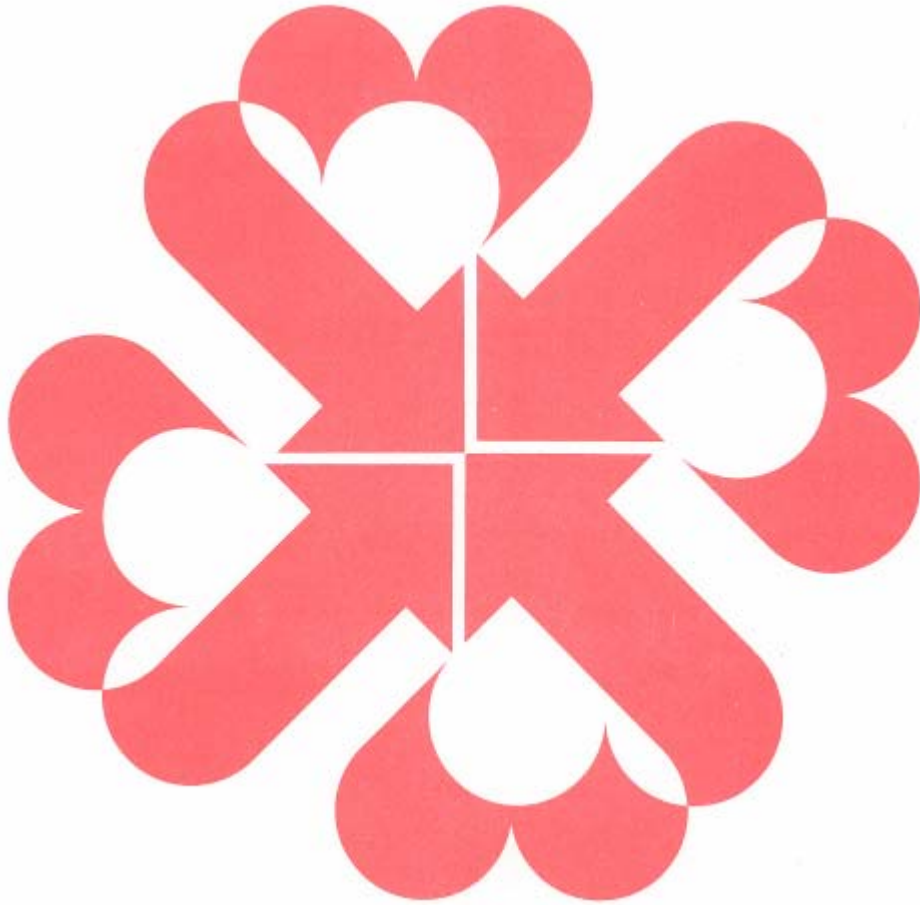


Department of Food Science and Human Nutrition  
Colorado State University Extension  
Fort Collins, CO 80523-1571

# healthy heart beats



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# Healthy Heart Program Updates

January - March 2009

Volume 31, Issue 1

## *In This Issue*

### *Greetings!*

As we reviewed the data from 2008, we were heartened to discover that over 67,000 people had accessed the *Healthy Heart Beats*. This is an indication to us we should continue issuing this quarterly newsletter. We thank each of you for reading *Healthy Heart Beats* and hopefully finding it to be helpful in your personal and professional lives.

February is American Heart Month and thus an ideal time to use this awareness in your educational efforts and work with the media. A related initiative the American Heart Association has developed is the “Go Red for Women” campaign. Red dress buttons are being worn in many cities, stores are decorated in red, and newscasters wore red on February 14 as awareness of the increased risk of heart disease in women was strongly emphasized.

In addition to heart disease, there appears to be a trend to increased incidence and prevalence of stroke in women that will likely continue through 2020. The latest issue of *Stroke: Journal of the American Heart Association* provides an in-depth look at the growing epidemic of stroke in women as well as the challenges it poses. There also appears to be a disparity in care for women with 14 percent less likely to receive “defect-free” stroke care compared to men. In an analysis conducted here in Colorado of the program *Get with the Guidelines*, researchers found that stroke-prevention measures for women, such as cholesterol medications, were less likely to be used in women than in men.

It is thus apparent that a lot of work remains for prevention and treatment of both heart disease and stroke. Educational programs are one avenue where measures can be taken to increase awareness. Both nutrition and an active lifestyle are key health practices that promote good health and prevent disease.

