

The Wise Choices Food Pyramid: What if we did compare apples and oranges?

K Humphries, S Langstaff, D Bainbridge, T Seekins

Citation

K Humphries, S Langstaff, D Bainbridge, T Seekins. *The Wise Choices Food Pyramid: What if we did compare apples and oranges?*. The Internet Journal of Nutrition and Wellness. 2007 Volume 6 Number 2.

Abstract

With more sedentary lives and more available food, our waistlines are growing and chronic diseases related to nutrition – like diabetes, cardiovascular disease, and some cancers – are on the rise. Our diets, although abundant, are relatively less healthy than in the past. In the face of those trends, it is important to learn to make better choices among the multitude of food options in the grocery stores and at meal times. The goal of this project was to create a visual guide to healthy foods to support individuals in making better nutritional choices. The Wise Choices Food Pyramid provides additional visual guidance for an individual wanting to select foods within a food group that would supply the most nutritional benefit. Foods in the Wise Choices Pyramid are ranked, from left to right, within each of the food groups according to their contributions of beneficial and essential nutrients.

Work completed at: The University of Montana Rural
Institute on Disabilities

Work supported in part by Cooperative Agreement Number
R04/CCR823272-01 from the Centers for Disease Control
and Prevention (CDC).

INTRODUCTION

With more sedentary lives and more available food, our waistlines are growing. In many nations, our diets, although increasingly abundant, provide relatively less healthy foods. It is important for consumers to learn to make better choices in the face of those trends among the multitude of options in the grocery stores and at restaurants.

More is being learned about the health-promoting properties of some foods and food components. The goal of this project was to create a visual guide to healthy foods to support individuals in making better nutritional choices called The Wise Choices Food Pyramid.

Historically in the United States and other countries, whole foods have been categorized into food groups according to the essential nutrients they have in common. The United States Department of Agriculture's (USDA) MyPyramid (1) illustrates the need for variety, moderation, and balance contained within the basic groups of grains, vegetables, fruits, oils, dairy, meat and beans, and discretionary calories, which used to be called Extras.

The Dietary Guidelines for Americans(2) suggests choosing wisely within food groups, but does not offer practical suggestions on which foods are better choices. It refers consumers to the MyPyramid guidance system for specific food choices and how practically to create a healthful diet. However, MyPyramid does not provide visual guidance for an individual wanting to select foods within a food group that would supply the most nutritional benefit.

We felt we could meet this challenge by showing foods ranked within each of the food groups according to their contributions of beneficial and essential nutrients. An educational tool was needed to provide guidance by adding another dimension to the USDA food guidance tools showing specifically what the better food choices are.

The Wise Choices Food Pyramid is a tool for achieving the Dietary Guidelines' recommendation to choose wisely within a food group. The Wise Choices Food Pyramid is a visual representation of commonly eaten foods ranked, based on the most compelling scientific information currently available on healthy diets.

METHODS

CHOOSING AND RANKING THE FOODS IN THE

The Wise Choices Food Pyramid was created using specific recommendations for diets that prevent disease while assuring basic dietary adequacy. Criteria for ranking the foods within each food group came from the following

sources:

1. First, the Dietary Guidelines for Americans (2) makes some specific recommendations for what foods and how much or often they should be consumed. These recommendations are the basis for our rankings. The other three sources used in constructing the Wise Choices Pyramid supplement them by adding health messages to the adequacy messages in the Dietary Guidelines.

2. The Summary of the Scientific Conference on Preventive Nutrition: Pediatrics to Geriatrics (3) was a report and recommendations on the food habits and dietary practices most beneficial for preventing the four leading chronic degenerative diseases of our time (atherosclerosis, cancer, diabetes, and obesity) by following the Dietary Guidelines for Americans and MyPyramid. The recommendations were developed through collaboration between the American Heart Association, American Cancer Society, American Dietetic Association, American Academy of Pediatrics, Division of Nutrition Research Coordination of the National Institutes of Health, and American Society for Clinical Nutrition.

