

Flaws in an International Nutrition Icon: The USDA Food Pyramid

Marcie G. Barnes

School of Journalism & Mass Communication
The University of North Carolina at Chapel Hill

(919) 773-1446

mgbarnes@email.unc.edu

Currently employed as a web systems designer for a major software company in Cary, NC, Marcie G. Barnes has worked in the field of graphic design and marketing for over ten years in the high-tech industry. Marcie has a Bachelor of Arts degree from Meredith College in Raleigh, NC and is currently pursuing a Graduate Certificate in Technology and Communication from the School of Journalism & Mass Communication at The University of North Carolina at Chapel Hill. Her interests include psychology, nutrition and nutrition research, preventative medicine, and the impact of new technology and innovation on our health and well-being.

Pledge: "I have neither given nor received unauthorized assistance while preparing this assignment and I have written the code myself"

Abstract

The familiar Food Guide Pyramid and the newer MyPyramid from the United States Department of Agriculture are widely used graphical representations of what the government agency deems to be appropriate proportions of different kinds of foods for the American public. These icons are used to educate people, including children, on what they should be eating. The International community and press also frequently reference this source. This paper examines the flaws in the old and new food pyramids by investigating scientific research, including that which the Pyramid's critics use to back up their claims, and explores the reasons why the government agency is seemingly ignoring the science. In addition, this paper proposes a new "food continuum" as a better way to graphically represent the dietary needs of the human body in a way that is easy to understand for the unhealthiest segment of our population: the poor.

Flaws in an International Nutrition Icon: The USDA Food Pyramid

In America and other Westernized nations, the leading causes of death are: heart disease, cancer, stroke, and respiratory disease - all of which are non-communicable diseases and are, therefore, largely preventable. All environmental factors considered, diet is normally the biggest control factor we have over our health living in a Westernized society. Ideally, the government's recommendations (and regulations) should be reflective of what truly will benefit the health of its citizens (and larger audiences), not what large corporations and their lobbyists prescribe.

Non-communicable diseases are what could be considered "self-inflecting" conditions, as they are not caused by a virus or bacteria. Instead, these types of conditions are indicative of the breakdown of the health of the individual. Although Western Medicine is at the forefront of finding cures for these diseases, the focus on preventing them from occurring in the first place is often lost in the "hunt for the cure". An examination of all possible environmental factors (to include physical and emotional stress) is the best way to identify causes of non-communicated health breakdown, and the most prevalent (and controllable) source of what goes into our bodies is the food we eat.

According to a University of Washington paper titled "Researcher Links Rising Tide Of Obesity To Food Prices," in the period since the Food Guide Pyramid was introduced in the 90s with its recommendation for high amounts of carbohydrates and avoidance of fats, bread products' sales have catapulted (along with that of soda) and the obesity rate in America

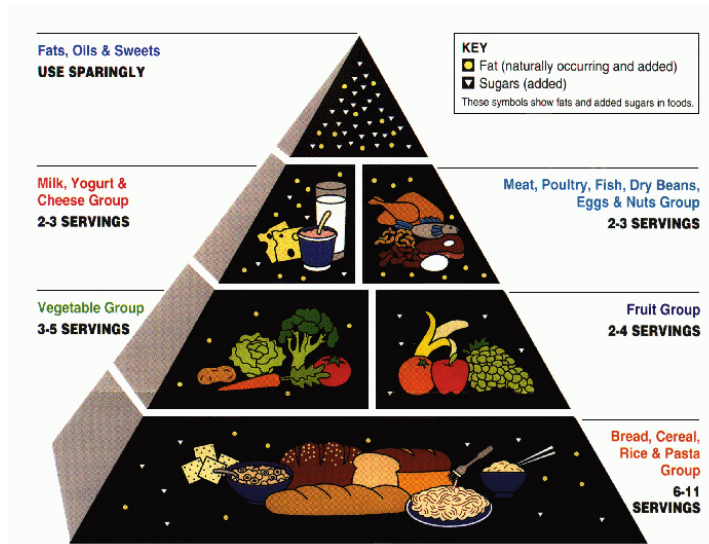
consequently has skyrocketed (in many states it has doubled.) This trend is particularly evident among low-income citizens. Cheaper foods tend to be higher in carbohydrates and harmful fats, and are far more accessible to the poorest Americans. The USDA has been highly scrutinized for the food pyramids they have developed; respected scientists and researchers' findings have "gone against the grain" of the USDA's recommendations for years. This raises the question: why are the food pyramids, particularly the newest version, so inconsistent with current the scientific research?

