



# NRI research highlights

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## Study Shows Nutrient-Poor Foods Supply 27% of Daily Energy Intake

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**F**ats, oils, and sweets are shown at the tip of the USDA Food Guide Pyramid – meaning that they are recommended for moderate intake only.

But they are the key ingredients in what are known as "energy-dense, nutrient-poor foods," which are widely consumed by a vast number of the U.S. population on a daily basis. In fact, it is estimated that one-third of the U.S. population gets 45 percent of its daily calories from such foods.

Diets that promote good health must meet the need for all essential nutrients for a given level of energy requirement, while helping to reduce the risk of chronic diseases. Reducing one's intake of

energy-dense, nutrient-poor (EDNP) foods is believed to be an important part of attaining these desirable dietary goals.

Therefore, most dietary guidance given to the U.S. population has emphasized moderate intake of fats, oils, and sweets.

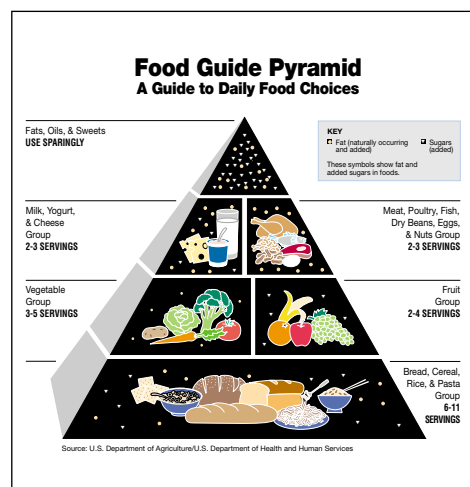
### INCREASING OBESITY

Recent surveys show an increasing incidence of obesity in the U.S. population. This problem is no doubt tied to the prevalent consumption of EDNP foods. But undoubtedly, factors other than diet, such as level of physical activity, are also important in this context.

An increase in total energy intake over the past two decades has also been reported. Given the explosive growth of convenience snack foods with modified energy and fat content in the American market, it is tempting to speculate that part of this increase in total energy intake may relate to changes in consumption of foods that may be fat-modified but still are energy-dense and nutrient-poor.

However, relatively little has been known about patterns of consumption of energy-dense, nutrient-poor foods by the U.S. population. With funding from the USDA's National Research Initiative (NRI)

USDA'S FOOD GUIDE PYRAMID SHOWS FATS, OILS, AND SWEETS AT THE TIP, INDICATING THAT THEY SHOULD BE CONSUMED IN MODERATION.



*High-energy foods of modest nutrient content are often consumed at the expense of more nutrient-dense foods.*

Competitive Grants Program, researchers at the Queens College of the City University of New York have been examining the contribution of EDNP foods to the American diet.

### **IMPLICATIONS**

The researchers studied the implications of EDNP food consumption on nutrition, health, and compliance with dietary guidance.

Research results showed that about 27 percent of daily energy intake comes from EDNP foods, with alcohol providing an additional 4 percent.

The results also suggested that the greater one's intake of EDNP foods, the less likely it is that the individual regularly consumes food from all five food groups (dairy, fruits, grains, meats, and vegetables).

With increasing EDNP food consumption, the intake of energy, percent energy from fat, and saturated fat increases. However, the relative odds of meeting the age-sex-specific recommended intake lev-

els of protein; vitamins A, C, B-6, and B-12; folate (folic acid); calcium; and iron decrease.

The researchers also found that serum levels of HDL cholesterol; vitamins A, E, C, and B-12; folate; and the carotenoids decrease with increasing EDNP food intake. Serum homocysteine (a blood chemical that is associated to a great degree with increased risk of heart disease) levels are positively correlated with EDNP food intake.

### **IMPACT**

High-energy foods of modest nutrient content are often consumed at the expense of more nutrient-dense foods. This can result in increased risk of high-energy intake, marginal micronutrient intake, and poor compliance with current nutrient- and food-group-related dietary guidance.

The results further suggest that simpler guidelines for including EDNP foods in the American diet are needed to help the public moderate its intake of these foods.

The research reported in this factsheet was sponsored by the Improving Human Nutrition for Optimal Health Program of the Nutrition, Food Safety, and Health Division of the National Research Initiative Competitive Grants Program. To be placed on the mailing list for this publication or to receive additional information, please contact the NRI (202/401-5022 or [NRICGP@reeusda.gov](mailto:NRICGP@reeusda.gov)). The factsheet also is accessible via the NRI section of the Cooperative State Research, Education, and Extension Service website (<http://www.reeusda.gov/nri>).

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