

Complementary and Integrative Medicine: Emerging Therapies for Diabetes, Part 1

Preface

Cynthia Payne, MS, RD, CDE, FADA

In this time of shifting paradigms in health care, it is no longer news that Americans are using complementary and alternative medicine (CAM). In an era in which one out of every three people has employed an herbal, massage, manipulative, or biological therapy and in which some insurance companies are reimbursing for guided imagery, mind-body groups, and acupuncture, complementary therapies have taken a place of greater prominence on the health care landscape.^{1,2} As health care professionals in the era of increasing consumer reliance on the Internet, it is often challenging to stay abreast of therapies our patients may explore or employ.

There is much in health and healing that we do not yet understand. As the National Institutes of Health (NIH) National Center on Complementary

and Alternative Medicine (NCCAM) Website notes, “The list of practices that are considered CAM changes continually as CAM practices and therapies that are proven safe and effective become accepted as ‘mainstream’ healthcare practices.”³

The NIH funds multiple centers for CAM research. Its Office of Dietary Supplements funds several centers for research on dietary supplements. (Table 1). In addition, NCCAM spent \$68.7 million last year on research into five major domains of CAM: biological therapies, manipulative and body-based therapies, alternate systems of healing, mind-body medicine, and energy medicine (Table 2).

Because of the wealth of emerging information about the various CAM therapies, we have spread this From Research to Practice section over two issues of *Diabetes Spectrum*. Our

Table 1. CAM Specialty Centers of Research

| Research Focus | Location of Center |
|--|---|
| Addictions | Minneapolis Medical Research Foundation |
| Aging and women’s health | Columbia University |
| Arthritis | University of Maryland School of Medicine |
| Botanicals (age-related disease) | Purdue University West Lafayette |
| Botanicals and dietary supplements for women | University of Illinois at Chicago |
| Dietary supplements/botanicals | University of California at Los Angeles |
| Botanicals (phytomedicine) | University of Arizona College of Pharmacy |
| Cancer | Johns Hopkins University |
| Cancer (hyperbaric oxygen) | University of Pennsylvania |
| Cardiovascular disease | University of Michigan |
| Natural medicine and prevention | Maharishi University of Management |
| Chiropractic | Palmer Center for Chiropractic Research, Iowa |
| Craniofacial disorders | Kaiser Foundation Hospitals, Oregon |
| Neurological disorders | Oregon Health Sciences University |
| Pediatrics | University of Arizona Health Sciences |

Table 2. Domains of Complementary and Alternative Medicine

Manipulative and body-based therapies

- Acupressure
- Alexander technique
- Chiropractic medicine
- Feldenkrais method
- Massage therapy
- Neuromuscular therapy
- Osteopathy
- Reflexology
- Roling

Biological therapies

- Antioxidizing agents
- Cell treatment
- Changes in lifestyle
- Chelation treatment
- Diet
- Megavitamins
- Metabolic therapy
- Nutritional supplements

Mind/body interventions

- Art therapy
- Biofeedback
- Dance therapy
- Humor
- Hypnotherapy
- Meditation
- Music therapy
- Prayer therapy
- Psychotherapy
- Relaxation
- Support groups
- Yoga

Alternate systems of medical practice

- Acupuncture
- Ayurveda
- Community-based practices
- Environmental medicine
- Homeopathy
- Native American medicine
- Naturopathic medicine
- Past life therapy
- Shamanism
- Tibetan medicine
- Traditional Oriental (Chinese) Medicine

Energy medicine

- Blue light treatment and artificial lighting
- Electroacupuncture
- Electrostimulation and neuro-magnetic stimulation
- Magnetic therapy
- Magnetoresonance spectroscopy devices
- Reiki, Therapeutic Touch

goals for Part 1, published on the following pages, are to familiarize readers with three of the five areas of CAM currently under study at NIH

and to increase awareness of the evidence supporting the use of these therapies in diabetes care. Our articles address vitamin/mineral therapies, energy therapies, and one of the alternate systems of healing: Chinese Medicine. Articles to be published in Part 2 (*Diabetes Spectrum* Vol. 19, No. 4, 2001), will review botanical/herbal therapies, mind-body therapies, and body-based or manipulative therapies.

The outstanding authors who contributed to this two-part research section have prepared summaries of each of the domains within the NCCAM classification. Wherever evidence of benefits and safety exists, our authors have also included clinical guidelines. These may aid practitioners in responding to their patients' questions or inappropriate uses of CAM practices.

In her update on vitamin and mineral dietary supplements and diabetes (p. 133), diabetes nutrition specialist Belinda O'Connell, MS, RD, LD, presents an excellent reference that we hope will be useful in clinical practice. Next, Diana W. Guthrie, PhD, FAAN, CDE, and Maureen Gamble, BSN, MA, CHTP/I, CCAP, RM, present concepts of and evidence for the therapeutic use of subtle energy (magnetic and touch) therapies (p. 149). Then, Maggie B. Covington, MD, of the complementary medicine program at the University of Maryland, shares information about Traditional Chinese medicine (TCM) and diabetes (p. 154) as one example of an alternative system of healing. She notes that TCM practitioners view the human body and its functioning from the perspective that no single body part or symptom can be understood apart from its relation to the whole.

