

APPLIED EVIDENCE

New research findings that are changing clinical practice

Naturopathic medicine: What can patients expect?

Naturopathic care—covered by many major carriers—
can complement customary clinical practice

Practice recommendations

- Patients who inquire about naturopathy will want to know that clinical tools typically include nutrition evaluation and dietary revision, counseling for lifestyle modification, botanical medicine, homeopathy, physical medicine, and mind-body therapies.
- Advise patients who wish to seek naturopathic care to contact the state licensing authority to learn the scope of naturopathic practice allowed in their local area.

What can patients expect when they seek a naturopathic approach to disease management? A case presented in this article illustrates the applications of naturopathy in practice (see **Naturopathic approach to one patient's case: A summary**, on pages 1068–1069).

Naturopathic physicians (NDs) diagnose and treat conditions typically seen in a “first contact” setting. They are not trained in the advanced use of highly technical conventional therapies for life-threatening diseases. Rather, they focus primarily on health issues encountered in out-patient ambulatory care settings (see **Naturopathic training**).

Though some tools of naturopathic practice differ from those of conventional practice, the goals of naturopathic medicine parallel those of family medicine in

providing for and maintaining the well-being of both the patient and the health-care system as a whole.

Collaboration is growing between conventional and naturopathic communities to examine the safety and efficacy of naturopathic medicine in preventing and managing a broad range of common conditions, and to determine whether availability of naturopathic services will improve patient health in a cost-effective manner.

■ Practice principles of naturopathic medicine

Naturopathic medical practice is based upon the premise that it is intrinsic to the nature of living organisms to heal. The naturopathic physician understands illness to be a disruption of normal orderly function. Healing therefore is the process by which living systems return to a resilient equilibrium, either unassisted or with the therapeutic support of the practitioner.

Western medicine rarely takes into consideration the inherent organizing forces underlying known physiologic processes such as metabolism or tissue repair. Naturopathic medicine calls this primary principle the *vis medicatrix naturae*, or the healing power of nature.

Another principle fundamental to the restoration of health is the understanding

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APPLIED EVIDENCE

Naturopathic approach to one patient's case: A summary

Patient encounter

Martha S., a 39-year-old Asian-American

Presenting complaint: Has not felt well since onset of light-headedness, fatigue, muscle pain, and lassitude 4 years earlier / muscle tightness or tension and achiness come and go, often relieved by chiropractic treatment / some fuzzy cognition / dry gritty feeling in back of eyes / decreased libido / intermittent heart palpitations / sadness, easy weeping in conjunction with menses, lessens somewhat with St John's Wort / disturbed, unrefreshing sleep 4 out of 7 days / body pain worse on waking

History

Three normal births and 3 spontaneous abortions with anticardiolipin antibodies that resolved after pregnancy / 2 D&Cs, no other surgery / incidental finding of partially empty sella tursica on MS MRI investigation

Extensive specialty workups since 2001 have ruled out disease / internist who coordinated specialty consultations favors diagnosis of generalized anxiety disorder / some improvement with low doses Celexa, but unacceptable side effects (same with Effexor) / has tried amitriptyline / husband travels and she is uncomfortable with a "drugged sleep" when alone with the children

Fell off horse as teenager / no other physical injury or significant viral or bacterial illness / job exposes her to adversarial atmosphere and also requires occasional extensive hours at keyboard / infertility issues; experience of foreign adoption was a prolonged stressor

Family Maternal aunt and grandmother had breast cancer age 50+; both survivors / paternal grandmother had

stroke / father had postoperative DVT

Social 1–2 glasses wine/week; recreational drug use over 10 years in past / no regular exercise / attorney for city / married 11 years; husband 48, Euro/American, smokes, on anti-HTN medication / adopted sibs from Korea 1 year ago, 5-yr-old girl, 2-year-old boy, some malnutrition, parasites, now recovered

Exam

Patient is pleasant, articulate / no active disease / 5'8", 128#, BP 128/62, P 82 / findings normal for HEENT, neck, chest, heart, abdomen, extremities, neurology, and skin / tender trigger points at bilateral trapezoids, paraspinous to subscapular, upper third gluteal and at hips

Lab

extensive records provided, essentially normal, none since 11/2003

Medications

None now

Allergies

Sensitive to drug side effects, but no known drug allergies

Management plan discussed with patient

In absence of other underlying disease, would like to treat you for fibromyalgia syndrome from long-term professional and personal stress / will work to recover your system from the physiologic effects of tension, worry, and hard work over past decade / if progress unsatisfactory after 3 months, we will revisit the diagnosis

