

Naturopathic Medical Education: Where Conventional, Complementary, and Alternative Medicine Meet

Douglas Poorman, PhD

Linda Kim, ND

Paul Mittman, ND, DHANP

Background on the philosophy of naturopathic medicine and the six principles basic to its practice are presented. Naturopathic medical education is discussed with examples of the didactic and clinical curriculum at Southwest College of Naturopathic Medicine and Health Sciences, located in Tempe, Arizona. The range of therapeutic modalities included in naturopathic medicine and integrative clinical training are discussed.

Naturopathic medicine marries ancient curative remedies with modern medical technology; intuitive healing processes with clinical investigative skills; and natural medicinal powers with pharmaceutical capacity. Above all else, naturopathic medicine embraces preventive care. The prevalence and expenditures associated with integrative medical therapies increased substantially from 1990 to 1997 when the number of U.S. adults utilizing alternative therapies increased from 60 million to 83 million people (Eisenberg et al., 1998). Likewise, attendance at naturopathic medical schools educating primary care practitioners in alternative medicine has increased during this period.

Naturopathic Doctors (NDs) graduate from a four-year in-residence, naturopathic medical program that integrates conventional and natural medicine in both classroom and clinical training. The first two years focus on Basic Sciences including Gross Anatomy with Dissection, Histology, Embryology, Neuroanatomy, Physiology, Microbiology, Pathology and Pharmacology and pre-clinical medicine such as physical, laboratory, and clinical assessment. Students' third and fourth years emphasize therapeutics, including tracks in Homeopathy, Botanical Medicine, Acupuncture, Physical Medicine, Counseling, Nutrition, Pharmacology and Minor Surgery. During these last two years, students engage in clinical training under the supervision of NDs, MDs, and DOs.

The Council on Naturopathic Medical Education (CNME) is the accrediting body that oversees medical education. The Council is comprised of institutional members representing each medical college, professional members who are actively engaged in private practice, and public members with various backgrounds and careers, including higher education. Meeting semi-annually to monitor the quality of educational experience at each of the colleges, the CNME places emphasis on educational excellence, ethical practice and each institution's attention to community service.

There are five naturopathic medical schools in North America—Bastyr University in Seattle, Washington; Canadian College in Toronto, Ontario, Canada; National College of Naturopathic Medicine in Portland, Oregon; Southwest College of Naturopathic Medicine and Health Sciences in Tempe, Arizona; and the University of Bridgeport in Bridgeport, Connecticut. Their curricula include a range of 2,580 to 3,270 hours of didactic instruction and between 1,200 to 1,500 hours of clinical education. Academic backgrounds of faculty include those having a ND, MD, DO, DC, PhD, MS, MPH, and other specialized degrees and professional backgrounds. Student enrollments in the naturopathic medical programs range between 260 and 540. Students attending colleges in the United States are eligible to participate in federally funded student financial aid programs and receive subsidized and unsubsidized Stafford loans.

Graduates take national board examinations in both basic and clinical sciences to become licensed as general practice naturopathic doctors within licensed states or as individual jurisdictions allow. While residencies are not yet required for licensure, naturopathic medical schools offer one- and two-year residency programs. Southwest College of Naturopathic Medicine (SCNM) places particular attention on providing students with career opportunities. This is accomplished through many clinical settings including collaborations with, among others: Maricopa Integrative Health Systems; Springdale Village & Springdale West Nursing Homes; Banner Health, Inc; and Valley Lutheran Hospitals.

The Southwest College Doctor of Naturopathic Medicine is a four-year, post-baccalaureate medical degree program that is completed in 16 academic quarters, during four-years of year-round attendance. Upon completion of the graduation requirements, the student is awarded a Doctor of Naturopathic Medicine degree (ND). Students are educated to become primary care physicians with a specialized focus on preventive medicine and natural therapeutics.

