual creative manifestations becomes more distinct.86 Connected by nature of the shared experiential of individual fulfillment at
the same level of actualization, self-actualizers share similar attributes of value, behavior, and perception even though one may be an artist and another an accountant. These similarities include the "[c]onception of nature, of man's place in it, of man's relation to man, and of the desirable and non-desirable as they may relate to man-environment relations and interhuman relations."  

The process of self-actualization, however, takes time. Maslow indicates that no one is born with healthy self-esteem, a precursor to self-actualization. "Even Mozart was not self-actualized until he was three or four."  

Jung relates the path of self-actualization to a process called individuation that respects the existence of the individual person as a free and responsible agent in charge of his own destiny. Through self-realization, becoming oneself, an individual develops into a more comprehensive, more mature personality, and this transition is visible to others.  

Jung's theory is that the psyche is the center of the self: the psyche consists of a small part personal ego and the majority as a higher self of consciousness or soul. Through this higher or inner self, which functions as a guiding center, individuals work toward a lasting expansion and maturation of personality into more and more soul. Attesting to a two-part consciousness that consists of unconsciousness, or soul, and a personality consciousness, Jung stated an individual's cognition of the soul orientation of the psyche would become a reality as the individual experienced layers upon layers of its existence. To discover the unconscious majority of soul, Jung pointed out that archetypes assist individuals symbolically to uncover their true
natures. By resolving the archetypal dilemmas with the soul as the guide, the deeper truths of the individual’s divine consciousness are uncovered.

Supporting the concept of the universality of the soul and the neutral yet perfect nature of living, Jung’s work and Maslow’s agree in principle on the integration of duality. “I believe . . . (in) the development of a humanistic and transpersonal psychology of evil, one written out of compassion and love for human nature rather than out of disgust with it or out of hopelessness . . . . evil from above, rather below.” Maslow, in describing characteristics of self-actualizers, found them to be making progress in the right direction but still flawed: essentially, self-actualizers by their very nature will continue to seek higher transcendence. For example, their tendency to experience wonder, beauty and fascination, leads to absent-mindedness and neglect of conventional social amenities. Sometimes overly compassionate, self-actualizers must take care not to be taken advantage of. On the other hand, self-actualizers are “occasionally capable of unexpected ruthlessness.”

Being strong people who clearly see what is called for, beyond the average person, their concise discernment in the present and intuition, prompts action at times in conflict with the status quo. As a group, self-actualizers have little difficulty breaking ties with their first chakra connections to, what Myss calls, their tribal origins.

Maslow coined the term self-actualization and described these individuals as possessing a more efficient perception and comfort level with reality. Self-actualizers are courageous and are not frightened by the unknown: and, in fact they are attracted to it. Generally, they enjoy people yet can do without them. There is a tendency “in art, music, in things of the intellect, in scientific matters, in politics and
public affairs, ... “to see concealed or confused realities more swiftly and more correctly.”\textsuperscript{94} Self-actualizers possess a heightened ability for ecstasy and find moment-by-moment living exciting, possessing a metaphysical concept of God rather than conservatively religious. Typically, this group is problem centered rather than ego centered. Maslow reports self-actualizers are also self-accepting and healthy of their own nature, tending to be
good and lusty animals, hearty in their appetites and enjoying themselves mightily without regret or shame or apology. They have a good appetite for food, they sleep well and they enjoy their sexual lives with unnecessary inhibition and all the relatively physiological impulses.\textsuperscript{95}

\textit{Sacred Contract}\textsuperscript{96}

Myss relates the path of self-individuation and self-actualization to the discovering of one’s Sacred Contract. This process “helps you to discover and integrate the fragments of your psyche. It is a guide to intense self-examination for the purpose of finding your individual archetypal companions, and working with them to realize your life’s mission and Sacred Contract.”\textsuperscript{97}

The nature of man is to evolve back toward divine potential, back to the original DNA blueprint that includes archetypes that “are so ancient that they must predate our physical birth. It comes from our own energy origins in the Divine, which is the source of our Sacred Contract-the guided plan for our life.”\textsuperscript{98} To the average intellect, it makes no sense that there is something more powerful than the third dimensional reality. “We have to remember our purpose by taking action and searching for it.”\textsuperscript{99} The process of developing one’s Sacred Contract helps to identify
and unleash the divine potential that Jung discusses that resides as the majority of the psyche, that of the soul. Myss states that “to fulfill your divine potential and even to resolve the many issues of daily life-like power plays at the office or the healing of past injuries—you must enlist a higher plane of consciousness.”

Through the third chakra power of individual choice and directed personal will, the higher level intent to seek the divine plan or Sacred Contract in life connects to Divine consciousness from a detached space of acceptance with no agenda except to experience divine love. Divine consciousness is not easily apprehended by our human faculties; nor is grace as “unmerited favor of the divine, a divine saving and strengthening influence.”

Myss also discusses the nature and consciousness of grace in the discovery and implementation of the Sacred Contract. Grace, as most Westerners agree, flows from the Divine yet most Westerners are confused about how to tap into grace. Myss feels that grace can be earned “through prayer, meditation, and other spiritual practices that increase its presence within us. But I also believe that there is a divine form of grace that provides us with spiritual stamina and direction and that flows into us in times of need whether we ask for it or not. This divine energy is your charism, a unique expression of grace that empowers you to fulfill your Sacred Contract. The word charism comes from a Greek root meaning ‘gift.’”

Self-actualizers allow their individual identities to expand when they suspend judgment of themselves from a base of confident self esteem. Accepting the dual nature of humanity and mitigating the extremes of good and bad requires a gentleness of graceful spirit and generates life expanding consciousness that supports the similar quality in others. “Your charism is also the energy through which the uniqueness of
your spiritual identity is revealed to others, the equivalent of your own spiritual trademark."¹⁰³ Grace is there, within our consciousness and it is conscious. It enhances our life-force and provides strength, protection, and courage; and, grace has the potential to heal illnesses and bestow blessings.¹⁰⁴

Acceptance of oneself and one’s life situation through the eyes toward the Divine allows grace to flow through our bodies and our lives, setting the stage energetically for charism. We do not have to ask for grace as by human nature of being made in the image of the Divine, it is a natural connection and source. “Your own search for your purpose in life makes you... a candidate for an infusion of grace.”¹⁰⁵ The worth and value of self-esteem opens the door to the possibility that there is a divine plan for each individual. Expanding consciousness, this opening into the soul from the human side of the psyche taps grace and the flow, if one chooses a continued holistic journey, of charism.

Maslow relates the peak experience to the “epiphany” experience that Myss describes in the sudden illumination of intimate union.¹⁰⁶ During the epiphany, it is suddenly understood that everything in life has occurred by divine intention, by the grace of God.¹⁰⁷ This is followed by an assimilation of this energy. Maslow’s peak experience shares the mystical quality of the epiphany, yet occurs in varying degrees of intensity from simple, daily experience to situations of abject ecstasy that transform the course of one’s life.

Similar to peak experience, Jung’s synchronicity of a “significant temporal experience,” refers to an outer occurrence of meaningful independent events with no causal relationship. Jung stresses that the meaningful nature of events in these
occurrences serve as guidance in the process of individuation. The question becomes, as in the ancient Chinese texts, what is the coincidence, rather than what is the cause.\textsuperscript{108}

In the discussion of synchronicity, Jung raised the issue of the connection between psyche and matter. It is reported that the possibility of finding meaning in this connection “tantalized” Jung for years. Einstein had been a guest at Jung’s home for dinner on numerous occasions, which Jung credits for getting him thinking about the possible relativity of time as well as space and their psychic synchronicity.\textsuperscript{109} Gerber comments that a higher self of the causal body operating from a different plane in space and time often arranges synchronicity. As in self-actualizing where peak experiences occur more frequently to those on the self-actualizing path, when “awareness shifts to the level of causal body consciousness, synchronistic events tend to come into our lives with increasing frequency.”\textsuperscript{110}

Contained in the theories of Myss’ charism and epiphany, Maslow’s peak experience, and Jung’s synchronicity is the inherent state of grace in the divine outworking and divine revelation that transforms an open human psyche and physicality. Keen, expressing his charism during a moment of epiphany and self-actualization, writes from his soul in the following.

In the middle of that battleground that is my personality-swept with confused alarms of struggle and flight where the ignorant armies of the superego, ego and id clashed by night-I discovered a peaceful kingdom. I am the sane one in the madhouse of my personality. I am the subject who has the ability to transcend the predicates and accidents of my psyche. The more I experience
and then disidentify from the wounds and brokenness of my historical condition, the more I gain an identity that is not at the mercy of passing thoughts or feelings. I am that being who has the capacity to transcend my mental-emotional-bodily conditioning. I am the one who can escape the imprisonment of my ancient character armor. I am the one who is not determined by yesterday. The correct names for this capacity for self-transcendence are freedom, spirit, and soul.\textsuperscript{111}

\textit{Consciousness as Energy}

It is reported that as a small child Einstein was playing with a compass his father had given him and commented that “[s]omething deeply hidden has to be behind things.”\textsuperscript{112} (Oschman, 2000) At the basic level, consciousness is the awareness and perception of one’s surroundings, or a state of being awake,\textsuperscript{113} through sensory or intuitive recognition of an object or truth. Derived from two Latin roots, \textit{com} and \textit{scire}, consciousness means “with knowledge.”\textsuperscript{114}

“The body is a vehicle of consciousness”\textsuperscript{115} and esoteric theory is that Divine Consciousness exists throughout existence. Edgar Cayce, renowned spiritual healer, frequently described conscious intent using the phrase “mind as the builder.” Energy medicine modalities work through the theory that an individual’s conscious intent to heal can help to modulate and harness the body’s natural healing balance. “Therefore, all that we are at any moment in time-physically, mentally, emotionally, spiritually is the sum total of all we have been, or experienced, in our past/present awareness (or consciousness) as Co-Creators of all that exist.”\textsuperscript{116}
My consciousness consists of myself and my world, and the relationship between them as it appears to me. It is clear enough that the psyche is not identical with consciousness, and that any understanding of the psyche must begin with an understanding of the role of the unconscious and the relations between consciousness and the unconscious.  

Singer refers to the separate forms of consciousness, of the individual and of the divine merging in the psyche, which is similar to the dual nature of grace that Myss describes. Grace comes into individual consciousness from accumulated good will and blessings from an individual’s history and nature of being in the light of human will and conscious intent or that of higher intervention, divine assignment of favor and light, Myss refers to as charism.

The nature of consciousness is expansion “as our intelligence operates on higher levels, with subtler substance and within larger fields. Consciousness is not intellect, rather the result of interaction between intellect and matter—a lighted area in which things are perceived, seen, and sensed; it is created when the intellect of the soul touches matter.” Consciousness is the lighted spark created by the contact of intellect as the positive pole and etheric, physical, astral and mental matter as the negative pole. Consciousness is the spark of divinity in the human, the soul energy that is the root of all awareness.

In the early 20th century, Bucke described the origin and evolution of consciousness including 1) simple consciousness as experienced by the upper half of the animal kingdom, 2) self consciousness as experienced by man as aware of himself as separate from the rest of the universe, and 3) cosmic consciousness as experienced
as the awareness of life and order of the universe. Cosmic consciousness deals with the intellectual enlightenment or illumination, which “alone would place the individual on a new plane of existence. Added to this is a state of moral exaltation, feelings of elevation, elation, and joy as well as a quickening of moral sense. “With these come what may be called a sense of immortality, a consciousness of eternal life, not a conviction that we shall have this, but the consciousness that we have it already.”

Dossey has identified three distinct stages or eras of medicine, with Era I beginning in the 1860’s when the scientific medical machine surfaced. For the next one hundred years, through the 1990’s, there was an absence of attention to consciousness in healing and medicine. “The old-world, Newtonian model of medicine lacks an appreciation of seemingly intangible things such as emotion, consciousness, and the energy and life force of soul and spirit,” In the mid-1990’s, after research studies revealed that illnesses such as ulcers and hypertension resulted directly from stressful conditions, Era II medicine, known as mind-body medicine, was ushered in. Dossey states that Era III medicine has dawned with the hallmark of “nonlocal mind.”

In Era III, we rediscover the ancient realization that consciousness can free itself from the body and that it has the potential to act not just locally on one’s own body, as in Era II, but also nonlocally on distant things, events and people, even though they may be unaware that they are being influenced. Dossey selected the term “non-local mind” to describe consciousness that Jung calls the collective unconsciousness and others refer to as “Christ
Consciousness” or “Universal Mind.” This category of activity includes telepathy, clairvoyance, precognition, visions, dreams, intercessory prayer, and distant healing among others.125

Gerber writes that consciousness plays an integral role in health and illness and is not merely a by-product of electrical and chemical signal processing in the human brain. From the perspective of vibrational medicine, consciousness is not limited to the brain and central nervous system but is also seen as an integral aspect of the human heart. The old adage of acting from the heart as well as the brain actually has a basis in science. One might say there is a form of “heart-based consciousness that acts from a center of love, compassion, and empathy toward others. Our emotions are also influenced by a greater, spiritual energy field that encompasses and influences the entire physical body and nervous system.”126

Consciousness can be defined as spirit, the totality of a person’s thoughts and feelings in a vital, animated essence. As spirit, consciousness is non-physical, yet intelligent and part of a person as the soul, perhaps a rational or intelligent being without a material body.127 Von Franz comments that the highest and most frequent symbol of the Self is a thing made of inorganic matter, pointing out the non-clarified relationship of the unconscious psyche to matter. This is an issue with which psychosomatic medicine in particular is struggling.128

Understanding more of the working nature of consciousness beyond psychosomatic interaction or placebo is especially relevant in discussions of healing and health maintenance. For “the mind appears to be capable of transcending time and space; it is part of the fifth dimension”129 which suggests that the instigation of
healing is somehow connected with our consciousness conversion of energy into healing velocity is instigated by our consciousness. Shealy tells of the master healer Ostad’s experience with converting mass to energy in the healing process. “For example the dissolution of a cyst or tumor would be converting mass into energy. Conversion of energy into mass would be the regeneration of tissues, such as in a cirrhosis cure.”

Proof and Measurement

The multi-dimensional aspect of the human body combined with the multi-dimensional aspect of Energy Medicine therapies provides unlimited opportunities for scientific study. Intent on exploring the intuitive theory and knowledge base of the mystics and spiritual healers that contains concepts such as “[e]nergy is conscious and consciousness is energy,” the Energy Medicine community seeks to validate the science behind the results of its daily practice.

The energy system of the human body is a holographic field that carries information for the growth, development, and reproduction of the physical body. This holographic field guides the unfolding of the genetic processes that transform the molecules of our bodies into functioning organs and tissues.

At this time, although spirit mechanism cannot be measured, emotional reaction can be as evidenced by the study of neuropeptides, the chemicals created by emotions. “My research has shown that the body can and must be healed through the mind, and the mind can and must be healed through the body.” Dr. Candice Pert, in her notable study of the physical impact of emotions, states that mind doesn’t dominate body, that it becomes body. She goes on to state that, as in Chinese
medicine, the body is inseparable from the mind and that through neuropeptide molecules, it will become clear how emotions are key to understanding disease.

"[K]now that all strength, all healing of every nature, is the changing of the vibrations from within-the attuning of the Divine within the living tissue of a body to Creative Energies."\textsuperscript{134}

Creative methods to validate subtle bioenergy theory and transmute theory to mainstream will eventually evidence the ancient knowledge of the human energy anatomy of chakras and nadis; and, the etheric, astral, mental and causal body interaction with the physical. No longer is the banner for this mission waved solely by the alternative and metaphysical communities. As attested to in the Report, the foundation of the integrative health care system is the holistic well-being of Americans, that of the combined components of body, emotions, mind and spirit.

"Whether it is accomplished by the use of drugs, the knife, or whatnot, it is the attuning of the atomic structure of the living cellular force to its spiritual heritage."\textsuperscript{135}

The subtle energy fields and frequencies through which the practitioners and patients of energy medicine work, challenge scientific measurement "since science can only measure the earth in terms of electromagnetics, but quantum physicists have theories that are compatible with that subtle part of the immeasurable higher dimension."\textsuperscript{136} While spiritually attuned, metaphysicians describe and work with a fourth dimensional energy alternative system, "... at least at present spirit and divine cannot be measured."\textsuperscript{137}

In thinking of the human dynamic of consciousness, Williams suggests that it would be useful to see consciousness as an enormously complex series or set of
interactions among a vast range of types of energies, each with a vast range of resonant domains of harmonic interactions. His thought follows that energy is "much more robust. . . we do know that at a molecular level, there are huge panoplies of harmonic oscillations each occurring at a characteristic frequency, particular to that specific interaction! Now, start adding on aggregate systems of communicating summations of structures, and you get a sense of where the resilience of the "essence" of a human being comes from." 138

In conventional medicine, a vast amount of knowledge has been unexplainable and has been produced through accidental stumbling or experimental trial and error of theory. In due scientific process through observation, experiment, and experience, the workings of the laws of nature have been accepted as medical science without the specifics behind the mechanics. This may also be the case with spiritual healing since in many instances "we can measure the results of their effects"139 yet remain puzzled as to the mechanics.

