



# Nutrition for Family Living

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## August, 2007 Topics

Nutrient Density: An Important but Confusing Concept

Aligning Ourselves with the Millennium Development Goals as Nutrition Educators

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## Nutrient Density: An Important but Confusing Concept

By Susan Nitzke

The American Dietetic Association (ADA) recently published a practice paper on “Nutrient density: Meeting nutrient goals within calorie needs” that summarizes one of the core nutrition concepts from the *Dietary Guidelines for Americans, 2005* (DGAs). According to this practice paper and the DGAs, nutrient-dense foods provide substantial amounts of vitamins and minerals and relatively few calories. Foods that are low in nutrient density supply calories but relatively small amounts of vitamins and minerals. As a general rule, consumers can select nutrient-dense foods (foods that are “nutrient rich”) by selecting foods that are low in fat (especially solid fats) and added sugars.

Some experts have proposed various scores to represent nutrient density, but none have been widely adopted. Before such a scoring system is adopted, several difficult issues need to be resolved. For example:

- Finding an appropriate way to distinguish between foods that are nutrient rich because nutrients have been added during processing (such as highly fortified breakfast cereals) and foods that are naturally nutrient rich (such as most fruits and vegetables).
- Choosing the nutrients upon which the ratings should be calculated (for example, is calcium more important than phosphorus?).
- Giving proper credit to beneficial food components that aren’t technically essential nutrients (for example, dietary fiber, carotenoids, and other phytochemicals or antioxidants in foods).
- Reducing the score for nutrient dense foods that are also high in less desirable food components such as saturated fat or sodium.
- Making adjustments for foods that contain nutrients with low bioavailability (such as giving more credit to heme iron in meats than iron from plant-based foods).
- Avoiding the application of this concept to assigning foods to “good” and “bad” categories that are not consistent with the preferred “total diet” approach to communicating food and nutrition information.

### *Implications for Extension Educators:*

Until these issues are resolved and a scoring system is available to assist consumers in choosing nutrient-dense foods, a simple and practical guide to nutrient density can be found on page 5 of the Dietary Guidelines consumer brochure: *Finding Your Way to a Healthier You*. Following is an excerpt from that page:

Choose the most nutritionally rich foods you can from each food group each day—those packed with vitamins, minerals, fiber, and other nutrients but lower in calories. Pick foods like fruits, vegetables, whole grains, and fat-free or low-fat milk and milk products more often.



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### **References and Resources:**

Practice paper of the American Dietetic Association: Nutrient density: Meeting nutrient goals within calorie needs. *J Am Diet Assoc.* 2007;107:860-869. Available online: [http://www.eatright.org/ada/files/nutrient\\_densityNP.pdf](http://www.eatright.org/ada/files/nutrient_densityNP.pdf) (non-printable).

Position of the American Dietetic Association: Total diet approach to communicating food and nutrition information. *J Am Diet Assoc.* 2007;107:1224-1232 (co-authored by Susan Nitzke from UW-Madison/Extension and Jeanne Freeland-Graves from the Univ. of Texas at Austin). This will soon be available online at <http://www.eatright.org>.

U.S. Department of Health and Human Services and U.S. Department of Agriculture. 2005. *Finding your way to a healthier you: Based on the Dietary Guidelines for Americans*. Available online <http://www.health.gov/dietaryguidelines/dga2005/document/html/brochure.htm>

2005 *Nutrition for Family Living* article on energy/calorie density:  
<http://www.uwex.edu/ces/wnep/specialist/nfl/mmpdfs/0502.pdf#page=1>



**Aligning Ourselves with the Millennium Development Goals as Nutrition Educators**

By Sherry Tanumihardjo and the International Committee\* of the Dannon Nutrition Leadership Institute Alumni Association

**Background:** In 2000, multiple global health agencies and stakeholders convened and established eight goals, the Millennium Development Goals (see **Table**), that would make our world a vastly better place if accomplished. Most of these goals are either directly or indirectly related to nutrition. The United Nations has led an evaluation team to assess the progress of these goals until 2015. We are mid-way between when the goals were set and the year 2015.