3. Background on Functional Foods (4) is a publication from the International Food Information Council Foundation (IFIC), an education and communications foundation that is supported primarily by food, beverage, and agricultural industries. It maintains partnerships with organizations such as the American Dietetic Association, the Consumer Federation of America, and the U.S. Department of Agriculture to develop and disseminate science based information for the public. This document reviews the scientific criteria used to define functional foods, or “foods or dietary components that may provide a health benefit beyond basic nutrition.” A chart in the Background on Functional Foods summarizes food components, their whole food sources, and potential benefits of many functional foods that meet the IFIC criteria.

4. The Position of the American Dietetic Association on Functional Food (5) summarizes the strength of evidence for functional foods currently on the U.S. market.

A final criterion, nutrient density, was also included for each food group in our pyramid. Nutrient density is defined as the amount of essential and beneficial nutrients or food components relative to the number of calories in the food. For example, a slice of whole grain bread and a small cupcake provide the same number of calories, but the bread

provides more nutrition calorie-for-calorie and thus has a better nutrient density. A nutritionally dense diet contributes positively to the ability to balance calories consumed with those expended and to getting all the essential nutrients in a relatively low-calorie diet.

Table 1 shows the criteria for including and ranking the foods within each food group and the published bases for the recommendations.

Figure 1
Table 1: Criteria for Including and Ranking Foods in

USDA MyPyramid Serving Size	Dietary Guidelines for Americans ^a	Additional Criteria ^{a,b,c}
Grains		
Equivalent to calories in one slice of bread	Limit saturated fat, trans fat and cholesterol; most fats from poly- and monounsaturated fatty acids; limit added sugar; limit added sodium; choose mostly or entirely whole grains; choose fiber-rich options	Whole oat products ^{a,c} ; dietary fibers ^{a,b,c} ; folate ^{a,b} ; reduce total fat ^b ; choose lower calorie options to achieve lower energy intake ^b ; complex carbohydrates ^b ; antioxidant compounds ^b ; plant sterols and sterols ^{a,c} ; prebiotics and probiotics ^c ; phytoestrogens ^c
Fruits and Vegetables		
ATypical portion sizes, 8 2 c. equivalent	Choose from all five vegetable subgroups: dark green, orange, legumes, starchy vegetables, and other vegetables; most fats from poly- and monounsaturated fatty acids; choose fiber-rich options	Folate ^{a,b} ; calcium ^{a,b} ; potassium ^{a,b} ; moderate salt from pickling or preserving ^b ; complex carbohydrates ^b ; antioxidant compounds ^b ; carotenoids ^{a,c} ; dietary fiber ^{a,c} ; flavonoids ^{a,c} ; isothiocyanates ^{a,c} ; phenols ^{a,c} ; prebiotics and probiotics ^{a,c} ; phytoestrogens ^c ; sulfides and thiols ^{a,c}
Protein		
Equivalent to protein and minerals in 1 oz. meat	Limit saturated and trans fats and cholesterol; limit added sodium; choose legumes; most fats from poly- and monounsaturated fatty acids; choose sources that are lean, low-fat, or fat-free; choose fiber-rich options	Foods from plant sources ^b ; reduce total fat ^b ; choose lower calorie options to achieve lower energy intake ^b ; moderate salt from pickling or preserving ^b ; antioxidant compounds ^b ; healthful fatty acids ^{a,c} ; phytoestrogens ^c ; soy protein ^{a,c}
Dairy		
Equivalent calcium content as 8oz. cows' milk	Limit saturated fat, cholesterol; most fats from poly- and monounsaturated fatty acids; limit added sugar; limit added sodium; choose fat-free or low-fat milk products	Foods from plant sources ^b ; reduce total fat ^b ; choose lower calorie options to achieve lower energy intake ^b ; antioxidant compounds ^b ; prebiotics and probiotics ^{a,c} ; phytoestrogens ^c ; soy protein ^{a,c}
Discretionary calories/Extras		
Added fat, sugar, salt	Limit saturated and trans fats and cholesterol; most fats from poly- and monounsaturated fatty acids; limit added sugar; limit added sodium	Low in sugar ^a ; emphasize foods from plant sources ^b ; reduce total fat ^b ; choose lower calorie options to achieve lower energy intake ^b ; antioxidant compounds ^b

a = ADA Position Statement on Functional Foods(5)
b = Summary Statement from Health Organizations (3)
c = IFIC background on Functional Foods (4)

Approximately 20-30 food items were selected for ranking within each food group. Only whole foods and not food components were included in The Wise Choices Food Pyramid. They were chosen for inclusion based on two criteria: that they were foods shown to be commonly consumed by Americans (6) or that they represent a larger class of commonly eaten foods (e.g. high-sugar breakfast cereals); and/or were foods whose consumption was being encouraged by nutritionists as “functional foods.”