In this manner, too, it may be necessary to evaluate many Energy Medicine modalities while the conventional scientific medical model develops a knowledge base of CAM. As far as proof or effect, in many cases, the public already believes that "[w]e have it already" as Bucke stated. Due to the public interest in spiritual healing practices, the CAM research directive includes increased study to qualify this domain through scientific method.140

Again, this begs the question of whether research into CAM using the scientific method will be an attempt to show proof of effect or the mechanism of the effect. Do we really care how spiritual healing works, if it works and we know how to
safely use it? Proponents of study may respond that by understanding the mechanism, the spiritual tool will be more precisely and safely conveyed or directed. Then, assuming we will come to understand more of the workings of emotional, psychological and spiritual health care, the practical issue becomes that of the operational role of spiritual health in the new integrative health care model.

Holistic Model

The Okinawans might tell Americans that spiritual health is as simple as taking a walk in the garden, doing light chores with companionship, preparing breakfast or watching the sunset. Unfortunately, transplanted Okinawans fall into the health habits of the Western world upon leaving Shangra La. The goal of Willcox et al was “to unlock the biological and psychospiritual connection responsible for the everlasting health of the Okinawan elders, preserve the old ways—the Okinawa way—and bring it to the West before it was lost forever.” Willcox reports the goal was fulfilled, establishing “common links in wellness.”

To utilize the valuable information gained by the twenty-five year study and to step it down to relate to integrative health care in a conventional Western market will require benchmarks to evaluate just where we are and how far we have to go in establishing the principles of integrative health. First, nutrition and a healing diet were cited in Willcox as a predominant factor in health and well-being. Exercise was a high contributor of Okinawan health and the range and balance of activity.

Compared to the 40% of Americans that report they do some type of exercise, exercise is a way of life and a spiritual practice among the Okinawans. There, the goal and motivation to exercise is to generate life energy or chi. Not only do they
exercise, the Okinawans include anaerobic, flexibility, and aerobic activity: plus, their lifestyle includes acts of movement such as gardening and dance. These activities are considered spiritual, in that they honor nature and balance life stresses.

Spiritually, the Okinawans believe in the goodness of man, respect for man, reverence of nature and the innate core spirituality of the universe. There is also a strong community sense of individual support, support groups for the individual path of the neighbor. The healthcare system is integrative, blending conventional and traditional. The lifestyle is also integrative, blending the old with the new ways.\textsuperscript{142}

Okinawans demonstrated excellent psychospiritual health; and, they celebrated health and longevity in the theme of most prayers. Deep spirituality was particularly evident among older women.\textsuperscript{143}

The study showed that Okinawans seem to handle stress well, reflecting on their psychospiritual health. This was not because they have less stress in their lives: Willcox reports the Okinawans demonstrate what research is considering a “stress-resistant personality.”\textsuperscript{144} This personality type actively deals with life issues that cause stress, releases them and continues forward with an optimistic perspective. An internal sense of control is evident along with low levels of negative emotionality that are associated with low self-esteem, vulnerability, hostility and anxiety. Personality testing showed high self-confidence, easy-goingness, moderate manner, and youthful, can-do attitudes.\textsuperscript{145}

Physiologically, beyond decreased incidence of heart disease, breast and other cancers, and osteoporosis, the Willcox study indicated that Okinawans have higher levels of DHEA. \textquoteleft\textquoteleft The fact that Okinawans seem to have higher DHEA levels than
Similarly aged Americans may be the best proof yet for the ability of the Okinawan program to slow the aging process. We are actively studying this possibility.\textsuperscript{146}

\textit{DHEA}

Isolated as a key, independent hormone rather than merely a synthesizer hormone by French chemist Etienne Emile Baulieu, DHEA most exclusively originates in the adrenal cortex of the two adrenal glands, which are positioned on the kidneys. Made from pregnenolone (a product of cholesterol), DHEA is a natural precursor to the development of androgens and testosterone and "serves as a major regulator in a feedback mechanism on all other hormones in the body, including the thyroid and pituitary itself."\textsuperscript{147}

For its prominence, the exact nature of DHEA and its relative association with the aging process is a question. While scientists identified DHEA as a human steroid in the early 1930's, it was only as recent as 1984 that the significance of DHEA as a factor in aging was scientifically demonstrated. At this time, it was discovered that levels of DHEA begin to rise after age seven. Levels subsequently peak in the mid-to-late twenties, and then decline ninety percent by age ninety.\textsuperscript{148}

Investigation into DHEA began seriously in 1964, and by 1995, it is estimated that over five thousand five hundred papers had been published on the subject. Dubbed the "biomarker of aging"\textsuperscript{149} and the "mother of all hormones," by countless others, it is no surprise that the steroid DHEA is controversial. Avidly being studied by bio-medical professionals and observed cautiously by the professional medical community, DHEA has been embraced by aging baby boomers as the proverbial "fountain of youth."\textsuperscript{150}
DHEA and Disease

In addition to the average pattern of DHEA decline throughout adulthood, it has been scientifically demonstrated that inadequate levels of DHEA are closely associated with numerous age-related disease and disabilities. For the most part, however, conventional medicine has viewed DHEA dispassionately as simply a clinical marker of overall adrenal androgen production and an assessment tool of adequate adrenal reserve after ACTH (adreocorticotropic hormone) stimulation from the pituitary gland. Physiologically, the stimulus for production of DHEA originates from the hypothalamus gland, where the hormone CRH (corticotropin-releasing hormone), is released, thus shooting its influence to the pituitary gland. From the pituitary gland, ACTH is secreted to the adrenal glands, which in turn produces cholesterol, pregnenolone and finally, DHEA.\textsuperscript{151}

Medical physicians may consider excessive DHEA secretion in the presentation of acne, hirsutism, testosterone virilization, adrenal tumors, Cushing’s disease, congenital adrenal hyperplasia, and premature adrenarche. Addison’s disease and anorexia nervosa also correlate to reduced DHEA levels; however, the medical community’s regard for the importance of regular monitoring of DHEA has been underwhelming. This is especially interesting in that restoration of DHEA levels to that of a healthy thirty year-old has appeared to produce dramatic improvement in, at least, the following documented conditions.\textsuperscript{152}

Diabetes, coronary artery disease, stroke, chronic fatigue syndrome, various cancers, obesity, lupus erythematosus, hypertension, AIDS, viral infections, Alzheimer’s disease, multiple sclerosis, depression, menopause, andropause,
obesity, autoimmune diseases, osteoporosis incidence, conversion of body fat, Epstein-Barr, memory and learning problems, collagen and skin integrity, multiple symptoms including fatigue, anxiety, depression, dizziness, nausea, diarrhea, muscles aches and pains, and sexual dysfunction.\textsuperscript{153}

\textit{Faltering Levels}

In addition to the conditions and diseases previously mentioned associated with potential DHEA deficiencies and the need for DHEA restoration, faltering DHEA levels alone, below the "good range," indicate a simmering health threat. DHEA deficiencies hamper the body's ability to defend itself against the stressors of life, encouraging susceptibility to illness. Restoration may strongly influence future occurrence of disease in the currently healthy. For this reason, it is recommended that individuals with levels falling below the excellent range develop a program to restore and maintain DHEA levels to optimum.\textsuperscript{154} (Appendix A)

\textit{Stress Connection}

Under normal stress, the body maintains balance among 1) the hypothalamus gland production of corticotrophic releasing hormone, 2) the pituitary gland production of ACTH (adrenocorticotrophic hormone), 3) the adrenal glands production of cortisol, and 4) the subsequent production of DHEA. However, during times of stress overload, the adrenals boost their production of cortisol to adapt. The hypothalamus, being sensitive to the excess cortisol production and the disturbed relationship of impending hormonal balance, further increase the signal of ACTH to the adrenal cortex to compensate.\textsuperscript{155}
At this point, under chronic stress, the natural homeostasis between cortisol and DHEA is destroyed. DHEA production is stunted, a response that is a mysterious and potentially life-threatening component of the loop back cycle. The result is that the body's chemical stockpile of DHEA defense against normal stress is, at best, adequately maintained. Then, when physically taxed, the body strives to adapt to the increased and chronic stress, rendering the DHEA stockpile inactive and ineffective in defending the body's overall health and immunity. Should the chronic stress situation continue or become acute, the stockpile stagnates. DHEA levels are then exhausted, resulting in over-production of cortisol, erratic insulin, poor sleep recovery, and immune system deficiency. Thus, enter illness and disease.\(^{156}\)

**DHEA and Stress Management**

Holistic in nature, stress points accumulate from physical, mental, emotional, psychological, spiritual and environmental forces, taxing the body systems and organs with a cumulative score. Interestingly, "[a]t least one study indicates DHEA does not correlate with aging alone until about 98 years of age."\(^{157}\) As Bernie Siegel is attributed as saying,

> If a thousand people are suffering with the same disease and one is cured, we ought to forget for the moment the nine hundred and ninety-nine who either have died or are still sick and find out why the one got well.\(^{158}\)

Several stress-combative tools have been demonstrated to also improve and maintain DHEA levels. These include exercise, meditation and biofeedback,
relaxation techniques, and nutritional programs. Natural progesterone cream is reported to raise DHEA levels 40 to 100 percent in most individuals.\textsuperscript{159}

However, research indicates that exercise training alone without combination behavior therapy had no significant impact on DHEA.\textsuperscript{160} This seems to reveal an association between DHEA and psycho-emotional attitudes. In further support of the psycho-emotional association, it appears that behavior modification leading to a relaxed, well-balanced lifestyle maintains optimal levels of DHEA.\textsuperscript{161} Ironically, this complex and abundant adrenal chemical hormone appears to be sensitive to emotional and mental energy.

\textit{DHEA As Life Energy}

Shealy's perspective of DHEA as "unequivocal life energy reserves" extends beyond hormonal physicality, suggesting an emotional and mental component in the nature of DHEA. He states that:

Psychosocial issues interact with chemical, physical, electromagnetic and additional emotional stressors to overwork our adrenals and deplete us of DHEA. DHEA depletion results from excess stress of all types. Then heredity and one's emotional profile determine the site and type of illness.\textsuperscript{162}

Shealy's operative discussion of DHEA resembles in theory and demonstration, the working of "chi" or "prana" in Eastern spiritual disciplines. Consider now the human energy system of the body.\textsuperscript{163}

Of particular value from the East is the description that we are a combination of mental, emotional, psychological and spiritual currents
of energy that come together to form the physical bodies, and that our bodies have energy centers called "chakras." The term "chakra" is the Hindu word used to refer to each of the seven major energy centers in the human body. Each of the seven centers, located at sequential points along the spine is responsible for maintaining the health of specific organs and bodily functions. Energy is continually flowing into our bodies through the top of our heads and, as it travels down the spine, the energy "feeds" each of the chakra centers. The mechanism of physically breathing is the counterpart to this "non-physical breath" which is called in the Eastern tradition "prana" meaning "life force.

The energetic flow of prana into the body's chakra centers is then met with the specific collective psycho-emotional and spiritual matter that is represented in the corresponding chakra center. Myss reflects on the nature of prana, and these phenomena of esoteric influence on its flow.

The flow of this energy (prana) is regulated by our beliefs and attitudes, which create all fear patterns, our concepts of reality, our understanding of God and the Universe, our memories, and all of the information that we have stored in our brains through the experiences we have had and through our various channels of upbringing and education.
When prana flow is blocked by psycho-emotional and spiritual influences, so are the chakras disrupted from receiving the life-giving energy needed for healing and balance. Ironically, at the time the life-giving pranic energy is needed most by the chakras, energy flow into the chakra is actually stifled by the very same psycho-emotional-spiritual factors that rest within the chakra, waiting to be healed.

Taking this thinking a step farther, it seems that the production and regulation of the hormone DHEA may also be susceptible to the same influences, attitudes and beliefs that impact prana and the chakra system when the similarity between the negative feedback process shared by the chakras and DHEA is considered. When the hypothalamus reacts to the excess of cortisol produced under stress or by psycho-emotional and spiritual issues, it increases its signal of ACTH headed to the adrenal cortex, which increase cortisol and disturbs healthy DHEA or the production of life energy reserves, as Shealy refers to DHEA.

Note the similarity between pranic flow (ACTH), charged by increased stressors (cortisol) into the chakras (DHEA), where stressors (cortisol) are disturbing the balance in the chakra, as represented by DHEA. As stressful cortisol continues to circulate due to impaired DHEA flow, the cycle of increased ACTH continues, resulting in a greater depletion of DHEA from excess cortisol and subsequent health-threatening opportunities. Similarly, the cycle of disrupted prana distribution, resulting in an even greater imbalance of stressors, also produces health-threatening opportunities in the unbalanced third chakra. Since the third chakra modulates and balances both the dual energies of the second chakra combined with the assimilation of tribal and familial issues of the first, the third chakra and DHEA balance become
compromised over power and self-esteem issues compounded by the reservoir of stress retained for the second and first chakras.

[C]hakras one, two and three are the ones where most people spend their energy. Not coincidentally, most illnesses result from a loss of energy from these three chakras. Even when an illness . . . develops in the upper region of the body, its energy origin can usually be traced to stress patterns in issues of the lower three chakras, such as in marriage or partnership, family or occupation. . . . several-if not all-the chakras have to be used to understand completely why a person has become ill.\textsuperscript{165}

Fortunately, as awareness of the valuable preventative benefits of DHEA increases, many individuals over forty have now been encouraged by complementary practitioners and health media to benchmark and monitor DHEA levels.\textsuperscript{166} Unfortunately, reliable blood assays have remained expensive and generally uncovered by insurance plans unless a "medical diagnosis" has correlated to endocrinology symptoms. Self-prescribed DHEA saliva testing via direct mail recently has become more widely available; however, the issues of cost, reliability, interpretation, and treatment options and safeguard have remained a concern.

\textit{Supplements}

To treat deficient DHEA levels, FDA-approved, pharmaceutical grade supplements are now available in health and drug stores without a physician prescription. The National Institute on Aging (NIA) however, has cautioned against the potential health risks and dangerous side effects of DHEA supplements.\textsuperscript{167}
Monitoring of DHEA supplemental usage, by a knowledgeable health practitioner, experienced in effective and safe methods of DHEA dosage and contraindications, cannot be overemphasized. Contraindications of DHEA supplementation include mixing certain medications with DHEA, anti-depressants, estrogen, aspirin or blood thinners, stimulants, insulin and thyroid hormones. Other contraindications warn against use in women with cancer of the breast, ovary or uterus, and men with prostrate cancer.\textsuperscript{168} It should also be mentioned that under extremely high dosages of DHEA, suppression of the adrenal glands' natural DHEA production and impairment of liver functions might result. Regular observation of liver functions has been advised in all cases.\textsuperscript{169}

Since the long-term effects of DHEA supplements have not been sufficiently studied, it is wise to explore other ways to restore and maintain DHEA. In the case of dangerously low levels, immediate supplementation may be warranted. This critical level occurs when "DHEA blood level is less than 180ng./dl in a woman or 22ng/dL in a man and . . . and any serious illness (heart disease, rheumatoid arthritis, lupus, multiple sclerosis, a serious infection, a need for a major operation, etc.) occur."\textsuperscript{170}

\textit{Beyond Supplements}

Other methods or a combination of methods may favorably and naturally enhance or maintain DHEA levels. There is a probable DHEA and nutrition relationship suggested by Shealy, with vitamins and other natural supplements an element in maintaining favorable DHEA.

"Natural enhancement of DHEA has been reported with physical exercise, stress reduction programs and transcendental meditation, as well as caloric restriction."
Higher than average DHEA levels have been reported with those who exercise and meditate regularly. Natural topical progesterone has been clinically shown to raise DHEA and systematic stimulus of acupuncture points using the “Ring of Fire” raised blood levels of DHEA fifty-six percent in a broad sample.171

Summary

Chapter Two has broadly touched on the nature and principles of Energy Medicine and emphasized the emotional, psychological and spiritual components of health and holism. In relation to integrative health care, incorporating CAM or Energy Medicine into the conventional medical model presents challenges that are well worth the effort when the potential benefits to the American public of enhanced health and well-being are considered. Some of these benefits are evidenced by the increased longevity and quality of life as reported in Wilcox’s Okinawan study. Although not the only chemical measure indicating increased well-being and longevity, one of the attributes of well-being and longevity as reported by Wilcox was higher DHEA levels among the elderly. DHEA then, was selected as a logical example of a physiological chemical measurement of integrative health in the author’s research study. Most certainly, there are other numerous indicators and potential combinations of indicators and influencers of well-being; and, DHEA is not represented here as the sole marker of health.

