How to Avoid a Heart Attack: Putting It All Together

To the editor:
In his clinical review article published in the May 2009 supplement to JAOA—The Journal of the American Osteopathic Association,1 Thomas A. Haffey, DO, admirably knits together multiple threads of cardiovascular disease (CVD) management into a coherent treatment approach. In his list of practical evidence-based dietary tips, he recommends antioxidants but states that vitamins B<sub>6</sub>, B<sub>12</sub>, and E may increase heart attack risk without providing an evidence-based reference. He later concludes that, based on findings from the Physician’s Health Study II (PHS II), “vitamin E, vitamin C, and a multivitamin have no place in a comprehensive CVD prevention strategy.”

We disagree with these conclusions and the interpretation of the papers on which they are based. Physicians and researchers must consider the total weight of the evidence; one randomized controlled trial or meta-analysis does not make an unalterable conclusion. Biological plausibility and careful exploration of a given study’s bias are also important factors.

The PHS II<sup>2</sup> was a randomized, placebo-controlled trial in which participants (male physicians) were directed to take 400 IU of vitamin E (synthetic α-tocopherol) every other day, 500 mg of vitamin C every day, or both supplements. (Beta carotene and a multivitamin were also randomly assigned but were not reported on in the study.) The researchers concluded that the vitamins had no effect on cardiovascular events when compared with placebo.

It is implausible that the PHS II participants would reduce their vascular risk by taking a modest dose, every other day, of a form of vitamin E with inferior antioxidant capacity. Nature often thrives on redundancy. Vitamin E is actually a group of six to eight closely related compounds that work better together as a group than individually. Using synthetic α-tocopherol, the minimum daily dose needed has been shown to exceed 800 IU, far greater than the 400 IU ingested every other day by subjects in this study.<sup>3,4</sup> In addition, an increasing number of scientists are questioning the wisdom of administering α-tocopherol vitamin E by itself.<sup>5,6</sup> One reason is that α-tocopherol displaces critically important γ-tocopherol in the body.<sup>10</sup> The PHS II authors admitted that the failure to include γ-tocopherol may have been a reason that no effect was seen in the α-tocopherol groups.<sup>2</sup>

Vascular benefits from vitamin C have been reported using doses of 1000 mg to 6000 mg daily.<sup>11-16</sup> In the introduction of their study, the PHS II authors alluded to the benefits of high-dose vitamin C when they stated, “In a pooled analysis of 9 cohorts, vitamin C supplementation use exceeding 700 mg/d was significantly associated with a 25% reduction in coronary heart disease risk.” Considering that the researchers who designed the PHS II knew that vitamin C intake exceeding 700 mg per day significantly reduced heart attack rates,<sup>17</sup> why did they limit their subject’s daily dose to only 500 mg?

Various studies exist that dispute the PHS II findings. A widely reported
study emanating from the University of California, Los Angeles found that men who took 800 mg per day of vitamin C lived 6 years longer than those who consumed the recommended daily allowance of 60 mg per day. The study, which evaluated 11,348 men for 10 years, found that higher vitamin C intake reduced cardiovascular disease mortality by 42%.17

A 4-year study of 1214 people aged 75 to 84 years found that those with the lowest vitamin C plasma levels (<17 μmol/L) had the highest mortality, whereas those aging people with the highest plasma levels (>66 μmol/L) had a mortality risk nearly 50% lower.18

The Established Populations for Epidemiologic Studies of the Elderly followed 11,178 older adults aged 67 to 105 years from 1984 to 1993 and examined vitamin E and vitamin C supplement use in relation to mortality risk. They found that vitamin E reduced the risk of all-cause mortality by 34% and reduced the risk of coronary disease mortality by 47%. In addition, the simultaneous use of vitamins E and C was associated with a 42% lower risk of total mortality and a 53% lower risk of coronary mortality.19

Furthermore, in the PHS II, a clinically significant number of study participants who were supposed to take vitamin C, vitamin E, or both did not. Participants who were supposed to take vitamins E and C in the prevention of cardiovascular disease in men: the Physician's Health Study II randomized controlled trial [published online ahead of print November 9, 2008]. JAMA. 2008;300 (18):2123-2133. http://jama.ama-assn.org/cgi/content/full/300/18/2123. Accessed May 11, 2010.


