

If healthy eating and active living are medicine, we need more places to fill the prescriptions.

Justin B. Moore¹

¹Department of Implementation Science, Division of Public Health Sciences

Wake Forest University School of Medicine, USA

When I was a youth, “taking your medicine” wasn’t a pleasant endeavor. It was usually a euphemism for doing something that you don’t *want* to do but *have* to do. Despite this negative connotation, healthy lifestyle proponents later branded healthy eating and active living (or exercise) to be medicine in hopes of highlighting the preventive and curative benefits of these behaviors. Unfortunately, after more than 15 years of this framing, most of the U.S. population still doesn’t want to take their medicine. Only 28% of Americans met the physical activity guidelines in 2020, and fewer than 13% achieve federal vegetable intake recommendations in 2019 (Abidso et al., 2023; Lee et al., 2022). This is not surprising. Medication non-adherence is a serious problem, even for individuals with chronic conditions (Kvarnström et al., 2021). In the context of healthy eating and active living, this is unfortunate, because unlike pharmaceutical medicines, healthy eating and active living have relatively low cost and very few side effects. One might argue that healthy eating and active living reflect the natural state of humans and that consumption of ultra-processed foods while engaging in sedentary behaviors is an unnatural state that we’ve engineered our environment to promote. As such, prescribing healthy eating and active living in our current environment is akin to prescribing oxygen while simultaneously running machines to harvest it from the air. Perhaps we should just leave the oxygen in the air and let people inhale it naturally, or more specifically, stop creating environments that deprive us of nature with its whole foods and room and freedom to roam.

The other problems with healthy eating and active living as medicine are matters of adherence and effectiveness. Take the case of obesity. Obesity is a multifaceted disease with a complex etiology that is facilitated by our obesogenic environment. When prescribed lifestyle interventions grounded in healthy eating and physical activity, many individuals fail to see clinically meaningful weight loss even with optimal adherence to the lifestyle “prescription” (Perreault et al., 2023). What is worse, adherence tends to decrease over time, resulting in sub-optimal outcomes and weight regain in many individuals with initial weight loss (Wadden et al., 2023). This experience can leave patients frustrated, defeated, and resentful, as the medicine they were prescribed failed to treat their disease. This is unfortunate, since it’s a relatively predictable outcome. Obesity and related comorbidities are heavily influenced by where we live, work, and play, and individuals with fewer economic resources tend to live in environments that actively discourage health eating and active living. It’s analogous to handing a patient a prescription for a medication with no pharmacy to fill it. While food prescription programs have attempted to remedy this problem, the effectiveness of these programs in changing behavior is currently unknown (Cafer et al., 2023).

If healthy eating and active living isn’t medicine, how to we promote these behaviors so that individuals can receive the myriad of benefits they confer? First, we need to

manage expectations. Let’s remember that the most beneficial physical activity that most people can do is walking (or otherwise ambulating), but the best activity is the one they’ll do consistently. Similarly, healthy eating should be more about finding plants that one likes to eat, rather than quibbling about which is the superior food source. Second, we need to remember that more is usually better but celebrate even the smallest of gains. Someone moving from 2000 steps a day to 4000 steps a day may not be meeting any of the benchmarks we’ve set, but they have begun to improve their health and decrease their risk of many diseases (Kelly et al., 2014). Similarly, the health impact of replacing adding one daily serving of vegetables to one’s diet may be small, it’s not insignificant, and it could be the foundation that sustainable dietary changes are built upon (Wang et al., 2014). Finally, we need to stop creating environments that are designed to encourage unhealthy behaviors. Human behavior is highly susceptible to environmental influence, so we need to use policy levers and economic drivers to promote active communities and healthy food options. We have more than twenty years of research showing that sidewalks, compete streets, playgrounds, parks, greenways, and natural areas promote active living, so we (the consumer) need to demand these of our policy makers and leaders (Zhang et al., 2022; Müller et al., 2024; Whitsel & Bantham, 2023). It’s clear that food policy is a driving factor in food availability and choice, but yet we subsidize process food production at the expense of making whole foods available at reasonable prices (Friel et al., 2013).

Ultimately, there is nothing wrong with promoting active living and health eating as the foundation to a healthy life. We need to equip people with the knowledge and skills they need to engage in health promoting behaviors. There is nothing wrong with encouraging healthcare providers from talking to their patients about non-pharmacological approaches to preventing and managing chronic conditions (Whitsel & Bantham, 2023). However, we need to acknowledge that behaviors are only partially under the control of the individual and redouble our efforts at the policy and environmental levels of we are to encourage long-term sustainment of healthy eating and activity living behaviors. Only by attacking the barriers to healthy living that society has created can one reasonable expect to move the needle on a population level. Without equitable access to healthy environments, healthy eating and active living “medicine” will continue to be a tough pill to swallow.