Some foods that have properties that are considered beneficial for some subpopulations (e.g. psyllium, certain fortified margarines, wine) were not included in The Wise

Choices Food Pyramid because they were not eaten by a large proportion of the general public, were not commonly found in grocery stores, or their health effects were specific to certain populations or disease conditions.

Photographs were taken of the selected foods, and the foods were ranked according to how they met the criteria listed in Table 1. Then the photographs were arranged on a continuum of more to less healthy choices within each food group. The geometry of the pyramid whereby the food groups run horizontally, rather than vertically like the newer MyPyramid, was selected based on results of focus groups with consumers. Participants did not easily comprehend the vertical colored bars of MyPyramid, even with standard nutrition education explanations, and found the pyramid shape with the Grains on the bottom and the Extras on the top to be more intuitive.

Fruits and vegetables were combined into one food group because the nutritional qualities that were being judged were similar. Further, for nutrition education purposes, the standard recommendation for consumption is nine servings per day of fruits and vegetables combined for the 2,000 calorie reference diet. The “extras” group (Fats, Oils, & Sweets) displayed foods in matched sets of a nutritionally poorer choices with a healthier alternative. Potato chips were matched with pretzels, soda pop was matched with 100% fruit juice, and a doughnut was matched with whole grain toast. The Wise Choices Food Pyramid is shown in Figure 1.

Figure 2

Figure 1: The Wise Choices Food Pyramid



DISCUSSION

The Wise Choices Food Pyramid is an educational tool that supports consumers in making higher quality food choices, thus making a more adequate and healthful diet accessible with minimum effort. Foods are ranked within, and not among, food groups and only comparisons within a food group are described and displayed on The Wise Choices Food Pyramid. The message that people need a diet varied across the food groups is highlighted in education materials and in text on the poster.

Like MyPyramid and the Dietary Guidelines for Americans, The Wise Choices Food Pyramid recommendations are for the general public over two years of age. The Wise Choices Food Pyramid is not a therapeutic diet for any specific health condition. Individuals with a chronic health condition should consult with their health care provider to determine what dietary pattern and foods are appropriate for them.

In the past, nutrition professionals have been reluctant to rank foods based on “goodness.” It is sometimes assumed that until there is firm scientific evidence that a ranking

system can be agreed upon and scientifically validated, ranking foods should not be done. It is our belief that there is no absolute truth in ranking all foods. Therefore, a system and criteria for ranking all foods will never pass scientific muster.

On the other hand, food manufacturers are not reluctant to make comparative health claims about their products. Because there is only one voice, the typical consumer receives only the messages from those with commercial biases. With The Wise Choices Food Pyramid, we propose guidance that uses the current state of the science, which consumers can draw upon to make better dietary choices. We recognize that it is in the consumers' best interest to get preliminary or general health promotion education from professionals rather than to see only food advertisements.

The Wise Choices Food Pyramid poster is packaged with education materials that caution consumers not to be overly confident of the exact spot on the rankings that a particular food currently resides. The scientific knowledge is incomplete about all the health-giving properties we get from our food. As we learn more, we undoubtedly will learn of nutrients and other functional properties that should be added to the criteria for ranking. Also, the concept that all foods have an inherent rank and that we should debate their absolute merits, is a faulty one. We are not seeking the ultimate truth in rankings, but rather providing public health guidance. Certainly, some foods are “good” or “bad” for individuals or groups. Persons who are lactose intolerant would rank cow milk products lower, for example.

Finally, many considerations go into menu planning or mealtime decisions, including eaters' food preferences, cost, time to prepare, availability of foods, and special dietary needs. When we use The Wise Choices Food Pyramid in health promotion workshops, we introduce the concepts of “nutritionally better choices within food groups” during menu planning exercises. Once the menus are planned to be nutritionally adequate and meet individuals' special dietary needs, they can usually be improved for healthfulness by focusing specific food choices on options from the left side of The Wise Choices Food Pyramid.