Chapter Three will now review the Methods of this research project
Endnotes

Chapter Two


7 Williams, B. (August, 2002). Private correspondence with author.

8 Williams, B. (August, 2002). Private correspondence with author.


11 Williams, B. (August, 2002). Private correspondence with author.


CHAPTER THREE

Method

Research Design Overview

The quantitative experimental study was a double blind, Pretest-Posttest Control Group Design\(^1\) with repeated measure of the dependent variable DHEA. Incorporated with the pretest and posttest experiment was a survey instrument to generate scoring regarding self-actualization, one of the independent variables studied. The self-actualization scores were correlated with DHEA and the other independent variables of exercise and grace therapy treatment to assess the study’s hypotheses. Grace therapy was the manipulated intervention relative to the dependent variable DHEA. Exercise status and gender were pre-determined in the recruitment and qualification procedure. The total set of seventy-seven participants was randomly assigned to treatment and control groups. Those in the treatment group were then randomly assigned to thirty-four grace therapists for intervention.

Experiment Method

Three Phase Study

Phase one involved the pretest blood sampling of DHEA. Phase two involved the posttest blood sampling of DHEA. Phase three involved the administration of the POI.

Subjects

Screening for inclusion. Female and male participants were sixty-five to seventy-five years old, with the recruitment goal of 50% exercisers. Other screening criteria excluded those taking DHEA supplements or hormone replacement therapy.

Sample recruitment. The study’s seventy-seven participants were first contacted by telephone by Market Development Associates, Inc. of Memphis, TN, an independent
marketing research firm. A stratified random sampling approach consisted of sampling both the firm's data base of seniors ages sixty-five to seventy-five and local telephone directories. Eighty-five candidates were initially screened, qualified, and processed for inclusion. With attrition, seventy-seven subjects participated.

Table I

*Sample Recruitment and Study Participation*

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<th>Recruits</th>
<th>Attrition</th>
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<th>Actual Pretest</th>
<th>Attrition</th>
<th>%</th>
<th>Actual Posttest</th>
<th>Attrition</th>
<th>%</th>
<th>Actual POI</th>
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<td>77</td>
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<td>0.00</td>
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The initial sampling objective was to have a total of sixty participants, or thirty per control and test group. In accordance with Central Limit Theorem of normal mean distribution, the sample sizes of thirty per group would balance the possibility of a markedly skewed sample. In this case, considering the strenuous effort and extent of activity required by the sample, an attrition factor of thirty percent was built into the sample objective. This was based on a potential dropout factor of ten percent over the three phases of implementation. A sample of eighty-five provided the thirty percent allowance to provide a completed sample size of sixty.
The overall attrition rate of the sample over the course of the three phases of the study was approximately seventeen percent. The largest attrition occurred prior to the first wave of blood testing. There was no attrition between the first and second phase. Between the second and third phases, attrition of five percent took place. In the first attrition group, transportation and illness were cited as explanation. In phase three of the study, one participant was deceased, one was ill and two were not located for recall.

*Incentive*

Due to the strenuous effort asked of the seniors, it was necessary to provide a cash incentive to encourage and to guarantee involvement. Numerous other avenues of recruitment and motivation were considered before determining that financial incentive was the only viable way to insure participation. Potential site recruitment and collection sites at churches, golf clubs, health clubs, and senior centers were explored. These options did not provide the controlled environment necessary to conduct phlebotomy or meet health, safety, and liability requirements. Other social and volunteer organizations were also contacted regarding participation as a community service to no avail. For these reasons, an incentive of $75 was paid after completion of the second blood test. This amount was based on fee schedules paid to the target demographic segment for similar research studies in the Memphis market. Another incentive fee of $50 was paid to participants attending the administration and completion of the self-actualization survey.

*Randomization*

The seventy-seven participants were assigned into test and control groups using a table of random numbers by an outside consultant. The test group members were then randomly assigned to specific grace therapists also by an outside consultant. Placebo was controlled for in that subjects in the control and treatment groups were uninformed that
DHEA was the topic of the study and were uninformed that they were participating in an experiment. The test administrator was blind to both the random control and test group selection process and the random assignment of subjects to grace therapists.

_Informed Consent_

As a prerequisite for involvement in the study, participants completed a signed consent form, acknowledging that their blood work was to be used in a research study. The consent form was included in the pretest-mailing packet and returned with the participant the day of the pretest blood work.

To maintain the uninformed status of the therapy intervention, it was not feasible to obtain consent for treatment. This does raise issues of ethics, both spiritually and physically. The rationale to proceed with integrity was based on the non-specificity of the nature of grace therapy, which is in effect, simply thoughts of positive personal intent in support of the blessing and highest good of another. Grace therapy is non-manipulative and there was no evidence prior to the study that sending grace affected the physicality of another.

However, as this study involved human testing and the non-disclosed health intervention of grace therapy, a medical physician with a specialty in internal and geriatric medicine was consulted in the study design and structuring of the intervention. The physician also supervised the DHEA blood specimen collection through Quest Diagnostics.

_Dependent Variable DHEA_

The subjects' DHEA blood samples were taken by phlebotomists, spun down and processed by the lab technicians at the Quest Diagnostics Lab on Kirby Rd. in Memphis, TN. Samples were sent to The Nichols Institute in San Juan Capistrano. At the time this
study took place "only one laboratory in the country is unequivocally reliable in DHEA
testing; this is The Nichols Institute in San Juan Capistrano, CA. Although local
laboratories offer DHEA testing, "other reference labs, results varied by 50 to 100 percent
... The Nichols variation is five percent."³

DHEA alone, not DHEA-S (DHEA Sulfate), was measured. Often, in "DHEA"
testing, DHEA-S, which is the DHEA molecule with a sulfur molecule attached,
is the element measured, rather than DHEA. Although most researchers do not
distinguish between DHEA and in either clinical laboratory significance or even
in oral replacement therapy, there is some evidence that DHEA-S is not as
effective or reliable as DHEA itself... there is no clear-cut proof that DHEA-S is
fully metabolically available. This is similar to testosterone... Only the free
testosterone is actually a reflection of testosterone activity. The same may well be
true for DHEA.⁴

Since it is reported that blood levels of DHEA may vary up to 15% seasonally, or
even during times of the day; the control group provided the basis to moderate the
variance.⁵ DHEA blood samples were drawn fasting, in the morning between 7:30 a.m.
and 9:00 a.m. with appointments scheduled at Quest every ten minutes for two to three
days.

Other Variables

Intervening Variable Grace Therapy

Prerequisite to participate as a grace therapist included a habitual prayer and
meditation practice, belief in the power of prayer and a commitment to perform the
individual and group meditations. The group consisted of twenty therapists from Seattle and fourteen from Memphis for a total of thirty-four therapists. Each therapist was assigned two, three, or four subjects. The intervention therapy was conveyed non-locally during the designated seven-day schedule. Therapists were uninformed that DHEA was the blood assay studied and treatment was non-specific and holistic in nature.

Therapists were also asked to provide DHEA samples pretest and posttest; however, this data were not included in the scope of this reporting although this had been the author's original intention when planning the study. With the inclusion of the variable of self-actualization and the administration of the POI, the objective of the study became focused around the relationship of holistic components and complementary health practices within the individual participants versus the flow of energy between the therapists and the participants, which is actually an entirely different study. The author intends to use this information or report these findings in future reporting.

Variable Exercise

As previously discussed, exercise was defined as twenty-five minutes of exercise two to three times per week, regardless of the type of activity. The recruitment objective was to include about half of the group as exercisers and half as non-exercisers in the study. Participants were asked to continue their normal exercise behavior between the course of the pretest and posttest phases of the study. There was no exercise requirement for the thirty-four grace therapists.

Variable Self-actualization

To rate the attribute of self-actualization, participants were given the Personal Orientation Inventory (POI), a proven, survey instrument that is an "unchallenged measure of criteria of self-actualization first espoused by Maslow." The instrument was
used by permission from EDITS. The POI was administered at the participant’s convenience at the offices of Market Development by the firm’s staff.

The POI is a written test containing 150 questions, two answers multiple choice. It takes about thirty minutes to complete.

There are two major scales, Time Competence (TC) and Inner-Directed (I) and ten subscales. TC and I relate broadly to the two major areas important in personal development and interpersonal interaction, time orientation and support orientation. Time orientation refers to the capacity to live in the present with full awareness and full feeling reactivity: support orientation deals with whether one is a self-influenced and motivated person or one that is primarily influenced by external forces or groups.

The ten subscales reflect pieces of the self-actualization pie. These are: 1) Self-Actualizing Value (SAV) measuring the affirmation of primary values of self-actualizing people, 2) Existentiality (Ex) measuring the ability to situation ally or existentially react without rigid adherence to principles; 3) Feeling Reactivity (Fr) measuring sensitivity or responsiveness to one’s own needs and feelings; 4) Spontaneity (S) measuring freedom to reach spontaneously, or to be oneself; 5) Self-Regard (Sr) measuring affirmation of self because of worth or strength; 6) Self-Acceptance (Sa) measuring the affirmation or acceptance of oneself in spite of one’s weaknesses of deficiencies; 7) Nature of Man-Constructive (Nc) measuring the degree of one’s constructive view of the human nature; 8) Synergy (Sy) measuring the ability to be synergistic-to transcend dichotomies, 9) Acceptance of Aggression (A) measuring the ability to accept one’s natural aggressiveness; and 10) Capacity for Intimate Contact (C) measuring the ability to develop and contact intimate relationships with other human beings, unencumbered by expectations and obligations.
Implementation

Phase one pretest and phase two posttest took place May 1998 through October 1998 including data gathering and following up with participants and grace therapists. Phase three POI took place from November 1999 through June 2000. The delay from phase two through phase three occurred because of the following circumstance. Initially, the research design did not include a segment addressing the psychological or self-actualization piece of the study. During the author’s oral comprehensive exam in November 1999, it was recommended by the Committee that the emotional and psychological factor would enhance and contribute as it related to the intent of the study. At this point, implementation of the POI segment of the study began.

Participants phase one pretest, phase two posttest, and phase three POI

Recruitment. Market Development began screening and recruiting participants the week of June 22, 1998 for the pretest appointments the week of June 29 through July 3, 1998. Pre-appointment packets were mailed to subjects, which included consent forms, a lab location map, and appointment instructions. (Appendix B.1-B.3) Reminder phone calls were placed a day prior to scheduled appointments.

Phase one pretest. At Quest Diagnostics, a Market Development employee greeted and checked in the participants. Subjects showed necessary identification, signed the log in sheet, and returned their consent form. While waiting in the reception area, subjects completed a health history questionnaire, which gathered condition and symptom information and Shealy’s Total Life Stress Test. Quest technicians then escorted participants to individual rooms and drew blood samples after taking their blood pressure and a brief history. Participants were uninformed that the blood work was for
DHEA testing throughout the procedure. After phlebotomy, participants were offered juice and muffins and were reminded of their follow-up appointments.

(Appendix B.4-B.7)

Phase two posttest. Participants were contacted for reminder prior to the follow-up appointments the week of July 14 through July 17, 1998. At the second appointment, participants repeated the same procedure as in the first appointment with these exceptions. While waiting in the reception area for phlebotomy, participants completed a brief demographic survey with several general questions regarding mood and relative well-being. Upon completion, participants were paid the incentive fee and were told they would receive study results in the fall. Quest Diagnostics then sent the samples to The Nichols Institute in San Juan Capistrano for processing. Test results were received by the end of July 1998. (Appendix B.8-B.9)

Follow-up. In November 1998, participants were mailed copies of their two lab reports and a copy of DHEA The Youth and Health Hormone. It was also recommended that the participants take their results and follow-up with their physicians. (Appendix B.10-B.11)

Phase three POI. February 2000, Market Development began to locate and re-contact the original study participants to take the POI in their administrative office location. Although it took until the end of June 2000 to complete recruitment and testing, seventy-three of the original seventy-seven participants returned for the POI. Two were deceased and two participants were not able to be located.

Testing. During the testing period, appointments were scheduled individually with participants at their convenience. The Market Development staff administered tests. The incentive was paid upon completion of the written test. In this phase of the test, there was
no follow-up due to the complexity of interpreting the test results in a form meaningful to the participants.

*Therapists phase one, phase two and phase three POI*

Phase one pretest. Grace therapists were recruited from June 1 through June 19, 1998. Two team leaders agreed to participate, one in Seattle and the other in Memphis. The team leaders recruited the grace therapists and coordinated the group meditation meetings. As previously mentioned, the grace therapists also contributed DHEA samples. Upon agreement to participate in the project, a packet was mailed to the therapists containing consent forms and instructions for lab work. Phlebotomy was conducted the week of June 29 at the offices of Health South in Lynwood, WA. The Nichols Institute in San Juan Capistrano also processed this blood work. (Appendix C.1-C.3)

Grace therapy. On July 6, 1998, the team leaders received their group’s individual assignments. On July 7, the first group meeting was held in both cities and assignments were given out to therapists. Therapists began their meditations three times per day for their assigned participants, keeping diaries throughout. The second group meditation was held on July 9, and the final group meditation was held on July 13, 1998. (Appendix C.4-C.5)

Phase two posttest. Following the final group session the same week, the second testing of grace therapist blood work was completed. Also, the grace therapists completed the stress tests and health surveys that were administered to the participants. Follow-up. Therapists received a similar follow up mailing, as did the participants in November 1998. Mileage and expenses were also reimbursed. (Appendix C.6-C.7)

Phase three POI. Grace therapists were re-contacted in April 2000 and asked to take the POI. The testing booklets and test forms were mailed to the therapists, with
return postage envelopes. These were received by the end of June 2000. POI results and explanation of scores were sent to the grace therapists in August 2000.

*Data analysis procedure*

Initially, this study was to include an analysis of the impact of conveying grace therapy on the DHEA of the therapists as well as the participants’ DHEA. This will occur in the future. The following discusses data analysis procedure for the participants only. Phase one and phase two data per participant consisted of 1) the two DHEA lab reports, 2) written stress test, and 3) health history survey; and 4) demographic and mood survey. In addition, the participant files included the 1) recruitment interview form, and 2) the consent and lab sign in identification.

Upon receipt of the lab results, the set of data was entered into spreadsheet format, checked, and verified by an independent consultant. Stress tests and health history information are still on file and are not evaluated to date.

Phase three data gathering was initially done at Market Development. At the end of the time period for completion of the testing, the tests were batched and sent to EDITS for scoring. EDITS scored the data and returned the hard copies, print outs and disk of results. These data were next transferred to a spreadsheet, checked, and verified by an independent consultant.

The data from the three phases were then combined for statistical analysis. Prior to analysis, the combined data sheet was double checked and verified back to the original phase one, two and three spreadsheets. Further cross check occurred with 1) the original set or participants’ lab reports; 2) the screening and verification of exercise status; 3) the verification of control and test group status; and, 4) the EDITS output of POI scores.
From this point, consulting statisticians assisted the administrator in the statistical analysis of findings.
Endnotes

Chapter Three


CHAPTER FOUR

Results and Findings

Statement of Findings

The first three hypotheses of the study focused on the relationships between the participants’ DHEA levels and their exercise status, the receipt of grace therapy, and their self-actualization measure. Hypothesis four addressed the potential connection between these four variables. In analyzing the data, an alpha level of .05 was used for all statistical tests.

As was the case, the exercise status of the women in the study was shown to be a factor in the statistically significantly higher levels of DHEA levels that resulted in the group of women that said they exercised prior to the study versus the group women that said they did not exercise prior to the study. As reflected in Figure 1, DHEA in the group of women that said they exercised prior to the study was also significantly higher than DHEA in both the group of men that said they exercised prior to the study and the group of men that said they did not exercise prior to the study.

Further of statistical significance, the groups of individuals (both women and men) that said they exercised prior to the study possessed a notable attribute of self-actualization as revealed by the POI, the Nc measure. This was contrasted with the group of individuals (both women and men) that said they did not exercise prior to the study. As a component of self-actualization, the Nc measure assessed the participants’ general perspective of the inherently positive nature of people.
Figure 1. Significant DHEA mean interactions with exercisers female (EF) versus non-exerciser female (NEF), exercisers male (EM), and non-exercisers male, (NEM) both pretest and posttest, indicating that those women that exercised prior to the study exhibited higher levels of DHEA than the other groups.

Additional findings being reported include a slight yet distinct trend that appeared to result during the grace therapy treatment intervention. The group of participants that indicated that they exercised prior to the study and that also were assigned to the experimental group demonstrated an increase in DHEA levels; and, the group that indicated that they did not exercise prior to the study and that also were assigned to the experimental group did not demonstrate an increase in DHEA levels.