Go to [www.eatright.org](http://www.eatright.org) for information and materials promoting National Nutrition Month (NNM) in March. The theme this year is “Eat Right.” You may wish to organize a healthy recipe contest in your workplace, decorate your bulletin boards with NNM materials, or make a healthy food display in your foyer or waiting area. Other ideas for NNM are to conduct supermarket tours or organize a pot-luck lunch with nutritious choices. Consider introducing some new foods for staff or class participants to enjoy.

National Start Walking Day is on April 8. To order the tool kit for National Start Walking Day, visit <http://www.americanheart.org/presenter.jhtml?identifier=3053117>. The kit includes materials to promote becoming more active in the workplace and encourage others to be part of the movement to get more Americans walking.

Best wishes in the coming year. We hope your health—especially your heart health—remains good this year despite the tremendous and stressful economic challenges we are all facing in 2009.

*Jennifer Anderson, Ph.D., R.D.*  
Food and Nutrition Extension Specialist

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Extension Specialist

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# Nutrition and Research Updates

## Vitamin E and C Supplementation and Cardiovascular Disease in Men

Vitamin supplement sales are a billion dollar industry and most U.S. adults report taking a vitamin supplement in the past year. Single nutrients, such as vitamins E and C, are popular as well due to their purported cardiovascular disease-reducing properties. The use of supplements is a growing public health concern and research is beginning to explore their true potential and value to health.



The Physicians' Health Study II was a randomized, double-blind, placebo-controlled trial that examined 14,641 U.S. male physicians on the effects of vitamins E and C in the prevention of cardiovascular disease in men. All subjects were 50 years or older and included 754 men with cardiovascular disease at randomization. As part of the intervention subjects were given supplements of 400 IU of vitamin E every other day and 500 mg of vitamin C daily. The study began in 1997 with a mean follow-up of eight years.

Compared with placebo neither vitamins E nor C had a significant effect on major cardiovascular events, including total myocardial infarction, total stroke, and cardiovascular mortality. Further, no benefit for vitamin E or C supplementation was found for those with cardiovascular disease or family history of cardiovascular disease. Additionally, neither vitamin E nor vitamin C had a significant effect on total mortality, but vitamin E was associated with an increased risk of hemorrhagic stroke.

This large, long-term trial provides no support for the use of vitamin E or C supplements in the prevention of cardiovascular disease in men. This is not to say, however, that consumption of foods rich in these nutrients is not encouraged. Single nutrients in supplement form act differently than those found in food, where a variety of complex interactions occur. The conclusions of the study do not negate the antioxidant properties of vitamins E and C, but suggest that supplement form is not helpful in the prevention of cardiovascular disease.

Source: *Journal of the American Medical Association*, 2008, 300(18): 2123-2133 (November).

## Committee Appointed to Review Vitamin D Supplementation

The Institute of Medicine (IOM) has announced the composition of the next vitamin D committee of the Food and Nutrition Board (FNB), a committee that will set recommendations for both adequate intake and upper limits. To view project information and a list of members along with their background and expertise, go to <http://www8.nationalacademies.org/cp/committeevuew.aspx?key=49031>.

## Lower Sodium Intake and Increase Potassium to Combat Heart Disease

The trials of hypertension prevention (TOHP) I and II evaluated the effects of sodium reduction and other interventions on the risk of cardiovascular disease (CVD). “The totality of evidence suggests that lowering dietary sodium intake, while increasing potassium consumption, at the population level might reduce the incidence of CVD,” concluded the researchers.

Data was based on the results of urine samples collected from the follow-up information of 2,275 participants with pre-hypertension over intermittent 24-hour periods. TOHP I looked at the relationship with life-style interventions of weight loss, sodium reduction, and stress management, and supplements of calcium, magnesium, potassium, and fish oil over eighteen months. TOHP II tested the effect of weight loss and sodium reduction over a three year period.

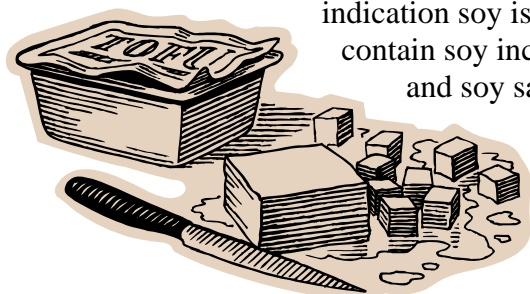


Harvard researchers reported that when the sodium to potassium excretion ratio was higher the risk of CVD increased by 24 percent. The study suggests those with pre-hypertension should increase potassium consumption along with the current guideline to lower salt intake to reverse the risk of CVD.

