

Will there be a tipping point in medical nutrition education?<sup>1-4</sup>

Robert F Kushner

## ABSTRACT

The title of this presentation is derived from a national bestseller that defines the moment when an idea, trend, or social behavior crosses a threshold, “tips,” and becomes widely disseminated. Three key tipping-point factors are discussed in the context of medical nutrition education. The Law of Few has to do with the essentiality of role models in directing educational curricula and clinical programs. The Stickiness Factor describes the quality and the content of the message that enable the information to have prolonged meaning. The Power of Context refers to the conditions and risk factors that are directly affected by diet and nutrition. Examples of these key factors are provided with a look to the future of medical nutrition education. *Am J Clin Nutr* 2003;77:288–91.

**KEY WORDS** Medical nutrition education, award lecture, Dannon Institute

I would like to thank the American Society for Clinical Nutrition (ASCN) and the Dannon Institute for this honor. I am grateful to be recognized among the list of accomplished and outstanding nutrition educators, from many of whom I have learned directly and with many of whom I have enjoyed a friendship (**Table 1**). Their previously published presentations on receiving this award summarized their own achievements in and perspectives on medical nutrition education (1–9). It is wonderful to be recognized for something that one is passionate about and would be driven to do, even without formal recognition. This room is filled with such leaders, some who have already been recognized and many others who will be recognized over the coming years. The ASCN sponsors numerous awards and programs that significantly enhance the careers of those involved in nutrition education, nutrition research, or both.

I would like to take this opportunity also to thank another organization, the American Medical Association, for an award I received in 1979, one that fundamentally changed my professional and personal life. When I was a fourth-year medical student at the University of Illinois, my wife came across a short article in the American Medical Student Association newsletter encouraging students to apply for a Joseph Goldberger Scholarship supporting an elective rotation in clinical nutrition to third- and fourth-year medical students (10). I had no particular interest in nutrition at the time, having grown up on Chicago deep-dish pizza and hot dogs. However, the offer of a stipend and the opportunity to do an elective in the San Francisco Bay Area were too much to resist. I applied to what was the forerunner of the current ASCN–American Medical Student Association National Clinical Nutrition Internship and was chosen to “get an exposure” to clinical nutrition. Those 6 wk with Robert Hodges as my first mentor set the course

for what would be a career path in nutritional practice, clinical nutrition research, and nutrition education. The foundation for my career was further strengthened during my 15 y at the University of Chicago. Here, 3 persons stand out for their influence and guiding mentorship: Irv Rosenberg, Michael Sitrin, and Dale Schoeller. I wish to thank you as well for your role in guiding me toward my achievements.

The title of my presentation is “Will there be a tipping point in medical nutrition education?” This question comes from a national bestseller by Malcolm Gladwell, called *The Tipping Point: How Little Things Can Make a Big Difference* (11). According to Gladwell, the tipping point is that magic moment when an idea, trend, or social behavior crosses a threshold, “tips,” and spreads like wildfire. Broad examples from medicine are the discovery of the polio vaccine, the identification of insulin as a treatment for type 1 diabetes, the 1964 Surgeon General’s Report on the health effects of cigarette smoking, the McGovern Committee and the 1979 Surgeon General’s Report on Health Promotion and Disease Prevention, and, possibly, the future changes stemming from the Human Genome Project. The focus of Gladwell’s book is the question, “What can we do to deliberately start and control positive epidemics?” My focus here is the question, “What can we, as nutrition educators, do to tip the balance of nutrition education so that it is introduced and enthusiastically embraced in medical schools, residencies, and continuing-education conferences?”

According to Gladwell, epidemics are a function of the people who transmit infectious agents, the infectious agent itself, and the environment in which the infectious agent is operating. When an epidemic tips, it does so because something has happened or some change has occurred in one or more of those areas. He goes on to describe 3 key factors that characterize tipping points (**Table 2**).