Further, the DHEA levels of the participants in the experimental group that said that they exercised prior to the study increased while the DHEA levels of the participants in the control group that said that they exercised prior to the study declined. This activity is depicted in Figure 2.
Figure 2. Real % DHEA change pretest to posttest in control exercise, control non-exerciser, test exercise, and test non-exercise groups reflecting trend in experimental exercise group variance, showing that those that exercised in the experiment group experienced an increase in DHEA following the intervention with grace therapy versus those that did not exercise in the experiment group, and those that exercised and did not exercise in the control group.

Data and Results

For hypotheses one and two regarding the impact of exercise status and effect of the grace therapy treatment intervention upon DHEA, a three-between-one-within subjects analysis of variance (ANOVA) was performed on the variables of exercise, grace therapy treatment, and gender. Pretest and posttest measures of DHEA formed the levels of a repeated measures variable. Interactive effects of these variables on levels of DHEA were also assessed in this ANOVA model.

Hypothesis three dealt with the fourteen measures of self-actualization as designated by the POI and potential relationships to DHEA levels. Multivariate analysis was used to relate both pretest and posttest DHEA levels of the combined control and test
group participants. Then, to evaluate hypothesis four, post hoc independent t tests were used relating exercise status to the fourteen POI self-actualization measures.

*Hypotheses One and Two*

Table 2 reveals that no significant effects were found respectively for grace therapy treatment, $F(1, 76) = 0.04, p = .84$, for exercise, $F(1,76) = 3.19, p = .08$, or for gender, $F(1,76) = 2.60, p = .11$. Table 2 also reveals no significance for the pretest versus posttest measurement of DHEA. $F(1,76) = 0.01, p = .94$.

However, a significant two-way interaction between gender and exercise was detected $F(1,76) = 5.42, p = .02, \eta^2 = 0.53$. As indicated in Table 3, follow-up t tests of the significant two-way revealed that females who exercised had significantly higher DHEA levels on both pretest and posttest than males or females who did not exercise, respectively. ($t = 2.48, p = 0.02, \eta^2 = 0.49$, and $t = 2.44, p = 0.02, \eta^2 = 0.49$, two-tailed interaction). Table 3 also states that no significant differences in DHEA existed for men who exercised compared with men who did not exercise respectively pretest or posttest. ($t = -1.02, p = .3$, and $t = .33, p = .74$).

Means of the pretest and posttest DHEA measures by gender and by exercise status are found in Table 4. Female exercisers demonstrate both pretest and posttest strength in contrast to women who do not exercise and men of either status. The interaction of these variables is described graphically in Figure 1.
Table II

Pretest Posttest with Control Group Analysis of Variance and DHEA

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>SS</th>
<th>MS</th>
<th>F</th>
<th>$\eta^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Treatment(T)</td>
<td>1</td>
<td>501.16</td>
<td>501.06</td>
<td>0.04</td>
<td>0.01</td>
<td>0.84</td>
</tr>
<tr>
<td>Exercise(E)</td>
<td>1</td>
<td>39147.01</td>
<td>39147.01</td>
<td>3.19</td>
<td>0.34</td>
<td>0.08</td>
</tr>
<tr>
<td>Gender(G)</td>
<td>1</td>
<td>31919.55</td>
<td>31919.55</td>
<td>2.60</td>
<td>0.29</td>
<td>0.11</td>
</tr>
<tr>
<td>E x G</td>
<td>1</td>
<td>66509.97</td>
<td>66509.97</td>
<td>5.42</td>
<td>0.53</td>
<td>0.02*</td>
</tr>
<tr>
<td>E x T</td>
<td>1</td>
<td>7013.14</td>
<td>7013.14</td>
<td>0.57</td>
<td>0.07</td>
<td>0.45</td>
</tr>
<tr>
<td>G x T</td>
<td>1</td>
<td>3650.88</td>
<td>3650.88</td>
<td>0.30</td>
<td>0.03</td>
<td>0.59</td>
</tr>
<tr>
<td>E x G x T</td>
<td>1</td>
<td>4863.23</td>
<td>4863.23</td>
<td>0.40</td>
<td>0.05</td>
<td>0.53</td>
</tr>
<tr>
<td>Between Residual</td>
<td>69</td>
<td>845935.80</td>
<td>12259.92</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DHEA</td>
<td>1</td>
<td>9.44</td>
<td>9.44</td>
<td>0.01</td>
<td>0.00</td>
<td>0.94</td>
</tr>
<tr>
<td>Exercise(E) x DHEA</td>
<td>1.00</td>
<td>2594.74</td>
<td>2594.74</td>
<td>1.60</td>
<td>0.18</td>
<td>0.21</td>
</tr>
<tr>
<td>Gender(G) X DHEA</td>
<td>1.00</td>
<td>0.10</td>
<td>0.10</td>
<td>0.00</td>
<td>0.00</td>
<td>0.99</td>
</tr>
<tr>
<td>Treatment(T) X DHEA</td>
<td>1</td>
<td>888.26</td>
<td>888.26</td>
<td>0.55</td>
<td>0.06</td>
<td>0.46</td>
</tr>
<tr>
<td>E x G x DHEA</td>
<td>1</td>
<td>2455.84</td>
<td>2455.84</td>
<td>1.52</td>
<td>0.17</td>
<td>0.22</td>
</tr>
<tr>
<td>E x T x DHEA</td>
<td>1</td>
<td>5877.98</td>
<td>5877.98</td>
<td>3.63</td>
<td>0.38</td>
<td>0.06**</td>
</tr>
<tr>
<td>G x T x DHEA</td>
<td>1</td>
<td>2410.89</td>
<td>2410.89</td>
<td>1.49</td>
<td>0.17</td>
<td>0.23</td>
</tr>
<tr>
<td>E x G x T x DHEA</td>
<td>1</td>
<td>60.65</td>
<td>60.65</td>
<td>0.04</td>
<td>0.01</td>
<td>0.85</td>
</tr>
</tbody>
</table>

Within Residual 69 111841.13 162089.89

* statistically significant
** trend
Table III

*Significant Interaction between Females Who Exercise and DHEA*

<table>
<thead>
<tr>
<th>Gender</th>
<th>df</th>
<th>t</th>
<th>$\eta^2$</th>
<th>p</th>
<th>df</th>
<th>t</th>
<th>$\eta^2$</th>
<th>p</th>
</tr>
</thead>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Females Exercise</td>
<td>35</td>
<td>2.48</td>
<td>0.49</td>
<td>0.02*</td>
<td>35</td>
<td>2.44</td>
<td>0.49</td>
<td>0.02*</td>
</tr>
<tr>
<td>Males Exercise</td>
<td>38</td>
<td>-1.02</td>
<td>0.20</td>
<td>0.313</td>
<td>38</td>
<td>0.33</td>
<td>0.06</td>
<td>0.74</td>
</tr>
</tbody>
</table>

*statistically significant

Table IV

*DHEA Means Pretest and Posttest by Gender and Exercise*

<table>
<thead>
<tr>
<th></th>
<th>DHEA</th>
<th>Pretest</th>
<th>DHEA</th>
<th>Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>M</td>
</tr>
<tr>
<td>Exercise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>200.40</td>
<td>107.29</td>
<td>203.65</td>
</tr>
<tr>
<td>Male</td>
<td>26</td>
<td>122.15</td>
<td>50.65</td>
<td>140.15</td>
</tr>
<tr>
<td>No Exercise</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>17</td>
<td>126.59</td>
<td>64.84</td>
<td>126.82</td>
</tr>
<tr>
<td>Male</td>
<td>14</td>
<td>147.36</td>
<td>96.56</td>
<td>133.57</td>
</tr>
</tbody>
</table>

Note. DHEA measured in ng/dl (nanograms per deciliter of blood).
Other two-way interactions between variables were examined and found not to be significant. These interactions included those between exercise and treatment, $F(1,76) = .57, p = .45$, and between gender and treatment, $F(1,76) = .30, p = .59$. In Table 5, the means of pretest and posttest DHEA measures for all groups are indicated.

Further, three-way interactions with DHEA as the repeated measure revealed no significance at the stated alpha level. However, as indicated in Table 2, a notable trend was indicated by the interaction between exercise, grace therapy treatment and DHEA, $F(1,76) = 3.63, p = .01, \eta^2 = .38$. Absolute percentage increase among the exercisers in the test group was a positive 17.58% versus a decline of 5.03% among exercisers in the control group. This is referenced in Table 6 and is graphically depicted in Figure 2.

The relevance in reporting this small effect is that, although not at the .05 alpha level given the small sample size, there is positive directional movement of the dependent variable DHEA in the experimental group of participants that possess the independent variable of the exercise attribute. This is not the case of the non-exercisers in the experimental group that also received the same grace therapy treatment intervention as the responding exercise group received. Another point of interest in this result was that in comparison with the average daily variance of DHEA, which is typically plus or minus 12%, the absolute DHEA levels of the exercisers in the experimental group that received the grace therapy treatment intervention was about 17.6% posttest, which is above the average daily variance. DHEA of the other three groups in the study, including those non-exercisers receiving grace therapy intervention treatment, was within the 12% variance posttest. This seems to indicate that grace therapy may have had an influence on the DHEA of the exercisers in the experimental group.
Table V

**DHEA Pretest and Posttest Means and Standard Deviations by Groups**

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>DHEA Pretest</th>
<th>DHEA Posttest</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>37</td>
<td>166.49</td>
<td>168.35</td>
</tr>
<tr>
<td>Male</td>
<td>40</td>
<td>130.98</td>
<td>137.85</td>
</tr>
<tr>
<td>n</td>
<td>77</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Exercise</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exercise</td>
<td>46</td>
<td>156.17</td>
<td>167.76</td>
</tr>
<tr>
<td>No Exercise</td>
<td>31</td>
<td>135.97</td>
<td>129.87</td>
</tr>
<tr>
<td>n</td>
<td>77</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experiment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>38</td>
<td>146.58</td>
<td>142.84</td>
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<td>Test</td>
<td>39</td>
<td>149.46</td>
<td>161.92</td>
</tr>
<tr>
<td>n</td>
<td>77</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. DHEA measured in ng/dl (nanograms per deciliter of blood).
Table VI

*DHEA Absolute Change by Exercise and Experiment Group*

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>Pretest</th>
<th>Posttest</th>
<th>Change</th>
<th>% Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Exercise</td>
<td>21</td>
<td>3181</td>
<td>3021</td>
<td>-160</td>
<td>-5.03</td>
</tr>
<tr>
<td>Control No Exercise</td>
<td>17</td>
<td>2389</td>
<td>2407</td>
<td>18</td>
<td>0.75</td>
</tr>
<tr>
<td>Test Exercise</td>
<td>25</td>
<td>3032</td>
<td>3565</td>
<td>533</td>
<td>17.58</td>
</tr>
<tr>
<td>Test No Exercise</td>
<td>14</td>
<td>4679</td>
<td>4480</td>
<td>-199</td>
<td>-4.25</td>
</tr>
</tbody>
</table>

n 77

Note. DHEA measured in ng/dl (nanograms per deciliter of blood).

*Hypothesis Three*

To address the third hypothesis specifying that self-actualization correlates with DHEA levels in the aging, simultaneous multiple regression analysis determined that there was no significant relationship between the collective fourteen measurements of the the POI test and DHEA levels. On both pretest and posttest DHEA correlation with the combined POI measures, this was the case as shown in Table 7 and Table 8, $F(14, 55) = .402, p = .968$, and $F(14, 55) = .568, p = .878$. Specifically, to the fourteen measures of self-actualization and their individual relationship to DHEA, multiple regressions of both pretest and posttest DHEA produced no significance of p. (Tables 11 and 12).
Table VII

*Multiple Regression Analysis for All POI Measures and Pretest DHEA*

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>$\eta^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>14</td>
<td>3664.393</td>
<td>0.402</td>
<td>0.046</td>
<td>0.968</td>
</tr>
<tr>
<td>Residual</td>
<td>55</td>
<td>9121.920</td>
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</table>

*Note.* Measures are C, SAV, TIME, S, NC, SA, SY, SF, FR, TC, EX, A, SUPPORT.

Table VIII

*Multiple Regression Analysis for All POI Measures and Posttest DHEA*

<table>
<thead>
<tr>
<th></th>
<th>df</th>
<th>Mean Squares</th>
<th>F</th>
<th>$\eta^2$</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>14</td>
<td>4957.497</td>
<td>0.568</td>
<td>0.065</td>
<td>0.878</td>
</tr>
<tr>
<td>Residual</td>
<td>55</td>
<td>8724.366</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Measures are C, SAV, TIME, S, NC, SA, SY, SF, FR, TC, EX, A, SUPPORT.
Hypothesis Four

In completing the analysis of the interconnection between the study’s independent variables of exercise, grace therapy and self-actualization beyond DHEA interaction, the focus was directed toward exercise status and its relationship to the fourteen POI measures. Independent t tests for each of the measures revealed one area of significance. Table 11 displays the significant relationship between exercise and the Nature of Man-Constructive (Nc) variable, with the resulting t statistic of 2.0, p of .049, and η2 of .22.

Means and standard deviations of the fourteen measures by exercise status are found in Table 13. Nature of Man-Constructive (Nc) by exerciser yields the mean of 45.16 (SD, 7.58) versus the no exerciser mean of 41.28 (SD, 8.89). Homogeneity of the Nc sample relative to the other POI measures is demonstrated using Levine’s Test with a non-significant p of .25.
Table IX

Multiple Regression Analysis of Individual POI Measures and Pretest DHEA

<table>
<thead>
<tr>
<th>Measure</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>η²</th>
<th>p</th>
<th>Zero-order</th>
<th>Partial</th>
<th>Part</th>
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</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>170.63</td>
<td>183.0</td>
<td>0.93</td>
<td>0.11</td>
<td>0.36</td>
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<tr>
<td>TIME</td>
<td>-3.06</td>
<td>4.40</td>
<td>-0.12</td>
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<td>0.49</td>
<td>0.00</td>
<td>-0.09</td>
<td>-0.09</td>
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<td>SUPPORT</td>
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<td>0.62</td>
<td>0.07</td>
<td>0.54</td>
<td>0.07</td>
<td>0.08</td>
<td>0.08</td>
</tr>
<tr>
<td>TC</td>
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<td>1.65</td>
<td>0.13</td>
<td>0.67</td>
<td>0.08</td>
<td>0.51</td>
<td>0.10</td>
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<td>ID</td>
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<td>9.70</td>
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<td>0.02</td>
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<td>-0.23</td>
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<td>-0.02</td>
<td>0.00</td>
<td>0.00</td>
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Table X

*Multiple Regression Analysis of Individual POI Measures and Posttest DHEA*

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Table XI

*T Test for Equality of Means of Individual POI Measures and Exercise*

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*Note.* Equal variances assumed.  
*significant.*
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Table XIII

_Levine's Test for Equality of Variance of Individual POI Measures_

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*Note. Equal variances assumed.*

*not significant.*
CHAPTER FIVE

Discussion

Recap of Findings

Two interesting areas of statistical significance and a potential trend came to light during this study. The findings suggested several tendencies that presented a framework for potential future studies while gathering other relevant data for future review.

Controlling for DHEA supplementation and hormone replacement therapy among a participant group ages 65 to 75: 1) women who exercised prior to the study demonstrated higher DHEA levels than the other groups, 2) men and women who exercised prior to the study demonstrated a higher factor of self-actualization, called the Nc factor, than the other groups, and 3) men and women in the experimental group who exercised prior to the study demonstrated a tendency to exhibit a positive variance in DHEA subsequent to the intervention of grace therapy.

Relative to Findings

Higher DHEA Levels in Women that Exercise

Due to the relationship that is understood to exist between DHEA and stress, that life stress influences DHEA and that physical activity may alleviate stress levels, it was anticipated that the study would indicate some positive level of correlation between DHEA and exercise. It was thought, however, that the DHEA means in the exercising group of both men and women, as well as the DHEA means in the nonexercising groups of both men and women, would be substantially higher than the means that actually occurred in this study.

Gender difference. In general, men traditionally have higher DHEA levels than women of the same age. As shown in Appendix A, the ranges of DHEA by gender are shown indicating the difference between men and women, which is at minimum 50 to nearly 300
ng/dl in the excellent category. In contrast, in this study there was a pretest mean among the women exercisers of 200 versus a pretest mean among the male exercisers of 122. This contrast was also the case of the mean of the total group of women, exercising and non-exercising alike, in contrast to the total group of men, exercising and non-exercising alike.

In considering explanations for this result, first of the higher female DHEA among women exercisers versus male exercisers and then of the categorically low DHEA levels of all the groups, we focus on several assumptions regarding gender behavior of the participants. Not inclusive of all factors, potential influencers include nutrition, health status and medications, definition of exercise, spiritual support, smoking, health consciousness, and stress management abilities at an especially challenging and transitional passage in the human life cycle.