History of the Pyramids and Their Critics

The Food Guide Pyramid was introduced in 1992 at a time when heart disease was a concerning leading cause of death in the United States as well as other Industrialized nations. This is still the case today, and most nutritionists were (and still are) blaming fats of all kinds for the preponderance of this disease, as noted by Willett and Stampfer in the *Scientific American* article "REBUILDING the Food Pyramid."

The pyramid was intended to help the American public make dietary choices to help maintain good health and reduce the risk of chronic disease. The recommendations basically told people to minimize their consumption of fats and oils and to eat six to eleven servings a day of foods high in carbohydrates. Although the food pyramid also recommended plenty of vegetables, fruit and dairy products, it did not differentiate between types of foods such as "good fats" vs. "bad fats" and "good carbs" vs. "bad carbs."

Fig. 1. The (1992) USDA Food Guide Pyramid



(Wikipedia)

The Food Guide Pyramid was replaced by the USDA in 2005 with "MyPyramid" (<http://www.mypyramid.gov>, pictured on the next page) which has also come under quite a bit of scrutiny. Even before it was released, The Wall Street Journal published an article detailing how lobbyists were scrambling to protect the high-carbohydrate serving recommendation found in the 1992 pyramid. According to the article, "Food-Pyramid Frenzy; Lobbyists Fight To Defend Sugar, Potatoes and Bread In Recommended U.S. Diet," the original pyramid "helped fuel double-digit growth for some bread products through the late 1990s," and therefore the corporations that were benefiting from these profits were doing everything in their power to keep their products on Americans' plates.

Fig. 2. The USDA "MyPyramid"

Steps to a Healthier You



(<http://www.mypyramid.gov/>)

In addition, critics said, the pyramid graphic itself offers no explanation of it's meaning when viewed. Instead, one must navigate to a particular section of [mypyramid.gov](http://www.mypyramid.gov) and hover over the various color bands to get more information about each "food group". With the majority of America's obesity problem lying with the poor, and particularly poor women in the US (Food Research and Action Center 5), it was evident to experts that the USDA had created tool that would never be viewed properly by the very people it was meant to help.

Compounding the situation, according to the *Scientific American* article "REBUILDING the Food Pyramid," was the fact that many nutritionists decided it would be "too difficult to educate the public" about the nuances of "good vs. bad" within a food group. Instead they opted for a more simple message: "Fat is bad." It goes on to say that:

Because saturated fat represents about 40 percent of all fat consumed in the U.S., the rationale of the USDA was that advocating a low-fat

diet would naturally reduce the intake of saturated fat. This recommendation was soon reinforced by the food industry, which began selling cookies, chips and other products that were low in fat but often high in sweeteners such as high-fructose corn syrup.

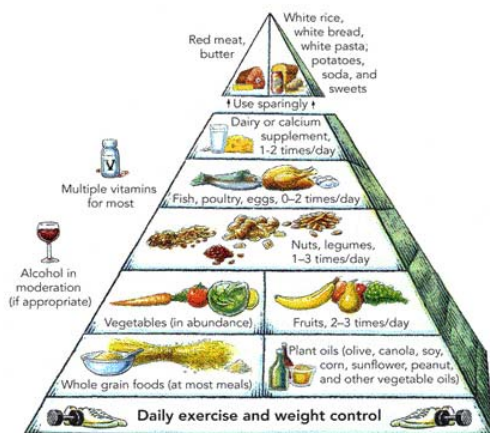
Another Scientific American article echoes the second overall concern that the pyramid's critics continue to discuss: "Critics, not surprisingly, discern the strong influence of food industry lobbyists here." (M.N.) The food industry in the United States is enormous: In the U.S., consumers spend approximately US\$1 trillion annually for food, according to Plunkett Research, Ltd. The food industry lobby is powerful, and this sentiment is voiced again in the article: "Food industry giants had big hand in writing US dietary guidelines; nutrition experts bewildered by useless advice." In it, Adams explains that "the vast majority of the people actually writing these dietary guidelines have financial ties to the very food industry groups that would be financially harmed by any advice telling Americans to eat less of anything."

