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Culinary Medicine as an Interprofessional Model for Evidence-Based Nutrition in Chronic Disease Prevention and Management

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Abstract

Since the mid-20th century, the United States' food environment has shifted progressively toward highly processed products. Consequently, the burden of chronic diseases related to diet has risen sharply across the country. At the same time, physicians continue to receive insufficient nutrition training. A novel approach developed to address this gap is "culinary medicine," delivered through programs led collaboratively by physicians, chefs, and registered dietitian nutritionists. Culinary medicine is an evidence-based, interdisciplinary medical field that integrates culinary skills, nutritional science, and medical training to prevent and manage diet-related illnesses. It emphasizes experiential, hands-on learning through healthy food preparation and is most often conducted in teaching kitchens, either in person or via virtual platforms. It may be implemented either as a clinical intervention for patients or as an experiential educational tool for students, medical trainees, and healthcare professionals. Evidence suggests that culinary medicine programs are effective, economically viable, and positively received. Consequently, healthcare institutions and medical education systems are increasingly integrating culinary medicine, teaching kitchens, and interprofessional nutrition training into both clinical care and educational frameworks.

Keywords: Nutrition, Interprofessional, Innovation, Education

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Introduction

The burden of diet-related chronic diseases has increased substantially since the mid-20th century, both in the United States and globally. It now represents a major source of mortality and morbidity [1, 2]. Cardiovascular disease has remained the leading cause of death among Americans since 1921 [3]. Currently, 34.2 million adults in the United States are living with type 2 diabetes, [4] reflecting more than a 20-fold rise since the 1950s [5]. It is projected that one in two Americans will have obesity by 2030 [6], and cancers associated with obesity—thirteen in total—account for 40% of all cancer diagnoses annually in the United States [7].

Table 1. Resources for training and education.

Resource	Website
Teaching Kitchen Collaborative	https://teachingkitchens.org/

Health meets Food Culinary Medicine Curriculum	https://culinarymedicine.org/
American College of Lifestyle Medicine Culinary Medicine Curriculum	https://lifestylemedicine.org/project/culinary-medicine-curriculum/
CHEF Coaching Program	https://www.instituteoflifestylemedicine.org/?page_id=511
Certified Culinary Medicine Specialist Certification	https://culinarymedicine.org/certified-culinary-medicine-specialist-program/culinary-medicine/
Biennial Teaching Kitchen Research Conference	https://tkresearchconference.org/
Annual Culinary Medicine Conference	https://culinarymedicine.org/conference/
Annual Healthy Kitchens, Healthy Lives Conference	https://www.healthykitchens.org/
Culinary Nutrition Collaborative	https://www.culinarynutritioncollaborative.com/
Culinary Nutrition Certification	https://culinary-nutrition-studio.mykajabi.com/

A central driver of this chronic disease epidemic is the modern food environment. Ultra-processed foods high in salt, fats, and sugars are widely available, from supermarkets to hospital cafeterias, and account for approximately 73% of the food supply in the United States [8]. Although an estimated 12.8% of the population resides in low-income, low-access regions known as "food deserts," where grocery stores are scarce and access to affordable, nutritious food is limited, [9] ultra-processed foods remain widely accessible. In "food swamps," [10] fast food outlets and convenience stores dominate local food environments, and chronic disease prevalence is high and normalized [11].

Importantly, the distribution of food deserts and food swamps reflects broader structural inequities, including racial disparities [12] and other social determinants of health [13]. Grocery retailers and supermarkets are often unwilling to operate in underserved communities, frequently citing concerns related to crime rates and low economic returns [14]. In contrast, fast food corporations and producers of ultra-processed foods are heavily present in these same areas and often direct targeted marketing toward minoritized populations [15]. These systemic barriers to healthy dietary patterns contribute to widening health disparities and the persistence of inequities.

Physicians, despite being frequently consulted for nutritional guidance, are often inadequately trained in nutrition science and counseling [16, 17]. Some scholars have suggested that this lack of training among physicians constitutes a structural factor contributing to the growing prevalence of diet-related diseases in the United States [18]. Given that poor dietary quality is among the most significant risk factors for chronic illness and the leading contributor to mortality in the United States [1, 19], this situation is unacceptable.

Registered dietitian nutritionists (RDNs), in contrast, possess advanced expertise in nutrition science and dietary counseling. However, access to their services for patients remains restricted due to inadequate insurance reimbursement [20], low referral rates [21], and a persistent societal undervaluation of their professional expertise and competencies [22]. While recent policy initiatives have attempted to address these gaps by establishing legal frameworks intended to expand patient access to RDN services, these proposals have not yet been enacted [23].