Student research projects are a culmination of a series of required medical research classes at SCNM. Students practice the skills of evaluation and using information provided by medical research. Students also have the opportunity to further their skills in research through the activities of the Southwest College Research Institute (SCRI). The research curriculum is offered in four courses in 40 didactic hours. The courses cover introductory biostatistics, research design and methods, Institutional Review Board and Scientific Merit applications, FDA methodology, literature search and review, and scientific writing.

Student research projects began with the first graduating class at SCNM in 1996. The projects are predominately pilot CAM clinical trials with human subjects, and are usually conducted by teams of four to six students per project. The students must complete their project by their fourth year, and present the results at a college Senior Research Presentation with invited guests from the community. The presentations are conducted twice a year, January and July. Student Research Projects have a faculty adviser from SCNM or from other licensed professionals from the local community. Student Research Projects are supported by SCNM (facility use, supplies, faculty advisers, SCRI contribution), and when Student Research Projects are funded by outside sources, these are primarily nutraceutical and diagnostic laboratory companies.

One of SCNM's student research projects resulted in an academic publication, *The Effect of Homeopathic Coca on High Altitude Mountain Sickness, 2000: Mt. Everest Base Camp* (Shackelton, Tondora, Whiting, & Whitney, 2000).

PHILOSOPHY OF NATUROPATHIC MEDICINE

Naturopathic medicine is a distinct medical approach to health care: an art, science, and practice of diagnosing and treating people, maintaining health, and preventing disease. Naturopathic physicians (NDs) seek to restore and maintain optimal health as they practice independently and/or with provider groups. Many also become educators, authors, and researchers who play vital roles in community health, awareness and education.

Patients are treated as unique human beings, enabling them to take responsibility for their own health. Naturopathic physicians are partners in their patients' healthcare providing evaluations and recommendations for patients who are committed to becoming healthier (Lindlahr, 1975). They educate their patients to optimize their lifestyles, enhance their immune function and learn how to take preventive measures to decrease illness.

As primary care practitioners, naturopathic physicians are trained as specialists in preventive medicine and natural therapeutics. As in other medical schools, a solid foundation is needed for diagnosis and treatment. To build this foundation, the curriculum includes conventional medical sciences, laboratory testing and physical examination procedures as listed in Figure 1. Naturopathic physicians evaluate physical structure, nutrition, digestion, and many other health parameters. NDs combine and individualize a wide variety of therapies based on a philosophy which acknowledges and encourages patients to actively participate in their health care. They practice medicine that includes the best aspects of many healing traditions from diverse cultures.

Effectively treating all age groups in a wide array of both acute and chronic health problems, naturopathic physicians are trained to use drugs when necessary, naturopathic therapies, usually alone or in combination with low doses of synthetic drugs, to provide the needed results. The last decade has seen a dramatic increase in the collaboration in patient care between naturopathic physicians (ND), allopathic physicians (MD), and osteopathic physicians (DO). Southwest College has educational affiliations with three hospitals, including the County hospital, numerous community medical centers and over 100 area physicians. The educational process is a two-way street with Southwest College students obviously benefiting from their clinical work in diverse settings. Southwest College of Naturopathic Medicine fosters opportunities for area physicians to learn more about and incorporate natural medicine into their own practices. In the past two years, naturopathic physicians have started being credentialed in many of these same clinics. Using a holistic approach to care for their patients, naturopathic physicians cooperate and participate with other health care providers, referring patients to, and accepting patients from, other practitioners.

PRINCIPLES OF NATUROPATHIC MEDICINE

Naturopathic physicians are guided by six principles:

1. First Do No Harm;
2. The Healing Power of Nature;
3. Find the Cause;
4. Treat the Whole Person;
5. Preventive Medicine; and
6. Doctor as Teacher.

This set of principles, emphasized throughout a naturopathic physician's training, outlines the philosophy guiding the naturopathic approach to health and healing and forms the foundation of this distinct health care practice.