The first is the Law of Few, in which a tiny percentage of people do most of the work. Sound familiar? There are 3 types of people involved in this factor: 1) mavens (a Yiddish word for one who accumulates knowledge or a connoisseur)—we more commonly call these types of persons champions or role models; 2) connectors—persons who occupy several worlds, disciplines, or fields of study; and 3) salesmen—teachers and information brokers whose responsibility is to spread the message.

<sup>1</sup> From the Feinberg School of Medicine, Northwestern University, Chicago.

<sup>2</sup> Presented at the American Society for Clinical Nutrition 42nd Annual Meeting, April 21, 2002, New Orleans.

<sup>3</sup> Presentation of the Dannon Institute Award for Excellence in Medical/Dental Nutrition Education supported by The Dannon Institute.

<sup>4</sup> Address reprint requests to RF Kushner, Feinberg School of Medicine, Northwestern University, 150 East Huron, Suite 1100, Chicago, IL 60611. E-mail: rkushner@nmh.org.

**TABLE 1**

Previous winners, Dannon Institute Award for Excellence in Medical/Dental Nutrition Education

Year	Awardee
1991	Elaine Feldman
1992	Eleanor Young
1993	Fredrick Stare
1994	Maurice Shils
1995	Roland Weinsier
1996	Stanley Gershoff
1997	Charles Halsted
1998	Virginia Stallings
1999	Douglas Heimbürger
2000	Kathlyn Kolasa
2001	Steven Zeisel

The second factor is called the Stickiness Factor. This derives from the quality and content of the message itself. In epidemics, the message matters: messages are what makes something spread. Gladwell suggests finding a way to package the message—the information—so that, under the right circumstances, it will be irresistibly retained. This can be accomplished by simply tinkering with the presentation of the information or the ideas.

The third and final factor is the Power of Context. Epidemics are sensitive to the conditions and circumstances of the times and places in which they occur. The environment must be receptive to the message. A key point is that you do not have to solve the big problems: a tipping point can be reached by first creating small movements, which will be followed by a larger wave of further changes. I will return to these 3 key tipping points a little later.

Is there a compelling rationale for tipping the medical curriculum toward nutrition education? Are there mavens who can lead the charge and salesmen to spread the message? Is there a perceived need on the part of our students to learn more about nutrition, and is there a necessity to train students with a certain degree of competency in the delivery of nutritional care? The answer to all of these questions is an unequivocal *yes*.

The most recent results of the 2001 medical school graduation questionnaire have recently become available from the Association of American Medical Colleges (12). These responses repre-

**TABLE 2**

The “tipping-point” key factors

#### The Law of Few

- Mavens—champions and role models
- Connectors—persons who occupy several worlds, subcultures, and niches
- Salesmen—teachers and information brokers who spread the message

#### The Stickiness Factor

- “Stickiness” derives from the quality and content of the message
- The key strategy is to find a simple way to package the information so that, under the right circumstances, it will be irresistible
- Tinkering with the presentation of information can significantly improve its “stickiness”

#### The Power of Context

- Epidemics are sensitive to the condition and circumstances of the times and places in which they occur
- You do not have to solve the big problems
- To create one contagious movement, you often have to create many small movements first

**TABLE 3**

Five key strategies for integrating nutrition into the medical curriculum<sup>1</sup>

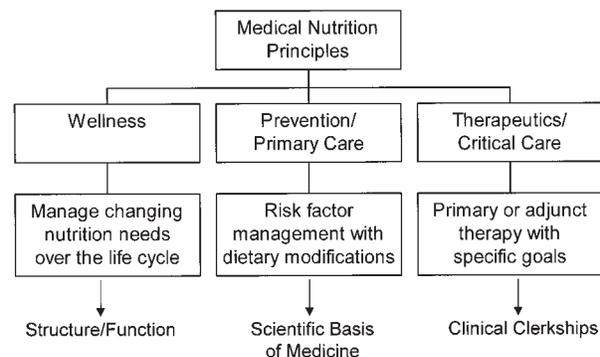
- Know your own curriculum
- Identify faculty with an interest and expertise in nutrition
- Develop a proposal integrating nutrition into the medical curriculum
- Watch for a window of opportunity
- Make nutrition cross-sectional and longitudinal