Another professional group that remains underutilized in addressing poor dietary patterns and chronic disease is chefs. Many culinary practitioners strive to create recipes that are both nutritious and palatable. Others are tasked with providing health-promoting meals in institutional settings such as hospitals, long-term care facilities, and rehabilitation centers. Nevertheless, most chefs receive limited or no formal nutrition education during their training, leaving them insufficiently prepared to meet expectations for producing health-oriented meals. Recent initiatives have begun integrating nutrition education into culinary training programs, a development that chefs have positively received [24].

In efforts to improve population health, food is clearly part of the underlying problem. However, it also represents a powerful avenue for intervention. Ensuring equitable access to nutritious foods, normalizing evidence-based nutrition education for both patients and healthcare providers, and teaching individuals how to prepare healthy meals at home can collectively enhance dietary quality and reduce the burden of chronic disease **(Figure 1)**. Achieving this requires a comprehensive, multidimensional strategy that includes improved food accessibility, strengthened community engagement, expanded healthcare access, policy reform, private-sector collaboration, infrastructure development, and additional coordinated efforts. A key component within this broader strategy is interprofessional culinary medicine delivered by physician–chef–RDN teams in teaching kitchen environments, tailored to meet population-specific needs **(Table 1)**.

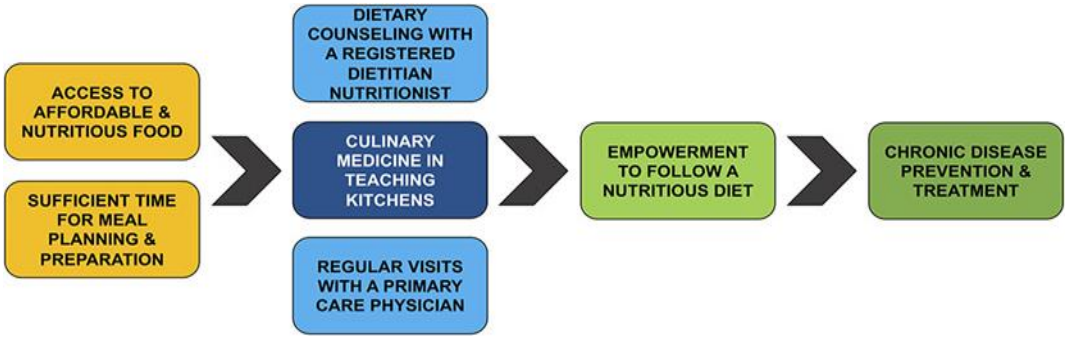

Figure 1. The role of culinary medicine within an integrated strategy for addressing diet-related disease.

Effective prevention and management of diet-related chronic diseases will require systemic transformation that addresses food insecurity and time scarcity, expands access to nutrition and culinary education, and strengthens the availability of interprofessional healthcare services. Within this interprofessional framework, culinary medicine functions as a critical mechanism that enables patients to translate healthy ingredients into sustained, health-promoting dietary patterns.

What is culinary medicine?

Culinary medicine is an evidence-based, interdisciplinary domain of healthcare that integrates culinary practice, nutritional science, and medical education to both prevent and manage diet-related conditions. It emphasizes experiential, hands-on instruction through the preparation of healthy meals and is most commonly delivered within teaching kitchens, either in physical settings or via virtual platforms. It may be implemented either as a clinical intervention for patients or as an experiential learning modality for students, medical trainees, and healthcare professionals.

Culinary medicine is inherently interprofessional in nature. It brings together the complementary expertise of physicians, chefs, and registered dietitian nutritionists (RDNs). Physicians often serve as the initial point of contact in healthcare delivery and specialize in diagnosing conditions, formulating treatment strategies, and coordinating multidisciplinary care teams. Chefs contribute specialized knowledge in recipe creation and culinary technique, which are fundamental for preparing nutritious and appealing meals. RDNs are formally trained, credentialed, and licensed experts in nutrition science, dietary evaluation, and nutritional counseling. The combined competencies of physicians, chefs, and RDNs within a collaborative team make them particularly well-positioned to support the prevention and treatment of chronic diseases through culinary medicine.

Culinary medicine is experiential and practice-based. Its educational programs incorporate a range of active learning strategies [25], such as case-based instruction, small-group collaboration, lectures, structured discussions, assigned readings, video-based learning, patient simulations, and—fundamentally—interactive, hands-on cooking experiences. Since their emergence approximately 2 decades ago [26], culinary medicine programs have primarily been conducted in teaching kitchens. These environments serve as essential learning laboratories that facilitate the development of kinesthetic and applied skills central to culinary medicine. However, over the past three years, particularly in response to the COVID-19 pandemic, virtual teaching kitchens have expanded significantly [27-29]. These remote, synchronous culinary medicine sessions have demonstrated comparable effectiveness to traditional in-person formats. This innovative virtual approach has further enhanced the scalability and accessibility of culinary medicine interventions.