Conflict of interest statement:

I have no conflicts of interest to disclose.

Correspondence should be addressed to

Justin B. Moore, PhD, MS, FACS

Department of Implementation Science, Division of Public Health Sciences

Wake Forest University School of Medicine
Winston-Salem, NC 27103

Creative Commons License

This work is [licensed](#) under a [Creative Commons Attribution-Noncommercial 4.0 International License \(CC BY-NC 4.0\)](#).

• Justin B. Moore: [0000-0003-4059-0538](#)

References

- Abildso, C. G., Daily, S. M., Umstattd Meyer, M. R., Perry, C. K., & Eyler, A. (2023, January 27). Prevalence of Meeting Aerobic, Muscle-Strengthening, and Combined Physical Activity Guidelines During Leisure Time Among Adults, by Rural-Urban Classification and Region - United States, 2020. *MMWR Morb Mortal Wkly Rep.* 72(4):85-89. doi:10.15585/mmwr.mm7204a1
- Cafer, A., Rosenthal, M., Smith, P., et al. (2023, January) Examining the context, logistics, and outcomes of food prescription programs: A scoping review. *Res Social Adm Pharm.* 19(1):57-68. doi:10.1016/j.sapharm.2022.09.0072013;14 Suppl 1:120-34. doi:10.1111/obr.12081
- Kelly, P., Kahlmeier, S., Götschi, T., et al. (2014, October 24). Systematic review and meta-analysis of reduction in all-cause mortality from walking and cycling and shape of dose response relationship. *International Journal of Behavioral Nutrition and Physical Activity.*
- Friel, S., Hattersley, L., Snowdon, W., et al. (2013, October). Monitoring the impact of trade agreements on food environments. *Obes Rev.* 14 Suppl 1:120-34. doi:10.1111/obr.12081
- Kvarnström, K., Westerholm, A., Airaksinen, M., & Liira, H. (2021, July 20). Factors Contributing to Medication Adherence in Patients with a Chronic Condition: A Scoping Review of Qualitative Research. *Pharmaceutics.* 13(7) doi:10.3390/pharmaceutics13071100
- Lee, S. H., Moore, L. V., Park, S., Harris, D. M., Blanck, H. M. (2022, January 7). Adults Meeting Fruit and Vegetable Intake Recommendations - United States, 2019. *MMWR Morb Mortal Wkly Rep.* 71(1):1-9. doi:10.15585/mmwr.mm7101a1
- Müller, C., Paulsen, L., Bucksch, J., & Wallmann-Sperlich, B. (2024, May 3). Built and natural environment correlates of physical activity of adults living in rural areas: a systematic review. *Int J Behav Nutr Phys Act.* 21(1):52. doi:10.1186/s12966-024-01598-3
- Perreault, L., Kramer, E. S., Smith, P. C., Schmidt, D., & Argyropoulos, C. (2023, November 23). A closer look at weight loss interventions in primary care: a systematic review and meta-analysis. Systematic Review. *Frontiers in Medicine.* 10doi:10.3389/fmed.2023.1204849
- Wadden, T. A., Chao, A. M., Moore, M., et al. (2023, December 1). The Role of Lifestyle Modification with Second-Generation Anti-obesity Medications: Comparisons, Questions, and Clinical Opportunities. *Current Obesity Reports.* 12(4):453-473. doi:10.1007/s13679-023-00534-z
- Wang, X., Ouyang, Y., Liu, J., et al. (2014, July 29). Fruit and vegetable consumption and mortality from all causes, cardiovascular disease, and cancer: systematic review and dose-response meta-analysis of prospective cohort studies. *Bmj.* 349:g4490. doi:10.1136/bmj.g4490
- Whitsel, L. P. & Bantham, A. (2023). It's Time to Move: Integrating Physical Activity Assessment, Prescription, and Referral through Policy and Systems Change. *J Healthy Eat Act Living.* 3(1):1-6.
- Zhang, Y., Koene, M., Reijneveld, S. A., et al. (2022, December 20). The impact of interventions in the built environment on physical activity levels: a systematic umbrella review. *Int J Behav Nutr Phys Act.* 19(1):156. doi:10.1186/s12966-022-01399-6