• Anatomy	• Physiology	• Cardiology	• Neurology
• Biochemistry	• Pathology	• Radiology	• Minor Surgery
• Microbiology	• Obstetrics	• Immunology	• Gynecology
• Pharmacology	• Pediatrics	• Dermatology	• Laboratory Diagnosis
• Embryology	• Pulmonology	• Physical Medicine	• Emergency Medicine

Figure 1. Basic science and clinical courses taught at Southwest College of Naturopathic Medicine.

First Do No Harm (*Primum Non Nocere*)

Illness is a purposeful process of the organism. The process of healing includes the generation of symptoms that are, in fact, expressions of the life force attempting to heal itself. Therapeutic actions should be complementary to and synergistic with this healing process. The physician's actions can support or antagonize the actions of the *vis medicatrix naturae*, the healing power of nature. Therefore, methods designed to suppress symptoms without removing underlying causes are considered harmful and are avoided or minimized.

Naturopathic physicians prefer non-invasive treatments, which minimize the risks of harmful side effects. They are trained to know which patients they can treat safely, and which ones they need to refer to other health care practitioners. To avoid harming the patient, naturopathic physicians utilize methods and medicinal substances that minimize the risk of harmful effects, and apply the least possible force or intervention necessary to diagnose illness and restore health. Whenever possible, the suppression of symptoms is avoided as suppression generally interferes with the healing process. Naturopathic physicians respect and work with the *vis medicatrix naturae* in diagnosis, treatment and counseling. If this self-healing process is not respected, the patient may be harmed.

The Healing Power of Nature (*Vis Medicatrix Naturae*)

The body has the inherent ability to establish, maintain, and restore health. The healing process is ordered and intelligent; nature heals through the response of the life force. To heal, nature acts powerfully through the healing mechanisms of the body and mind to maintain and restore health.

Naturopathic medicine recognizes this healing process. Naturopathic physicians work to restore and support these inherent healing systems when they have broken down, by using methods, medicines, and techniques that are in harmony with natural processes. The naturopathic physician's role is to facilitate and augment this process, to act to identify and remove obstacles to health and recovery, and to support the creation of a healthy internal and external environment.

Identify and Treat the Cause (*Tolle Causam*)

Illness does not occur without cause. Underlying causes of disease must be discovered and removed or treated before a person can recover completely from illness. Symptoms are expressions of the body's attempt to heal, but are not the cause of disease. Symptoms, therefore, should not be suppressed by treatment.

Causes may occur on many levels including physical, mental, emotional, and spiritual. The physician must evaluate fundamental underlying causes on all levels, directing treatment at root causes rather than at symptomatic expression. The naturopathic physician seeks to treat the causes of disease, rather than to merely eliminate or suppress symptoms.

Treat the Whole Person (*The Multifactorial Nature of Health and Disease*)

Because health and disease are conditions of the whole organism—a whole involving a complex interaction of physical, spiritual, mental, emotional, genetic, environmental, social, and other factors—naturopathic physicians treat the whole person by taking all of these factors into account. The harmonious functioning of all aspects of the individual is essential to recovery from and prevention of disease, and requires a personalized and comprehensive approach to diagnosis and treatment.

Since total health also includes spiritual health, naturopathic physicians encourage individuals to pursue their personal spiritual development. The multifactorial nature of health and disease requires a personalized and comprehensive approach to diagnosis and treatment. Naturopathic physicians take all of these factors into account as they treat the whole person.

Prevention (*Prevention is the Best “Cure”*)

The ultimate goal of any health care system should be prevention. This is accomplished through education and promotion of life-habits that create good health.

Assessing risk factors, lifestyle, and hereditary susceptibility to disease, the naturopathic physician makes appropriate interventions to avoid further harm and risk to the patient. The emphasis is on building health rather than on fighting disease. Naturopathic medicine asserts that one cannot be healthy in an unhealthy environment. Based on this premise, naturopathic physicians work toward the creation of a world in which humanity may thrive.