Culinary medicine is grounded in empirical evidence, both for patient populations and for healthcare trainees. Among patients, culinary medicine programs have been associated with improvements in glycemic control in diabetes [27, 30], blood pressure regulation [30], serum lipid profiles [30], body mass index (BMI) [31, 32], adherence to a Mediterranean dietary pattern [33], intake of fruits and vegetables [32, 33], self-esteem [34], self-efficacy [35], social engagement [36, 37], psychological well-being [38, 39], and overall quality of life [37, 40]. Among medical trainees, participation in culinary medicine interventions has been linked to enhanced interprofessional teamwork, increased confidence and competence in delivering nutritional counseling, improved cooking and nutrition knowledge, greater self-efficacy, stronger motivation toward healthy eating, and healthier personal lifestyle behaviors [25, 41, 42].

Culinary medicine is also engaging and enjoyable. Educators find it rewarding to teach, and participants find it enjoyable to experience. These programs have consistently been highly well-received [42]. Beyond acquiring knowledge, developing practical skills, and improving attitudes and behaviors, participants also build enduring friendships, peer support systems, and community connections. In the context of increased isolation, loneliness, and mental health challenges following the COVID-19 pandemic, these social benefits are both highly appealing and deeply significant.

The beneficiaries of culinary medicine

Culinary medicine was first designed with patients as its primary focus [26]. Although food insecurity remains a major issue for many individuals, a significant proportion of food-secure people still face challenges in maintaining healthy dietary habits.

Simply having access to nutritious foods is not sufficient on its own; translating healthy purchasing into healthy eating depends heavily on the ability to cook and prepare meals effectively **(Figure 1)**. When individuals lack basic nutrition literacy or practical cooking skills, sustaining a healthy diet over time becomes difficult. Culinary medicine addresses this gap by providing patients with actionable nutrition education and practical cooking skills, enabling them to prepare meals that are affordable, accessible, simple, nutritious, and enjoyable, thereby supporting long-term behavioral change for chronic disease prevention and management.

In more recent years, culinary medicine has also emerged as an innovation in medical education curricula. The Goldring Center for Culinary Medicine, recognized as the first teaching kitchen embedded within a medical school, was established in 2012 [43]. Currently, the Health meets Food culinary medicine program has been incorporated into more than 55 medical schools, residency training programs, and nursing education institutions [44].

Culinary medicine training represents a modern, integrated approach to preparing healthcare professionals to respond to diet-related chronic illness. At the outset, trainees are taught core nutritional science, including how dietary patterns influence major chronic conditions such as cardiovascular disease, type 2 diabetes, obesity, and cancer. They then immediately reinforce this theoretical knowledge through practical application by preparing meals specifically designed for disease prevention and management. Because of this integration of theory and practice, culinary medicine has been described as the "missing laboratory portion of the historically didactic nutrition curriculum present in most medical schools" [45].

Furthermore, culinary medicine introduces learners to evolving models of healthcare delivery, including shared medical appointments (SMAs) and team-based interprofessional care [46]. In culinary medicine settings, SMAs are increasingly used as platforms to promote dietary behavior change through experiential learning and practical skill development [46, 47]. These approaches strengthen collaboration among healthcare disciplines and help form supportive networks that encourage sustained lifestyle modification.

Beyond physicians in training, culinary medicine holds value for a broad spectrum of healthcare workers, including physician assistants/associates, nurse practitioners, physical therapists, nurses, clinical pharmacists, social workers, exercise physiologists, and others. Patients frequently interact with multiple healthcare providers, many of whom spend more time in direct patient contact than physicians themselves. As a result, these professionals are often expected to address nutrition-related concerns or provide dietary guidance despite limited formal nutrition training. Enhancing their knowledge and skills through culinary medicine education could help ensure consistent, evidence-based nutritional guidance is delivered across the entire healthcare team.

Implementation challenges

A major obstacle to scaling culinary medicine programs is structural and logistical: the requirement for a dedicated teaching kitchen. Nevertheless, multiple adaptable models now exist that enable hands-on culinary instruction in various settings. Fully equipped commercial kitchens in culinary schools, food service operations, and similar facilities can replicate a professional culinary environment. Some forward-thinking culinary medicine initiatives have also used food science laboratories on undergraduate university campuses [48, 49]. In response, many universities are actively developing teaching kitchen facilities, while experts increasingly advocate for similar spaces to be established in hospital cafeterias, corporate environments, and community hubs [50]. Mobile "pop-up" kitchen setups—consisting of compact kits with basic cooking tools and supplies—can also be deployed in classrooms or meeting spaces. Where physical kitchens are unavailable, culinary medicine can be delivered through virtual teaching kitchens, allowing participants to cook simultaneously from their own homes via online platforms. This adaptability enables institutions to tailor teaching kitchen models to learner needs while also accommodating financial and infrastructural limitations.