Source: *Archives of Internal Medicine*, 2009, 169(1): 32-40 (January).

## Eat Soy for Complete Source of Protein

Soybeans are a complete protein containing all the essential amino acids required for human nutrition. The recommendation for dietary whole soy protein is 25 grams per day. Increasing dietary whole soy protein lowers lipid levels of total cholesterol, low-density lipoproteins, and triglycerides. Soy intake may improve menopausal hot flashes and may help maintain bone health and decrease fractures in postmenopausal women. However, there is no indication soy is effective for cancer prevention. Examples of foods that contain soy include: edamame, tofu, soy milk, soy flour, tempeh, miso and soy sauce. Supplements containing soy isoflavone have not shown the same health effects as consuming dietary whole soy protein. There are no contraindications for adding soy to the diet. The greatest advantage is that soy can be substituted for higher-fat animal products while lowering lipid levels.



Source: *American Family Physician*, 2009, 79(1): 43-47 (January).

## Switching to the Mediterranean Diet Insures Ample Fruits and Vegetables

Two specific characteristics of a Mediterranean dietary pattern are high consumption of fruits and vegetables and a high intake of monounsaturated fat. In this randomized study 69 women were divided into two groups. One group followed their usual diet for six months. The other group used an “exchange list” developed specifically for the Mediterranean Diet by registered dietitians. Each participant in the intervention group maintained her original total calorie and fat intake upon entering the study. Dietitians provided both individual counseling sessions as well as support by telephone to the intervention group.



Researchers found that the group who followed the exchange-list plan reached the goals of the Mediterranean dietary pattern within three months, and maintained the change for the six-month duration of the study. Fruit and vegetable intake increased from 4.0 to 8.6 servings per day. Monounsaturated fat intake increased to a statistically significant level of 48 percent without change in total fat intake. However, the group following their usual diet without benefit of the exchange lists or counseling made few dietary changes.

"That tells us that the exchange list was helpful in assisting women to make major changes in their diet, without changes in their caloric or total fat intake," says lead author Zora Djuric, Ph.D., research professor of Family Medicine at the University of Michigan Medical School.

Source: *Journal of the American Dietetic Association*, 2008, 108 (12): 2059-2065 (December).

## Tainted Weight Loss Products Flagged as Health Risks

On December 22, 2008, the Food and Drug Administration (FDA) alerted consumers not to buy or use more than 25 different weight-loss pill products because the products may be harmful to health. Anyone using any of these weight-loss products should be advised to stop taking them and consult a health care professional immediately. Visit this Web site [www.fda.gov/bbs/topics/NEWS/2008/NEW01933.html](http://www.fda.gov/bbs/topics/NEWS/2008/NEW01933.html) for more specific information including:

- Which products have been cited
- Why the FDA acted against these products
- What undeclared ingredients were found
- Where these products are sold
- What steps the FDA is taking



*Consumers should:*

- Be advised to seek guidance from a health care professional before purchasing weight-loss products.
- Report serious adverse reactions or product quality problems to FDA's MedWatch Adverse Event Reporting program at [www.fda.gov/MedWatch/report.htm](http://www.fda.gov/MedWatch/report.htm).
- Get more information at [www.fda.gov/cder/consumerinfo/weight\\_loss\\_products.htm](http://www.fda.gov/cder/consumerinfo/weight_loss_products.htm).

## Omega-6 Fatty Acids Heart Healthy

Vegetable oils, nuts and seeds are plentiful in omega-6 fatty acids and are a beneficial part of a heart-healthy eating plan, according to a science advisory published in the January 27, 2009, edition of *Circulation: Journal of the American Heart Association*. View the full Omega-6 Advisory [here](#).