<sup>1</sup>From reference 13.

sent the opinions of over 14 000 medical school graduates from around the country. Overall, 56% felt their nutrition-related experiences were inadequate, 51% felt that their clerkship preceptors did not serve as appropriate role models for the practice of nutrition assessment and intervention with patients, 50% felt that they were not prepared to assess patients with regard to obesity and undernutrition, and 34% and 28%, respectively, were not adequately taught to nutritionally assess and treat patients with type 2 diabetes or those at risk of coronary heart disease. Finally, 66% felt that their clinical decision making and clinical care regarding nutrition were inadequate.

How to introduce nutrition education into the curriculum is an interesting and important question. When I started in this field, I believed that we had to implement a stand-alone nutrition course. After all, if students did not take a required course in nutrition, all of the nutrition principles that I deemed important would be lost among the clutter. My colleagues and I did just that at the University of Chicago in the late 1980s, when we introduced the first nutrition course in the curriculum. That experience taught me an important lesson—stand-alone courses will fail if nutrition is not integrated throughout the entire curriculum. Without that step, nutrition will be seen merely as a peripheral, isolated subject with very little practical relevance. In 1990, on behalf of the Committee on Medical/Dental School and Residency Nutrition Education of the ASCN, we published a user’s guide on implementing nutrition in the medical curriculum—a document that has been used and quoted quite frequently in the literature (13). The 5 key implementation steps are shown in **Table 3**.

The road map for integrating nutrition education into our curriculum at the Feinberg School of Medicine of Northwestern University is shown in **Figure 1**. The principles of wellness, prevention, and therapeutics and critical care are taught within existing



**FIGURE 1.** Road map of the integration of nutrition education into the medical curriculum at the Feinberg School of Medicine of Northwestern University.

courses that span all 4 y of medical school. However, this integration cannot stop there; it must expand into graduate and continuing education as well as into community and public health initiatives if possible. The salesmen for nutrition must be the interns, residents, fellows, and other faculty who are responsible for the day-to-day teaching.

In sum, can we be successful and start a positive nutritional education epidemic, as Gladwell suggests? The Law of Few certainly applies. In 1995 the Committee on Clinical Practice Issues in Health and Disease of the ASCN delineated the role and identity of the physician nutrition specialist (14). A physician nutrition specialist award is also funded yearly by this society to support physicians specializing in nutrition in US medical schools. These are our future mavens. Douglas Heimbürger, the 1999 recipient of this Dannon Institute Award, has advanced the physician nutrition specialist career track with the founding of the Intersociety Professional Nutrition Education Consortium and the American Board of Physician Nutrition Specialists (15). There are 2 other initiatives augmenting the Law of Few that I am currently involved in and that I want also to comment on: the Nutrition Academic Award and the Centers for Obesity Research and Education.

The Nutrition Academic Award was developed by the National Heart, Lung, and Blood Institute to develop or enhance undergraduate and graduate medical education curricula and training opportunities in the areas of nutrition principles and clinical practice skills (16). There are 21 schools participating in the award, many of which are represented here today. The designed curriculum varies among schools and encompasses integrative strategies including problem-based, case-based, Web-based, and thematic learning. Several collaborative projects are being conducted, one of which is the Nutrition Curriculum Guide for Training Physicians. Twenty-five sections or topics have been identified, ranging from community and population health to disease-focused nutritional support. Each section includes a framework for knowledge, attitudes, and clinical practice skills that should be covered within undergraduate, graduate, and postgraduate physician training programs (17). Work in progress includes methods for incorporating this information and promulgating it to non-Nutrition Academic Award schools.

