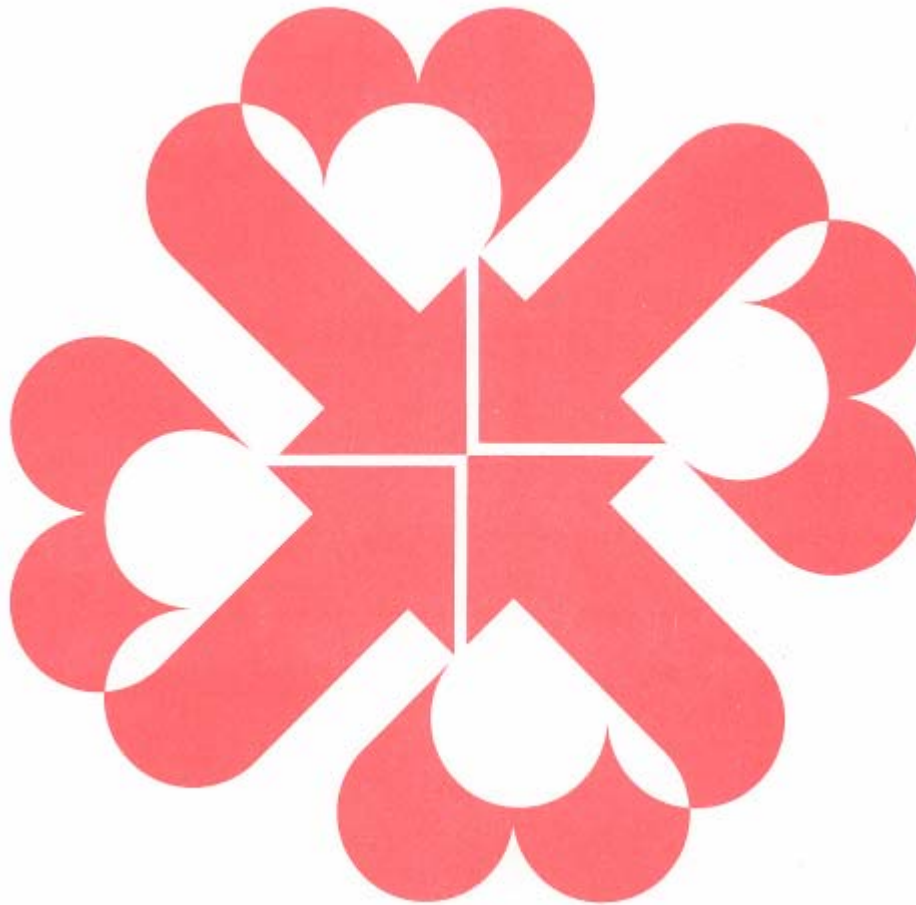


Department of Food Science and Human Nutrition
Colorado State University Extension
Fort Collins, CO 80523-1571

healthy heart beats



Colorado State University Extension programs are available to all without discrimination.

Healthy Heart Program Updates

October – December 2007

Volume 29, Issue 4

In This Issue

There has been a lot in the research news recently on managing high blood pressure. This remains a major health issue and as weight increases so does blood pressure. Overweight could be the cause of high blood pressure in half of all adults who have the condition, researchers reported in early October at the American Heart Association's 61st Annual Fall Conference of the Council for High Blood Pressure Research.

A recent research article, **Managing Blood Pressure, Weight in Middle Age May Protect Heart Later in Life**, found that adults who maintain normal blood pressure and a healthy weight at age 50 have a lower chance of suffering heart failure in old age, according to a study published in *Circulation: Journal of the American Heart Association*.

Researchers studied 3,362 participants in the Framingham Heart Study who had routine examinations between 1969 and 1994. Participants who experienced an increase of just one standard deviation (about 20 mm Hg) in systolic blood pressure at age 50 had a 36 percent higher risk of heart failure over a period extending up to 20 years later. Those whose pulse pressure rose by one standard deviation (about 15 mm Hg) had a 31 percent higher heart failure risk. A body mass index (BMI) increase of 1 kg/m² was associated with a 5 to 7 percent risk increase.