Plan is to restore-rejuvenate your body, which knows how to right itself / think 6 months to a year for full recovery, after which you will have new knowledge of yourself and tools to maintain

FAST TRACK

Standard review of systems is supplemented with patient reports of dietary habits, physical activities, etc

your well-being / details of the plan will shift as you recover and learn to use developing self knowledge to protect yourself during new challenges / flexibility and resilience are key and develop continually from self awareness / note what works for you and what doesn't

Diet Goal

Hypoallergenic, whole-foods; small, frequent meals / adjust eicosanoid balance to increase systemic circulation, musculoskeletal flexibility, and cellular repair (patient given background article) / decrease production of pain-signaling chemistry, swelling that presses on nerves and creates the sensations of pain and stiffness; avoid sweets and refined carbohydrates, in order to maintain steady blood sugar levels

Use serotype diet (diet printed for patient) for the next 6 weeks / stick with best foods; dip into OK foods as little as possible / whet appetite for best food by "selfishly" focusing on your recovery / invite family to share meals, but primary purpose is your recovery; this can be hard for a mom to pull off; please invite your husband to call me if I can help him understand how he can enable you accomplish goal

Possible further steps

(see online version for details of action steps):

1. *Support/restore digestive tract:* May not be making optimal gastric acid and other digestive factors as a result of long term stress stealing circulation away from those tissues that produce it.
2. *Eliminate simple sugars and refined flour products:* Will help reduce pain / simple sugar creates hypoglycemic episode that can be experienced as nameless

anxiety, weakness, fatigue, and dizziness / stable blood sugar essential for sense of well-being / eat pears, berries, or nuts if you need dessert.

3. *Exercise:* Aerobic exercise 45 to 60 minutes, 3 or more times/week
4. *Sleep:* Melatonin 250 µg to 500 mcg 30 or so minutes before bedtime / Deeper, assisted sleep will help, and you can adjust dosages to keep head clear in morning.
5. *Fundamental supplementation:* For general well being, including fish oils, vitamins, and minerals.
7. *Adrenal recovery formula:* We can presume your endocrine system has been affected by perceptions of threat (anxiety as related to the mystery of your physical pains) as well as long-term pain / recommend adrenal function test, to more closely determine optimal timing and doses of raw material that supports adrenal function
8. *Massage/body work*
9. *Generalized anxiety disorder:* your internist is convinced of this diagnosis; let's discuss.

Outcome

Over 2 months: Sleep improved; trigger point pain diminished in upper body (by 30%), in gluteal and hips (80%) / able to manage diet "70% to 80% of the time" / exercise 3 to 5 times weekly, less when husband travels

Vacation interlude: Treatment plan jettisoned for vacation / return of rheumatic symptoms; dizziness and lassitude, however, continued to improve

Next 2 months: Continued improvement, with trigger point pain flaring only on long drives

FAST TRACK

Modalities:

- dietary revision
- lifestyle changes
- botanical medicine
- homeopathy
- physical medicine
- mind-body therapies

APPLIED EVIDENCE

that any intervention employed should not further disrupt a system attempting to regain homeostasis. This is expressed as *primum non nocere*, the imperative to first choose interventions which do the least harm.

When confronted with an ill patient, the naturopathic physician seeks to understand the totality of fundamental causes disrupting the patient's optimal equilibrium. In order to remove the cause of the illness (*tolle causum*), one must *treat the whole person*.

In pursuit of removing or moderating the insults and stressors that result in harm to the patient, the doctor becomes teacher (*docere*) and engages the patient in the essential responsibilities of self-care. Participation in the restoration of personal wellbeing prepares the patient to behave proactively in the future, when mutual efforts at *prevention* predominate in the physician-patient relationship.¹

Although these practice principles form the foundation of the naturopathic approach to health and healthcare, the philosophic and conceptual approaches of conventional medical theory apply as well, including complexity science, quantum physics, medical ecology, public health, energy medicine, and the biological basis of healing. The above principles do not replace the foundation of biological pathology, but offer the practitioner an expanded perspective when treating each individual patient. Naturopathic medicine ascribes to a therapeutic hierarchy that integrates the full spectrum of modern biomedicine in a continuum that includes mental, emotional and spiritual therapies, as appropriate to each patient's needs.² Applied in this context, biomedical interventions are highly valued as both diagnostic and therapeutic approaches.