The second initiative is the Centers for Obesity Research and Education, which was developed in 1999 in response to the obesity epidemic and the need to disseminate relevant scientifically based information to physicians. The mission of these centers is to facilitate the education of health care professionals in obesity management (18). Each of the 8 Centers for Obesity Research and Education sites provides 2- to 4-h, case-based, small-group workshops emphasizing the skills and strategies needed for obesity care. Over the past 3 y, nearly 5000 physicians, nurse practitioners, and physician assistants have attended these workshops. This year, the Centers for Obesity Research and Education is instituting an evaluation instrument to assess short- and long-term behavior change.

The Law of Few says that there are exceptional people out there who are capable of starting epidemics. The lesson of “stickiness” is to make what you want to promote relevant and practical. Recent studies and reports have an enormously high stickiness factor. The dramatic results of the Diabetes Prevention Program (19), the promotion of the DASH (Dietary Approaches to Stop Hypertension) diet for hypertension (20), the prescription of therapeutic lifestyle changes (21), and the

heightened awareness of the metabolic syndrome (22) are examples of simple and appealing packaging of nutrition information. In addition, the inclusion in one of the most commonly used physical diagnosis textbooks for medical students of a chapter on assessing nutritional status (23) is perhaps one of the most significant stickiness factors. If students learn to perform a nutritional assessment as part of routine histories and physicals, we, as mavens, can build upon and strengthen that fundamental skill.

The last key factor is the Power of Context. I have already mentioned the obesity and diabetes epidemics that are capturing the attention of government agencies and the public. The same is true for the other diet-related, preventable causes of morbidity and mortality. The full ramifications of the Human Genome Project are not known yet but do offer exciting opportunities to highlight the possible interactions of diet and genes. I also mention complementary and alternative medicine, known as CAM. Before there were medicines, surgery, and radiation, all the physician had to use for healing was himself and perhaps diet. CAM literature trumpets that special relationship between the physician and the patient. Philosophically, CAM has embraced the very reasons and qualities that led us to become physicians in the first place as well as the ideas that are consistent with the role of diet and nutrition. We need to keep in mind that nutrition education must encompass the whole patient—not just amino acids, vitamins, calories, and protein.

I am reminded here of another popular book with some very simple lessons. Spencer Johnson’s number 1 bestseller, *Who Moved My Cheese?* (24), is a simple parable about change and the risk of staying idle. To be creative and dynamic regarding nutrition education, we need to be on the lookout for new sources of “cheese.” CAM can be one of our cheeses. CAM funding has risen sharply since the designation of the National Center for Complementary and Alternative Medicine in 1998. CAM practices are currently grouped into 5 major domains (25). Diet and nutrition have a prominent role under the heading of biologically based therapies as special diets. The final report of the White House Commission on Complementary and Alternative Medicine Policy recommended education as a fundamental health care service, stating “Education about prevention, healthy lifestyles, and the power of self-healing should be made an integral part of the curricula of all health care professionals and should be made available to the public of all ages” (26). In addition, a glossary of new terms describing this area of nutrition, including phytochemicals, functional foods, nutraceuticals, botanicals, and medicinal foods, is being invented. We have an opportunity to provide the nutritional science to either support or refute recommendations and to shape the directions to come. CAM gives us not only context but also stickiness. Thus, it is my recommendation that nutrition educators take a slice of the CAM “cheese” for ourselves.

Will there be a tipping point in medical nutrition education? I believe the answer is yes. However, it will not come in one magical moment but rather after multiple small movements like the ones I described and the ones that each of you are conducting in your own institutions. You are the few, the mavens, who will “tip” medical nutrition education. 

## REFERENCES

1. Feldman EB. Educating physicians in nutrition—a view of the past, the present, and the future. *Am J Clin Nutr* 1991;54:618–22.