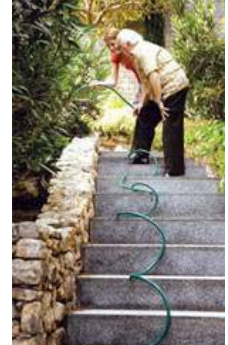
[American Heart Association News Release. Omega-6 fatty acids: Make them a part of heart-healthy eating DALLAS, Jan. 27, 2009.](#)



# Resources

## Improve Health and Well-Being of Older Adults

The National Institute on Aging (NIA) has updated their exercise guide for older adults. It is now available online and in print at [www.nia.nih.gov/exercise](http://www.nia.nih.gov/exercise). The 2009 version is titled “Exercise and Physical Activity: Your Everyday Guide from the National Institute on Aging.” This resource is useful for the physical activity, aging, and public health fields for both researchers and practitioners.



## DASH Eating Plan Tool Kit Available

Research has documented the effectiveness of the DASH (Dietary Approaches to Stop Hypertension) Eating Plan, to help lower blood pressure and other cardiovascular risk factors. The DASH Diet emphasizes a balanced eating plan that includes nutrient-rich dairy foods, fruits and vegetables.

The new DASH Education Tool Kit includes downloadable patient education materials, research summaries and a turnkey PowerPoint presentation that reviews the latest science and the Eating Plan. To access the new DASH Tool Kit, [click here](#).

## Two Free Handouts Available for Heart Month

Food & Health Communications, Inc. has made two resources available for free for February 2009. One resource is a Healthy Heart Quiz to help teach the basics of heart disease. The other is a handout that teaches about the DASH (Dietary Approaches to Stop Hypertension) Diet and stresses the importance of keeping blood pressure low. Go to: <http://foodandhealth.com/>.

## Tips to Help Lose Weight

Losing weight takes time and perseverance. This website from the Department of Health and Human Services can help jumpstart your efforts. Learn how to take small steps to change your lifestyle, and find tips for eating well at home and on the road as well as being more active: [Aim for a Healthy Weight](#).



## Tools to Aid in Portion Control

Keeping portions reasonable can serve to act as a helpful tool in weight loss and weight maintenance. Familiarize yourself with the following tools which may prove helpful.

- Portion Pals offers five color-coded discs which can be used as templates to assist with determining recommended portion sizes for meat, chicken, fish, side dishes and dessert: [www.portionpal.com](http://www.portionpal.com).
- Bowls and plates with markings for portions sizes of foods for both men and women can be found at [www.dietplate.us](http://www.dietplate.us).
- The American Institute for Cancer Research offers several tools to aid in choosing healthy portion sizes. Click on [www.aicr.org](http://www.aicr.org) to view the “New American Plate” brochures and other materials.



## Eat Healthy on a Budget

Minimize food costs but maximize nutrition. This can be challenging and does take time and advance planning before grocery shopping. Consider consulting this helpful resource from the USDA: Eating Right When Money is Tight” by going to: [www.fns.usda.gov/FSP/outreach/pdfs/making-ends-meet.pdf](http://www.fns.usda.gov/FSP/outreach/pdfs/making-ends-meet.pdf)

## Feeding Kids Newsletter

The February 2009 issue of the Feeding Kids newsletter is now available at <http://nutritionforkids.com/emlnews/FK-Feb09.htm>. The February issue contains a healthy snacking handout to help children choose healthy snack, a kid favorite recipe, lesson plans and more.

## Dairy Council Defines Role of Dairy in Childhood Nutrition



The National Dairy Council has released a white paper on dairy foods and their role in childhood nutrition. By encouraging the consumption of nutrient-rich foods, including dairy, child nutrition programs can make a contribution to improving the overall quality of Americans’ diets, potentially reducing the economic and social burden of chronic disease. The white paper can be found on the home page of the National Dairy Council: [www.nationaldairycouncil.org](http://www.nationaldairycouncil.org).

**Please remember** to credit the source for free resources used as PowerPoint presentations, handouts, articles, etc.

## Did You Know . . . ?

**Q.** I have heard a lot about high fructose corn syrup recently. Some companies are taking it out of their products and some people say it's bad for you. I have also heard that it's a natural product made from corn and is not bad for you in moderation. Can you help clear this up for me?

**A.** High fructose corn syrup (HFCS) has certainly been given a lot of attention recently. The apparent concurrent increase in obesity with the introduction of HFCS into the diet has made it a leading scapegoat. Claims have also been made that tie HFCS to diabetes, cancer, dental caries and blood lipid levels in addition to obesity. The truth is that HFCS has been associated with these issues, but a cause and effect relationship has not been found. HFCS is not the only factor in rising obesity rates! Looking to the research can help to clear up some of the confusion.