Editor’s Note: A response letter from Thomas A. Haffey, DO, will appear in the June issue of the JAOA.

Changes in US Healthcare: Our Time Is Now, But For What?

To the Editor:

People buy into the leader before they buy into the vision. Therefore, we might say the leader determines the credibility of a vision, and the acceptance of the vision is determined by the timing of its presentation.

So seems to be the story of osteopathic medicine.

Rogers’ Theory of Individual Innovativeness can be used to explain cultural change.1 This theory describes the phases for acceptance of change (ie, dissemination) following the introduction of a new or innovative idea. The pace of change (ie, dissemination of innovation) in healthcare can be quite slow.2 Balas and Boren3 have suggested that an average of 17 years are required to witness change that results in research evidence reaching clinical practice.

Consider that the “innovators” of the current healthcare reform movement were part of President Bill Clinton’s first term in office, in 1993. In light of the three references cited in the previous paragraph,1-3 it should come as no surprise that healthcare reform has finally gained the momentum needed for actual change to begin—regardless of whether one considers that change to be good or bad. Following the innovators of healthcare reform, the early adopters of reform, the early majority for reform, and finally the late majority for reform have created the critical mass necessary to drive change.

If it is true that 17 years are required, on average, for a new standard of care (representing a cultural shift) to develop in healthcare,3 why was osteopathic medicine not the primary form of medical practice in the United States by 1891—given that Andrew Taylor Still, MD, DO, “flung to the breeze the banner of Osteopathy” in 1874?4 Perhaps part of the answer to that question is that the timing was wrong and the establishment did not buy into the leader. A.T. Still was not a prominent physician in the United States when he first presented his ideas of osteopathic medicine. However, even medical innovators who were prominent did not always see ready acceptance of their ideas. For example, the Mayo brothers and the founders of the Virginia Mason Medical Center in Seattle, Washington, initially found opposition to their recommendations on ways to improve the practice of medicine—though their ideas were eventually fully accepted by the medical establishment. In order to overcome the establishment and its political prowess, Dr Still needed a critical mass of acceptance for osteopathic medicine to reach its “tipping point.” He also needed an environment that was fertile for growing what he was trying to plant.

Regarding the suggestion that an average of 17 years are required for research evidence to reach clinical practice, representing a cultural shift,3 the key word is average. Some healthcare technology is rapidly adopted in the clinical setting, but other healthcare con-

cepts die out before a shift ever occurs. Why the difference?

One reason is related to the degree of concern driving the change. For example, if physicians are greatly concerned about the spread of an infectious disease, a new effective method of prevention is likely to be adopted quickly. By contrast, osteopathic medicine—embodying a change of philosophy involving the practice of medicine that is built around a difficult-to-prove manual therapy—has been of far less concern to practicing physicians and the public. Thankfully, Dr Still’s endeavor did not die out, despite the fact that we have needed a little longer than might be expected to gain the interest of the majority.

A few years ago, I was intrigued by a conversation I had with the president of Kettering College of Medical Arts in Ohio—an individual who is also a theologian and philosopher. “I have been learning about your osteopathic medicine,” he said. “Your philosophy has much in common with our Adventist beliefs” (C. Scriven, PhD, oral communication, November 2007). We discussed possible reasons for this similarity based on social changes occurring in the United States during the mid-1800s, which was a time of spiritual reawakening. He eventually shared the following profound thought with me (C. Scriven, PhD, oral communication, November 2007):

I believe your organization [the AOA] has the potential to be a change agent in healthcare. You are not large enough to be the leaders of healthcare, but you have the critical mass and the right message to effect change through those who are.

