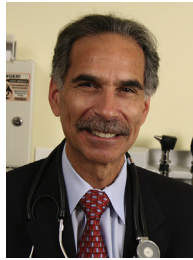
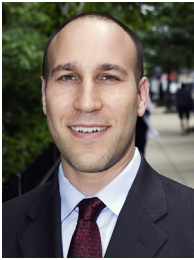


## Preface

# Nutrition in Clinical Medicine: A Core Competency for Healthcare Providers



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*Editors*

Health is influenced by five general determinants: genetics, social circumstances, environmental exposures, medical care, and behavioral patterns. The single greatest opportunity to improve health and function, reduce disability and premature deaths, and increase quality of life is by improving health behaviors, which account for nearly 50% of all deaths in the United States.<sup>1</sup> Health behaviors play a central role in the risk for, development of, and treatment and management of the most common causes of disease, disability, and death in the modern world. In one landmark study, those with the poorest of four key health behaviors (tobacco use, alcohol use, fruit and vegetable intake, and physical activity) had more than four times higher risk of death over a decade, compared with those exhibiting the most healthful of these behaviors; this resulted in a chronological difference of 14 years in life expectancy!<sup>2</sup> Incredibly, fewer than 1% of 20,244 adults included in the study regularly achieved all four of these behaviors; 70% achieved none or just one.

While behavioral patterns drive much of the development and propagation of chronic diseases, poor nutrition is a particularly integral driver of morbidity and mortality in the United States and throughout the world. The most common scourges of modern society are nutrition-related, including cardiovascular disease, diabetes, renal disease, liver disease, and many cancers.<sup>3</sup> Poor diet may be the primary “cause of the cause,” underlying much of what ails us, and on par with tobacco smoking as the most common actual causes of death in the United States and beyond.<sup>4</sup> As an example, increasing dietary intake of trans fats by just 2%—about a teaspoon a day—doubles the risk for coronary artery disease.<sup>5</sup>

The nineteenth century has been called the “Century of Hygiene,” due to vast improvements in understanding of microbes and prevention of infectious disease, leading to an “epidemiologic transition,” in which mortality related to acute and infectious

diseases began to wane and chronic disease burden began to increase. The twentieth century has been called the “Century of Medicine,” due to the vast improvements in clinical care and medical treatment options, which led to substantial declines in premature mortality associated with chronic diseases, such as cardiovascular disease. However, the “nutrition transition”—rapid shifts in diet as societies develop toward increased processed foods, refined grains, outside-of-home intake, greater use of edible oils and added sugars—has led to an epidemic increase in chronic and nutrition-related health conditions. We are now in the midst of a “Century of Behavior Change,” in which diseases related to preventable behaviors represent the largest healthcare burden.<sup>6</sup> But where there is crisis, there is also opportunity. Preventable, nutrition-related health conditions are just that: preventable.

Relatively moderate interventions—at both broad community and societal levels, as well as individual levels—can reap large rewards. Primary prevention interventions, such as iodination of salt and folate fortification of cereal grain products, which combined have prevented countless cases of mental retardation and neural tube defects, respectively, have also prevented numerous deaths.<sup>7,8</sup> Bans on trans fats have similar potential for public health benefit.<sup>9</sup> Clinical nutrition interventions can be similarly impressive, albeit on a different scale. The Diabetes Prevention Program (DPP) showed a moderate diet and lifestyle intervention led to 58% decreased development of diabetes, compared with placebo, and community adaptation of DPP provided in YMCA and similar group settings has been nearly as effective.<sup>10,11</sup> The PREDIMED study showed a Mediterranean diet intervention lowered cardiovascular events by 30%, compared with a basic control diet.<sup>12</sup>

Continued progress on primary prevention and policy to improve nutrition environments is important, but it will also be essential to equip clinicians with the knowledge and know-how to counsel and support patients to improve diet and lifestyle behaviors. In preparing this article, we referred back to the first issue of *Medical Clinics of North America* that focused on nutrition—published in 1993—which stated on the opening page: “...teaching of Clinical Nutrition is still lacking from many medical school curricula and, when studied, it is often in a fragmented form....” Unfortunately, we haven’t made much progress in the intervening quarter century. Nutrition is covered inadequately or unevenly at all levels of medical training, including undergraduate, postgraduate, fellowship, licensing, board certification, and continuing education.<sup>13–15</sup> Few medical schools reach the 30 hours of nutrition education recommended by the National Academy of Sciences.<sup>16</sup> Worse, nutrition education appears to be on the decline: The percentage of medical schools offering a dedicated nutrition course declined from 35% in 2000 to 25% in 2008, and the average hours devoted to nutrition in US medical schools declined from 22.3 hours in 2004 to 19.6 hours in 2008–2009.<sup>17</sup> Less than one in four physicians feel they received adequate training in nutrition and lifestyle counseling.<sup>18</sup> Less than one in eight medical visits include counseling for nutrition.<sup>19</sup> Just 4% of medical visits are related to obesity, despite the nearly 40% obesity prevalence in the United States.<sup>20</sup>

Nutrition and health behavior change must become a core competency for anyone working with patients with chronic diseases in clinical medicine, which is virtually everyone. In deciding which articles to include in the issue, we purposely sought to identify topics that represent a wide spectrum of conditions or states in which diet and nutrition have a vital role. Similarly, we chose authors that are experts in their respective fields. As few of us have had the opportunity to engage in formal nutrition education during medical training, we hope this issue of *Medical Clinics of North America* focused on practice-based nutrition will be a valuable resource for clinicians.

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