"This study highlights the importance of maintaining an ideal BMI and blood pressure over the life course of individuals," said Ramachandran S. Vasan, M.D., senior investigator of the Framingham Heart Study and a professor of medicine at Boston University School of Medicine. The

prevention of heart failure should begin early in life, and should include screening for elevated blood pressure and BMI," Vasan said.

The DASH (**D**ietary **A**pproaches to **S**top **H**ypertension) approach has been addressed in previous issues of this newsletter, and a new CSU Extension fact sheet will be published soon as an additional resource to help people control their high blood pressure. When there are no symptoms, it is often ignored and referred to as the silent killer. Regular blood pressure checks are the only means to assess one's blood pressure.

In addition, our fact sheet #9.318, *Diet and Hypertension*, is another good resource to use. Through our education, we can help everyone lead a healthy life and control those serious risk factors for heart disease and stroke.

This issue also includes information on Vitamin D; several shorter summaries on healthful food choices that do not negate the poor choices we make when eating fast food; more information on being active in the older years, and a wealth of good resources for your use in your education.

As the year winds toward an end, I hope 2007 has been a good one for your health, and great programs are in the planning stages for 2008. Best wishes for a healthy joyous holiday season.

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

Shirley Perryman, M.S., R.D.
Extension Specialist

Table of Contents

Nutrition and Research Updates

Counseling on Healthy Dietary Fats Helps Kids Reduce Cholesterol	3
‘Pot’ Belly is an Indicator of Future Heart Disease	3
Healthier Foods do not Prevent Harmful Effects of Fast Food.....	4
Physical Activity and Public Health in Older Adults.....	4
Diet Foods May Contribute to Childhood Obesity	5
Metabolic Syndrome Linked to Soft Drink Consumption	5

Resources

Portion Size Quiz	6
Trust for America’s Health Releases 2007 “F as in Fat” Report	6
Heart Healthy and Stroke Free: A Social Environment Handbook.....	7
Low Literacy Health Education Materials	7
Childhood Obesity Video.....	7
Instructional Materials for Adolescent and School Health	8

Did You Know . . . ?

I have been hearing a lot about the importance of increasing vitamin D to protect my heart health. What should I do to make certain I’m getting enough vitamin D?	9
--	----------

Spotlight

Marisa Bunning, Ph.D.....	10
---------------------------	----

Dining a la Health

Fruits and Vegetables can Boost General Health.....	11
---	----

Nutrition and Research Updates

Counseling on Healthy Dietary Fats Helps Kids Reduce Cholesterol

Children who received special counseling on dietary fat had lower cholesterol levels than children who didn't receive counseling, according to a recent study published in *Circulation: Journal of the American Heart Association*. Finnish researchers compared 540 children assigned to a dietary counseling group (starting at 7 months of age) to 522 children who did not receive special diet advice. At age 14, the dietary counseling group had a lower median cholesterol level which was statistically significant by a small margin. This finding could positively impact future efforts to encourage heart-healthy lifestyle changes.

"In the long run, even a minor decrease in serum cholesterol concentrations in a large population can have a major influence on coronary heart disease," said Harri Niinikoski, M.D., Ph.D., lead author of the study and a pediatric endocrinologist at the University of Turku in Finland. Studies have shown that high blood levels of total cholesterol and low-density lipoprotein (LDL, or "bad" cholesterol) in childhood predispose a person to early atherosclerotic changes in the large arteries, which increases the risk of early heart attack and stroke.



Source: <http://www.americanheart.org/presenter.jhtml?identifier=3049564> (August)

'Pot' Belly is an Indicator of Future Heart Disease

University of Texas researchers report that having a "pot" belly (or a high waist-to-hip ratio) is linked to early signs of heart disease. In a study of 2,744 Dallas residents, researchers used different measures of obesity: body mass index (BMI), waist circumference (WC) and waist-to-hip-ratio (WHR) as assessment tools. They assessed how these measurements were associated with coronary artery calcium and aortic plaque which are early indicators of atherosclerosis (hardening of the arteries). They found that WHR was more closely linked to increased calcium and plaque than BMI or WC suggesting that obesity contributes to cardiovascular mortality due to increased atherosclerosis.