What powerful words!

If Dr Still had been allowed to present his innovative message to colleagues at Baker University in Baldwin, Kansas, when first seeking support for his new form of medical

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practice, we might not have ever witnessed the growth of our own independent system of osteopathic medical education. How different things might have been if Dr. Still’s principles had simply been integrated into the medical education curriculum of the period.

Instead, Baker University administrators rejected Dr. Still’s request, leading him to start the long path of creating change in the U.S. healthcare system. He did not live to see his model of reform happen, and this model is only now gaining widespread acceptance. Today, concern about improvement in the U.S. healthcare system, both from physicians and the public, is driving change that is aligned with osteopathic medical philosophy. Two obvious examples of this change are the emphasis being placed on primary care and the focus on addressing the whole person when providing healthcare.

While attending the 19th and 20th Annual Osteopathic Medical Education Leadership Conferences in January 2009 and January 2010, respectively, I realized the magnitude of the alignment between osteopathic medicine and healthcare reform. The vision of Dr. Still and the osteopathic medical profession has been kept alive by the thousands of DOs who have lived and died since the opening of the American School of Osteopathy at Kirksville College of Osteopathic Medicine in Missouri in 1892. The leaders of the osteopathic medical profession today are individuals in whom the medical establishment can believe. They are the keepers of a legacy that was started more than a century ago and whose time has finally come. These modern leaders—and many who have come before them—are proof that the osteopathic medical profession is worthy of recognition and influence within the establishment.

As previously alluded to, the allopathic medical profession is adopting ideas that the osteopathic medical profession has advocated since its founding, such as patient-centered care, a holistic approach to care, and even manual medicine. In many cases, the adoption of these ideas has come about as a result of graduates of osteopathic medical schools serving in allopathic residency training programs and influencing their allopathic colleagues. The adoption of osteopathic ideas has also come from the increasing prominence of osteopathic physicians in leadership positions in some of the most prestigious medical centers in the United States. Furthermore, acceptance of osteopathic concepts has been encouraged by DOs sitting at the healthcare table in government and the private sector, and by DOs teaching their allopathic colleagues in the hallways of hospitals and in the conference rooms of specialty society meetings.

It is doubtful that anyone outside of our profession will ever step up to a podium and thank Dr. Still for what he gave the world. I doubt if anyone in the allopathic medical profession will ever look at osteopathic medicine and say, “your way was right all along.” Nor should we expect them to do so. We will continue to live in the large shadow of allopathic medicine. However, we can take a deep breath and, with a feeling of satisfaction, realize that we have indeed become change agents.

Our profession has itself changed since the challenges presented by the medical establishment of the 1960s. As often happens when different cultures mix, osteopathic and allopathic physicians have learned something from each other. When such mixing is recognized and nourished, both groups have the potential to become better. We must, however, always be cautious not to lose sight of the principles and tenets that make us unique.

In the coming years, we must use our position as change agents to finish what A.T. Still began. We can use our osteopathic identity for the good of the American people. Our osteopathic message has come of age, but we must be prepared to consistently deliver it through the care of our patients and to share it with all who will listen. We do not have to be apologetic about our profession, nor do we have to wonder if the grass is greener on the other side of the fence—such as by trying to get the DO degree changed or seeking allopathic training to validate our professionalism.

We must take steps to ensure the credibility of the osteopathic medical profession, beginning with understanding and communicating who and what we are as an organization and as physicians. We must intentionally emphasize our osteopathic paradigm—that is, the way we view healthcare—throughout training and throughout practice. Our paradigm must be clear, simple to express, and—most importantly—easily understood by the public, the government, the insurance industry, and other entities. The tenets of osteopathic medicine may be a good starting point for developing a way to effectively express our paradigm. The modern tenets of osteopathic medicine are as follows:

- A person is the product of dynamic interaction between body, mind, and spirit.
- An inherent property of this dynamic interaction is the capacity of the individual for the maintenance of health and recovery from disease.
- Many forces, both intrinsic and extrinsic to the person, can challenge this inherent capacity and contribute to the onset of illness.
- The musculoskeletal system significantly influences the individual’s ability to restore this inherent capacity and therefore to resist disease processes.