A Preponderance of Evidence

There is a vast amount of research and discussion from the past two decades that bolster the argument that the Food Pyramid is leading people in the wrong direction. Most notably, scientific research from esteemed institutions such as the Harvard School of Public Health, the American Society of Agronomy, and The World Health Organization have, in the past and in the present, opposed the general structure of the Food Pyramid.

The first example of this is the Harvard School of Public Health’s 2007 published article titled: “Food Pyramids, What Should You Really Eat?” This article explains the shortcomings of both the old and new Food Pyramids and points out that: “In theory, the USDA pyramid should reflect the nutrition advice assembled in the [Dietary Guidelines for Americans](#),” also published by the USDA. It is likely, however, that since the Guidelines are in the format of an 84-page .pdf file, very few Americans would read it in its entirety. Therefore, the food pyramid takes center stage for getting nutritional information out to the public. However, according to the article, the USDA’s Pyramid does not even sync up with its own Guidelines. The article concurs with a lot of the prevalent sentiment about *why* by saying: “Intense lobbying efforts from a variety of food industries also helped shape the pyramid.” It also goes on to point out the faults of the simplicity of the new pyramid, which must be used interactively in order to be understood. In addition, the School created its own version of a pyramid in order to show the public what is best to eat and what is not (below).

Fig. 3. The Harvard School of Public Health’s “Healthy Eating Pyramid”



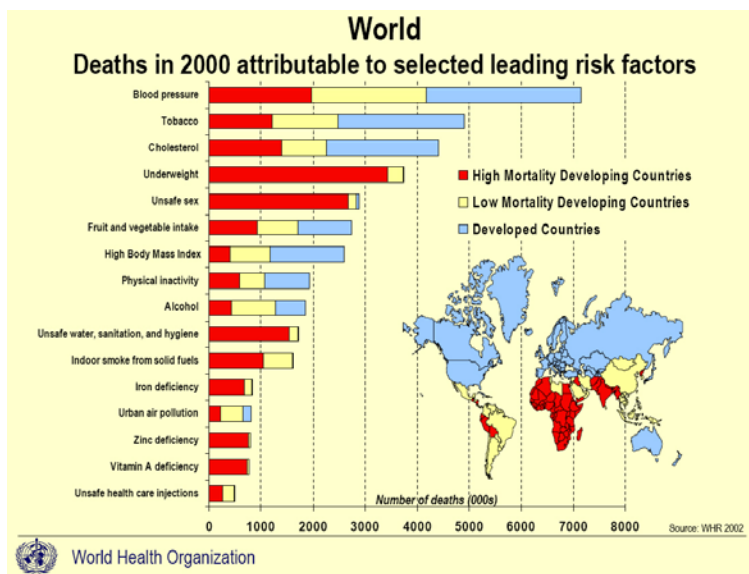
(<http://www.hsph.harvard.edu/nutritionsource/pyramids.html>)

The second example of this is the American Society of Agronomy's paper titled "Cultivating Better Nutrition: Can the Food Pyramid Help Translate Dietary Recommendations into Agricultural Goals?" in which there is in-depth exploration of the shortcomings of the original food pyramid, most of which are still evident in the 2005 version. These include political influence, overemphasis on meat and dairy consumption (also related to political influence), grouping meat and legumes together as a protein source, and the limits placed on fat consumption (to its credit, the 2005 pyramid does differentiate between fish, nut and vegetable oils [good] and "solid fats" [bad]). Although this paper mainly focuses on the potential of the Food Pyramid to influence the direction of agricultural practices, it makes an excellent point in highlighting the fact that "the Pyramid generally represents an improvement from the current U.S. diet." This is perhaps an even more profound statement when applied to today's state of health in Westernized nations because however flawed the Pyramids may be, Americans still fall far short of meeting even the basic nutritional requirements the Pyramids do present.