Nutrition professionals counsel consumers that there are many ways for them to choose a diet that contains less added fats, trans-fats and sugars and minimize the natural saturated fats and maximize essential nutrients. The Wise Choices Food Pyramid helps translate that advice into real food choices. Clearly however, because The Wise Choices Food

Pyramid displays only about 130 foods, they are not the only options in a typical Western diet.

This visual aid to dietary choices was originally conceived for persons who need concrete examples of healthy versus less-healthy food choices. It can be useful for many populations, such as adults on weight loss/maintenance programs, children, seniors, or other individuals with newly diagnosed health conditions or increased health awareness. With The Wise Choices Food Pyramid we hope to provide nutrition educators with a new tool to explain how to plan and choose healthier food options.

ACKNOWLEDGMENTS

The information provided in this manuscript was supported in part by Cooperative Agreement Number R04/CCR823272-01 from the Centers for Disease Control and Prevention (CDC). The contents are solely the responsibility of the authors and do not necessarily represent the official views of the CDC. The authors would like to acknowledge the contributions of Blakely Brown, PhD of the Health and Human Performance Department of the University of Montana for student supervision on this project and Neal Wiegert for graphics and design work on The Wise Choices Food Pyramid. The Wise Choices Food Pyramid is available for schools, clinics or others for purchase through: goodnutritionideas.com

CORRESPONDENCE TO

Kathleen Humphries 52 Corbin Hall The University of Montana Missoula, MT 59812 (406)243-2515
khumphries@ruralinstitute.umt.edu

ADDITIONAL BIBLIOGRAPHY

Other adapted food pyramids for special populations or purposes.

Functional Food Guide Pyramid from Southern Illinois University at Carbondale
http://www.extension.uiuc.edu/~ffh/health/ff_pyramid.html

Mediterranean pyramid
http://oldwayspt.org/index.php?area=pyramid_med

Vegetarian pyramids
<http://www.vrg.org/nutrition/adapyramid.htm>
http://oldwayspt.org/index.php?area=pyramid_veg

Prader Willi Syndrome pyramid
<http://www.pwsausa.org/syndrome/foodpyramid.htm>

Young Children's pyramid

<http://www.usda.gov/cnpp/KidsPyra/>

Older adults pyramid

<http://nutrition.tufts.edu/consumer/pyramid.html>

Native American pyramid

<http://www.nal.usda.gov/fnic/Fpyr/NAmFGP.html>

Hispanic/Latin American pyramids

<http://www.semda.org/info/pyramid.asp?ID=27>

http://oldwayspt.org/index.php?area=latin_american_diet

Asian pyramid

http://oldwayspt.org/index.php?area=pyramid_asian

Diabetes pyramid

<http://www.diabetes.org/nutrition-and-recipes/nutrition/food/pyramid.jsp>

References

1. US Department of Agriculture, Center for Nutrition Policy and Promotion. MyPyramid Food Guidance System, Washington, DC.: Author. 2005
2. US Department of Health and Human Services, Office of Disease Prevention and Health Promotion. US Department of Agriculture, Center for Nutrition Policy and Promotion and Agricultural Research Service. Dietary Guidelines for Americans, Washington, DC.: Author. 2005
3. Deckelbaum RJ, Fisher EA, Winston M, Kumanyika, Lauer RM, Pi-Sunyer FX, et al. Summary of a scientific conference on preventive nutrition: Pediatrics to geriatrics. *Circulation*. 1999;100:450-456.
4. International Food Information Council Foundation. Background on Functional Foods. Available at: <http://www.ific.org/nutrition/functional/index.cfm> Accessed March 1, 2006.
5. American Dietetic Association. Position of the American Dietetic Association: Functional foods. *J Am Diet Assoc*. 2004;104:814-826.
6. Putnam J, Allshouse J, Kantor LS. U.S. per capita food supply trends: More calories, refined carbohydrates, and fats. *FoodReview*. 2002;25(3):2-15.

Author Information

Kathleen Humphries, Ph.D

The University of Montana Rural Institute on Disability

Sierra Langstaff, B.S.

Student during this study at The University of Montana

Donna Bainbridge, Ed.D.

The University of Montana Rural Institute on Disability

Tom Seekins, Ph.D.

The University of Montana Rural Institute on Disability