Securing sustainable funding represents an almost universal challenge for implementation. A recent scoping review highlighted substantial variation in how culinary medicine programs are financed and identified inconsistent funding as a key threat to long-term program viability [42]. At present, most programs rely on philanthropic contributions, institutional support, or external grant funding. Integrating culinary medicine education with clinical service delivery presents a promising pathway forward. Group-based care models such as shared medical appointments (SMAs) have demonstrated potential for financial sustainability [51, 52]. In addition, billable individual clinical services provided by dietitians or culinary medicine teams can generate revenue streams. Emerging models have also introduced reimbursable culinary medicine eConsult services [53]. Ensuring long-term viability will require health systems, medical schools, and public health institutions to collaboratively develop innovative financing structures that align clinical care efficiency, research productivity, educational value, and community engagement.

Another limitation is the field's relative infancy and the resulting shortage of trained professionals capable of delivering culinary medicine education and practice. There is currently no formal residency or fellowship pathway dedicated to culinary medicine, and only a limited number of programs offer structured clinical rotations or internships in this area. The Certified Culinary Medicine Specialist credential was introduced only within the last decade [54]. Physicians generally receive

insufficient training in nutrition, and even less in culinary skills, while most chefs lack formal education in medicine or clinical nutrition.

Similarly, training for registered dietitian nutritionists (RDNs) is primarily centered on scientific coursework and medical nutrition therapy rather than culinary practice. Although dietetics historically included training in food preparation, many academic programs gradually reduced or eliminated hands-on culinary education as the profession moved away from its historical association with home economics [55]. In response to this gap, a small but expanding group of culinary dietitian nutritionists has emerged, positioned to play a leading role in advancing culinary medicine initiatives [56, 57].

When physicians, chefs, and RDNs work collaboratively, their distinct yet complementary expertise integrates to enhance the effectiveness of evidence-based culinary medicine programs. As these initiatives mature and become more sustainable, program leaders are encouraged to emphasize "train-the-trainer" strategies to prepare the next generation of professionals to teach and practice culinary medicine more broadly.

The dollars and sense of culinary medicine

In the short term, culinary medicine programs can be financially viable within existing fee-for-service healthcare structures. A commonly used strategy to achieve this is integrating teaching kitchens into shared medical appointments (SMAs). One published model [46] described the successful incorporation of culinary medicine into SMA sessions held in a teaching kitchen. In this approach, standard US evaluation and management billing codes were applied for patients with common diet-related conditions during each weekly visit. The program reached break-even when it served 12 patients per week for 8 weeks, totaling 96 patient encounters. Importantly, beyond feasibility and cost neutrality, SMAs that include culinary medicine education are reported to be highly acceptable to patients [47]. In addition, teaching kitchens align well with community health initiatives, offering opportunities to expand programs within nonprofit missions and in partnership with community-based organizations engaged in related work.

Teaching kitchens also offer significant potential to advance research productivity. By targeting urgent public health challenges and participating in community-engaged participatory research—especially in collaboration with schools of public health—these environments provide institutions with an additional mechanism to secure meaningful and impactful research funding.

From a long-term perspective, culinary medicine initiatives position healthcare systems for the transition toward value-based care models. As reimbursement frameworks continue to shift, strategies that enhance population health outcomes while reducing healthcare expenditures will become increasingly incentivized and central to healthcare delivery. Within this context, culinary medicine may serve as a key component, coordinating multidisciplinary care across patients, healthcare professionals, and community resources to address high-cost chronic conditions [58]. Furthermore, such programs may be integrated into workplace wellness initiatives, potentially decreasing healthcare spending while improving workforce productivity.

Healthcare organizations may also feel increasing pressure to adopt culinary medicine programs to attract and retain patients. As individuals become aware of and have access to culinary medicine opportunities in teaching kitchens, they are more likely to seek these services actively. Since patient choice increasingly influences healthcare spending, individuals will likely drive demand for culinary medicine offerings within hospitals and clinical settings.

Beyond the bucks

At a time when 63% of healthcare professionals experience burnout [59] and 56% of Americans believe the US healthcare system performs poorly [60], culinary medicine may offer a constructive response. By facilitating shared medical appointments (SMAs) and culinary medicine-based care, healthcare teams can reintroduce engagement, authenticity, and purpose into clinical practice. This, in turn, can enhance job satisfaction among faculty and staff, improving not only the quality of patient care but also retention and productivity among healthcare workers. Clinicians benefit from systems that recognize and support their meaningful contributions. In contrast, patients benefit from collaborative, holistic care that addresses the underlying causes of disease in both compassionate and practical ways.

Culinary medicine also strengthens the relationship between healthcare systems and the communities they serve. Teaching kitchens create a platform for shared leadership with community members and the development of sustained, trust-based relationships. The act of sharing food—"breaking bread"—is a universal expression of hospitality and respect recognized across cultures and historical periods. Through this shared trust, patients and community members can become more actively engaged in healthcare systems and participate as co-creators of public health-oriented, patient-centered care.