■ Clinical approach to patients

The ultimate goal of each clinical assessment is to obtain an in-depth understanding of the patient's underlying condition (including his or her experience) and to effectively communicate relevant infor-

mation to other healthcare providers participating in the patient's care.

Essential to a comprehensive evaluation is the extended interview, which ranges from 60 to 90 minutes for new patients. Follow up visits range between 30 and 60 minutes. A standard review of systems is supplemented with patient-generated reports of daily activities, such as dietary habits, physical activity, and psychological issues (see **Naturopathic approach to one patient's case**). NDs perform physical examinations appropriate to the patient's presenting complaint and health history, and employ conventional laboratory and diagnostic imaging services as needed. Clinical evaluation is patient-centered and addresses a full range of factors that influence health as well as illness, generating a problem-oriented patient record based on International Classification of Diseases (ICD-9) criteria.

Modalities most often used in naturopathic practice include clinical nutrition and dietary revision, counseling for lifestyle modification, botanical medicine, homeopathy, physical medicine, and mind-body therapies.

Scope of practice. Depending on local licensure statutes, naturopathic physicians may be fully recognized as primary healthcare providers.³ Prescriptive authority varies, as do provisions for other procedures commonly associated with general medical practice.⁴

Details of the scope of naturopathic practice in each licensed jurisdiction can be accessed by contacting local licensing authorities, usually via a state or provincial agency website. In the majority of jurisdictions, licensed NDs are responsible for all public health regulations including reportable diseases and immunizations. Most ND practice acts require annual continuing education credits to maintain practice privileges.

Interdisciplinary collaboration. NDs are trained to recognize serious and life-threatening situations and to identify conditions outside of the scope of their

FAST TRACK

NDs often work with physicians to co-manage patients and help decide when to refer for evaluation by other practitioners

professional or legal limitations. Appropriate referral mechanisms are indoctrinated during educational and clinical training. NDs often work with conventionally trained family practice physicians, internists, and specialists in co-managing patients, participating in decisions regarding referral for evaluation and treatment by other allopathic and complementary/alternative medicine practitioners.

■ Safety and effectiveness of naturopathic medicine

Naturopathic practice is distinguished by treatments individualized to a patient's physical condition and environmental circumstances, requiring combination therapies adjusted over time as guided by patient response. Documenting the safety and efficacy of naturopathic interventions presents significant challenges—eg, the limitations of the reductionistic approach of allopathic research models when applied to complex interventions and inadequacy of available funding sources. Research on the clinical and quality of life outcomes, particularly evaluation of the actual, complex whole practice as opposed to single agent or specific modalities, is relatively scant.⁵

Responding to this challenge, in 2002 the NIH funded more than 1200 scientists and physicians from both conventional and naturopathic academic and professional communities in a 2-year effort to design the Naturopathic Medical Research Agenda (NMRA). Guided by the NMRA process, the research departments of naturopathic academic centers are systematically developing the collaborative infrastructure required to examine the theory and practice of naturopathic medicine.⁶ The recently inaugurated *International Journal of Naturopathic Medicine* (available at www.intjnm.org) provides access to naturopathic-specific, peer-reviewed research.

Documentation of safety is as relevant as documentation of efficacy. As the potential for harm does exist within the naturopathic scope of practice,⁷ licensure in the US requires that adverse medical events be

Naturopathic training

Naturopathic physicians graduate from 1 of 6 naturopathic medical schools accredited by the Council on Naturopathic Medical Education (CNME) (**TABLE 1**, available at www.jfponline.com). The CNME is a member of the Association of Specialized and Professional Accreditors recognized by the US Department of Education. Each school in the United States is also accredited by, or has candidacy status through, the specific regional agencies responsible for overseeing postsecondary institutions of higher learning.

Requirements for admission. The goal of naturopathic medical education is to prepare clinicians for the challenges of general practice, with a foundation in current medical science as well as traditional naturopathic theory. Candidates for admission to naturopathic medical school must earn a baccalaureate degree (or equivalent) prior to matriculation, including standard premedical undergraduate courses.

Naturopathic curricula. Subjects include inorganic and organic chemistry, physics, general biology and psychology. Other coursework is comparable to that of allopathic and osteopathic medical schools (**TABLE 2**, available at www.jfponline.com). While the first 2 years of education combine courses in naturopathic principles with basic and diagnostic sciences, third and fourth year students focus on clinical practice, receiving training at naturopathic primary care outpatient clinics as well as conventional medical facilities (**TABLE 3**, available at www.jfponline.com). Academic faculty at such institutions include NDs, PhDs, MDs, DOs, and other allied health professionals.

