



Nutrition Strategies for Reducing Risk of Burnout Among Physicians and Health Care Professionals

Abstract: *Under typical circumstances, up to half of physicians, 31% of nurses who provide direct patient care, and 37% of nurses working in nursing homes experience burnout, and these rates are likely exacerbated following the Coronavirus disease 2019 pandemic. Diet is a mediating and modifiable factor with regard to burnout risk. Chronic stress, such as the stress experienced by individuals suffering from burnout, has been shown to influence the amounts and types of foods individuals eat, contributing both to excessive eating and undereating and the development of chronic diseases. Dietary strategies to mitigate burnout for physicians and health care professionals should be developed based on existing evidence related to nutrition and mental health, incorporate effective behavior change theory, and include systems-level change to promote healthy eating among health care professionals. Evidence supports the application of the Mediterranean diet, cognitive behavioral theory, and mindful eating interventions. Policy and systems approaches should*

support the availability of healthy foods at employer-sponsored events and eating outlets, worksite wellness, and nutrition education in medical training curriculum.

Keywords: diet; Mediterranean; burnout; nutrition; health behavior

which negatively affects the personal well-being of health care providers and reduces the quality of patient care. Physician burnout is correlated with major medical errors, and among nurses, it is associated with elevated patient mortality rates and spread of hospital-transmitted infection.¹⁻³ Under typical circumstances, up to half of physicians,

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Coronavirus disease 2019 (COVID-19) has exacerbated burnout in a workforce of physicians and essential health care workers, who are already at high risk for burnout. The demanding pace, emotional intensity, and time-sensitive work presented in the health care environment is a breeding ground for burnout. This chronically stressed environment lends itself to burnout,

31% of nurses who provide direct patient care, and 37% of nurses working in nursing homes experience burnout, and these rates are likely exacerbated following the COVID-19 pandemic.⁴ These high rates of burnout can eventually lead to health care providers leaving the field and contribute to the shortage of these professionals.

Diet is a modifiable factor with regard to burnout risk. Chronic stress, like the

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stress experienced by individuals suffering from burnout, has been shown to influence the amounts and types of foods individuals eat, contributing both to excessive eating and undereating and stress hormones have been linked with abdominal obesity. Burnout has also been associated with the development of chronic conditions, attributed to poor diet and lifestyle habits, such as type 2 diabetes and cardiovascular disease.⁵ Burnout in women has been linked with emotional and uncontrolled eating behaviors that are correlated with higher body mass index.⁶ The evidence for dietary interventions to overcome burnout is limited but promising. Studies have demonstrated that increased fast food consumption is related to burnout, whereas self-reported healthy eating is protective.^{7,8} One study among trauma surgeons ($n = 1383$) found that a 2.6 greater odds for work-life balance was achieved when participants reported consuming a healthy diet.⁹ All 3 studies were observational in nature, and methods for dietary assessment were weak. Although a healthy diet has demonstrated a protective effect on burnout among trauma surgeons, health care professionals are commonly observed to have suboptimal diets and increased risk for obesity.

Dietary strategies to reduce burnout for physicians and health care professionals are needed to minimize the health care professions shortage, maximize investment in health care professionals' training, and improve quality of life for these frontline workers. Strategies could focus on applying existing evidence on nutrition interventions for mental health conditions, strategies to promote behavior change, and systems-level changes to promote healthy eating among physicians and health care professionals.