In addition, culinary medicine contributes to mental health promotion by fostering social connection, supporting group-based therapeutic experiences, and increasing social interaction following the widespread isolation experienced during the early 2020s due to the COVID-19 pandemic. These programs are also inherently enjoyable.

Because culinary medicine experiences are both engaging and effective, they are increasingly used as recruitment tools. They appeal not only to patients but also to clinicians, students, and researchers. The teaching kitchen, conceptualized as a "learning

laboratory" [50] where culinary practice, medical nutrition therapy, mindfulness, mental health, and behavioral science intersect, is widely regarded as dynamic and intellectually stimulating. Researchers will find abundant opportunities for innovation and further investigation. To attract and retain motivated faculty, learners, and clinicians, future medical schools and healthcare systems should consider investing in teaching kitchens as part of their educational and clinical infrastructure. Such programs enhance institutional prestige and reflect a progressive, patient-centered philosophy of care aligned with modern healthcare goals. As public and media interest in teaching kitchens continues to grow, healthcare systems are likely to recognize—if they have not already—that investing in culinary medicine programs is essential to remain competitive and relevant.

The future of culinary medicine

Culinary medicine embodies the type of innovative, forward-looking strategy that is likely to play a central role in the evolution of healthcare systems. It is inherently collaborative and interprofessional in design. Within this model, physicians, chefs, and registered dietitian nutritionists (RDNs) combine their respective expertise to enhance outcomes for both clinicians and patients. Physicians contribute by advocating for interdisciplinary collaboration, distributing aspects of patient care more equitably, and recognizing the value of RDN expertise. Medical trainees educated about the relationship between diet and disease are better equipped to participate in scholarly work and community-based participatory research, including quality-improvement initiatives that aim to improve patient outcomes. Physicians with exposure to culinary medicine are also better able to address nutrition misinformation in clinical settings and on digital platforms, manage diet-related chronic diseases more comprehensively, and drive innovation in healthcare delivery systems and community-based partnerships.

Teaching kitchens function as integrative spaces that bring together components of an otherwise fragmented system, acting as potential centers for education, research, clinical care, and community engagement **(Figure 2)**. These environments are well-positioned to build and strengthen community partnerships while elevating the perspectives of local leaders, thereby fostering trust and establishing meaningful, sustained relationships with the populations they serve. By collaborating with social workers, community health workers, food assistance programs, government initiatives, educational institutions, and nonprofit organizations, teaching kitchens can serve as central hubs for interventions to improve food access, reduce health inequities, and address broader social determinants of health

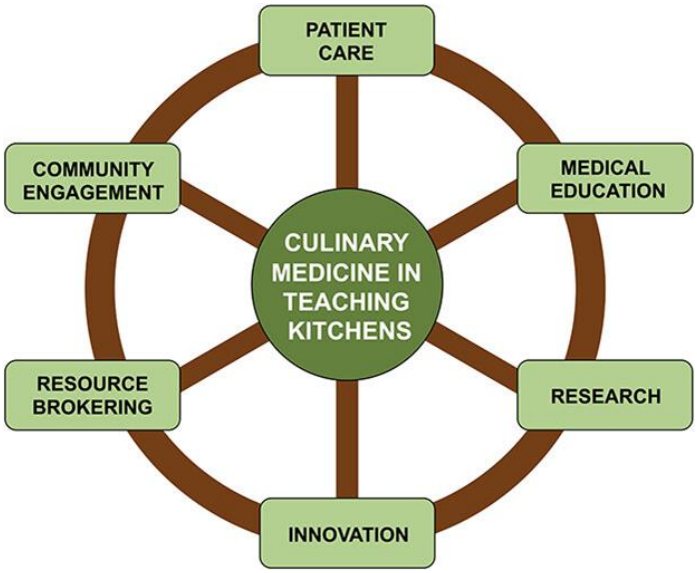

Figure 2. Culinary medicine in teaching kitchens as a central "hub."

Culinary medicine delivered through teaching kitchens, due to its inherently interdisciplinary and collaborative structure, integrates healthcare systems, academic institutions, and public service initiatives into a cohesive framework. Within this model, patients, healthcare providers, community members, researchers, universities, insurers, and healthcare organizations all benefit from coordinated engagement and shared objectives.

Culinary medicine programs based in teaching kitchens are also well aligned with the transition toward value-based care and other emerging healthcare models. They are financially pragmatic, support workforce recruitment and retention, and create opportunities to prioritize preventive care. In addition, they have the potential to attract funding by reducing the economic burden associated with managing diet-related chronic diseases. Interprofessional teams composed of physicians, chefs, and RDNs can support patients in developing practical, evidence-based skills to improve health outcomes through hands-on culinary education. This model also encourages patients to take a more active role in maintaining their own health. Ultimately, the future of healthcare may very well begin in the kitchen.