HFCS was developed in the late 1960's to produce the same sweetness as sucrose (table sugar) at a lower cost. Economics has been the principal driver behind using HFCS as a substitute for sucrose as a caloric sweetener. HFCS is corn syrup (glucose) processed to increase the fructose content and then blended with pure corn syrup, producing a high-fructose corn syrup. There are three varieties of HFCS:

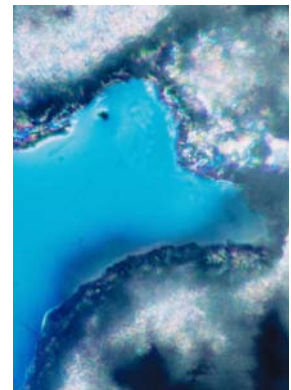
- HFCS 90 (mostly for making HFCS 55), approximately 90 percent fructose and 10 percent glucose
- HFCS 55 (mostly used in soft drinks), approximately 55 percent fructose and 45 percent glucose
- HFCS 42 (used in most foods and baked goods), approximately 42 percent fructose and 58 percent glucose

Sucrose is a mixture of 50 percent fructose and 50 percent glucose, as compared to the several varieties of HFCS. The primary difference between HFCS and sucrose is that the glucose and fructose exist as individual units in HFCS, but as a chemically joined unit in sucrose. Both HFCS and sucrose contain the same number of calories (4 per gram).

HFCS has been linked to obesity because fructose is metabolized differently than glucose in the body.

- Fructose results in lower insulin and leptin levels and these hormones help to regulate satiety (feeling of fullness); lower levels of insulin and leptin decrease satiety which can lead to over consumption and weight gain.
- Interestingly as well, fructose increases triglyceride levels when consumed in excess, which increases the risk for heart disease.

Remember: HFCS is **NOT** pure fructose; it contains both fructose and glucose the same as sucrose or table sugar.



You may wonder whether HFCS and sucrose act differently in the body. To date, short-term studies have shown that consuming either HFCS or sucrose does not produce differences in perceived

sweetness, hunger, satiety (feeling of fullness), satiety hormones, or subsequent food intakes. Researchers agree, however, that there is a need for long-term effect studies with various populations.

Defining HFCS as ‘natural’ is a complex topic. It has been highly debated, even within the Food and Drug Administration (FDA), the agency responsible for defining food label policies. The FDA recently stated that HFCS can be called ‘natural’ when synthetic fixing agents do not come into contact with it during processing. This came after a previous statement where the FDA said HFCS could not be labeled as ‘natural.’ The problem arises from the fact that the FDA has no official definition of ‘natural’ and that HFCS is highly processed. The bigger, and potentially more important issue is not whether HFCS is ‘natural,’ but the fact that added sugar in any form can be problematic in excess.

The bottom line is that excess calories, lack of physical activity, genetics, and environment all lead to weight gain. It is not accurate to label a single nutrient as the single cause for obesity and other health-related problems. HFCS should be consumed with some degree of caution due to the fact that HFCS-containing foods tend to be higher in calories and lower in nutrients compared with less processed foods as well as the fact that long term effects have not been determined.

There are a growing number of food products being produced without HFCS. Reading labels is the best way to know the ingredients in the foods you consume. Here is a list of some products that are made without HFCS:

- Oroweat bread (all varieties)
- Rudi’s Organic bread (all varieties)
- Bisquick
- Tropicana Orange Juice
- Quaker Oatmeal
- Cheerios
- Kashi TLC Granola Bars (all varieties)
- Heinz Tomato Ketchup (organic)
- French’s Honey Dijon Mustard
- Mountain High Yogurt (all varieties)
- Dannon All Natural Vanilla Yogurt

There are a number of other foods produced without HFCS. Be sure to check labels or contact the manufacturer for details. When reading labels, note that ingredients are listed in descending order by weight. The closer to the top of the ingredient list the more there is in the product.

You may wonder what is replacing the HFCS in these products. Other caloric sweeteners being used include honey, maple syrup, molasses, dextrose, corn syrup, maltodextrin, crystalline fructose, fruit juice concentrates, evaporated cane juice/syrup, and sugar alcohols including xylitol, mannitol, maltitol, and erythritol. Sugar substitutes or non-caloric sweeteners, including aspartame, acesulfame K, saccharin, sucralose (Splenda) and stevia (Truvia), may also be used. All sugars should be consumed in moderation, so be good to your body by enjoying whole foods and physical activity.