2. Young EA. Perspectives on nutrition in medical education. *Am J Clin Nutr* 1992;56:745-51.
3. Stare FJ. Some early beginnings and what now? *Am J Clin Nutr* 1993;58:443-7.
4. Shils ME. Nutrition education in medical schools—the prospect before us. *Am J Clin Nutr* 1994;60:631-8.
5. Weinsier RL. Medical-nutrition education—factors important for developing a successful program. *Am J Clin Nutr* 1995;62:837-40.
6. Gershoff SN. Nutrition education—success or failure? *Am J Clin Nutr* 1996;64:809-12.
7. Halsted CH. Clinical nutrition—relevance and role models. *Am J Clin Nutr* 1998;67:192-6.
8. Heimburger DC. Physician-nutrition-specialist track: if we build it, will they come? *Am J Clin Nutr* 2000;71:1048-53.
9. Kolasa KM. “Images” of nutrition in medical education and primary care. *Am J Clin Nutr* 2001;73:1006-9.
10. Anonymous. AMA offers nutrition clerkships. *JAMA* 1980;243:103.
11. Gladwell M. The tipping point. How little things can make a big difference. Boston: Little, Brown, 2000.
12. Association of American Medical Colleges. 2001 Medical school graduation questionnaire. Internet: <http://www.aamc.org/data/gq/allschoolsreports/start.htm>. (accessed 27 June 2002).
13. Kushner RF, Thorp FK, Edwards J, Weinsier RL, Brooks CM. Implementing nutrition into the medical curriculum: a user’s guide. *Am J Clin Nutr* 1990;52:401-3.
14. Committee on Clinical Practice Issues in Health and Disease. The role and identity of physician nutrition specialists in medical school-affiliated hospitals. *Am J Clin Nutr* 1995;61:264-8.
15. Intersociety Professional Nutrition Education Consortium (IPNEC). Internet: <http://ipnec.org> (accessed 24 June 2002).
16. Pearson TA, Stone EJ, Grundy SM, McBride PE, Van Horn L, Tobin BW. Translation of nutritional sciences into medical education: the Nutrition Academic Award. *Am J Clin Nutr* 2001;74:164-70.
17. Tobin B, Smith M, Kushner R, Hark L, Eaton C. Nutrition curriculum guide for training physicians. *FASEB J* 2001;15:A1095 (abstr).
18. CORE Centers. Centers for Obesity Research and Education launch national obesity education program. *Obes Res* 1999;7:101S (abstr).
19. Diabetes Prevention Program Research Group. Reduction in the incidence of type 2 diabetes with lifestyle intervention or metformin. *N Engl J Med* 2002;346:393-403.
20. Karanja NM, Obarzanek E, Lin PH, et al. Descriptive characteristics of the dietary patterns used in the dietary approaches to stop hypertension trial. DASH Collaborative Research Group. *J Am Diet Assoc* 1999;99:S19-27.
21. National Institutes of Health. Third report of the National Cholesterol Education Program Expert Panel on Detection, Evaluation, and Treatment of High Blood Cholesterol in Adults (Adult Treatment Panel III). Bethesda, MD: National Institutes of Health, 2001. (NIH publication number 01-3670.)
22. Ford ES, Giles WH, Dietz WH. Prevalence of the metabolic syndrome among US adults. Findings from the third National Health and Nutrition Examination Survey. *JAMA* 2002;287:356-9.
23. Kushner RF, Swartz MH. Assessment of nutrition status. In: Swartz MH, ed. *Textbook of physical diagnosis*. Philadelphia: WB Saunders, 2002:79-100.
24. Johnson S. *Who moved my cheese?* New York: Putnam, 1998.
25. National Center for Complementary and Alternative Medicine. Internet: <http://www.nccam.nih.gov/health/whatisncam> (accessed 27 June 2002).
26. White House Commission on Complementary and Alternative Medicine Policy. Final Report. Executive summary. Internet: <http://whccamp.hhs.gov/finalreport.html> (accessed 24 June 2002).