Naturopathic medical schools emphasize the study of health as well as disease. The prevention of disease and the attainment of optimal patient health are primary objectives of naturopathic medicine. In practice, these objectives are accomplished through education and the promotion of healthy ways of living, and appropriate interventions are introduced to avoid further and possible future harm and risk to the patient.

The Physician As Teacher (*Docere*)

The original meaning of the word “doctor” is teacher. A principal objective of naturopathic medicine is to educate the patient and emphasize self-responsibility for health. Beyond an accurate diagnosis and appropriate prescription, the physician must work to create a healthy, sensitive interpersonal relationship with each patient.

A physician’s major role is to educate and encourage patients to take responsibility for health. The physician is a catalyst for healthful change, which empowers and motivates patients to assume responsibility.

Naturopathic physicians also recognize and employ the therapeutic potential of the doctor-patient relationship. It is the patient, not the doctor, who ultimately creates/accomplishes healing. The physician must strive to inspire hope as well as understanding. The physician must also make a commitment to his/her personal and spiritual development in order to be a good teacher.

NATUROPATHIC MEDICAL EDUCATION

With admissions requirements comparable to conventional medical schools, applicants for admission to Southwest College of Naturopathic Medicine and Health Sciences must take prerequisite courses such as biology, inorganic and organic chemistry,

English, psychology, and humanities. The degree of Doctor of Naturopathic Medicine requires four years of graduate level study in the medical sciences at Southwest College of Naturopathic Medicine and Health Sciences.

Throughout the four years, there is extensive training in naturopathic therapeutics, including botanical medicine, homeopathy, nutrition, acupuncture, hydrotherapy, and mind-body medicine. A listing of therapeutic courses with number of hours in the curriculum is included in Figure 2.

Clinical Nutrition

The Hippocratic concept that “food is the best medicine” is a cornerstone of naturopathic practice. Many medical conditions can be treated more effectively, having fewer complications and side effects, with foods and nutritional supplements. Naturopathic physicians use dietetics, natural hygiene, fasting, and nutritional supplementation in practice.

The discovery of vitamins, minerals and deficiency diseases in the early part of the 20th century began to provide a scientific understanding of clinical nutrition. The realization that enzyme systems were dependent on essential nutrients provided the naturopathic profession with great insights into the importance of an organically grown, whole foods diet for health.

Nutritional biochemist Roger Williams formulated the concept of biochemical individuality. In 1955, he further developed insights into the unique nutritional needs of each individual, how to correct in-born errors of metabolism, and even how to treat specific diseases through the use of nutrient-rich foods or large dosages of specific nutrients (Williams & Dans, 1986). Linus Pauling, two-time Nobel Prize winner, coined the concept of orthomolecular medicine, and provided further theoretical substantiation for the use of nutrients as therapeutic agents (Pauling, 1968).

Naturopathic physicians sometimes use nutritional supplements as part of a patient’s treatment. The dietary approach to prevention and treatment of chronic degenerative disease, championed for more than a century by naturopathic physicians, has recently gained the attention of conventional medicine. Each of the seven dietary guidelines in the 1988 U.S. Surgeon General’s report on nutrition and health is a traditional part of naturopathic practice. More than 40 scientific journals worldwide are devoted to

Naturopathic Therapeutics	Clock Hours in Didactic Curriculum
Botanical Medicine	140
Homeopathic Medicine	140
Nutrition	150
Physical Medicine	220
Traditional Chinese Medicine	200
Environmental Medicine	50
Counseling and Stress Management	100
Minor Surgery	50

Figure 2. Therapeutic courses at Southwest College of Naturopathic Medicine.

clinical nutrition, and articles on the therapeutic use of diet or supplements also appear regularly in conventional medical journals. However, naturopathic physicians are the only health care professionals that meet and exceed the recommendations of former U.S. Surgeon General Koop for education in nutrition. Recently, the American Cancer Society has established nutrition and physical activity guidelines for the prevention of cancer (Brown, Byers, Thompson, Eldridge, Doyle, & Williams, 2001).