Conclusion

Generally, administration of legalon alone affects growth performance especially in the last two weeks, but legalon in combination with H_2O_2 did not. Blood serum concentration has showed a reduction in birds treated with legalon urea, creatinine, triglycerides, total cholesterol, LDL-C, VLDL-C, risk index and greater concentration of HDL-C. H_2O_2 increases the kidney functions, and lipids profile except HDL-C.
In conclusion, administration of legalon significantly improved the Hydrogen peroxide induced disturbances and has good effect on lipids profile and kidney functions as well as on body weight when given alone in chickens.

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References

1. Mokdad AH, Ballestros K, Echko M, Glenn S, Mullany E, Lee A, et al. The State of US Health, 1990–2016: burden of diseases, injuries, and risk factors among US states. JAMA. 2018;319(14):1444-72.
2. Afshin A, Sur PJ, Fay KA, Cornaby L, Ferrara G, Salama JS, et al. Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the Global Burden of Disease Study 2017. Lancet. 2019;393(10184):1958-72.
3. National Center for Health Statistics. Leading Causes of Death, 1900–1998. Atlanta, GA: Centers for Disease Control and Prevention; 1998 [cited 2023 Feb 12]. Available from: https://www.cdc.gov/nchs/data/dvs/lead1900_98.pdf
4. Centers for Disease Control and Prevention. National diabetes statistics report, 2020. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Dept of Health and Human Services; 2020 [cited 2023 Feb 12]. Available from: https://diabetesresearch.org/wp-content/uploads/2022/05/national-diabetes-statistics-report-2020.pdf
5. Division of Diabetes Translation. Long-term trends in diabetes. Atlanta, GA: Centers for Disease Control and Prevention; 2017 [cited 2023 Feb 12]. Available from: https://www.cdc.gov/diabetes/statistics/slides/long_term_trends.pdf
6. Ward ZJ, Bleich SN, Cradock AL, Barrett JL, Giles CM, Flax C, et al. Projected U.S. state-level prevalence of adult obesity and severe obesity. N Engl J Med. 2019;381(25):2440-50.
7. Steele CB, Thomas CC, Henley SJ, Massetti GM, Galuska DA, Agurs-Collins T, et al. Vital signs: trends in incidence of cancers associated with overweight and obesity — United States, 2005–2014. MMWR Morb Mortal Wkly Rep. 2017;66(39):1052-8.
8. Menichetti G, Ravandi B, Mozaffarian D, Barabási AL. Machine learning prediction of the degree of food processing. Nat Commun. 2023;14(1):2312.
9. Rhone A, Ver Ploeg M, Dicken C, Williams R, Breneman V. Low-income and low-supermarket-access census tracts, 2010–2015. Washington, DC: U.S. Department of Agriculture, Economic Research Service; 2017 (EIB-165) [cited 2023 Feb 12]. Available from: https://www.ers.usda.gov/webdocs/publications/82101/eib-165.pdf?v=3395.3
10. Rose D, Bodor N, Swalm C, Rice J, Farley T, Hutchinson P. Deserts in New Orleans? Illustrations of urban food access and implications for policy. Ann Arbor, MI: University of Michigan National Poverty Center; USDA Economic Research Service Research; 2009.
11. Cooksey-Stowers K, Schwartz M, Brownell K. Food swamps predict obesity rates better than food deserts in the United States. Int J Environ Res Public Health. 2017;14(11):1366.
12. New York Law School Racial Justice Project. Unshared bounty: how structural racism contributes to the creation and persistence of food deserts (with American Civil Liberties Union). New York, NY: Racial Justice Project; 2012 [cited 2023 Feb 12]. (Book 3). Available from: https://digitalcommons.nyls.edu/cgi/viewcontent.cgi?article=1002&context=racial_justice_project

