



# Medical Education: Nutrition Curriculum Reformation and Lifestyle Medicine- Today's Need

Jadon Neuendorf<sup>1</sup>, Hina Mohsin<sup>2</sup>, Sable Neuendorf<sup>1</sup> and Mohsin Yakub<sup>2\*</sup>

<sup>1</sup>First year student in the MD program, California University of Science and Medicine, USA

<sup>2</sup>Faculty California University of Science and Medicine, USA

\*Corresponding author: Mohsin Yakub, Assistant Dean of Admissions, Associate Professor of Medical Education: Physiology and Nutrition, California University of Science and Medicine, 217 E, Club Center Drive, Suite A, San Bernardino, CA 92408, USA.

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## Introduction

As social and scientific authorities on health and wellbeing, physicians are expected to practice evidence-based medicine. Despite this respect and responsibility, physicians are consistently facing challenges in addressing the extensive body of evidence that proves the power of lifestyle modifications on disease prevention and treatment. Some of these challenges stem from the lack of education and training during medical school [1]. The health care education system is under scrutiny for creating a void which fosters the public's acceptance of years of suffering with chronic disease as an unavoidable fate. 6 in 10 adults in the US have a chronic disease, most of which are attributable to preventable, lifestyle related health issues, such as smoking, diabetes, decreased physical activity, obesity, alcohol consumption, hypertension, poor diet, high lipid levels and psychosocial factors [2-4]. The behemoths of chronic illness, namely heart disease, cancer, and diabetes, can be prevented, battled, and reversed through daily decisions-decisions of what to pack in your lunchbox or whether to step onto that dreaded treadmill. The argument is supported by the American Heart Association reports in the context of hypertension (a critical risk factor for cardiovascular disease) [5], that some of the lowest blood pressures observed have been documented in individuals that eliminated meat from their diet [6]. As cancer remains one of the most enigmatic bodies of disease, the American Cancer Society recommends complete nutrition and physical activity in the prevention of cancer [7,8]. Diabetes, yet another illness on the list of top ten killers in the US, is a double whammy as it is, in itself, a leading cause of death, and a cause of other chronic illnesses [9]. The American Diabetes Association states that remission of type 2 diabetes can be achieved either through costly and dangerous bariatric surgeries, or simply through lifestyle efforts [10].

Beyond the grips that lifestyle can have on direct mortality, is the fact that quality of life can be greatly affected. While it may not be impending death that is the concern, how about the quality daily living? To be able to live feeling healthy and happy? To be free of the lists of symptoms and mountains of medications that clutter and complicate so many lives? Lifestyle changes towards a whole-food plant-based diet have shown remarkable efficacy in helping to avoid and reduce polypharmacy by helping patients come off of statins,  $\beta$  blockers, and even insulin as their conditions improve with lifestyle changes [11-13]. These changes, such as a plant-based diet and increased exercise regimen, have also been shown to improve the state of mental well-being, including an association with improved moods and lower risk of depression [14,15]. This information, however, is not new news. Lifestyle modifications have an irrefutable impact on the burden of chronic disease and in shaping quality of life, and the scientific evidence is abundant and readily available.

## Medical Education - Nutrition Curriculum

What does this mean for physicians and the role of medical education? At the crossroads of an individual's responsibility in their well-being and the role of public health is the patient-physician relationship. Physicians practice under oath to provide their patients with the best solutions towards improving their health. If most of these patient-physician interactions happen with individuals who deal with diseases largely attributable to lifestyle choices, this poses the question, are physicians adequately prepared to offer their patients the best solutions [16]? A physician visit is seen as a definitive action to address health concerns, and if there is ample scientific evidence showing lifestyle changes are a powerful tool, then why is this not a common prescription? According to