Botanical Medicine

Many plant substances are powerful medicines. Where single chemically derived drugs may only address a single problem, botanical medicines are able to address a variety of problems simultaneously. Their organic nature makes botanicals compatible with the body's own chemistry; hence, they can be gently effective with few toxic side effects.

Naturopathic physicians use plant material for food, medicine and health promotion. Formal training includes plant identification, preparation, storage, therapeutic indications, contraindications, and dosing. There is extensive contemporary medical literature on medicinal and healing plants. Nothing in naturopathic licensing laws prevents the use of plant medicines by any individual or group.

Most European countries recognize the effectiveness of medicinal plants, include them in their official pharmacopoeias and regulate them as drugs or over-the-counter remedies. At least fourteen scientific journals worldwide are devoted to the study of botanical medicine.

Naturopathic Formulary

Naturopathic formulary is usually a part of rules and regulations rather than law that list those prescriptive substances which naturopathic physicians use in practice. Much of the prescriptive pharmacy is based on naturally derived substances. Further, giving naturopathic physicians prescriptive rights saves the state constituents' money and time by not requiring a visit to another physician when a simple prescription is indicated. Creating a naturopathic formulary helps clarify to legislators, pharmacists, naturopathic physicians and other practitioners the legal scope of naturopathic prescribing. The list is composed of those substances that are in the traditional pharmacopoeia of naturopathic medicine.

The curriculum of naturopathic medical schools includes extensive training in clinical pharmacology. Courses cover the use of legend drugs as well as nonprescription agents, botanicals, antibiotics, hormones, vitamins and minerals.

Homeopathic Medicine

Homeopathy is a system of medicine more than 200 years old. It is based on the principle of "like cures like," working on a subtle yet powerful electromagnetic level to gently strengthen the body's healing and immune response (Wood, 1992). Homeopathic therapeutics use medicines made from natural substances which stimulate the body's immune and defense system to initiate the healing process. A recent review article in the *British Medical Journal* performed a meta-analysis of 107 controlled clinical trials of homeopathic substances, and found positive evidence supporting their effectiveness (Linde et al., 1997). Various other *in-vitro* or animal studies have also demonstrated the effectiveness of homeopathic preparations.

There are more than 100 homeopathic medical colleges worldwide. Naturopathic medical schools teach homeopathic therapeutics as a standard part of the curriculum. Naturopathic schools in the U.S. offer training in homeopathy at the same high standard of Canadian or European schools.

Physical Medicine

Manipulative therapy is a large, international, interdisciplinary science practiced by a multitude of professions. The value of such treatments is recognized in other licensed professions such as physical therapy, osteopathy, chiropractic, and massage therapy. The chiropractic system of spinal adjustment is only one of many systems of spinal manipulation, as is Naturopathic Manipulative Therapy (NMT). Some systems of medicine want to co-opt manipulative therapy for their exclusive use.

Naturopathic Medicine has its own methods of therapeutic manipulation of muscles, bones, and spine. NDs also use ultrasound, diathermy, exercise, massage, water, heat and cold, air, and gentle electrical pulses. Naturopathic manipulation of the muscles, bones and soft tissues are collectively known as Naturopathic Manipulative Therapy (NMT). Physical medicine also includes exercise therapy, physiotherapy using heat and cold, electrical pulsation, ultrasound, diathermy and hydrotherapy. Such techniques are regularly evaluated in journals such as the *Journal of Manipulative and Physiological Therapies*. Naturopathic Manipulative Therapy is performed and prescribed as a “therapy.” That is, it is used for a specified therapeutic effect and is not conceived of as the final act of anatomical approximation of a displaced bone. Rather, it is conceived of as a dynamic process having specific therapeutic benefits.