13. Bower KM, Thorpe RJ Jr, Rohde C, Gaskin DJ. The intersection of neighborhood racial segregation, poverty, and urbanicity and its impact on food store availability in the United States. Prev Med. 2014;58:33-9.
14. Shaffer A. The persistence of LA's grocery gap: the need for a new food policy and approach to market development. Los Angeles, CA: Center for Food and Justice, Urban and Environmental Policy Institute, Occidental College; 2002 [cited 2023 Feb 12]. Available from: https://www.oxy.edu/sites/default/files/assets/UEP/Comps/2002/shaffer.pdf
15. Grier SA, Kumanyika SK. The context for choice: health implications of targeted food and beverage marketing to African Americans. Am J Public Health. 2008;98(9):1616-29.
16. Adams KM, Butsch WS, Kohlmeier M. The state of nutrition education at US medical schools. J Biomed Educ. 2015;2015:1-7.
17. Kris-Etherton PM, Akabas SR, Bales CW, Bistrian B, Braun L, Edwards MS, et al. The need to advance nutrition education in the training of health care professionals and recommended research to evaluate implementation and effectiveness. Am J Clin Nutr. 2014;99(5):1153S-66S.
18. Morris NP. The neglect of nutrition in medical education: a firsthand look. JAMA Intern Med. 2014;174(6):841-2.
19. Murray CJL. The state of US health, 1990–2010: burden of diseases, injuries, and risk factors. JAMA. 2013;310(6):591-608.
20. Martin H, Kushner S, Iles K, Montgomery H. Advocating for expanded access to medical nutrition therapy in Medicare. J Acad Nutr Diet. 2022;122(1):175-81.
21. Devries S, Aggarwal M, Allen K, Kris-Etherton P, Theriot P, Freeman AM. Assessment of the low referral rate of cardiologists to dietitians/nutritionists. Int J Dis Reversal Prev. 2021;4(1):8.
22. Siopis G, Colagiuri S, Allman-Farinelli M. Dietitians' experiences and perspectives regarding access to and delivery of dietetic services for people with type 2 diabetes mellitus. Heliyon. 2020;6(2):e03344.
23. Collins S. Medical nutrition therapy act of 2021. United States Senate, 117th Congress; 2021 [cited 2023 Feb 20]. Available from: https://www.congress.gov/117/bills/s1536/BILLS-117s1536is.pdf
24. Bertoldo J, Hsu R, Reid T, Righter A, Wolfson JA. Attitudes and beliefs about how chefs can promote nutrition and sustainable food systems among students at a US culinary school. Public Health Nutr. 2021;24(14):1-13.
25. Tan J, Atamanchuk L, Rao T, Sato K, Crowley J, Ball L. Exploring culinary medicine as a promising method of nutritional education in medical school: a scoping review. BMC Med Educ. 2022;22(1):441.
26. La Puma J. What is culinary medicine and what does it do? Popul Health Manag. 2016;19(1):1-3.
27. Sharma SV, McWhorter JW, Chow J, Danho MP, Weston SR, Chavez F, et al. Impact of a virtual culinary medicine curriculum on biometric outcomes, dietary habits, and related psychosocial factors among patients with diabetes participating in a food prescription program. Nutrients. 2021;13(12):4492.
28. Poulton G, Antono A. A taste of virtual culinary medicine and lifestyle medicine—an online course for medical students. Am J Lifestyle Med. 2022;16(1):57-60.
29. Razavi AC, Latoff A, Dyer A, Sardari M, Sarpong D, Monlezun DJ, et al. Virtual teaching kitchen classes and cardiovascular disease prevention counselling among medical trainees. BMJ Nutr Prev Health. 2023;6(1):e000477.
30. Monlezun DJ, Kasprowicz E, Tosh KW, Nix J, Urday P, Tice D, et al. Medical school-based teaching kitchen improves HbA1c, blood pressure, and cholesterol for patients with type 2 diabetes: results from a novel randomized controlled trial. Diabetes Res Clin Pract. 2015;109(2):420-6.
31. Penn L, Ryan V, White M. Feasibility, acceptability and outcomes at a 12-month follow-up of a novel community-based intervention to prevent type 2 diabetes in adults at high risk: mixed methods pilot study. BMJ Open. 2013;3(11):e003585.
32. Reicks M, Kocher M, Reeder J. Impact of cooking and home food preparation interventions among adults: a systematic review (2011–2016). J Nutr Educ Behav. 2018;50(2):148-72.e1.
33. Stauber Z, Razavi AC, Sarris L, Harlan TS, Monlezun DJ. Multisite medical student–led community culinary medicine classes improve patients' diets: machine learning–augmented propensity score–adjusted fixed effects cohort analysis of 1381 subjects. Am J Lifestyle Med. 2022;16(2):214-20.
34. Flego A, Herbert J, Waters E, Gibbs L, Swinburn B, Reynolds J, et al. Jamie's ministry of food: quasi-experimental evaluation of immediate and sustained impacts of a cooking skills program in Australia. PLoS One. 2014;9(12):e114673.
35. Hasan B, Thompson WG, Almasri J, Wang Z, Lakis S, Prokop LJ, et al. The effect of culinary interventions (cooking classes) on dietary intake and behavioral change: a systematic review and evidence map. BMC Nutr. 2019;5(1):29.
36. Farmer N, Touchton-Leonard K, Ross A. Psychosocial benefits of cooking interventions: a systematic review. Health Educ Behav. 2018;45(2):167-80.
37. Kwon J, Yoshida Y, Yoshida H, Kim H, Suzuki T, Lee Y. Effects of a combined physical training and nutrition intervention on physical performance and health-related quality of life in prefrail older women living in the community: a randomized controlled trial. J Am Med Dir Assoc. 2015;16(3):263.e1-8.