For information on postgraduate residencies, research, and collaborative opportunities for NDs, please see **APPENDIX I** at www.jfponline.com. For additional information on naturopathic licensure, please see **APPENDIX II** at www.jfponline.com.

reported to the federally mandated National Practitioner Databank.⁸ The disciplinary records of naturopathic licensing boards provide scrutiny of practices regulated in those jurisdictions as well as documentation of specific offenses: over a 10-year period (1992–2002), 173 complaints were filed with state licensing boards from a total of 1805 licensees. During this period, 31 disciplinary actions were initiated, ranging from probation to fines or censure.⁹

Safety and efficacy are also of concern

APPLIED EVIDENCE

More about naturopathy

To access more in-depth information, including how to identify licensed NDs in a particular geographic area, contact the American Association of Naturopathic Physicians at www.naturopathic.org.

For information on naturopathic medical education, particularly the advanced standing programs available to degreed professionals, contact the American Association of Naturopathic Medical Colleges at www.aanmc.org.

An additional resource for degreed medical professionals interested in naturopathic professional practice is the website for the North American Board of Naturopathic Examiners at www.nabne.org.

to third-party payers. More than 70 companies, trade unions, and state organizations offer health plans that cover naturopathic medical services,¹⁰⁻¹¹ requiring utilization reviews incorporating documented patient outcomes. As NDs are increasingly covered as specialists and primary care providers under reimbursement plans of corporations such as Microsoft and Boeing, the credentialing processes required by their insurers (such as Blue Cross and Blue Shield, Kaiser Permanente, Connecticare, Oxford, and Healthnet) result in formal analyses of safety and efficacy of practice. Malpractice insurance industry data also verify incidents of harm that may occur related to naturopathic practice.

The advent of integrated care has resulted in staff privileges granted to NDs at approximately 20 conventional hospitals and numerous integrated clinics. As a result, efficacy of peer review is strengthened as payers elect naturopathic medical directors to peer advisory committees charged with formulating reimbursement and case management policies.¹² ■

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FAST TRACK

Increasingly, NDs are covered as specialists and primary care providers under corporate reimbursement plans

TABLE 1**Accredited naturopathic medical schools
in US and Canada****Bastyr University**

14500 Juanita Drive NE, Kenmore, WA 98028-4966

Boucher Institute of Naturopathic Medicine*

200-668 Carnarvon St. , New Westminster, BC V3M 5Y6

Canadian College of Naturopathic Medicine

1255 Sheppard Avenue East, North York Ontario, Canada M2K 1E2

National College of Naturopathic Medicine

049 SW Porter Street, Portland, OR 97201

Southwest College of Naturopathic Medicine and Health Sciences

2140 E Broadway Road, Tempe, AZ 85282

University of Bridgeport College of Naturopathic Medicine*

60 Lafayette Street, Bridgeport, CT 06601

Source: Council on Naturopathic Medical Education,
US Department of Education (www.crme.us).

*Indicates colleges that are candidates for accreditation.)

TABLE 2**Comparison of average number of hours of basic sciences**

	NATUROPATHIC	ALLOPATHIC	OSTEOPATHIC
Anatomy (gross/dissection)	350	380	362
Physiology	250	125	126
Biochemistry	125	109	103
Pharmacology	100	114	108
Pathology	125	166	152
Microbiology/immunology	175	185	125
Total hours	1125	1079	976

Source: Jensen CB. Common paths in medical education: The training of allopaths, osteopaths and naturopaths. *Altern Complement Ther* 1997; 3:276–280

TABLE 3

Naturopathic medical school curriculum overview

Basic and diagnostic sciences Anatomy, neuroanatomy, neurosciences, physiology, histology, pathology, biochemistry, genetics, microbiology, immunology, lab diagnosis, clinical diagnosis, physical diagnosis, medical research, epidemiology, public health, medical ethics, and others

Clinical sciences Family medicine, ENT, cardiology, pulmonary medicine, gastroenterology, rheumatology, neurology, dermatology, urology, infectious disease, pediatrics, geriatrics, obstetrics, gynecology, pharmacology, pharmacognosy, minor surgery, ophthalmology, psychiatry, and others

Naturopathic therapeutics Clinical nutrition, botanical medicine, homeopathy, naturopathic manipulative therapy, hydrotherapy, counseling, naturopathic philosophy, naturopathic case analysis/management, advanced naturopathic therapeutics, acupuncture and traditional chinese medicine, ayurvedic medicine

Source: Jensen CB. Common paths in medical education: The training of allopaths, osteopaths and naturopaths. *Altern Complement Ther* 1997; 3:276–280.