#### References:

*Health Connections*. High-Fructose Corn Syrup – A Sugar by Any Other Name. Summer 2008.  
*Environmental Nutrition*. High Fructose Corn Syrup a “Natural?” November 2008.

# Spotlight

## Jairam Vanamala, Ph.D.

Jairam Vanamala, Ph.D., is an Assistant Professor in the Department of Food Science and Human Nutrition at Colorado State University. His Bioactive Compounds for Health Laboratory is actively engaged in identifying markers in colon and prostate cancer cells and tissue in obese and non-obese conditions that could be used to identify men and women at high risk for colon cancer or that could be used for evidence-based chemoprevention strategies. As a plant-based diet is protective against a variety of cancers, his laboratory is exploring the anti-cancer properties of bioactive compounds found in fruits, vegetables, grains and herbs. Currently, his research team is working to determine whether bioactive carotenoids and/or anthocyanins from colored potatoes exhibit anti-oxidant and anti-inflammatory properties. He is also investigating whether these potatoes exhibit different properties when processed in various forms (raw vs. baking, chipping, and French frying), and alter the gut-microbiota and energy-balance in a live pig model. He serves as the principal investigator for this study, which is part of a multi-institutional USDA NRI Integrated project. Dr. Vanamala says, “The long-term goal of my research is to optimize the health profiles of food products and provide modern evidence for ancient wisdom on diet and disease.”



He received the Distinguished Early Career Contributions Award for excellence in Functional Food Research from the 2008 5th International Functional Food Conference in Baton Rouge. He also received the 2008 Outstanding Young Scientist Award from Punjab Agricultural University, Ludhiana, India, for his contributions in bringing experts together from economics, horticulture, animal science, food science, nutrition and medicine to work on complex problems in the area of functional foods, probiotics and chronic disease prevention. In addition to directing the Bioactive Compounds for Health Laboratory, he also serves on the Sub-Committee for Professional Nutrition Education for the American Society for Nutrition (ASN; 2007-2010).

Dr. Vanamala is from India and worked at the National University of Malaysia (1998-2000) before moving to Texas A&M University (TAMU), College Station, Texas, to pursue his doctoral studies on colon cancer prevention. He completed his Ph.D. in 2004 and pursued a Post-doctoral Fellowship (2004-2006) at the Department of Nutrition and Food Science on a NASA funded grant with an aim to develop dietary ingredients that protect future astronauts going to Mars against cosmic radiation induced colon cancer. Before moving to Colorado State University in August 2008, he worked at the Obesity Research Institute (2006-2008) at TAMU on obesity-promoted colon cancer prevention. He and his wife, Lavanya, and daughter, Anjali, live in Fort Collins. They are expecting another baby in June 2009 and together they enjoy spending time with their friends and cooking authentic and traditional Indian and American cuisine (Turkey for Thanksgiving).

# Dining a la Health

## Nutrient Rich Foods

The Nutrient Rich Foods Coalition Web site is useful for those who want to eat nutrient-dense foods without excess calories. The information is based on the nutrition guidelines from the USDA's *MyPyramid* and the 2005 Dietary Guidelines for Americans.

The Nutrient Rich Foods Coalition is composed of research scientists, media professionals and representatives of twelve agricultural commodity groups that represent the five basic *MyPyramid* food groups. The coalition is committed to developing tools to make it simpler for consumers to select nutrient-dense foods into the diet.

Among the helpful tools from which to choose are:

- Portion Control Basics
- Eating Out
- Fitting in Fun Foods

Use the links below to negotiate the Web site:

**NAVIGATING**  
the grocery store



Take the express lane to healthy eating! This supermarket map points the way to nutrient-rich foods. [Go »](#)

**RECIPES**  
& meal ideas



Nutrient-rich meals are on the menu! See a selection of quick and tasty options. [Go »](#)

**MYPYRAMID**  
& you



Tour *MyPyramid's* five basic food groups and get tips for making the most nutrient-rich picks. [Go »](#)

Health Professionals can download the *Live Well!* Tool Kit, which includes a Leader Guide and reproducible handouts intended to be used to help teach patients and clients to select and enjoy nutrient-rich foods: [Download Live Well!](#)

Source: <http://www.nutrientrichfoods.org/index.html>.