38. Jyväkorpi SK, Pitkälä KH, Kautiainen H, Puranen TM, Laakkonen ML, Suominen MH. Nutrition education and cooking classes improve diet quality, nutrient intake, and psychological well-being of home-dwelling older people – a pilot study. Eur Geriatr Med. 2013;4(Suppl 1):S130.
39. Silver JK, Finkelstein A, Minezaki K, Parks K, Budd MA, Tello M, et al. The impact of a culinary coaching telemedicine program on home cooking and emotional well-being during the COVID-19 pandemic. Nutrients. 2021;13(7):2311.
40. Barak-Nahum A, Haim LB, Ginzburg K. When life gives you lemons: the effectiveness of culinary group intervention among cancer patients. Soc Sci Med. 2016;166:1-8.
41. Asher RC, Shrewsbury VA, Bucher T, Collins CE. Culinary medicine and culinary nutrition education for individuals with the capacity to influence health related behaviour change: a scoping review. J Hum Nutr Diet. 2022;35(2):388-95.
42. Newman C, Yan J, Messiah SE, Albin J. Culinary medicine as innovative nutrition education for medical students: a scoping review. Acad Med. 2023;98(2):274-86.
43. Monlezun DJ, Dart L, Vanbeber A, Smith-Barbaro P, Costilla S, Samuel C, et al. Machine learning-augmented propensity score-adjusted multilevel mixed effects panel analysis of hands-on cooking and nutrition education versus traditional curriculum for medical students as preventive cardiology: multisite cohort study of 3248 trainees over 5 years. Biomed Res Int. 2018;2018:1-10.
44. Magallanes E, Sen A, Siler M, Albin J. Nutrition from the kitchen: culinary medicine impacts students' counseling confidence. BMC Med Educ. 2021;21(1):88.
45. Hauser ME. A novel culinary medicine course for undergraduate medical education. Am J Lifestyle Med. 2019;13(3):262-4.
46. Kakareka R, Stone TA, Plsek P, Imamura A, Hwang E. Fresh and savory: integrating teaching kitchens with shared medical appointments. J Altern Complement Med. 2019;25(7):709-18.
47. Delichatsios HK, Hauser ME, Burgess JD, Eisenberg DM. Shared medical appointments: a portal for nutrition and culinary education in primary care—a pilot feasibility project. Glob Adv Health Med. 2015;4(6):22-6.
48. Wood NI. A hands-on curriculum for teaching practical nutrition. Med Educ. 2019;53(5):520-1.
49. Wood NI, Gleit RD, Levine DL. Culinary nutrition course equips future physicians to educate patients on a healthy diet: an interventional pilot study. BMC Med Educ. 2021;21(1):280.
50. Eisenberg DM, Imamura A. Teaching kitchens in the learning and work environments: the future is now. Glob Adv Health Med. 2020;9:2164956120962442.
51. Sidorsky T, Huang Z, Dinulos JGH. A business case for shared medical appointments in dermatology: improving access and the bottom line. Arch Dermatol. 2010;146(4):374-6.
52. Cunningham SD, Sutherland RA, Yee CW, Thomas JL, Monin JK, Ickovics JR, et al. Group medical care: a systematic review of health service performance. Int J Environ Res Public Health. 2021;18(23):12726.
53. Albin JL, Siler M, Kitzman H. Culinary medicine econsults pair nutrition and medicine: a feasibility pilot. Nutrients. 2023;15(12):2816.
54. Culinary Medicine Specialist Board. Certification for Healthcare Professionals (CCMS) [Internet]. [cited 2023 Feb 12]. Available from: https://culinarymedicine.org/certified-culinary-medicine-specialist-program/why-get-certified/
55. Begley A, Gallegos D. Should cooking be a dietetic competency? Nutr Diet. 2010;67(1):41-6.
56. Webb D. Culinary Medicine. Todays Dietit. 2023;25(1):16-21.
57. Del Coro K, Topol J. About us culinary nutrition collaborative [Internet]. [cited 2023 Feb 22]. Available from: https://www.culinarynutritioncollaborative.com/about
58. National Center for Chronic Disease Prevention and Health Promotion. Health and economic costs of chronic diseases. Atlanta, GA: Centers for Disease Control and Prevention; 2022 [cited 2023 Feb 12]. Available from: https://www.cdc.gov/chronicdisease/about/costs/index.htm
59. Shanafelt TD, West CP, Dyrbye LN, Trockel M, Tulsky J, Wang H, et al. Changes in burnout and satisfaction with work-life integration in physicians during the first 2 years of the COVID-19 pandemic. Mayo Clin Proc. 2022;97(12):2248-58.
60. The Associated Press-NORC Center for Public Affairs Research. Support for greater government role in health care for older adults. Chicago, IL: The Associated Press-NORC Center for Public Affairs Research; 2022 [cited 2023 Feb 12]. Available from: https://apnorc.org/wp-content/uploads/2022/09/APNORC_TSF_July22_topline-POSTED.pdf