Patient care in Western medicine has often focused on reduction and elimination of symptoms and less frequently on actual cures. "Healing" in the language or precepts of CAM may be directed at the early, subtle, and fundamental sources of distress that are responsive to self-regulation and self-care.⁴ In diabetes, we are fortunate that our current treatment paradigm incorporates concepts of patient responsibility for self, proficiency in self-care skills, and early intervention. The blending of our scientific treatment model and CAM's focus on healing can ameliorate symptoms and

address the underlying source of illness.

My own interest in CAM interventions, particularly biological therapy and mind-body practices, was sparked as a child when I witnessed profound improvement in the mental health of a close family member through the use of meditation, yoga, whole foods, and supplements. Since then, I have watched with great interest as science continues to elucidate the mechanisms of mind and body on physical and mental disease and disease prevention.

Personal interest and scientific curiosity led me to coordinate a research project at the Joslin Diabetes Center affiliate at the University of Maryland. We developed a 10-week intervention of instruction and practice in mind-body skills for patients with type 2 diabetes. Our as-yet-unpublished data showed improvement in heart rate, score reduction in the Problem Areas in Diabetes Survey (PAID), and significant improvement in the Beck Inventory, a measure of depression scores of participants.

I have also been fortunate to attend clinical training programs with three leading practitioners in the field of mind-body medicine: Herbert Benson, MD, at Harvard; Jon Kabat-Zin, PhD, at the University of Massachusetts; and James Gordon, MD, at Georgetown, who is also chair of the White House Commission on Complementary and Alternative Medicine Policy. (An interview with Dr. Gordon will be included in Part 2 of this research section.)

At a recent Harvard Mind-Body Medical Institute training session, I learned about the biology of the stress response. Our body and mind will spontaneously recover and return to relaxation after acute stress, but chronic stress requires intentional active relaxation in order to restore balance. If we do not restore our pre-stress functioning, we remain in a state of chronic stress stimulation, which includes elevated blood pressure and heart rate; muscle tension; relative hyperglycemia; glycogenolysis; and release of adrenal corticotropin releasing hormone, cortisol, and catecholamines for the "fight or flight" response.⁵ The Lifestyle Heart Trial conducted by Dean Ornish, MD, utilized mind-body practices and a re-setting of stress reactivity to aid in regression of coronary artery stenosis.⁶ For our already high-risk patients with diabetes, the stress-

related continuation of elevated blood glucose levels and cardiovascular risk factors are particularly perilous.

Often our patients/clients are already participating in complementary therapies when the health care team becomes aware of their use of supplements, body work, massage, or acupuncture. The American Diabetes Association's position statement on unproven therapies⁷ also offers the following recommendations relating to alternative therapies:

1. Encourage health care team members to ask patients about their use of alternative therapies or practices.
2. Evaluate each alternative therapy's effectiveness (including the number and quality of studies performed), the degree to which it has been independently validated, and its potential to harm patients.
3. Provide new and innovative, but unproven, diagnostic and therapeutic measures for patients generally only in two circumstances: *a*) as part of an investigational trial that conforms to the U.S. Department of Health and Human Services reg-

ulations for protection of human research subjects, and *b*) when a review board or clinical investigations committee approves such use under provisions of compassionate use.

This is an exciting time in medical and diabetes history. Although diabetes is reaching epidemic proportions and now accounts for the expenditure of one of every seven health care dollars in this country and 25% of the Medicare budget,⁸ new therapies, including CAM therapies, may provide effective, low-cost options to traditional treatment-oriented medical care. The current paucity of good research specific to the utility of CAM therapies in diabetes care means that there is rich opportunity to study and demonstrate the potential benefits of such therapies for our patients with diabetes. I invite you to critically examine these modalities and to consider the role you can play in the discovery of or research into CAM interventions that complement currently accepted clinical practice.

References

¹Eisenberg D, Davis R, Ettner S, Appel S, Kilkey S, Van Pompey M, Kessler R: Alternative medicine in the United States, 1990–1997. *JAMA* 280:1569–1576, 1998

²Gordon J: *Manifesto for a New Medicine*. New York, Addison-Wesley Publishing, 1996, p. 260–261

³<http://www.nccam.nih.gov>

⁴Dacher E: *Intentional Healing: A Guide to the Mind/Body Healing System*. New York, Marlowe & Company, 1996

⁵Selhub E: *The Biology of the Stress Response II*. Lecture presented at Harvard Medical School as part of a training session titled “Clinical Training in Mind/Body Medicine,” June 14, 2000

⁶Ornish D, Brown SE, Scherwitz LV, Billings JH, Armstrong WT, Pors TA, McLanahan SM, Kirkeelde RL, Brand RJ, Gould KL: Can lifestyle changes reverse coronary heart disease? The Lifestyle Heart Trial. *Lancet* 336:129–133, 1990

⁷American Diabetes Association: Unproven therapies (Position statement). *Diabetes Care* 24 (Suppl. 1):S119, 2001

⁸Songer TJ, Ettaro L, and the Economics of Diabetes Project Panel: *Studies on the Costs of Diabetes*. Atlanta, Ga., Centers for Disease Control and Prevention Division of Diabetes Translation, 1998