a nutrition trend survey distributed by the American Diabetes Association, physicians are viewed as “very credible” sources of nutrition information [17]. Unfortunately, this notion is largely unsupported and may be the reason why lifestyle modifications are not forefront in the solutions that physicians offer. A study assessing the status of nutrition education in medical schools found that “Most US medical schools (86/121, 71%) fail to provide the recommended minimum 25 hours of nutrition education; 43 (36%) provide less than half that much” [18]. With the extent of information covered in medical school, nutrition boils down to about 25 hours of the hundreds of hours of lecture material covered during the 4-year degree. As stated boldly by California University of Science and Medicine faculty “If the goal of medical education is to form physicians who possess the attributes necessary to meet their responsibilities to society, the precarious position of teaching nutrition in US schools raises a major concern that the goals of these schools fall short and that many future doctors will not be appropriately prepared to deal with the components of modern medical practice” [1].

As current medical students at the California University of Science and Medicine, our experience has been one in the minority of schools who meet the standard for nutrition education hours recommended by the National Academy of Sciences. The school of medicine incorporates nutrition lectures longitudinally and integrated vertically throughout their organ systems approach to the medical curriculum. The spaced presentation of nutritional considerations as we explore pathologies of different organ systems, compounded with the school’s clinical presentation-based curriculum, allows for us to draw connections in how nutrition can be clinically applied, and how our future patients can be counseled to make lifestyle changes. Unfortunately, most of our peers are un-enthusiastic about learning and applying nutrition principles in future practice. This lack of interest among medical students in the power of nutrition and lifestyle changes to fight disease is multifactorial. The limitations that come from lack of interest from the student body are compounded by the limitations that exist in establishing and integrating a nutrition curriculum in medical schools. There are budgets to be considered, faculty to be recruited, mentors to be sought out, and most importantly, a knowledge base to be sifted through. It can be partially attributed to the “low yield” status of nutrition content on the United States Medical Licensing Examination Step 1. The few references to nutrition and lifestyle that are tested on the exam (at the institutional and national level) are related to nutritional deficiencies and associated biochemical knowledge-not in the context of treating chronic disease or disease prevention [19-20].

Additionally, nutrition and lifestyle have not previously been incorporated as major components of practice in existing medical specialties. Preventive Medicine is listed by the American Association of Medical Colleges, on their “Careers in Medicine”

resource for medical students, as the only career option among all the listed specialty pathways for those who may be interested in the application of lifestyle modifications to improve health. This creates significant resistance to investing time in nutrition education if the knowledge cannot be used in daily practice (or rather, is not traditionally used) to benefit future patients in the specialty students choose to pursue.

Nutrition education on the public and professional level is very convoluted. It receives constant muddling from the food industry, fad diets, big pharma, and even mis-directed educational authorities. A source and discipline of knowledge is needed to provide health professionals, and consequently the public, with a clear standard on recommendations for optimal health.

### Medical Education – Lifestyle Medicine

This standard of knowledge has been established in the new discipline of Lifestyle Medicine. The American College of Lifestyle Medicine (ACLM) is an organization founded with the intent to educate and board certify medical professionals in the discipline of lifestyle medicine. Lifestyle medicine as defined by ACLM is “the use of a whole food, plant-predominant dietary lifestyle, regular physical activity, restorative sleep, stress management, avoidance of risky substances and positive social connection as a primary therapeutic modality for treatment and reversal of chronic disease” [21]. The organization provides a comprehensive curriculum available for use by medical schools and has established residency programs throughout the US for physicians to implement lifestyle modifications with their patients in a clinical setting. This residency curriculum is also available to complete independently to allow physicians to integrate this knowledge into their individual medical specialties. As an organization, ACLM provides the necessary curriculum and opportunity for health professionals to obtain a baseline of knowledge and standard of care to be used as a first treatment approach in medical practice.

### Final Considerations

As chronic disease rates continue to skyrocket and healthcare disparity grows, reformation of medical education and medical practice is long overdue. We must start from the roots, in educating and equipping the health professionals of tomorrow with the powerful tool that is lifestyle medicine.

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