The third example is the World Health Organization's presentation which details their concerns about what is becoming plague of sorts consisting of non-communicable diseases (NCDs) worldwide at the 18th National Conference on Chronic Disease Prevention and Control in 2004. In the presentation, the chart shown on the next page was included to illustrate the differences in risk factors for death between "high mortality developing countries," "low mortality developing countries," and "developed countries." The chart below shows (high) blood pressure, tobacco, cholesterol, (low) fruit and vegetable intake, high body mass index, physical inactivity, and alcohol as the major risk factors for death in developed countries. Although there is no direct mention of the Food Pyramid in the presentation, it does

corroborate the general consensus of the scientific community in saying “Emerging epidemic of NCDs is to a great extent a consequence of rapid changes in diets, of declining physical activity and of increase of tobacco use” (7). This indicates that it is truly the things we are directly putting into our bodies on our own accord that are killing us. It also echoes the growing concern about the poor being the fastest growing segment of declining health when it states: “Risks are increasingly accumulating in lower socio-economic groups of the population” (7).

Fig. 4. Deaths in 2000 attributable to selected leading risk factors



(Le Galès-Camus, p.6)

These are only a few examples of the great amount of evidence and research available to peruse on the subject, however, they are very representative of the sentiment that has been coming out of the scientific and scholarly community for decades on nutrition and how it should be presented to the public.

It is also noteworthy to mention here that recent research has also been pointing to poor diet, most problematically the low-fat diets that have been prescribed by the Food Pyramid and others, as a probable cause of a variety of psychological disorders such as depression (Revill).

Defending the USDA?

The fact that there is an overwhelming amount of consistent criticism of the Food Pyramid means that is very difficult to find any real positive reviews of it. However, it is important to note the goal of the Center for Nutrition Policy and Promotion, the organization within the USDA which publishes the Pyramid: "to improve the nutrition and well-being of Americans." It would not be fair to say that this agency's intentions are not admirable, but it is fair to say that the agency, like the majority of Americans, may be in denial about what is healthy for them and what is not, and that they are unaware or unwilling to understand the severe consequences of consuming an unhealthy diet made up of foods we love as Americans. Specifically, it is those foods that we tend to crave and derive pleasure from that are the most detrimental to our health when consumed in excess (or out of proportion from our activity level). Many of these foods can be considered American Icons: Wonder Bread, Coca-Cola, McDonald's fries and burgers, and Twinkies just to name a few. Perhaps there is a sentimental reason for giving the refined, processed, high (trans)-fat foods we love a fair shake in the scheme of things?

More likely, there is an economic reason. The same companies that manufacture those "foods we love" are not surprisingly the richest and most powerful, and in turn, have the most powerful lobbies on Capitol Hill. In essence, Americans are putting more dollars right into the hands of the

corporations who influence our government to downplay the dangers of these unhealthy foods. It's a vicious cycle. And it's sad to say, but the evidence is very clear that the USDA has opted to side with Corporate America instead of with the great minds in the scientific and scholarly communities that are so vocally trying to get the correct message across to our citizens.

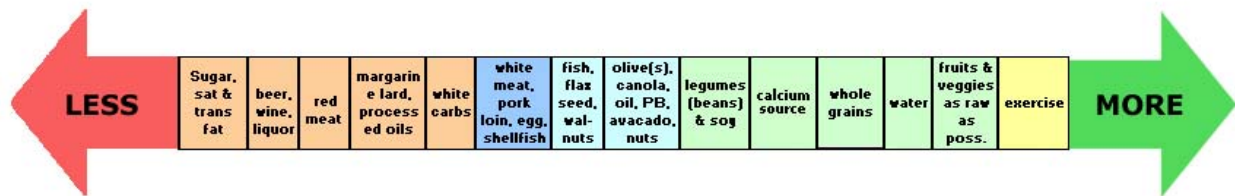
What Can Be Done?