**The Millennium Development Goals**

<i>Goal</i>	<i>Description</i>
1	Eradicate extreme poverty and hunger
2	Achieve universal primary education
3	Promote gender equality and empower women
4	Reduce child mortality
5	Improve maternal health
6	Combat HIV/AIDS, malaria and other diseases
7	Ensure environmental sustainability
8	Develop a global partnership for development

**Links to nutrition:** The **first** Millennium Development Goal (MDG) is to “**Eradicate extreme poverty and hunger.**” Our responsibility as nutrition educators is to understand and educate about the ramifications of poverty, chronic hunger, and food insecurity as we seek to eliminate these. Food insecurity is complex and the paradox is that not only can it lead to undernutrition and recurring hunger, but also overnutrition, which can lead to overweight and obesity. Unfortunately, it is estimated that by 2015, noncommunicable diseases partially caused by overnutrition such as type 2 diabetes, hypertension, and coronary vascular disease, will overtake undernutrition as the leading cause of death in low-income communities worldwide. The **second** MDG is to “**Achieve universal primary education.**” Nutrition needs to be included in curricula to promote lifestyle changes that include improved nutrition and increased physical activity. The **third** MDG is to “**Promote gender equality and empower women**”. Measures to correct poverty among women are important because they are often the main providers of health care and education to their children as well as being responsible for the family’s diet and food preparation. Moreover, they are critical to the political and economic success of their communities. Household structure is an important contributing factor to children’s nutritional outcomes. Children in single-parent, low income families with siblings and low-income extended families are more likely to have poor nutritional status. The **fourth** MDG is to “**Reduce child mortality.**” In 2004, 10.5 million children in the world died before their fifth birthday and many of these deaths were from preventable causes that were exacerbated or caused by undernutrition. The **fifth** MDG is to “**Improve maternal health.**” Targeting the vulnerable period of the child-bearing years through our nutrition programs is of utmost importance for preventing both nutrient deficiencies and excess. Although originally not intended for noncommunicable diseases, the phrase “other diseases” in the **sixth** MDG, which is “**Combat HIV/AIDS, malaria and other**



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diseases,” will need to encompass those diseases associated with overnutrition, e.g., diabetes, coronary artery disease, arthritis, and certain types of cancer. Nutrition educators can have a major role in the control and prevention of these diseases. The **seventh MDG** is to “**Ensure environmental sustainability.**” Advocating for healthy and safe environments in our communities is important for our outreach efforts. Examples of these initiatives would be sustainable agriculture and decreased use of chemicals on our foods. The **eighth MDG** is to “**Develop a global partnership for development.**” This begins with educating ourselves and others about the complexities of poverty, obesity and the double burden of malnutrition. Understanding the ramifications of having a diet that provides adequate or excessive calories yet insufficient nutritional quality is important as we set our education efforts. Billions of dollars are spent on health care expenses associated with chronic disease states that could be prevented by a healthy diet and lifestyle at all stages of life.

**The bottom line:** We have important responsibilities as nutrition educators to understand and address the consequences of food insecurity, hunger, and malnutrition. As we build coalitions, promoting grassroot efforts to increase intake of nutrient dense fruits, vegetables, and whole grains is essential to improve optimal health of individuals and the community. Across all income and education levels, healthful eating can be improved. Complex problems, such as poverty, food insecurity, and hunger require comprehensive multidimensional approaches instead of unilateral interventions. The income gap in many countries including the US continues to widen and as a consequence, so does nutritional inadequacy and health status. Understanding the nutritional implications of poverty, food insecurity, and hunger, *i.e.*, undernutrition and overnutrition, is of paramount importance. We need to actively participate in influencing public policy, research and programming to reach the MDGs by 2015. “Poverty should not leave us with a comfortable feeling,” (D. Hora-Schwobe, nutrition educator to Native Americans, personal communication, 2007).

### Resources:

United Nations Department of Economic and Social Affairs. *The Millennium Development Goals Report*. New York, 2006.

Tanumihardjo SA, Anderson C, Kaufer-Horwitz M, et al. Poverty, obesity and malnutrition: an international perspective recognizing the paradox. *J Am Diet Assn* 2007; (in press).

*\*Members of the International Committee of the Dannon Nutrition Leadership Institute Alumni Association (formed in March 2006) include S. A. Tanumihardjo, associate professor in the Dept. Nutritional Sciences at the UW-Madison and Extension, Madison, WI; C. Anderson, assistant scientist in the Dept. Epidemiology at Johns Hopkins Bloomberg School of Public Health, Baltimore, MD; M. Kaufer-Horwitz, researcher at the Fundación Mexicana para la Salud, Mexico; L. Bode, staff scientist at Burnham Institute for Medical Research, La Jolla, CA; N. J. Emenaker, program director at the National Cancer Institute, Bethesda, MD; A. M. Haqq, MD, assistant professor at Duke University Medical Center, Durham, NC; J. A. Satia, assistant professor in the Depts. Nutrition and Epidemiology at the University of North Carolina at Chapel Hill, NC; H. J. Silver, research assistant professor at Vanderbilt University Medical Center, Nashville, TN; and D. D. Stadler, research assistant professor at Oregon Health & Science University, Portland, OR. The goal of the committee is to foster intercontinental communication to build awareness concerning issues facing community nutrition globally.*



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