Naturopathic Manipulative Therapy has been an integral part of the practice of naturopathic medicine since the founding of the naturopathic profession and throughout its existence. It is part of every current naturopathic licensing law.

The training of naturopathic physicians in NMT and related fields is extensive. Students receive approximately 348 hours of instruction in NMT. Of these, 132 hours are devoted strictly to the hands-on learning of technique. In addition, elective course work is available for students wishing greater expertise in this area.

Hydrotherapy

Hydrotherapy is the use of hot and cold water for the maintenance of health and treatment of disease. These are therapies that stimulate circulation and healing, often with the only other effect of cleanliness. Naturopathic medicine is partly rooted in the European hydrotherapy movement, centuries old and still thriving.

The best known American hydropath was John Harvey Kellogg, MD, who approached hydrotherapy scientifically and performed many experiments to determine the physiological effects of hot and cold water. *Rational Hydrotherapy* (Kellogg, 1902) is considered one of the definitive texts on the therapeutic effects of water. It also has an extensive discussion of the actual techniques.

The value of water treatments, fasting and rest in treatment for chronic disease is recognized throughout the developed countries in Europe. About half a million French citizens each year receive insurance reimbursement for medically prescribed spa therapy.

Acupuncture and Traditional Chinese Medicine

Acupuncture and Traditional Chinese Medicine (TCM) are complementary healing philosophies to naturopathic medicine. Meridian theory offers an important understanding of the unity of the body and mind, and adds to the Western understanding of physiology. Acupuncture provides a method of treatment, which can unify and harmonize the imbalances present in disease conditions, which, if untreated, can result in illness. The eclectic base of the modern naturopathic practices offers simple, effective acupuncture treatments for a wide variety of health problems. All NDs are trained with entry-level acupuncture competency and many continue studies that certify them as specialists.

An individual naturopathic physician may or may not have the same in-depth training as an acupuncturist, who is a specialist to whom referrals are made. Every ND receives appropriate training to utilize acupuncture in an eclectic practice. To specialize in acupuncture, training is similar to any other acupuncturists at the level required for certification by the National Commission on the Certification of Acupuncturists.

All naturopathic physicians are trained at an introductory level in the basics of Traditional Chinese Medicine, and about one in five receives further training and specializes in it. Traditional Chinese Medicine has been developed continuously for more than three thousand years in Asia and coexists along with conventional medicine today in China and Japan as a primary form of medicine. Dozens of peer-reviewed journals are devoted to the scientific evaluation of Oriental methods, including both acupuncture and botanical medicine.

Mind-Body Medicine

Mental attitudes and emotional states may influence, or even cause, physical illness. Counseling, nutritional balancing, stress management, hypnotherapy, biofeedback, and other therapies are used to help patients heal on the psychological level.

The ND must be able to talk with patients in a constructive way about lifestyle, stresses, and habits. As a rule, naturopathic physicians spend one-half to one and a half hours with a patient on the first visit. They gather a medical history, as well as a family history. They get data on lifestyle and stress, means of relaxation, diet, and exercise. They ask the patient when each symptom began and what was happening in his or her life at the time. They try to uncover the cause or causes of the symptoms or imbalance and to discover the blocks that keep the patient from necessary change. Again, nothing in any naturopathic licensing bill interferes with the scope of any other practitioner.

Naturopathic physicians are trained in various psychological techniques, including basic counseling, stress management, hypnotherapy, biofeedback, and methods of lifestyle modification. A large body of scientific literature points to the importance of treatment for psychological and somatic factors and coping mechanisms in many illnesses and complaints.

INTEGRATIVE CLINICAL EDUCATION

The Southwest College clinical education provides students with an integrative approach to the delivery of health care while encompassing natural therapy philosophies and emphasizing the practical information necessary to establish a successful practice.

ND students gain experience in private practice offices and in local health care and hospital settings under the supervision of naturopathic, allopathic, or osteopathic licensed physicians.