Nutrition. It is said by some, that the four-legged stool of holism includes nutrition in addition to physical, emotional, and psychological and spiritual health practices. Nutrition may be a contributing factor to the low DHEA levels in this study that was not factored into the study. Some data was gathered via the Total Life Stress test regarding chemical and nutritional stress that may be evaluated in the future. Whether it is actually true, the South has a bad reputation for its nutritional and eating habits and this may affect DHEA. Body mass index was reviewed in the study, however, and there was no apparent DHEA relationship with obesity.

Health conditions and medications: It is known that DHEA levels are generally deficient in disease and health conditions. Although health history and medication data was gathered in this study, this information was not factored into the statistical work. The men in the exercising group may have been an exceptionally ill sample. Smoking, another
likely DHEA depressant was also not considered in analysis. Again, historically the South has demonstrated especially high levels of smoking.

*Exercise.* Another area that possibly influenced the findings regarding the unimpressive showing by the exercising men in the study was the lack of definition as to the screening criteria for exercise. First, exercise status was self-reported and there were no diaries or recorded history documentation; the participants' word was just taken when the recruiters asked the screening questions. During the course of the study, participants were asked to continue their daily habits and behavior without change although no diaries of activity were required during the intervention period. The method of the self-report of exercise status could have been more specific and diaries requested. Intentionally, the screening was left open as to the type and specifics of exercise activity to allow for the widest inclusion. It would be helpful to know, at this point, exactly what type and how much activity were regularly engaged in, by which participants.

It is also possible that the manner that exercise was perceived by women and men in the study differed, which may have affected the group selection. For example, women may be more disciplined and walk regularly while men consider exercise to be activity such as home repair. The activity may not be sufficient to get the heart rate up for optimum fitness. Perhaps women were more conscious of the importance of exercise considering that none of the women in the study were on hormone replacement therapy; and exercise is often prescribed for menopausal symptoms and for osteoarthritis. The intent to experience health may compound the exercise benefit.

As indicated in the Okinawa study,¹ older women tended to be more spiritual, forming support groups, and leaning toward exercise as a spiritual or natural activity. An interesting thought to pursue is that the women in this study participated in organized exercise activity that required a greater level of intent and disciplined schedule, and with
a corresponding feedback in group support and companionship. This group activity may be providing fitness, therapy, and spiritual support, which would in turn influence health and well-being.

Yet another potential factor in the DHEA results was the fasting requirement. Participants were given instructions to fast prior to the early morning phlebotomy. There was no monitoring or questioning of the participants upon arrival at the lab regarding their intake in the a.m.

Following the concept that group support is health supporting, it is also quite possible that women of this age have developed stress management skills superior to men or have lead different lifestyles that have allowed less cumulative stress. We know that women have historically lived longer than men and we also know that as women have entered the workforce in mass, heart attacks in women have increased. This leads to the reasoning, that in light of the total weak DHEA showing of the study, that this group of participants is experiencing an exceptionally unmanageable amount of stress. Remembering that stress is cumulative and from physical, emotional, mental, chemical, spiritual, and environmental sources, it may be that society as a whole may be experiencing low DHEA across the board. In both the case of men and women, but especially in men, there is a huge opportunity for education regarding the holistic components of well-being of mind, emotions, spirit and body, and the accompanying stress management techniques and tools.

*Unhealthy Low DHEA*

The finding of the higher level of DHEA in the group of women that exercised is statistically significant yet still the average DHEA of 200 ng./dl. falls in the low range for optimum health, as shown in Appendix A. Due to the historical declining nature of DHEA in the average aging population, the conventional medical and lab community
would view a DHEA level of 200 as ‘normal’ for the age category. Yet, the average DHEA levels in the statistically significant group in this study are in the worrisome low range, indicating progressive maladaption and degeneration, a baby step away from serious deficiency and exhaustion, which sets the stage for serious illness. Since this is the case for even the statistically significant group in the study, the potential for serious illness indicated by the other participants is also of real concern.

As there is no base currently available for comparison of this study versus results of comparable market, it is only speculation that the low DHEA average of the Memphis area participants in the study is abnormal. Still, the low means do raise the question of what has influenced them, whether they are abnormal results or not. Regardless, while not the only factor influencing disease by any means, low DHEA levels may be predictors and indicators of health issues as DHEA has been shown to be a factor in multiple disease processes and conditions.

In addition to the concern regarding the low, potentially unhealthy DHEA levels in this study, this example provides a perspective of the differing philosophies of complementary and conventional practitioners that must be addressed in the integrative model. Most likely, a majority of conventional practitioners would not consider the DHEA level in this study a factor potentially compromising health. This conventional perspective, not preventatively based, presumes that this is usual behavior of DHEA in the aging and that this level indicates normal levels. It is to be noted that normal does not equate to healthy with DHEA and possibly other chemical measures. The semantics of normal as healthy presents a challenge to health care patients and providers. As all people are under stress from some source, “[t]he diagnostic dilemma is the simple fact that stress can cause every known symptom but there is no diagnostic test for stress.”
Although there is no scientifically proven method to determine DHEA levels without chemical lab work, an understanding of one’s personal reactions to stress and a factoring in of the known depletion and decline of DHEA in the aging may provide a diagnostic evaluation of the probable risk. While there are numerous other indicators of stress in the body since stress of some type is responsible for almost all health conditions, the majority of these physical stress symptoms and indicators appear post hoc to the experience of the disrupting energy.

Shealy discusses that stress is comprised of environmental, chemical, physical, attitudinal, emotional, and mental stress. Spirituality and the process of self-actualization may also be stressful as issues present in our Beings to address and work through. A tool like the Total Life Stress has potential as a base for developing a mainstream, generic assessment of a person’s holistic health that could be incorporated into the annual physical check-up or practitioner visit. Not only would a measure like this provide direction in evaluating the probability of disease onset for possible prevention but it would also inform the patient regarding the holistic components of well-being and health, that of the body, mind, emotional and spiritual interaction. This would also assist the health care provider in assessing the patient’s need for referral for assistance in managing their emotional, mental, and spiritual health. Consistent follow-up to the measure would provide a type of marker for health progress and a monitor of on-going wellness.

*Higher Self-actualization Attribute in Women and Men that Exercise*

The statistically significant POI attribute in the study describes the personal perception held by people about other people, and consequently, their own nature. The higher NC factor in exercisers indicates that this group has a tendency to see others as essentially positive and good at the core of their humanness or their being.
This perception includes a person’s ability to weigh and accept as “normal” the seeming dichotomies of basic human nature without judgment and with synergism, as in the contrasting of emotions or behavior of sensuality and spirituality, or anger and joy. The perception extends to the ability to focus on the balanced perspective of others to “resolve the good-evil, masculine-feminine, selfish-unsselfish,”\textsuperscript{5} and black-white dualities of bias and bigotry. A low scoring of this factor would “suggest that one sees man as essentially bad or evil.”\textsuperscript{6} It would also suggest the fear-based insight into self and God.

Along these lines, it is feasible to consider that the significant scoring of the Ne attribute may reflect a positive self-esteem level among the exercisers in the study. This factor also may reflect on a person’s ability to manage the stress in one’s life, through an attitude of non-victimization and personal empowerment. Myss has repeatedly discussed victimization as hindering the healing and well-being process, and the necessity of personal responsibility for healing physically, as well as healing holistically in mind, emotions, and spirit. In \textit{Sacred Contracts}\textsuperscript{7}, Myss encourages revisiting the victim archetype as guardian of self-esteem, rather than through the eyes of the wounded. From this empowered perspective, the victim begins to approach life through making choices around what one will or not do, through positive boundaries. “It’s amazing how your world changes when you feel that you can take care of yourself.”\textsuperscript{8}

It makes sense that those with positive self-esteem would exercise. This reinforces the concept that self-esteem is a potential key to the effectiveness of CAM treatments. The self-esteem of the American public may make or break the integrative health care system by their choice to participate in the philosophy of holism. It also makes sense that if a person believes that people, and therefore them self, are basically good in nature, their perception of the Universe as a friendly, safe, productive, and comfortable place to live would encourage an individual to expand and personally stretch in growth, literally
in physical activity and involvement in life. The POI provides an assessment of the various components demonstrated by self-actualizing individuals. As an example of a therapeutic tool, it provides guidance in identifying obstacles to process on the path of health and well-being that may have a place in the annual holistic check up.

The Nature of Man-Constructive attribute forms the construct of self-esteem and is based on an individual’s perception of the Nature of the Divine. The “sincere belief that deep down all people are good”\(^9\) allows one to experience himself from that awareness, opening the gate to grace, peak experiences, synchronicity, and actualization. The release of black and white mental thought, allows, as Myss says of one her clients’ experiences, ”an infusion of grace from the Divine that allowed her to open herself to the healing forces of the universe and recognize her own great potential.”

The relationship between exercise and the positive image of oneself has been demonstrated in numerous studies. Exercise is cited in mental health programs as a primary tool due to the physiological effect and the stress benefits. Those demonstrating self-actualizing traits are “good choosers,” as Maslow says, and they are making a choice for health and well-being.\(^10\)

Not only this, the exercising group may see reality more clearly and be in touch with their inner natures, the constructive and positive nature of themselves, humanity and the divinity within. This knowledge allows the “unfolding of wonderful possibilities that are somewhere deep within the core of human nature all along.”\(^11\) Whether the first choice an individual makes is to exercise, which is followed by belief, or the first choice is to believe which is followed by exercise is unimportant. The choices are interchangeable and the holistic result is greater than the sum of the parts.

As discussed prior in this paper, one’s perception of the Self may influence a person’s relationship with the Divine as a positive and supportive experience. This
Self/Divine relationship influences intuitive abilities and the quality of the guidance that we receive. If this is the case, positive self-esteem and intuition may help link people more closely to the nature of their individualized Beings, that of the essential ‘I’ value of constructive alignment of the dualities of human body, mind, emotions and spirit. “We are well aware that God works with those who love him, those who have been called in accordance with his purpose, and turns everything to their good.” The belief in and alignment of the multi-dimensional aspect of humanness provides opportunity for the experiences that Maslow, Jung, and Myss describe toward personal fulfillment, supporting Gordon’s vision of the philosophy in the Commission’s Report. If it were possible to legislate holism, America would experience a true renaissance.

**Positive Variance in DHEA after Intervention of Grace Therapy**

Although not statistically significant, the real increase in DHEA among exercisers in the experimental group was 17%, compared to a normal variance of DHEA of 15%, reflecting that there was some action-taking place considering the small sample size. The sample in this study was adequate to measure a medium to large effect. The sample size would have had to be nearly 400 participants to reflect the smaller effect. It is recommended for future research that the sample size be increased as limited resources precluded a larger sample in this study.

Although not involving intercessory prayer per se, grace therapy did involve a specifically directed and intended, non-specific, uninformed intervention of good will and blessings sent from a distance. Since the design and implementation of this study, several important prayer studies on cardiac patients, and in other areas such as fertilization by in vitro, demonstrate a positive activity in intercessory prayer. Not discussed in this writing, some examples of these include the Byrd study at General Medical Center in San Francisco, and the Harris, et al, study at the Mid American Heart Institute. There are now
numerous prayer and spirituality studies underway, including a Duke University six-year study into the private prayer and spiritual habits of the aging. The distance healing studies, as in the Astin et al work, are also of interest. For future study, other methods and protocols will be reviewed prior to design of the grace therapy treatment program. It is the author's opinion that the power in holistic meditation and spiritual healing as a complement and enhancement to health care offers exciting potential in a structured, managed, medical support program.

Practically, the actual measure of spirituality may be, as discussed prior, not how it works but that it works. One of the purposes of studying consciousness and the nature of effective prayer is to provide techniques for use in practical application in support of health, healing, and well-being of individuals and society. As a health tool, spirituality has vast potential that can be further developed through the understanding of the nature of conscious intention. Most important, understanding scientifically more of the actually workings of spiritual healing will help us in development of practical applications to be introduced into an integrative health care system.

For future study, several points will be reconsidered. As was not feasible due to the scope of this study, the author would like to spend more time "scientifically" structuring the study based on the latest research information and theories of consciousness and intentionality such as William Tiller's. This study of grace therapy was designed prior to the recent increase in published prayer studies. It would be helpful to review the medical prayer studies methods to design and implement a larger scale grace therapy study, perhaps in conjunction with a physician's office practice. Perhaps a structured and managed program of grace therapy and its application as a healing support program could be incorporated into a physician practice setting or hospital system. A
larger study would also allow the testing of several levels of intervention and several types of intervention by method of grace transfer.

Though records were kept of the grace therapy activity, the structure of the meditations was extremely loose, intentionally so as not to limit the meditators. In fact, from the information gathered from the grace therapists, a wide range of techniques was used. For future study, the notes of the therapists would be helpful in structuring several categories of therapists to follow. The group meditations may be an area to be evaluated and reconsidered. It seems there was so amount of disagreement among some of the therapists regarding appropriate group meditation style, which may have caused some negativity in the process. Due to the randomization process, some therapists were sending grace to 3 or 4 recipients, while several were only assigned to 2. Likewise, some of the participants received grace from more than 2 therapists. This quantity and quality issue would also be a point of future interest.

As previously mentioned, the DHEA of the grace therapists was measured. The author hopes to review this information and piece the results of the therapists with the recipients for possible relationship of variance. Further, study of the effect of transferring energy as expended by the grace therapists may also provide interesting study.

Relative to Purpose

This study was designed to evaluate potential interaction and relationship of CAM or integrative health care approaches and practices representing the holistic component of body (exercise), spirit (grace therapy), and emotions and psyche (self-actualization). Health is not just DNA it is “what we do, think and believe-helps determine our health and longevity.”15

The monitoring and management of DHEA is also an integrative health care practice in and of itself. The current study did not exclude a physiological relationship
and link to DHEA that exists in those individuals that practice a balanced, integrative lifestyle of body, spirit, emotional, and psychological health. "Okinawans my not live forever, but they are able to stack the odds in favor of lifelong health. And so can we. While there is no way to reverse the aging process, it can be slowed. And the decline attributed to "normal aging" is not inevitable."  

Relative to the Okinawan study, the following points were pertinent to the current study. Okinawans 1) demonstrated a significantly high DHEA and tend to maintain it longer through life, 2) showed a relationship between a belief in the positive nature of man and the Divine, 3) reflected an inherently spiritual quality of and through exercise, positive belief, and spiritual support, 4) indicated that there is a relationship between body, spirit, and emotional and psyche, physiologically as demonstrated by DHEA and other measures such as heart disease, and 5) indicated that DHEA continues to perform as a potential marker of well-being and predictor of health. This leads to the assumption that the other findings of the referenced study may shed further insight into areas of potential study and provide concepts for practical, healthy and helpful tools for holism and well-being that may be translated to the American public and culture.

Relative to Hypotheses

Hypotheses one and two cannot be rejected as findings of the study reflected that there may be room for future study of the premises. Hypothesis Four also cannot be discarded, as there is some evidence that there may be potential linking between these variables through the exercise factor.

While there was not a direct correlation between DHEA and self-actualization in hypothesis three, this finding is inconclusive. Hypothesis three is inconclusive because of the time frame of 18 months that lapsed between the initial testing of DHEA and the administration of the POI in the pretest and posttest of DHEA. This being the case, it is
not possible to discount a relationship between DHEA and self-actualization, as current DHEA scores were not available. In future study, the measures would be conducted simultaneously and a third DHEA test conducted subsequently to determine consistency.

**Closing**

The theme of this dissertation on DHEA and the relationship between physical, emotional, mental and spiritual well-being supports the opinion that America as a well society is dependent upon the standardization of care for the complete person and the inclusion of emotional, mental and spiritual health into the modern perspective of the definition of health. Regular and professional assessment of the sum of well-being presents a challenge to the existing health care model. However, as stakeholders continue to shift focus from disease to well-being and "how to get unsick,"18 the American public has the opportunity to flourish beyond current societal ills.