Perhaps these tenets can be cast in a form that provides us with an easy method of reminding ourselves of the osteopathic paradigm, as well as a method of teaching this paradigm to
Osteopathic physicians are educated from the beginning of osteopathic medical school to develop and maintain a holistic, patient-centered philosophy of care. Science alone does not define human health. Health is a complex and dynamic state derived from an interaction of the body, mind, and spirit.

Osteopathic physicians focus on relationships of structure and function. The human body is a mechanical structure—from our cellular level to our gross anatomic structure—that, if altered, impacts the body’s optimal function. Think of what happens to the tires on your car when the vehicle is out of alignment. Optimizing structure and function increases the likelihood of maintaining or achieving a state of good health.

Osteopathic physicians also emphasize the psychosocial needs of the patient. The impact of this particular aspect of human existence cannot be ignored. A chronically ill patient without family or with unrecognized or unmanaged depression will have a different outcome than a patient with strong social support and no evidence of mental distress.

Osteopathic physicians are trained to use their hands to diagnose and correct changes in body structure that may impact optimal function. Osteopathic manipulative treatment (OMT) is intended to maintain and/or restore a patient’s state of health. The use of our hands for this purpose is analogous to the diagnostic techniques used with a car that is operating out of alignment and the adjustments made to the vehicle to correct the problem.

Our services recognize the primary care core within every osteopathic physician. Although many DOs choose to become primary care physicians, even osteopathic physicians in other specialties are expected to be able to identify and, if necessary, care for the general needs of their patients.

We must reintegrate OMT into training and research to support its regular use in practice. However, osteopathic medicine must not be pigeonholed in a manner that requires us to believe it can be accomplished only through mechanical means. Although our classic approach of returning structure and function to normal conditions through OMT should remain at the core of our teaching, we must undertake innovative research to better understand the physiologic effects of OMT and to determine if other effective therapies can be developed. Such research is not blasphemy, nor is it ignoring the need to return to our roots. Instead, it is a way for us to evolve as a profession.

If members of the osteopathic medical profession live the osteopathic paradigm, we will continue to maintain our distinct identity. We will also be agents of change who share a great gift with those who deserve it most—our patients. Our influence can change the way that medical education is structured and the way that medicine is practiced in the United States.

For those concerned about recent trends among osteopathic medical school graduates of decreasing board certifications in family practice and increasing board certifications in other specialties, the decision to train for a specialty becomes less of a problem if we operate from the osteopathic paradigm. That is because the way a DO practices under the osteopathic paradigm should be “hard wired” in his or her heart, mind, and hands—no matter what specialty he or she chooses.

I believe that Dr Still would be proud of the modern osteopathic medical profession if we set an expectation—for all of us—to rededicate ourselves to the osteopathic paradigm. His vision could be finally realized, not by DO title or DO numbers, but by something far more valuable—a meaningful and hopefully permanent cultural change in US healthcare.
In closing, I ask the following question: Does our profession have the wherewithal to come out of our many silos and unite to take on another great challenge? If so, then we should act now, together from a position of strength, to define the new face of healthcare in the United States. We should make a firm commitment to practice from our osteopathic paradigm and to share what we do best with all who want to learn.

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References

The Anachronistic Fight for Osteopathic Distinctiveness

To the Editor:
For many years, I have read article after article about the desire for and the wisdom of changing the DO degree to an MD degree, or some variation thereof. It has been an ongoing controversy since long before I was in medical school in the 1970s. Even a cursory search in the archives of JAOA—The Journal of the American Osteopathic Association! reveals that this debate continues to rage.