Post-graduate residencies, research, and collaborative opportunities

Development of postgraduate medical education has been given priority status by the profession's academic, accrediting, and membership institutions.¹ Approximately 10% of graduate naturopathic physicians find placement in accredited residency programs, most of which are sponsored by the medical colleges. Certification of naturopathic residency programs is established through the Council on Naturopathic Medical Education. Current challenges to the development of larger numbers of residencies for NDs include standardization of curriculum and identification of appropriate training sites and mentors, as well as issues regarding scope of practice and reimbursement.²

The naturopathic research community is engaged in collaborative investigations with conventional medical schools and patient-care centers, specifically in the areas of chronic disease and environmental medicine. Academic research facilities at the accredited naturopathic medical schools in the United States have assurances of compliance filed with the US Department of Health and Human Services, permitting federally funded human subjects research. These centers currently host studies in epidemiology, bench research, and clinical outcomes funded through both private foundations and federal and state health agencies, including the National Institute for Health (NIH), the National Cancer Institute, and the Office of Dietary Supplements.

ND research faculty submit to the rigorous review, scoring, and recommendation processes familiar to investigators at other medical institutions in the US. Naturopathic faculty also serve as mentors and advisors to graduate and postdoctoral ND students, allopathic medical residents, and post-doctorates pursuing CAM research agendas. Bastyr University and National College of Naturopathic Medicine are currently collaborating on National Institutes for Health (NIH)/National Center for Complementary and Alternative Medicine (NCCAM) sponsored educational grants with the University of Washington School of Medicine and Oregon Health and Science University to develop,

implement, and evaluate curricula for medical students in complementary and alternative medicine.^{3,4}

Additional examples of collaboration with conventional academic universities and patient-care centers include alliances with the department of biochemistry at Emory University to investigate the clinical effects of antioxidant therapy, Arizona State University's Diabetes Collaborative to evaluate naturopathic diabetes care, University of Washington School of Pharmacy to examine the anti-HIV activity of botanical preparations, and Oregon Health Science University to assess naturopathic treatment for remitting forms of multiple sclerosis.⁵

In addition to providing clinical services, naturopathic physician researchers, academicians, and administrators are engaged in the development of governmental healthcare policies. NDs have participated in the establishment of the Office of Alternative Medicine (now the NCCAM), held seats on the NCCAM Advisory Council, and represented their profession on the White House Commission on Complementary and Alternative Medicine Policy (WHCCAMP). NDs presently serve on the Department of Health and Human Services Medicare Coverage Advisory Committee, the American Medical Association CPT Editorial Panel/HCPAC (Healthcare Professionals Advisory Committee), the Center for Medicare Services, the National Cancer Institute, and the Office of Dietary Supplements at the National Institutes of Health.⁶

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Licensure

State licensure, professional title recognition and protection, and specified legal scopes of practice are clearly defined for the profession. NDs who graduate from an accredited naturopathic medical school must pass the national and state board exams to apply for a license to practice naturopathic medicine.¹ The Naturopathic Physicians Licensing Examination (NPLEX) is the required national board exam for licensure in all jurisdictions. Independent professional assessment has confirmed the psychometric validity of the production, format, and management procedures of twenty basic science, clinical science and specialty exams, resulting in a standard for naturopathic credentialing within North America. The North American Board of Naturopathic Examiners (NABNE) credentials candidates and administers the NPLEX.²

There are 21 jurisdictions that license NDs in North America. In September 2003, California joined these ranks, followed in the same year by the District of Columbia and Idaho in 2005. Naturopathic physicians are now licensed in Alaska, Arizona, California, Connecticut, District of Columbia, Hawaii, Idaho, Kansas, Maine, Montana, New Hampshire, Oregon, Utah, Vermont, Washington, and the US Territories of Puerto Rico and the Virgin Islands.³ Regulated provinces in Canada include British Columbia, Manitoba, Saskatchewan, and Ontario, with Alberta currently in process.⁴ There are active licensure campaigns in 9 additional states and Canadian provinces as well.⁵

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