"How can we encourage. . . . sick people are made by a sick culture; healthy people are made possible by a healthy culture. But it is just as true that sick individuals make their culture more sick and that healthy individuals make their culture more healthy. Improving individual health is one approach to making a better world."19 An important step toward the concept of a healthier American society may begin with a positive understanding of the true nature of man and Self, a partnership with the true nature of the Divine. This realization in turn seems to relate in part to empowered choices and action, like exercise and self-care, promoting and enhancing self-esteem. It may also tend to open the door to quality intuitive guidance and increased opportunities for interventions of grace, and potentially enhanced health and well-being. "Our choice of lifestyle gives us the power to alter our life course no matter how poor the cards Mother Nature has dealt us. It's not the cards we get but how we play them that determines the final outcome."20
Endnotes

Chapter Five


## APPENDIX A

### DHEA Levels by Gender

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>750-1250</td>
<td>550-980</td>
</tr>
<tr>
<td>Good</td>
<td>600-749</td>
<td>450-549</td>
</tr>
<tr>
<td>Fair</td>
<td>350-599</td>
<td>300-449</td>
</tr>
<tr>
<td>Low</td>
<td>180-349</td>
<td>130-299</td>
</tr>
</tbody>
</table>

*Deficient* 180 130

ng/dl(nanograms per deciliter blood)

*used with permission, C. Norman Shealy.*
APPENDIX B.1

SENIORS AND AGING SCREENING

PARTICIPATING IN A STUDY ON AGING, PLEASE LISTEN TO THE FOLLOWING:

1. We will schedule you on two separate occasions during the weeks of June 29 and July 14 for testing.
2. Your appointments will be at a local laboratory located at the corner of Quince Rd. and Kirby Rd.
3. During your first appointment, a medical professional will take a sample of blood for evaluation.
4. Also, during the first appointment, you will be asked to fill out a brief questionnaire on your overall health, attitudes and emotions.
   The first appointment should take no more than 20 minutes.
5. During your second appointment, you will again have a sample of blood drawn by a medical professional.
6. Also, during the second appointment, you will be asked a few follow-up questions.
   The second appointment should take no more than 15 minutes.
7. For your participation, you will receive the results of your lab work at no charge. This is a several hundred dollar value not usually covered under insurance plans.

You will also receive $75 after the second appointment to reimburse you for your participation.

ARE YOU INTERESTED IN PARTICIPATING?

X YES  If yes, proceed to schedule appts.

☐ NO

APPPOINTMENT ONE (Circle)

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wed</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 29</td>
<td>June 30</td>
<td>Jul 1</td>
<td>Jul 2</td>
</tr>
</tbody>
</table>

Times are scheduled every 10 minutes starting at 7:30 a.m. through 11:30 a.m. Participants must arrive fasting. Tell participants to wait until after the test to eat to ensure accuracy of their results.

What time is convenient for you? 9:20
Consult appointment scheduler for available time slots.
APPENDIX B.1
SENIORS AND AGING SCREENING

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The second appointment should take no more than 15 minutes.
7. For your participation, you will receive the results of your lab work at no charge. This is a several hundred dollar value not usually covered under insurance plans.

You will also receive $75 after the second appointment to reimburse you for your participation.

ARE YOU INTERESTED IN PARTICIPATING?

[ ] YES  If yes, proceed to schedule appts.

[ ] NO  

I) APPOINTMENT ONE: (Circle)

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 29</td>
<td>June 30</td>
<td>July 01</td>
<td>July 02</td>
</tr>
</tbody>
</table>

Times are scheduled every 10 minutes starting at 7:30 a.m. through 11:30 a.m. Participants must arrive fasting. Tell participants to wait until after the test to eat to ensure accuracy of their results.

What time is convenient for you? 9:20
Consult appointment scheduler for available time slots.
CONSENT FOR PARTICIPATION IN RESEARCH STUDY

We would like you to participate in a research study examining factors involved in aging and healthy longevity. The purpose is to provide information to help in understanding how activity, emotions, and attitudes influence health. We want to help develop ways to maintain healthy well-being in seniors and seniors-to-be.

If you decide to participate in the study, your involvement will take about 20 minutes on two separate occasions. The first session will require you to give a blood sample taken by medical professionals at Quest Diagnostics Lab located at 2900 Kirby Rd., Suite 10, Memphis, TN 38119. (Phone: 901-755-7796.) You will also be asked to complete a brief questionnaire on your health history.

The second session will require less than 20 minutes. You will also have a blood sample drawn by medical professionals. A brief survey will be completed.

At the conclusion of the second session, you will receive expense compensation of $75 cash for your cooperation and any associated inconvenience. Upon completion of the findings, you will also receive the results of your blood work, which are a several hundred dollar cost usually not reimbursed by insurance plans.

There are no foreseeable risks to your participation; however, medical attention will be available. Your participation is strictly voluntary and you may decline or withdraw from the study at any time. Your blood work results and answers to the questionnaires will not be given to anyone else an no reports of the study will identify you in any way.

Please read the following paragraph, and, if you agree to participate, please sign below:

I understand that any information about me obtained from this research will be kept strictly confidential. I understand that I am participating in a medical research project.

SIGNED: _____________________________

DATE: _______________________________
RESEARCH STUDY PARTICIPANT INSTRUCTIONS

On the morning of your scheduled appointment, please DO NOT eat breakfast or a snack before having your blood work drawn. Coffee and water is okay. Refreshments will be provided after your appointment.

Please arrive at Quest Diagnostics, 2900 Kirby Rd., Suite #10, Memphis, TN 38119, at your appointment time. (A map is attached for your information). Remember to bring your reading glasses if necessary to fill out the questionnaire. Also, please bring your consent form with you as well as a form of picture identification, like a driver's license.

Thank you so much for you contribution to this worthwhile research study. We look forward to sharing the results of your tests with you and appreciate your cooperation.

Please call Market Development at 901-682-1011 with any questions!

DIRECTIONS: Quest Diagnostics is located at the corner of Kirby Rd. and Quince Rd. on the northeast corner of the intersection. Quest Diagnostics can be easily accessed from East Memphis coming east on Quince and making a left-turn onto Kirby Rd, and making an immediate right-turn into the small brown strip center where Methodist After Hours is located. Quest is in Suite #10. Quest Diagnostics can also be accessed from Park Ave. From Germantown, make a left from Park Ave. onto Kirby Rd. Proceed down Kirby about 2.5 miles and the center will be on your left, before the intersection of Kirby and Quince Rd.

From elsewhere in the city, access to Kirby and Quince is excellent from the Nonconnah Parkway at the Kirby Rd. exit, going north, past the Quince intersection, into the center on the immediate right.

The phone number at Quest Diagnostics is 901-755-7796.

Thank you again for your participation. We look forward to seeing you!
APPENDIX B.4
FIRST APPOINTMENT CHECK-LIST

RECRUITED PARTICIPANT 1st APPOINTMENT CHECK-LIST

1. Participant signed Recruited Participant legal pad.  

2. Participant completed and signed/dated materials from his/her folder:
   Consent Form (or returned one already signed)  
   Stress Survey  
   Survey  

3. Participant had blood drawn.  

4. Participant given Thank you/Appointment Reminder.
   Juice/muffin offered.  

Signed: ________________________________  
Market Development Associates, Inc.
1. Which of the following vitamins or supplements have you taken in the past 60 days?

- Multi-vitamin
- Calcium supplement (including TUMS)
- Vitamin C
- Vitamin E
- DHEA
- Vitamin B6
- Any others? Please list: _______________________

2. Please list any medications that you are currently taking.

________________________________________________

________________________________________________

3. Please indicate which of the following conditions apply to you:

<table>
<thead>
<tr>
<th>Condition</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sinusitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Allergies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thyroid Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cataracts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glaucoma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic Bronchitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pneumonia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asthma</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coronary Heart Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carotid Artery Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peripheral Vascular Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High cholesterol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes Requiring Insulin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes Non-insulin Requiring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peptic Ulcer Disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diverticulitis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemorrhoids</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irritable Bowel Syndrome</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
DEAR [Name]

Thank you for your participation in this important research study.

In the next few weeks, until your next appointment, please keep to your normal routines and nutrition.

Be aware of how you feel during the next few weeks and tell us about it at your next appointment.

Your second appointment is on **Thurs., July the 16th.** at **9:20 A.M.**

WE APPRECIATE YOU! HAVE A WONDERFUL DAY!

Thank you!
Please check those that apply to you. Shakes:

Symptom Index

- Depressed Mood
- Significant weight loss or gain
- Insomnia
- Oversleeping
- Fatigue, low energy
- Feelings of worthlessness or guilt
- Difficulty concentrating
- Indecisiveness
- Recurrent thoughts of death or suicide
- Nervous exhaustion
- Anxiety or worry
- Frequent crying
- Being extremely shy
- Lumps or swelling in neck
- Vision problems
- Hearing problems
- Motion sickness
- Teeth or gum problems
- Sore or sensitive tongue
- Change in sense of taste
- Breathing problems
- Frequent colds
- Sore throat or hoarseness
- Enlarged tonsils
- Difficulty in swallowing
- Coughing spells
- High or low blood pressure
- Heart problems
- Shortness of breath
- Heartburn
- Feeling bloated
- Excess belching
- Nausea
- Peptic ulcer
- Loss of appetite
- Digestive problems
- Excess hunger
- Frequent urination at night
- Urinary problems
- Constipation
- Diarrhea
- Other bowel problems
- Frequent stomach trouble
- Intestinal worms
- Hemorrhoids
- Yellow jaundice
- Biting your nails
- Stuttering or rammering
- Sexual problems
- Hernia or rupture
- Kidney or bladder disease
- Stiff or painful muscles or joints
- Back or shoulder pain
- Painful feet
- Swelling in armpits of groin
- Leg cramps
- Itching or burning skin
- Dizziness
- Cold hands or feet
- Epilepsy
- Tendency to shake or tremble
- Tendency to be too hot or too cold
- Sedentary
- Overweight or underweight
- Dental problems
- Coated tongue
- Varicose Veins
- Headaches
- Surgery within the past year
- Get angry easily
- Feel lonely or sad

For Men only:
- Weak or slow urine stream
- Prostate trouble
- Swelling or lumps in testicles
- Trouble getting erections

For Women only:
- Difficult or heavy menses
- PMS
- On birth control pills (in the last year)
- Lumpy breasts
- Vaginal discharge
- Hot flashes
- Have had a hysterectomy
- On hormonal replacement

Please sign _______ here: _______

Date: _______
Total Life Stress
(Please circle the score that applies)

A. Chemical Stress

<table>
<thead>
<tr>
<th>Average daily sugar consumption</th>
<th>(total used)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugar added to food or drinks (# teaspoons)</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Sweet roll, piece of pie/cake, brownie, other dessert (# per day)</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Soda or candy bar (# per day)</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>Ice cream (# per day)</td>
<td>0 1 2 3 4</td>
</tr>
<tr>
<td>White Flour (white bread, pasta, pastry, etc)</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average daily salt consumption (how often?)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I add salt to my food</td>
</tr>
<tr>
<td>I eat salty food</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average daily caffeine consumption (# per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coffee</td>
</tr>
<tr>
<td>Tea</td>
</tr>
<tr>
<td>Cola Drink or Mountain Dew</td>
</tr>
<tr>
<td>Anacin or Aspirin</td>
</tr>
<tr>
<td>Caffeine benzilate tablets (NoDoz, Vivarin, etc)</td>
</tr>
</tbody>
</table>

B. Other Chemical Stress (circle the # by each statement that applies)

<table>
<thead>
<tr>
<th>Drinking Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>My water is chlorinated and fluoridated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Soil and Air Pollution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live within 10 miles of city of 500,000 or more</td>
</tr>
<tr>
<td>Live within 10 miles of city of 250,000 or more</td>
</tr>
<tr>
<td>Live within 10 miles of city of 50,000 or more</td>
</tr>
<tr>
<td>Live in the country but use pesticides, herbicides, and/or chemical fertilzer</td>
</tr>
<tr>
<td>Exposed to cigarette smoke of someone else for more than one hour per day</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Drugs (For any amount usage, circle 4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antidepressants</td>
</tr>
<tr>
<td>Tranquilizers</td>
</tr>
<tr>
<td>Sleeping pills</td>
</tr>
<tr>
<td>Narcotics</td>
</tr>
<tr>
<td>Other pain relievers</td>
</tr>
<tr>
<td>Marijuana or other street drugs</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Nicotine (circle those that apply)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-10 cigarettes per day</td>
</tr>
<tr>
<td>11-20 cigarettes per day</td>
</tr>
<tr>
<td>21-30 cigarettes per day</td>
</tr>
<tr>
<td>31-40 cigarettes per day</td>
</tr>
<tr>
<td>Over 40 cigarettes per day</td>
</tr>
<tr>
<td>I smoke cigars</td>
</tr>
<tr>
<td>I smoke a pipe</td>
</tr>
<tr>
<td>I use chewing tobacco</td>
</tr>
</tbody>
</table>

Average daily alcohol consumption

<table>
<thead>
<tr>
<th>1 drink =</th>
<th>1 oz. whiskey, gin, or vodka; 8 oz. beer or 4-6 oz. wine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 drink per day</td>
<td>2 ---------</td>
</tr>
<tr>
<td>2 drinks per day</td>
<td>4 ---------</td>
</tr>
<tr>
<td>3 or more drinks per day</td>
<td>20 ---------</td>
</tr>
</tbody>
</table>

II. Physical Stress

<table>
<thead>
<tr>
<th>Weight (circle that which applies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight more than 10 lbs.</td>
</tr>
<tr>
<td>10 to 15 lbs. overweight</td>
</tr>
<tr>
<td>16 to 25 lbs. overweight</td>
</tr>
<tr>
<td>26 to 40 lbs. overweight</td>
</tr>
<tr>
<td>More than 40 lbs. overweight</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Activity (circle that which applies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30 minutes of exercise, 3 days or more per week</td>
</tr>
<tr>
<td>Some physical exercise, 1 or 2 days per week</td>
</tr>
<tr>
<td>No regular exercise</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Work Stress (circle that which applies)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sit most of the day</td>
</tr>
<tr>
<td>Industrial/factory worker</td>
</tr>
<tr>
<td>Overnight travel more than once a week</td>
</tr>
<tr>
<td>Work more than 50 hours per week</td>
</tr>
<tr>
<td>Work varying shifts</td>
</tr>
<tr>
<td>Work night shifts</td>
</tr>
<tr>
<td>Heavy labor-physically fit</td>
</tr>
<tr>
<td>Heavy labor-not physically fit</td>
</tr>
</tbody>
</table>

Used with permission: 1998, C. Norman Shealy
Total Life Stress (continued)

Attitudinal stress
A. Holmes-Rachman Social Readjustment Rating*
(Circle those events listed below which you have experienced during the last 12 months)

Death of a spouse 10
Divorce 7
Marital separation 6
Jail term 6
Death of a close family member 5
Personal injury or illness 5
Marriage 5
Work 5
Marital reconciliation 5
Retirement 5
Change in health of family member 4
Pregnancy 4
Sexual difficulties 4
Gain of a new family member 4
Business readjustment 4
Change in financial state 4
Death of a close friend 4
Change to a different line of work 4
Change in number of arguments w/spouse 4
Mortgage over $20,000 3
Foreclosure of mortgage or loan 3
Change in responsibilities at work 3
Son or daughter leaving home 3
Trouble with in-laws 3
Outstanding personal achievement 2
Spouse begins or stops work 3
Begin or end of school 5
Change in living conditions 3
Revision of personal habits 3
Trouble with boss 3
Change in work hours or conditions 2
Change in residence 2
Change in schools 2
Change in recreation 2
Change in church activities 2
Change in social activities 2
Mortgage or loan less than $20,000 1

Change in eating habits
Vacation, especially if away from home 1
Christmas, or other major holiday stress 1
Minor violations of the law 1

B. Other emotional stress (circle those that apply)

Sleep
Less than 7 hours per night 4
Usually 7 or 8 hours per night 0
More than 8 hours per night 2

Relaxation
Relax only during sleep 4
Relax or meditate at least 20 minutes per day 0

Frustration at work
Enjoy work 0
Mildly frustrated by job 1
Moderately frustrated by job 4
Very frustrated by job 8

Lack of authority at job 8

Boss doesn’t trust me 8

Marital status
Happily married 0
Married, moderately unhappy 4
Married, very unhappy 8
Unmarried man over 30 2
Unmarried woman over 30 1

Usual mood
Happy, well adjusted 0


Moderately angry, depressed or frustrated 4

Very angry, depressed or frustrated 8

Overall Attitude
Degree of feeling hopeless 0 1 2 3 4
Degree of feeling depressed 0 1 2 3 4
Inability to achieve major goals 0 1 2 3 4
Inability to achieve close love/intimacy 0 1 2 3 4
Degree to which I am frustrated, annoyed,
and/or angry because someone attacked or
harmed me or prevented me from happiness 0 1 2 3 4

(Below score 0 if you agree; score a 1, 2, 3, 4, if you disagree)

Satisfied and in control of my life

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Experience happiness regularly
Believe I am responsible for my happiness
Believe and experience happiness as an inside job
Any other major emotional stress not mentioned above.
You judge intensity 0-10.

0 1 2 3 4
0 1 2 3 4
0 1 2 3 4

You are Finished!
Thank you!