Evidence for Dietary Interventions and Mental Health

Mediterranean Diet and Mental Health

The cardiovascular and health benefits of the Mediterranean diet have been well

described and have recently demonstrated protection against depression.¹⁰ The traditional Mediterranean diet includes high intake of vegetables, fruits, legumes, nuts, seeds, whole grains, and olive oil, with moderate intake of fish and low intake of highly processed food and red meat. Two randomized clinical trials have yielded evidence on the effect of a Mediterranean diet pattern on mental health.¹¹ A 2017 randomized controlled trial found that a 3-month Mediterranean diet intervention yielded statistically and clinically significant improvements in self-reported depression and that these improvements were evident at a 6-month follow-up.¹² Another study, the SMILES trial also demonstrated statistically significant improvements in mental health status, following a 12-week Mediterranean diet intervention.¹³

Nutrients and Mental Health

Nutrients from foods and dietary supplements are implicated in cellular processes related to mental health. The role of omega 3 fatty acids, amino acids, and carbohydrates on mental health will be explored.

Omega 3 fatty acids found in foods such as salmon, tuna, mackerel, nuts and seeds, and plant oils have been widely studied for their impact on mental health and brain function. These fatty acids interact with the central nervous system to support serotonin and dopamine neurotransmission and play a role in the hypothalamus pituitary adrenal axis to decrease corticosterone levels, indicative of inflammation and stress.¹⁴

Amino acids are the building blocks of protein, found in foods like meat, poultry, eggs, beans, legumes, and nuts. Two amino acids implicated in brain and mental health include tryptophan and ornithine. Tryptophan is an important precursor to metabolites related to sleep and sleeping patterns. Ornithine not only plays a role in improving sleep, but also modulates stress through direct action on the central nervous system.¹⁵

Carbohydrates in the diet provide glucose which is the preferred fuel substrate for the brain. Simple

carbohydrates, consumed in the form of refined grains, sweets, and sugar-sweetened beverages can enhance brain serotonin synthesis, which triggers excessive consumption in individuals with mood disturbances, are associated with inflammatory responses and ultimately less metabolic effects.¹⁵ On the other hand, complex carbohydrates from foods like fruits, vegetables, and whole grains, contain higher proportions of fiber or indigestible carbohydrates. These carbohydrates fuel gut bacteria to produce short chain fatty acids that have anti-inflammatory effects on the brain.¹⁶

Evidence on the Mediterranean dietary pattern and the supportive role that specific nutrients have in optimal brain function and mental health have been provided. These findings may be applied to physicians and health care professionals to reduce risk of burnout by imparting mental and physical health benefits. Efforts to support adherence to this eating pattern may benefit this population, and at a minimum, efforts to reduce intake of highly processed foods and red meat while increasing intake of fruits, vegetables, whole grains, and other components of the Mediterranean diet should be considered. Effective strategies to promote long-term and sustainable behavior changes among this population are needed to fully realize the benefits of these dietary recommendations. Presented below are intervention techniques and behavioral strategies that may support burnout mitigation via diet.

Strategies for Behavior Change

Nutrition education aims to provide learners with information and experiences that yield adoption of eating behaviors that are conducive to health. Nutrition education interventions vary in terms of duration, frequency, and types of experiences. With technology, nutrition education can be delivered through a variety of means: in-person, via telemedicine, live, or prerecorded. A systematic review on factors that influence the efficacy of nutrition

education found that interventions that are at a minimum 5 months in duration and highly focused—having 3 or fewer learning objectives—yielded the greatest effect. Enhanced success of nutrition education interventions has been observed when support from policy makers is present, for example when worksite wellness interventions are supported by management.¹⁷ Employers should consider investment in innovative worksite wellness programs for delivery of nutrition education to prevent physician and health care professional burnout.

Nutrition counseling is an alternative approach to facilitating nutrition behavior change to promote health. Registered dietitians are practitioners who utilize counseling techniques based on various behavior change theories to support nutrition-related behavior changes. Cognitive behavioral theory, which utilizes strategies such as self-monitoring, problem solving, goal setting, stress management, stimulus control, and cognitive restructuring, has the strongest evidence for eliciting behavioral change. Utilization of self-monitoring (ie, maintaining a food diary) is a particularly effective strategy for imparting behavior change, whereas 1 meta-analysis found little evidence for the use of monetary rewards for long-term behavior change.¹⁸ Practitioners at risk for burnout might consider seeking nutrition counseling services from a registered dietitian when embarking on efforts to alter nutrition behaviors. Employers of physicians can make these services available to prevent burnout among staff.