There are many things that could be done to improve the state of nutrition education. First, a new Food Pyramid, since this is such a trusted resource worldwide. Second, a lot more proper nutrition education is needed in schools as well as in places where the general public will see it. This education should focus on *quality* of food rather than quantity in relation to stereotypical food groups. Unfortunately, this puts responsibility on the Government, Corporate America and the Food Industry to "do the right thing" and promote healthier lifestyles and eating habits. Their reputation for that hasn't been prevalent in decades, but there has been hope in the form of small steps being made by big players such as McDonald's who have been adding healthier items to their menu. The first solution I mentioned, a new Food Pyramid, is a much more realistically attained goal for the short term. Below, I propose a new graphic of what the human diet should consist of.

On the next page is what I call a "Food Continuum." Instead of the familiar pyramid shape, this graphic simply lists (from left to right) the most commonly eaten foods. It directs the reader to view the ones towards the left side of the continuum as "bad" foods that should be consumed sparingly, and those towards the right side to be "good" foods that should be eaten in abundance. Something like this should always be accompanied with further

detail for those who seek more information, however, I feel it is important for there to be a single graphic for the public to be able to reference in a clear, easy-to-understand format. The new MyPyramid fails at this miserably since there is no information whatsoever on the graphic, and people must have Internet access in order to reap the full benefit of the tool.

Fig. 5. The Food Continuum (Prototype)



© 2007 Marcie G. Barnes

In contrast to the Food Pyramid, this Continuum separates “bad” and “good” forms of fats, meats, and carbohydrates and gives examples where needed for clarification. In addition, it only reminds the reader to have a “calcium source” instead of advocating large quantities of dairy products. Although the benefits of dairy products can be huge, it is interesting to note that, by the Government’s own estimates (from the National Digestive Diseases Information Clearinghouse), a large segment of the American population is lactose-intolerant:

Between 30 and 50 million Americans are lactose intolerant and certain ethnic and racial populations are more affected than others. Up to 80 percent of African Americans, 80 to 100 percent of American

© 2007 Marcie G. Barnes

Indians, and 90 to 100 percent of Asian Americans are lactose intolerant.

Therefore, it makes little sense that the Pyramids specifically endorse dairy products. Also, the continuum notes that fruits and vegetables should be eaten as raw as possible. Any comparison in the USDA's own "National Nutrient Database for Standard Reference" will reveal that canned or otherwise prepared fruits and vegetables suffer a significant vitamin loss (and possibly other kinds of nutrient damage, depending on the food) when canned, cooked, processed, pasteurized, etc.

Final Words

The human experience consists largely of the activities we participate in and the foods and other substances we put into our bodies. Poor lifestyle choices have become epidemic in America and this is evidenced by the non-communicable disease health crisis we currently face. This is a matter of both national and international concern, as more nations follow the lead of America culturally and politically. Modern Western Medicine has proven amazing in its ability to treat and cure these NCDs, however, the cost of healthcare and health insurance is also a major issue in the United States. And unfortunately, the impoverished citizens falling victim to these health problems the most have the least amount of access to that care.

At the national level, the growing body of research on the relationship between diet and incidence of chronic disease has been effectively ignored by the Government agencies charged with educating the public on what to eat; it is obvious that the Food Industry lobbyists have been far more

influential. Internationally, the incidence of non-communicable diseases (and subsequent deaths) will begin to climb higher and higher as more cultures begin to embrace the Westernized ideals that are hallmarked by American (processed) fast food and drinks.

The human body evolved on raw, natural foods from Mother Earth. It is my hope that more people will be educated to reach for a fresh pear instead of a milkshake for dessert. But there is a long road ahead. The past several generations (in large part) have been taught, and therefore have passed down to their children, that things like white bread and fast food are wholesome and/or okay as a meal. This may be true, for a very active family. But most Americans are becoming increasingly more sedentary.

A lot of education is needed in order to reverse the health crisis we are in, and the Government and Food Industry bear a great deal of that responsibility. Otherwise, it will begin to become more and more evident that the Cultural (and Corporate) Imperialism America is exhibiting is actually killing people worldwide.