Please sign here:

Date:
FOLLOWUP APPOINTMENT CHECKLIST

NAME: [Redacted]

DATE: 7-15-98

1. Participant signed-in

2. Participant completed bloodwork

3. Participant offered juice and muffin.

4. Participant completed follow-up survey.

5. Participant received co-op payment.

Signed: [Redacted]

Market Development
FOLLOWUP SURVEY

| Name: | ________ |
|_______ | ________ |
| S#    | ________ |

1. Please check your height

| Below 5 ft. | 6 ft. |
| _______ | _______ |
| 5 ft. 1 inch | 6 ft. 1 inch |
| _______ | _______ |
| 5 ft. 2 inches | 6 ft. 2 inches |
| _______ | _______ |
| 5 ft. 3 inches | 6 ft. 3 inches |
| _______ | _______ |
| 5 ft. 4 inches | 6 ft. 4 inches |
| _______ | _______ |
| 5 ft. 5 inches | 6 ft. 5 inches |
| _______ | _______ |
| 5 ft. 6 inches | 6 ft. 6 inches |
| _______ | _______ |
| 5 ft. 7 inches | 6 ft. 7 inches |
| _______ | _______ |
| 5 ft. 8 inches | 6 ft. 8 inches |
| _______ | _______ |
| 5 ft. 9 inches | 6 ft. 9 inches |
| _______ | _______ |
| 5 ft. 10 inches | 6 ft. 10 inches |
| _______ | _______ |
| 5 ft. 11 inches | 6 ft. 11 inches |
| _______ | _______ |
| 7 ft. or over | _______ |

2. Please check you weight

| Under 100 lbs. | 201-210 |
| _______ | _______ |
| 100-110 | 211-220 |
| _______ | _______ |
| 111-120 | 221-230 |
| _______ | _______ |
| 121-130 | 231-240 |
| _______ | _______ |
| 131-140 | 241-250 |
| _______ | _______ |
| 141-150 | 251-260 |
| _______ | _______ |
| 151-160 | 261-269 |
| _______ | _______ |
| 161-170 | 270-279 |
| _______ | _______ |
| 171-180 | 280-289 |
| _______ | _______ |
| 181-190 | 290-299 |
| _______ | _______ |
| 191-200 | Over 300 |

3. What is your marital status?

Please check

- Married or partnered
- Single
- Widowed
- Separated/
- Divorced

4. What is your level of education?

Please check

- Graduated Up to grade 12
- Graduated High School
- Graduated Vo-Tech/
- Graduated Trade School
- Graduated Some college
- Graduated 4 year college
- Graduated Post-graduate
5. What was your overall happiness level in the last 10 days?
   Please check.  Extremely happy  
                  Very happy  
                  Moderately happy  
                  Somewhat happy  
                  Not happy at all  

6. How did you feel physically in the last 10 days?
   Please check.  Extremely well  
                  Very well  
                  Okay  
                  Below average  
                  Not well at all  

7. Compared to a month ago, would you say that in general you felt PHYSICALLY
   Please check.  Much better than usual  
                  Better than usual  
                  Somewhat better than usual  
                  About the same  
                  Worse than usual  

8. Compared to a month ago, would you say that in general your MOOD is
   Please check.  Much better than usual  
                  Better than usual  
                  Somewhat better than usual  
                  About the same  
                  Worse than usual  

THANKYOU, YOU’RE DONE! WE APPRECIATE YOUR PARTICIPATION IN THE STUDY!

Please sign here:  
Date:  

<table>
<thead>
<tr>
<th>TESTS</th>
<th>RESULT</th>
<th>UNITS</th>
<th>RANGE</th>
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<tbody>
<tr>
<td>DHEA, SERUM</td>
<td>120</td>
<td>ng/dL</td>
<td>180-1250</td>
</tr>
</tbody>
</table>

Observed range for ACTH Stimulation (Adults):

<table>
<thead>
<tr>
<th>Time</th>
<th>ng/dL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline</td>
<td>130-1250</td>
</tr>
<tr>
<td>15 minutes</td>
<td>472-1681</td>
</tr>
<tr>
<td>30 minutes</td>
<td>545-1785</td>
</tr>
<tr>
<td>60 minutes</td>
<td>545-1846</td>
</tr>
<tr>
<td>90 minutes</td>
<td>545-1855</td>
</tr>
</tbody>
</table>

SUMMARY OF RESULTS OUTSIDE ESTABLISHED REFERENCE RANGE

| DHEA, SERUM         | 120    | ng/dL | 180-1250    |

<table>
<thead>
<tr>
<th>Time</th>
<th>ng/dL</th>
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<td>545-1846</td>
</tr>
<tr>
<td>90 minutes</td>
<td>545-1855</td>
</tr>
</tbody>
</table>

REFERENCE LABS UTILIZED IN THIS REPORT

TEST DONE AT QUEST DIAGNOSTICS, NICHOLS INSTITUTE
33608 ORTEGA HIGHWAY
SAN JUAN CAPISTRANO, CA 92670
<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
<th>Units</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHEA, SERUM</td>
<td>109</td>
<td>ng/dL</td>
<td>180-1250</td>
</tr>
</tbody>
</table>

Observed range for ACTH Stimulation (Adults):

<table>
<thead>
<tr>
<th>Time</th>
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</tr>
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<tbody>
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<tr>
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</tr>
<tr>
<td>90 minutes</td>
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</tr>
</tbody>
</table>

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<tr>
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</tr>
<tr>
<td>90 minutes</td>
<td>545-1855</td>
</tr>
</tbody>
</table>

Reference Labs Utilized in This Report:

TEST DONE AT QUEST DIAGNOSTICS, NICHOLS INSTITUTE
33608 ORTEGA HIGHWAY
SAN JUAN CAPISTRANO, CA 92690
November 1, 1998

Dear Study Participant,

Enclosed in this packet you will find the results of your blood tests from the research project you participated in this summer.

The blood test measured the hormone DHEA (dehydroepiandrosterone). A booklet is provided to give you information about the importance of DHEA in health maintenance and aging.

If your DHEA levels are below optimal, please do not be alarmed. You are not at immediate risk. It is wise, however, to discuss the findings with your physician during your next regular check-up.

Thank you for your support in this important research study.
DHEA
The Youth and Health Hormone
Its promise as an antidote to the diseases of aging and as a whole-body rejuvenator
C. Norman Shealy, M.D., Ph.D.
CONFIDENTIAL

May 20, 1998

Dear Study Participant;

Thank you for your interest in participating as a “Grace Therapist” in this important research study. I know that each of you has been divinely selected to contribute your spiritual as well as physical energy to the project. I am honored to work with you, and I am grateful for your commitment.

This research project will be conducted as part of my work toward a Ph.D. in Intuition and Energy Medicine through Greenwich University. This program was developed by C. Norman Shealy, M.D., Ph.D. and Caroline Myss, Ph.D. It is the first doctorate program of its kind. If you have had the privilege of attending Norm and Caroline’s seminars, you may have heard them discuss the Greenwich program, which was developed primarily to encourage research in the field. As yet, sufficient funding is difficult to obtain for research into energy medicine and intuitive topics. Norm and Caroline started the Greenwich program to encourage further scientific studies, for which there is a critical need in helping further to bridge the gap between conventional and complementary medicine and to promote the development and acceptance of the science of intuition and energy medicine.

Norm and Caroline’s work has made a huge impression in my life and countless others. (If you are unfamiliar with the material, Caroline’s recent book Why People Don’t Heal and How They Can provides an exceptional overview of her philosophy and insight.) After attending Norm and Caroline’s Intuition Training courses in 1997, I enrolled in the Greenwich University program. I am extremely blessed to have Norm as my mentor and direct supervisor.

Overview: The study concept evolved as a combination of both Norm and Caroline’s work, as well as from other literature in the fields of consciousness, healing and spirituality. Following is a general overview of the specific components of the double-blind, scientific study you are being asked to participate in, Seniors and Grace.

1) First, the study will measure a specific blood factor normally associated with aging in 70 physically-active seniors between the ages of 65-75 from the Memphis, TN area. The relationship between activity, accumulated stress and spirituality will be examined to determine which elements potentially influence the aging factor being studied.

2) Second, the impact of intercessory prayer/meditation on this specific blood factor will be examined. This will be done by dividing the seniors into a control group and variable group, with the variable group receiving the treatment of prayer/meditation therapy for a period of 7 days during a period called “Grace Week.” The type of prayer/meditation which will be tested is being called “Grace Therapy” because of the nature of balanced healing energy being conveyed. You as a “Grace Therapist” will be assigned the names of 3 seniors in the variable group to “treat” through “Grace Therapy.” Please note that you will not be treating your seniors for a specific outcome
of the blood work; but rather for a state of overall well-being and wholeness. Since the blood factor we are testing represents a state of healthy balance in the human body, the theory is that the factor will respond to holistic energy therapy. After "Grace Week," both the control group and variable group of seniors will be re-measured to determine the change occurring in the variable group versus the control group.

3) Third, the actual physical effect or the healing feedback experienced by the "Grace Therapists" during "Grace Week" will be measured. This will also be accomplished through blood tests conducted before "Grace Week" and after "Grace Week." Additionally, "Grace Therapists" will take the same stress and spirituality tests as the seniors will take.

Requirements: The study will take place over a period of approximately 3 weeks, beginning June 25, 1998. As a participating "Grace Therapist," the following will be required of you.

1) Use the first set of materials, which will be delivered to you by June 20, 1998, in preparation for "Grace Week." This packet will include a mandala, invocation and meditation. The meditation will be used for approximately one week about 15 minutes per day. (June 20 through June 28, 1998, or until your scheduled pre-"Grace Week" lab appointment time.)

2) Fill out the written quizzes that will be provided to you in a second delivery you will receive by June 26, 1998. These are the tests which will measure your stress level and other spiritual. Return the originals of the quizzes to me using the pre-paid air bill to be provided.

3) Go to the designated location at your pre-scheduled appointment time and have your pre-test blood drawn. This should only take about 10 minutes once you arrive at the collection point. In Seattle, a location convenient to the participants is being selected. The Memphis lab is located at the corner of Quince Rd. and Kirby Rd., in east Memphis. (June 29 through July 3, 1998, from 7:30 a.m. to 11:00 a.m. Appointments will be coordinated every 15 minutes. Blood samples must be collected in the morning, fasting for accuracy!)

4) Attend the brief group meditation to kick-off "Grace Week." There will be a total of 35 "Grace Therapists" participating in the study. In Memphis, there will be 2 groups of 7 "Grace Therapists." In Seattle, there will be a total of 21 "Grace Therapists," or 3 groups of 7. ("Grace Week" is July 7 through July 13, 1998.)

5) Convey "Grace Therapy" 3 times per day for about 15 minutes on the 3 seniors you are to be assigned on July 6, 1998. A specific invocation will be provided to be used along with your personal meditation technique. Meditation times will be synchronized with the other "Grace Therapists." (July 7 through July 13, 1998.)

6) Attend two other brief group meditations if possible during "Grace Week." Times and location will be provided to you in your "Grace Week" instructions. (July 7 through July 13, 1998)
7) Return to the lab collection point following "Grace Week" at the pre-arranged
appointment time and provide the second blood sample at your scheduled appoint-
time. (July 14 through July 17, 1998.)

YOU'RE DONE! THANK YOU!

After the Seniors and Grace Test: After the completion of your part of the study,
you will receive mileage reimbursement of $30. For participation, you will receive the
individual results of your blood tests, which are normally a $340 expense. You will also
receive the results of your stress and spirituality tests, your variance in all
measurements against the group, and the results of your "Grace Conveyance" on your
3 personal seniors. If you are interested, I will be glad to present the Seniors and
Grace research project findings and conclusions to the Seattle and Memphis groups of
"Grace Therapists" after the project is completed.

Sign-up: In the attached information, you will find a "Grace Therapist"
registration form to fill out and return to me by May 31, 1998. The registration form may
be delivered to either Lou Ann Kummeren(Seattle), Connie Freeram(Memphis) or
Debbie Nichols(Memphis), who will then forward the form to me. You may also fax
these forms directly to me at 901-748-2015 if this is more convenient for you.
Regardless, we need your completed registration form by May 31, 1998.

Confidentiality: Many of us value our spiritual programs and wish our anonymity
to be respected. If you prefer not to be identified by name in any publication, interview
or document discussing the research project, now or in the future, please indicate this
in the space provided on the registration form. Your request will be honored.
Regardless, no information regarding the identity of participating "Grace Therapists" will
be used or released without written permission from the "Grace Therapist." However, if
you have interest in using your participation in the study for continuing education credit,
reference or other purpose, the necessary documentation or release will be provided.

As the nature of this research may potentially attract premature interest from
sources like the media and religious groups, it is requested that all materials and
discussion of the research project be kept confidential until the testing and reporting
period is over. Then, the study conclusions will be released and distributed.

Finally, as you are led to contribute your energy to this important research
project, the universe rejoices in your commitment! Our concert of "Grace Therapy" will
pour a tremendous influx of healing and creative energy into the lives of all participating
in the study and beyond. If you are unable to participate, your positive meditation on
the divine outcome of the study is requested as we dedicate our work to the
demonstration of universal unity and the wholeness and health of humanity.

In Grace and Gratitude,

Jayne E. Hammond
APPENDIX C.2
THERAPIST INSTRUCTIONS

Dear Grace Therapist,

Thank you for deciding to participate in the Grace Therapy project. The project is "graced" to have your energies on board!

Enclosed you will find several items. First, is a letter from Billie Joseph, who is responsible for the mandala and the invocations we will be using during the study. (The mandala and invocations are also included in this packet.) Billie's letter provides instructions for using the mandala, starting now through July 6. The invocations will be used during Grace Week, July 7-July 13.

You will be receiving another mailing from me about June 24th. This will contain several questionnaires for you to complete and return in the envelope provided. The consent to participate form will be included in this mailing, along with confirmation of your appointment times.

To the Seattle grace therapists, thank you for your patience while we nailed down the lab location. Your appointments will be at the HealthSouth Clinic in Lynwood, located at 4320 196th St. SW., Lynwood, WA. 98036. The phone is 425-774-8758 and the manager's name is Joy Steen. You will be able to walk-in without an appointment. The clinic will have your name and will be expecting you on the first day of your selected time-slots. Unfortunately, HealthSouth does not open until 8:00 a.m. I hope this is not a problem, especially for those of you who wanted the sun-rise 7:30 a.m. slot. I'll keep working on this a little more to see if there's a way we could come in earlier. I will let you know next week.

In Memphis, Quest Diagnostics is located at 2900 Kirby Rd. Suite #10, Memphis, TN 38119. The phone is (901) 755-7796. Quest is located at the corner of Kirby Rd. and Quince Rd. on the northeast corner of the intersection. Access from East Memphis coming east on Quince requires a left-turn onto Kirby, and an immediate right into the small, brown strip center where Methodist After-Hours is located. Access is easy from Nonconnah Parkway at the Kirby Rd. exit, too. Head north on Kirby past Quince and Quest is on your right.

Please call with any questions or comments you have about the study. Thank you again for coming forward to do this important service.

In Love and Celebration

Jayne Hammond
CONSENT FOR GRACE THERAPISTS PARTICIPATION IN RESEARCH STUDY

We would like you to participate in a research study examining the effects of prayer on a blood factor involved in aging. The purpose is to provide information to help in understanding how prayer affects the one being prayed for and the one praying. We will also be examining how activity affects the blood factor in question.

If you decide to participate in the study: 1) Your involvement will take about 20 minutes on two separate occasions, giving a blood sample. The blood sample will be taken by medical professionals at the Memphis location of Quest Diagnostics Lab located at 2900 Kirby Rd., Suite 10, Memphis, TN 38119. (Phone: 901-755-7796.); in Seattle, the lab location will be HealthSouth Rehabilitation located at 4320 196th St. SW, Lynwood, WA 98036. (Phone: 425-774-8758.)

2) You will be mailed a brief questionnaire to complete and return on your health history, stress factors and attitudes about self-healing.

3) You will be asked to participate in a prayer program before and after the first blood sampling using the materials provided. If it is possible for you, please attend the group meetings on 7/6/98, 7/9/98 and 7/13/98.

4) Following the prayer week, you will return to the lab for your second session, which will require less than 20 minutes. A brief survey will be given to you for completion.

For participating, you will receive the results of your blood work, which are a several hundred dollar cost usually not reimbursed by insurance plans. You will also receive thirty dollars to cover transportation expense.

There are no foreseeable risks to your participation; however, medical attention will be available. Your participation is strictly voluntary and you may decline or withdraw from the study at any time. Your blood work results and answers to the questionnaires will not be given to anyone else an no reports of the study will identify you in any way.

Please read the following paragraph, and, if you agree to participate, please sign below:

I understand that any information about me obtained from this research will be kept strictly confidential. I understand that I am participating in a medical research project.

SIGNED: ________________________________

DATE: ________________________________
Grace Therapist Survey

Respondent Name: __________________________ Date:
Address: ________________________________
City/State/ZIP: ____________________________
Area Code and Phone: ______________________

Seattle, please fill out the following questions and return using the FedEx airbill enclosed. Memphis, use the envelope enclosed.
SEATTLE AND MEMPHIS, PLEASE MAIL BY FRIDAY, 6/26/98.