Mindful eating is a relatively newer concept in nutrition and a potential strategy for overcoming negative consequences of burnout on nutritional status. Mindful eating is most consistently described as making conscious food choices, developing a keen awareness of hunger and fullness cues, eating in response to those cues, being present during eating occasions, paying close attention to the effect of food on the senses, and noting physical and emotional responses to eating.¹⁹ Mindful eating interventions have been most

frequently and effectively applied to individuals who report emotional eating or binge eating behaviors.²⁰ Mindfulness-Based Eating Awareness Training is an intervention designed to promote mindful eating practices, helping individuals cultivate an awareness of internal and external triggers to eat, prevent automatic eating, and eating in response to natural hunger cues.¹⁹ Individuals experiencing burnout, especially women, may be at high risk for emotional eating, where mindful eating interventions may be particularly beneficial.

Systems-Level Change for Nutrition to Mitigate Physician Burnout

Presented above are effective interventions that at an individual level can promote healthy eating practices that can contribute to reduced risk for physician burnout. Recognizing the influence that upstream factors have on nutritional status and individual behaviors, interventions aimed at institutional and policy levels are also warranted to support efforts to improve nutrition and diet. Organizational policy can help improve adherence to a healthy diet, the Mediterranean diet for example, and promote mindful eating. Foods provided to physicians and health care professionals for free, at sponsored lunches, and for purchase at hospital cafeterias could be designed to promote the Mediterranean diet eating pattern. When being sold, these healthy options could be priced comparatively to other less healthy options or be made even more affordable to encourage consumption. Organizations can also develop policies that, for example, create nutritional guidelines for foods purchased with organizational funds to support these efforts. Organizations can also develop policies to promote mindful eating, use strategies such as eliminating working lunches, and schedule patients to provide adequate time for breaks to consume meals.

Worksite wellness programs, supported by institutional administration, are also

an avenue for promoting healthy and mindful eating and for delivering evidence-based interventions such as nutrition education and counseling. Furthermore, evidence supporting the role of these programs in preventing burnout exists.²¹

Medical training programs present another avenue for creating systems-level change to reduce risk for physician burnout. Evidence consistently shows that medical training provides inadequate levels of nutrition education for physicians. The nutrition knowledge gained in medical training programs could enhance health care because physicians can provide nutrition interventions for patients as well as improve physicians' personal nutrition practices. The absence of nutrition education negatively affects medical students' skills and confidence in implementing nutrition interventions into patient care, and studies have shown that physicians' eating habits are not in line with recommendations for fruits and vegetables.²² The introduction of nutrition-related competencies into medical education could reinforce the inclusion of this content in curriculum and yield providers who are equipped to provide nutrition interventions with the potential to apply to personal behaviors.

Presented here is the potential for nutrition to mitigate burnout risk among physicians and health care providers. Burnout is associated with chronic stress and unhealthy eating habits that include high consumption of processed and fast foods, emotional eating, and overconsumption of foods. Meanwhile, physicians are observed to have limited adherence to diet recommendations and inadequate nutrition education in their medical training. The mechanisms by which nutrients are implicated at a cellular level, in brain health, inflammation, and central nervous system function support the growing body of knowledge on the benefits of a Mediterranean diet pattern on mental health. Effective strategies for improving nutrition behaviors include nutrition education and counseling and mindful eating interventions, whereas policy- and

institutional-level supports include worksite wellness, healthy food policy, and incorporation of nutrition competencies into the medical training curriculum. COVID-19 has exacerbated the burnout risk in an already high-risk population of physicians. Multilevel strategies for improving nutritional status may aid in reducing burnout risk.

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Informed Consent

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Trial Registration

Not applicable, because this article does not contain any clinical trials. **AJLM**

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