Resources

Adams, Mike. "Food industry giants had big hand in writing US dietary guidelines; nutrition experts bewildered by useless advice." NewsTarget.com. 02 Nov. 2004.

<<http://www.newstarget.com/002343.html>>.

Gleason P, Suitor C. 2001. "Children's Diets in the Mid-1990's: Dietary Intake and Its Relationship with School Meal Participation." Alexandria, VA: U.S. Department of Agriculture. Report No. CN-01-CD1.

<<http://www.fns.usda.gov/oane/menu/Published/CNP/FILES/ChilDietsum.htm>>.

Harvard School of Public Health. "Food Pyramids, What Should You Really Eat?" Retrieved 06 Dec. 2007. <<http://www.hsph.harvard.edu/nutritionsource/pyramids.html>>.

Lactose Intolerance. National Digestive Diseases Information Clearinghouse. Retrieved 06 Dec. 2007. <<http://digestive.niddk.nih.gov/ddiseases/pubs/lactoseintolerance>>.

Le Galès-Camus, Catherine. A Global Approach: Addressing the leading causes of death and disability. February 2004.

<http://www.gfmer.ch/Medical_education_En/PGC_RH_2004/Pdf/Leading_causes_death_disability.pdf>.

M.N. "Flawed Food Pyramids." Scientific American. 8 Aug. 2007.

<<http://www.sciam.com/article.cfm?articleId=4715260F-E7F2-99DF-35562DA45527971C>>.

National Nutrient Database for Standard Reference. The U.S. Department of Agriculture.

<<http://www.nal.usda.gov/fnic/foodcomp/search>>.

Peters, Christian J., Ficka, Gary W., and Wilkins, Jennifer L. "Cultivating Better Nutrition: Can the Food Pyramid Help Translate Dietary Recommendations into Agricultural

Goals?" Agronomy Journal. 95:1424-1431 (2003).

<<http://agron.scijournals.org/cgi/content/full/95/6/1424#SEC3>>.

Plunkett Research. Food Industry Overview. Retrieved 06 Dec. 2007.

<<http://www.plunkettresearch.com/Industries/FoodBeverageTobacco/FoodBeverageTobaccoStatistics/tabid/248/Default.aspx>>.

Revill, Jo. "Poor diet link to rising cases of depression." The Observer UK. 15 Jan. 2006.

<http://observer.guardian.co.uk/uk_news/story/0,6903,1686730,00.html>

University Of Washington. "Researcher Links Rising Tide Of Obesity To Food Prices."

ScienceDaily 5 January 2004. 5 December 2007

<<http://www.sciencedaily.com/releases/2004/01/040105071229.htm>>.

Wikipedia: Corporatocracy. Retrieved 07 Dec. 2007.

<<http://en.wikipedia.org/wiki/Corporatocracy>>.

Wikipedia: Food Guide Pyramid. Retrieved 05 Dec. 2007.

<http://en.wikipedia.org/wiki/Food_guide_pyramid>.

Willett, Walter C. and Stampfer, Meir J. "REBUILDING the Food Pyramid." Scientific American. Vol. 288, Issue 1 (Jan. 2003): 64-70. Academic Search Elite. EbscoHost.

University of North Carolina at Chapel Hill, Academic Affairs Library. 3 Dec. 2007

<<http://web.ebscohost.com.libproxy.lib.unc.edu/ehost/detail?vid=8&hid=15&sid=94f8f79e-3246-4128-acb4-2888428ca313%40sessionmgr2>>.

Zamiska, Nicholas. "Food-Pyramid Frenzy; Lobbyists Fight To Defend Sugar, Potatoes and

Bread In Recommended U.S. Diet." July 29, 2004. p. B.1. Wall Street Journal

(Eastern Edition). ProQuest. University of North Carolina at Chapel Hill, Academic Affairs Library. 3 Dec. 2007.

<<http://proquest.umi.com.libproxy.lib.unc.edu/pqdweb?index=0&did=670907171&srchMode=1&sid=2&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1197137413&clientId=15094>>.