Clinical training is designed to provide the entry-level skills necessary to become a successful practitioner. Along with providing experiences to establish confidence as a practitioner and to foster understanding of the role of naturopathic medicine within the health care system, students are:

- Provided with many opportunities to observe excellent role models.
- Involved in observing diverse patient populations in a variety of clinical environments.
- Focused on effective communication, diagnostic, and therapeutic tools.
- Immersed in a Clinical Competency Program, where, at their own pace, they gain the skills and knowledge to become successful practitioners.

CONCLUSIONS

Naturopathic medical schools go beyond offering electives in complementary and alternative medicine. They are the only medical schools in the United States that integrate basic sciences, conventional diagnostic medicine, pharmacology and complementary and alternative medicine. They also have the advantage of educating students using these modalities in direct patient care. The ultimate strength of this program is that the philosophy and principles of natural medicine, introduced in the first week of school, are imbedded and interwoven throughout the entire fabric of the program.

The challenges in naturopathic medicine are primarily in two areas. First, because naturopathic medical schools do not receive government or state subsidies, the funding base for them is significantly smaller than for their allopathic and osteopathic counterparts resulting in smaller libraries, laboratories, and clinical facilities. Second, the clinical training focuses primarily on outpatient care and needs to incorporate training in hospital settings and emergency care. Because naturopathic residencies do not receive funding from the Federal Government, they are few in number resulting in less than 10% of naturopathic physicians having residency opportunities. Naturopathic medicine and its training institutions work hard to meet these challenges by developing creative solutions to offset inadequate funding.

REFERENCES

- Brown, J., Byers, T., Thompson, K., Eldridge, B., Doyle, C., & Williams, A. (2001). Nutrition during and after cancer treatment: A guide for informed choices by cancer survivors. *CA: A Cancer Journal for Clinicians*, 51, 153-187.
- Eisenberg, D., Davis, R., Ettner, S., Appel, S., Wilkey, S., Rompay, M., & Kessler, R. (1998). Trends in alternative medicine use in the United States (1990-1997). *Journal of American Medical Association*, 28, 1569-1575.
- Kellogg, J. (1902). *Rational hydrotherapy—The physiological and therapeutic effects on hydiatic procedures, and the technique of their application in the treatment of disease* (2nd ed.). Philadelphia: F. A. Davis Company.

- Linde, K., Clausius, N., Ramirez, G., Melchart, D., Eitel, F., Hedges, L. V., & Jonas, W. B. (1987). Are the clinical effects of homeopathy placebo effects? A meta-analysis of placebo controlled trials. *The Lancet*, 350(9081), 834-843.
- Lindlahr H. (1975). *Philosophy of natural therapeutics*. Saffron Walden, Essex, England: CW Daniel Company.
- Pauling, L. (1968). Orthomolecules psychiatry—Varying the concentrations of substance normally present in the human body may control mental disease. *Science*, 160(825), 265-271.
- Shackelton, M., Tondora, C., Whiting, S., & Whitney, M. (2000). The effect of homeopathic coca on high altitude mountain sickness: Mt. Everest base camp. *Complementary Health Practice Review*, 6, 45-55.
- Williams, R., & Davis, D. (1986). Differential nutrition—A new orientation from which to approach the problems of human nutrition. *Perspectives in Biology and Medicine*, 29(2), 199-202.
- Wood, M. (1992). *The Magical Staff. The vitalist tradition in Western medicine*. Berkeley, CA: North Atlantic Books.

Biographical Data. Douglas Poorman, PhD, is the Chief Academic Officer at Southwest College of Naturopathic Medicine and Health Sciences (SCNMHS). Linda Kim, ND, is a Research Assistant at SCNMHS. Paul Mittman, ND, is the President/CEO at SCNMHS.

Offprints. Request for offprints should be directed to Douglas Poorman, PhD, Chief Academic Officer, Southwest College of Naturopathic Medicine and Health Sciences, 2140 E. Broadway Road, Tempe, AZ 85282.