

Is the Healthy Eating Index a Biased Metric?

To the Editor:

This letter is in relation to a publication in the PRHSJ (1) in which the investigators described the dietary patterns of college students in PR and the association of these patterns with socio-demographic characteristics and perceived academic stress. Dietary patterns were determined using a version the Healthy Eating Index (HEI).

The HEI (2) is a scoring system to evaluate a set of foods. The scores range from 0 to an ideal of 100. The overall HEI-2015 score is made up of 13 components that reflect the different food groups and key recommendations in the 2015-2020 Dietary Guidelines for Americans (3). Values for each component range from 0 to 5 or 10 depending on the degree of compliance with the guidelines. The following 9 components should meet dietary adequacy. (Maximum value is in brackets): Total fruits {5}, Whole fruits {5}, Total vegetables {5}, Greens and beans {5}, Whole grains {10}, Dairy {10}, Total protein foods {5}, Sea food and Plant protein {5} and Fatty acid ratio {10}. The following 4 components are recommended in moderation: Refined grains {10}, Sodium {10}, Added sugars {10} and Saturated fats {10}. Over time, eating patterns in the United States have remained far below Dietary Guidelines recommendations as reflected by the HEI of which the current average is 59 (3). As stated in the DGA: "Concurrently, it has become increasingly clear that diet-related chronic diseases, such as cardiovascular disease, type 2 diabetes, obesity, liver disease, some types of cancer, and dental caries, pose a major public health problem for Americans. Today, 60 percent of adults have one or more diet-related chronic diseases" (3). Table 1 shows the HEI's for 3 different eating patterns -Mediterranean, Ketonic and Vegetarian. Entries for each component are based on values listed in the latest edition of the dietary guidelines (3).

The Mediterranean pattern is exemplary with an HEI of 100 but is strictly followed by a small portion of the population. The ketonic pattern has an HEI of about 51 while the vegetarian pattern has a value of about 85. Relying solely on HEI, the vegetarian would be a better the pattern of choice for minimizing risk of chronic disease. But is this always true? To answer this question, one must examine the components that comprise the HEI and compare them to the manner in which the ketonic state is produced. Ketogenic metabolism takes place only if carbohydrates are minimized and percentage fat is high (4) which makes the whole grain category (10 points) difficult to satisfy and exceeds the maximum calories in the saturated fat category (10 points). Likewise, since carbohydrate restriction requires adequate water, sodium (10 points) is added to prevent electrolyte imbalance. In addition, fruits and vegetables are not major contributors in this type of

pattern making an additional 20 points questionable. On the other hand, the vegetarian eating pattern is only deficient in the meat and protein categories (15 points). Therefore, ketonic eating patterns will, by the criteria determining the HEI, always be around 50 while the vegetarian pattern will be in the 80's. Considering this discrepancy in determination of HEI scores, what are actual clinical results in incidence of chronic diseases between ketonic and vegetarian eating patterns? Countless studies have been carried out and both found to have favorable health outcomes at least in the short term (5). In fact, considering diabetes, the preponderance of evidence seemingly favors a high fat vs a high carbohydrate diet and equally as well as the Mediterranean diet for lowering disease risk (6-9).

It is not the intent of this letter to disparage any type of eating pattern. Its aim is to point out that the HEI, developed from the DGA should be recognized, as only one way to rate an eating pattern and other criteria, such as clinical results should be considered before an eating pattern is selected.

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Table 1. HEI Values for Different Eating Patterns

Component	Maximum Points	Mediterranean	Ketonic	Vegetarian
<i>Adequacy</i>				
Total Fruits	5	5	3	5
Whole Fruits	5	5	1	5
Total Vegetables	5	5	3	5
Greens and Beans	5	5	2	5
Whole Grains	10	10	0	10
Dairy	10	10	8	4
Total Protein Foods	5	5	5	0
Sea Food and Plant Protein	5	5	5	1
Fatty Acids	10	10	4	10
<i>Moderation</i>				
Refined Grains	10	10	10	10
Sodium	10	10	0	10
Added Sugars	10	10	10	10
Saturated Fats	10	10	0	10
Total	100	100	51	85

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Peer-teaching: An Effective Learning Experience? Revisited.

The original article was published in the Puerto Rico Health Sciences journal in March, 2009 (1). It described a Program which at the time had been in effect for ten years and involved the assignment of a peer-tutor guiding the dissection of cadavers under the guidance of the faculty member. Groups were composed of 8-9 students per table, tutors were chosen according to their performance on examinations and familiarity with dissection techniques as observed by the laboratory staff. The results of the Peer-teaching were surveyed among the students with very positive effects observed in the participants.

Subsequently, the Medical School added Nursing, Public Health, and Physician Assistant Programs which have resulted in an appreciable increase in our student population and class offerings. Our Peer-Tutoring Program has expanded to include every course offering including English/Spanish language instruction, and exam taking techniques for the licensing exams.

Our tutors are chosen according to their performance on section examinations and their willingness and ability to share their grasp of the material with peers less able to understand the material at hand. The Peer/Tutors are coupled with the tutees by means of e-mail addresses and they arrange to meet virtually at mutually agreed upon times. This modality was very useful during the COVID-19 pandemic when we were transitioned to virtual teaching/learning. Our peer tutors played an instrumental role in that transition as they were well versed in on-line instruction.

In reviewing the literature it is apparent that peer-teaching/learning is an excellent adjunct to the traditional as it takes advantage of students who readily dominate certain subjects and are able to relay said information in a non-intimidating manner.

The literature abounds with praise for the peer teacher/learning approach to learning as an adjunct as opposed to the traditional mode of teaching (2). Our Medical School attests to its value as a tool of learning.

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This article describes a follow-up visit to the peer-teaching strategy applied in the San Juan Bautista School of Medicine.

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