1. What is your age and date of last birthday?
   AGE               DAY                YEAR
   ______            ______             ______

2. Female ________
   Male _________

3. Which of the following vitamins or supplements have you taken in the past 60 days?
   ________ Multi-vitamin
   ________ Calcium supplement (including TUMS
   ________ Vitamin C
   ________ Vitamin E
   ________ DHEA
   ________ Vitamin B6
   ________ Any others? Please list: ________

4. Have you taken any female hormones like Estrogen or Progesterone in the past 60 days?
   ________ Yes. Which ones? ________
   ________ No.

5. Do you exercise regularly?
   ________ Yes
   ________ No.

   If YES, then how often?
   ________ 30 minutes of exercise, 2 to 3 day a weeks or more.
   ________ 1 day a week or no exercise.
6. Please indicate which of the following conditions apply to you:

<table>
<thead>
<tr>
<th>Condition</th>
<th>YES</th>
<th>NO</th>
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<tbody>
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<td>Sinusitis</td>
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<td>Allergies</td>
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<td>Thyroid Disease</td>
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<td>Peripheral Vascular Disease</td>
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<td>High cholesterol</td>
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<td>Diabetes Requiring Insulin</td>
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<tr>
<td>Diabetes Non-insulin Requiring</td>
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<td></td>
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<tr>
<td>Peptic Ulcer Disease</td>
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<td>Diverticulitis</td>
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<tr>
<td>Hemorrhoids</td>
<td></td>
<td></td>
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If yes, please give type: ____________________________

in remission or cured? ____________________________

OTHER: PLEASE SPECIFY, THANK YOU.

__________________________________________________________________________
7. On a scale of 1 to 10, with 1 being ABSOLUTELY NOT and 10 BEING ABSOLUTE:

   Do you believe that the grace therapy program will positively influence the blood factor of those you are praying for? 

8. On a scale of 1 to 10, with 1 being ABSOLUTELY NOT and 10 BEING ABSOLUTELY:

   Do you believe that the grace therapy program will positively influence your own blood factor? 

THANK YOU SO MUCH FOR YOUR TIME. PLEASE RETURN THIS SURVEY USING THE FEDEX AIRBILL PROVIDED. MEMPHIS GRACE THERAPISTS, USE RETURN ENVELOPE. SEATTLE AND MEMPHIS, COMPLETE AND MAIL BY FRIDAY, JUNE 26, 1998. THANK YOU AND BLESSINGS.
**Grace Therapist Record**

**NAME:**

**Week beginning Monday, 06/29/1998**

**and ending Sunday, 07/05/1998**

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Week beginning Monday, 07/06/1998 and ending Sunday, 07/12/1998
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Dear [Name],

Greetings to you! Please know that, included with this letter, is my heart-felt appreciation for your participation in the Grace Project.

Today you are receiving preliminary information that I hope will be interesting to you. Since the complete analysis and reporting of the study data will take several months, I wanted to give you some information about the status of the Grace Project.

As you may know, the blood factor measured in the Grace Project was the hormone dehydroepiandrosterone or DHEA. I’ve enclosed a copy of DHEA The Youth and Health Hormone by Dr. Norman Shealy that discusses DHEA for your review. The booklet provides background information about DHEA and its relationship to stress, health maintenance, and aging. I’ve also enclosed the results of your two DHEA blood tests.

DHEA is currently the subject of much study and inquiry. Little is clearly understood about the practical benefits of the management of DHEA to healthy levels, either by conventional or complementary health care providers. Understanding more about DHEA and its relationship to activity, stress management, and illness are objectives of the Grace Project.

There is evidence, however, that DHEA responds to healing energies, meditation and prayer. This makes the hormone an excellent participant in the study of prayer and meditation. The thought is this: many potential chemical reactions occur in the body during healing, prayer or energy work; possibly DHEA is a quantifiable, chemical indicator of the receipt and transmission of loving, holistic, positive energy. In this study, we called this energy grace therapy.

You will find the following items enclosed in your packet: 1) your pre-Grace Week and post-Grace Week DHEA levels; 2) DHEA The Youth and Health Hormone; 3) your transportation reimbursement; and 4) several questions for you to complete and mail back to me using the enclosed envelope.
In closing, the group results and findings of the Grace Project are proceeding in divine order. The top-line indications appear to be extremely positive. I look forward to passing the findings on to you upon completion! Thank you again for your energy, love, and support of this meaningful work!

Love, Light and Blessings,

Jayne Hammond

P.S. Please do not be alarmed if your DHEA levels are low. (See page 10 in the booklet enclosed for levels.) YOU ARE NOT IN IMMEDIATE CRISIS OR DANGER. Please read the booklet provided and meditate on its significance to you. Consult a medical practitioner if you are led to do so. Be especially cautious about self-prescribing over the counter DHEA supplements long-term. There are many cases when short-term use of supplements is extremely beneficial. However, some medical conditions contraindicate DHEA supplementation. As Norm Shealy discusses, DHEA levels may be improved and maintained by using tools beyond and in addition to DHEA supplements.

P.S.S. Also, do not be concerned if your DHEA levels actually went down during Grace Week. DHEA levels may fluctuate to some extent every day. DHEA levels are also affected by other factors beyond prayer and meditation. This is part of the study, evaluating the influence of other life stresses on DHEA levels, including prayer and meditation. Reduced DHEA levels may also be a result of the method we individually use in transmitting healing or intercessory prayer. This possible influence on the grace therapists' DHEA is being evaluated and, hopefully, will provide valuable groundwork for future understanding and study. Furthermore, reduced DHEA levels experienced by a grace therapist do not mean parallel reduced levels in the assigned prayer recipients.

All of the information we are uncovering will be provided to you upon completion of the study. Remember to complete and mail back the questionnaire in this mailing. GRACE TO YOU!
GRACE THERAPIST FOLLOWUP

| Height          | Below 5 ft. | 6 ft. | 5 ft. 1 inch | 6 ft. 1 inch | 5 ft. 2 inches | 6 ft. 2 inches | 5 ft. 3 inches | 6 ft. 3 inches | 5 ft. 4 inches | 6 ft. 4 inches | 5 ft. 5 inches | 6 ft. 5 inches | 5 ft. 6 inches | 6 ft. 6 inches | 5 ft. 7 inches | 6 ft. 7 inches | 5 ft. 8 inches | 6 ft. 8 inches | 5 ft. 9 inches | 6 ft. 9 inches | 5 ft. 10 inches | 6 ft. 10 inches | 5 ft. 11 inches | 6 ft. 11 inches | 7 ft. or over |
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2. Please check you weight

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3. What is your marital status?

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4. What is your level of education?

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<tr>
<td>college</td>
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<td>Post-graduate</td>
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5. List prescription medications that you are taking.

6. What was your overall happiness level in the last 10 days?
   Please check. Extremely happy
   Very happy
   Moderately happy
   Somewhat happy
   Not happy at all

7. How did you feel physically in the last 10 days?
   Please check. Extremely well
   Very well
   Okay
   Below average
   Not well at all

8. Compared to a month ago, would you say that in general you felt PHYSICALLY
   Please check. Much better than usual
   Better than usual
   Somewhat better than usual
   About the same
   Worse than usual

9. Compared to a month ago, would you say that in general your MOOD is
   Please check. Much better than usual
   Better than usual
   Somewhat better than usual
   About the same
   Worse than usual

10. On a scale of 1 to 10, with 1 being ABSOLUTELY NOT and
    10 BEING ABSOLUTE:
    Do you believe that the grace therapy program
    has positively influenced the blood factor of those
    you are praying for?

11. On a scale of 1 to 10, with 1 being ABSOLUTELY NOT and
    10 BEING ABSOLUTE: Do you believe that the grace therapy program
    has positively influenced your own blood factor?

THANK YOU, YOU'RE DONE!
| #  | AGE | M/F | E/N | T/C | PRE | POST | Time | Support | TC | ID | SAV | EX | FR | S | SR | SA | NC | SY | A | C |
|----|-----|-----|-----|-----|-----|------|------|---------|----|----|-----|----|----|---|----|----|----|----|----|----|----|
| 8050 | 66  | M | N | C | 150 | 201 | 1:8.67 | 1:2.34 | 58 | 52 | 48 | 50 | 54 | 51 | 54 | 56 | 48 | 39 | 48 | 48 |
| 8060 | 71  | M | E | C | 122 | 133 | 1:3.80 | 1:1.40 | 51 | 41 | 43 | 44 | 48 | 44 | 47 | 48 | 43 | 48 | 23 | 43 |
| 8070 | 67  | M | E | C | 99  | 135 | 1:2.29 | 1:2.43 | 44 | 53 | 63 | 54 | 42 | 54 | 58 | 45 | 53 | 64 | 51 | 48 |
| 8080 | 75  | M | E | C | 65  | 88  | 1:8.87 | 1:2.26 | 58 | 62 | 63 | 62 | 51 | 48 | 56 | 50 | 54 | 56 | 57 | 59 |
| 8100 | 71  | M | E | C | 149 | 145 | 1:8.67 | 1:1.76 | 58 | 48 | 56 | 36 | 51 | 48 | 56 | 66 | 53 | 64 | 51 | 39 |
| 8130 | 74  | M | E | C | 43  | 69  | 1:2.29 | 1:1.57 | 44 | 43 | 40 | 32 | 48 | 44 | 58 | 48 | 38 | 22 | 39 | 46 |
| 8160 | 73  | M | E | C | 86  | 76  | 1:1.30 | 1:0.89 | 33 | 30 | 40 | 30 | 30 | 38 | 38 | 32 | 43 | 48 | 19 | 31 |
| 8180 | 66  | M | E | C | 206 | 146 | 1:0.92 | 1:2.02 | 26 | 49 | 40 | 44 | 48 | 61 | 58 | 53 | 48 | 56 | 48 | 43 |
| 8230 | 69  | M | E | C | 105 | 131 | 1:1.88 | 1:1.86 | 41 | 44 | 46 | 40 | 38 | 44 | 47 | 53 | 63 | 39 | 67 | 53 |
| 8240 | 69  | M | N | C | 55  | 102 | 1:1.75 | 1:1.63 | 37 | 42 | 43 | 36 | 42 | 41 | 62 | 46 | 38 | 22 | 30 | 41 |
| 8250 | 70  | M | N | C | 181 | 120 | 1:2.29 | 1:1.83 | 44 | 44 | 56 | 38 | 46 | 48 | 50 | 48 | 43 | 64 | 51 | 51 |
| 8270 | 66  | M | E | C | 223 | 139 | 1:2.83 | 1:2.02 | 48 | 49 | 56 | 50 | 54 | 44 | 62 | 50 | 48 | 48 | 46 | 46 |
| 8280 | 71  | M | E | C | 46  | 68  | 1:2.83 | 1:1.74 | 48 | 46 | 50 | 42 | 30 | 48 | 62 | 60 | 23 | 39 | 51 | 41 |
| 8310 | 70  | M | N | C | 267 | 247 | 1:2.83 | 1:1.84 | 48 | 43 | 33 | 40 | 57 | 51 | 55 | 37 | 33 | 15 | 42 | 46 |
| 8340 | 73  | M | N | C | 189 | 189 | 1:1.88 | 1:2.17 | 41 | 51 | 46 | 50 | 48 | 48 | 62 | 50 | 53 | 39 | 45 | 48 |
| 8350 | 69  | M | N | C | 150 | 186 | 1:1.58 | 1:1.16 | 37 | 33 | 40 | 28 | 28 | 38 | 50 | 50 | 28 | 31 | 29 | 29 |
| 8370 | 70  | M | E | C | 41  | 57  | 1:2.83 | 1:1.64 | 48 | 43 | 43 | 44 | 45 | 51 | 50 | 42 | 53 | 48 | 39 | 53 |
| 8390 | 73  | M | N | C | 43  | 47  | 1:2.83 | 1:1.76 | 48 | 46 | 63 | 42 | 48 | 48 | 62 | 42 | 53 | 64 | 39 | 41 |
| 8400 | 73  | M | E | C | 97  | 171 | 1:2.29 | 1:1.07 | 44 | 34 | 43 | 30 | 42 | 38 | 43 | 34 | 38 | 48 | 39 | 39 |
| 8410 | 71  | M | N | C | 125 | 76  | 1:2.83 | 1:2.83 | 48 | 54 | 53 | 54 | 54 | 44 | 58 | 53 | 58 | 48 | 48 | 64 |
| 8450 | 65  | F | B | C | 384 | 291 | 1:4.75 | 1:1.52 | 54 | 43 | 38 | 46 | 45 | 58 | 50 | 42 | 48 | 48 | 45 | 43 |
| 8480 | 69  | F | N | C | 101 | 107 | 1:6.00 | 1:2.08 | 51 | 46 | 43 | 54 | 38 | 48 | 47 | 59 | 33 | 48 | 36 | 51 |
| 8490 | 73  | F | E | C | 155 | 167 | 1:2.83 | 1:1.95 | 48 | 48 | 56 | 34 | 54 | 58 | 54 | 37 | 48 | 39 | 48 | 51 |
| 8500 | 68  | F | E | C | 231 | 254 | 1:8.67 | 1:2.57 | 58 | 53 | 36 | 46 | 54 | 48 | 62 | 53 | 43 | 22 | 45 | 58 |
| 8510 | 65  | F | E | C | 34  | 51  | 1:1.30 | 1:1.38 | 33 | 41 | 46 | 42 | 36 | 41 | 47 | 37 | 58 | 48 | 33 | 43 |
| 8520 | 69  | F | E | C | 150 | 155 | 1:4.75 | 1:1.89 | 54 | 48 | 53 | 42 | 54 | 41 | 56 | 48 | 63 | 48 | 48 | 56 |
## APPENDIX

<p>| A  | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U |
| 8570 | 67 | F | E | C | 407 | 244 | 1:2.67 | 1:1.86 | 44 | 44 | 43 | 46 | 30 | 38 | 58 | 56 | 43 | 39 | 23 | 34 |
| 8580 | 69 | F | E | C | 196 | 126 | 1:0.77 | 1:2.26 | 22 | 52 | 56 | 48 | 57 | 51 | 54 | 37 | 53 | 55 | 51 | 48 |
| 8620 | 66 | F | N | C | 83 | 64 | 1:2.29 | 1:2.17 | 44 | 51 | 33 | 54 | 51 | 44 | 47 | 61 | 38 | 48 | 45 | 60 |
| 8630 | 71 | F | N | C | 195 | 201 | 1:2.83 | 1:1.54 | 48 | 43 | 46 | 40 | 30 | 61 | 62 | 50 | 43 | 39 | 30 | 39 |
| 8680 | 70 | F | E | C | 216 | 220 | 1:3.60 | 1:1.02 | 51 | 33 | 53 | 36 | 13 | 38 | 54 | 40 | 58 | 64 | 23 | 20 |
| 8700 | 65 | F | N | C | 113 | 119 | 1:0.53 | 1:1.49 | 13 | 43 | 53 | 40 | 42 | 51 | 50 | 42 | 43 | 55 | 42 | 43 |
| 8720 | 75 | F | N | C | 101 | 104 | 1:6.07 | 1:1.95 | 56 | 48 | 50 | 44 | 33 | 44 | 58 | 59 | 48 | 65 | 42 | 48 |
| 8740 | 68 | F | E | C | 172 | 223 | 1:1.88 | 1:1.15 | 41 | 37 | 49 | 38 | 28 | 51 | 47 | 30 | 48 | 48 | 30 | 46 |
| 8760 | 68 | F | N | C | 194 | 141 | 1:6.87 | 1:2.02 | 58 | 49 | 48 | 46 | 44 | 68 | 61 | 22 | 48 | 43 |
| 8770 | 70 | F | N | C | 220 | 168 | 1:2.83 | 1:2.43 | 48 | 53 | 48 | 50 | 48 | 66 | 58 | 50 | 48 | 42 | 53 |
| 8780 | 66 | F | N | C | 52 | 82 | 1:2.83 | 1:1.53 | 48 | 42 | 53 | 40 | 36 | 48 | 50 | 34 | 38 | 39 | 36 | 36 |
| 8790 | 70 | F | N | C | 124 | 185 | 1:0.77 | 1:1.70 | 22 | 45 | 43 | 44 | 51 | 44 | 54 | 42 | 48 | 22 | 48 | 56 |
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| 9021 | 72 | M | N | T | 212 | 163 | 1:1.30 | 1:1.15 | 33 | 37 | 46 | 28 | 39 | 48 | 47 | 45 | 48 | 31 | 28 | 26 |
| 9041 | 74 | M | N | T | 53 | 78 | 1:2.83 | 1:1.35 | 48 | 41 | 43 | 40 | 45 | 48 | 50 | 48 | 43 | 48 | 36 | 41 |
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APPENDIX
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