I have practiced medicine for more than 25 years, and I was trained in both osteopathic and allopathic postgraduate programs. I have also practiced in both osteopathic and allopathic clinical settings. Following are some observations I have made during the course of my training and practice:

■ Any differences in knowledge, training, or approach regarding patient care between osteopathic physicians and allopathic physicians are marginal at best and would be largely invisible to an objective observer.

■ Although the DO degree designation is essentially irrelevant to MDs and patients who have experience interacting with osteopathic physicians, there remains a profound lack of recognition of DO qualifications and professional identity (eg, “Are you an eye doctor?”) among those with little or no experience with DOs.

■ Unlike allopathic medical training, the training that DOs receive in other countries, including the United Kingdom, is dramatically different than training received in the United States. Most countries do not recognize a DO as a fully competent, fully qualified physician and, therefore, authorities in those countries will not grant full licensure or recognition to DOs. As a result, international opportunities for DOs are limited.

■ Even some allopathic specialty organizations continue to refuse to recognize osteopathic specialties—perhaps to protect their own “turf.”

Andrew Taylor Still, MD, DO, founded the osteopathic medical profession after the American Civil War, at a time when conventional medicine was largely ineffective and the application of the scientific method to medicine was relatively recent. After losing his family to such ineffective therapy, Dr Still began searching for a better way of treating people. His search led him to the use of manipulation as an alternative to the powders, ointments, and rudimentary surgical procedures of the day.

We need to ask ourselves the following question: If Dr Still had been able to observe the amazing progress of medicine during the 20th and 21st centuries, would he have felt to need to found a new medical profession?

Dr Still founded the first osteopathic medical school in 1892, and he decided to award the DO degree rather than the MD degree in order to separate the graduates of his school from the practitioners of medicine that he considered to be ineffective and occasionally harmful. Since then, osteopathic physicians have been fighting for recognition by both the public and their allopathic colleagues. After 118 years, “conventional” allopathic medicine has matured into a serious scientific discipline, while osteopathic medicine has become largely indistinguishable from its conventional counterpart. Both osteopathic and allopathic physicians are taught to consider the “whole patient,” not just the disease. Nevertheless, the osteopathic medical profession still finds itself fighting for recognition.

Perhaps it is time to recognize that the reasons for the founding of the osteopathic medical profession no longer exist—and the need to continue the “fight” is anachronistic at best. Moreover, the government is unlikely to continue providing education funds for two separate but indistinguishable schools of medicine in the United States—the country simply cannot afford it anymore.

Let’s accelerate the process of professional unification by either changing the DO degree to an MD degree, or by awarding both a DO and an MD degree at graduation. With such an action, we would remove any remaining lack of recognition of osteopathic physicians while continuing to emphasize the small but residual uniqueness of our profession.

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References


Corrections

The JAOA and the authors regret an error that appeared in the following article:


In the last paragraph on page 165, the quoted American Osteopathic Association basic standard should have been identified as Standard D 1.5, not Standard D 1.4.

This change will be made to the full text (http://www.jaoa.org/cgi/content/full/110/3/160) and PDF (http://www.jaoa.org/cgi/reprint/110/3/160) versions of this contribution online.

In addition, the JAOA regrets the errors that appeared in the following appendix:


On page 197, the dean’s name for William Carey University-College of Osteopathic Medicine should have appeared as Michael K. Murphy, DO, instead of Michael K. Murphey, DO.

Also on page 197, West Virginia School of Osteopathic Medicine was incorrectly labeled as having provisional accreditation status. Instead, it should have been labeled as a public college of osteopathic medicine.

These changes will be made to the full text (http://www.jaoa.org/cgi/content/full/110/3/195) and PDF (http://www.jaoa.org/cgi/reprint/110/3/195) versions of the appendix online.