"Fat that accumulates around your waist seems to be more biologically active as it secretes inflammatory proteins that contribute to atherosclerotic plaque build-up, whereas fat around your hips doesn't appear to increase risk for cardiovascular disease at all. We think the key message for people is to prevent accumulation of central fat early on in their lives," said James A. De Lemos, M.D., a professor of medicine at the University of Texas Southwestern Medical Center.

Source: *Journal of the American College of Cardiology*, 2007, 50(8):752-759 (August)

Healthier Foods do not Prevent Harmful Effects of Fast Food

Recent research suggests that a single fast-food meal impairs endothelial function, a key marker for cardiovascular disease, according to lead investigator, Dr. Tanja K. Rudolph, University Hospital Hamburg-Eppendorf, Germany. Rudolph and colleagues measured the initial endothelial function and other markers of cardiovascular disease in 24 healthy volunteers. The 14 women and 10 men ate one of three readily available fast food meals during one week, a different meal the second week and the remaining meal the third week. Unexpectedly, the researchers found that endothelial function was adversely affected within 2 and 4 hours after eating each of the three meals, with no statistically significant differences among them. Furthermore, all three meals had a negative impact on other cardiovascular disease markers as well, Rudolph said. "When we planned the study, our hypothesis was that "healthy" components like orange juice or salad would be able to prevent impairment of endothelial function," Rudolph noted, "But we could not show this. You cannot prevent the harmful effects of fast food to the vascular system if you only add 'healthy components,'" Rudolph concluded.



Source: *The American Journal of Clinical Nutrition*, 2007, 86 (2):334-340 (August)

Physical Activity and Public Health in Older Adults

A panel of scientists with expertise in public health, behavioral science, epidemiology, exercise science, medicine, and gerontology recently updated recommendations on the types and amounts of physical activity needed to improve and maintain health in older adults, aged 65 and older. The recommendation for older adults is similar to the Updated Recommendation from the American College of Sports Medicine (ACSM) and the American Heart Association (AHA) for Adults first published in 1995. The new recommendations emphasize the following key points:

- The recommended intensity of aerobic activity takes into account the older adult's aerobic fitness.
- Activities that maintain or increase flexibility are recommended.
- Balance exercises are recommended for older adults at risk of falls.

In addition, it's recommended that older adults should have an activity plan for achieving physical activity that integrates preventive and therapeutic recommendations. The promotion of physical activity in older adults should emphasize moderate-intensity aerobic activity, muscle-strengthening activity, reducing sedentary behavior, and risk management.



"I think if you look back during the last ten years or so, there have been some misconceptions about exercise, especially as it relates to health and the specific benefits to the heart," according to Dr. Jennifer Mieres at the New York University School of Medicine and spokesperson for the AHA. "The new guidelines give a very good definition of what constitutes physical activity, as well as the benefits that this exercise can bring about. The guidelines also give a much better roadmap in terms of fitting exercise into our daily lives."

Source: <http://circ.ahajournals.org/cgi/reprint/CIRCULATIONAHA.107.185650v1.pdf> (August).

Diet Foods May Contribute to Childhood Obesity

Researchers have reported a link between childhood obesity involving early learning about the taste of food and its caloric content. Children who have been conditioned to eat low calorie foods that are normally high in calories tend to overeat when low-calorie foods and drinks are served to them on a regular basis.

“Based on what we've learned, it is better for children to eat healthy, well-balanced diets with sufficient calories for their daily activities rather than low-calorie snacks or meals,” said Dr. David Pierce, a University of Alberta sociologist and lead author of the paper. “One thing is clear at this point. Our research has shown that young animals can be made to overeat when low-calorie foods and drinks are given to them on a daily basis, and this subverts their bodies’ energy-balance system,” Pierce said.

The researchers used young rats in a series of elaborate experiments in which they substituted low-calorie versions of foods and drinks and observed overeating as a result, including both young rats that were lean as well as those who were genetically obese. This same observation did not prove to be true for adolescent rats.

Pierce added that his team's "taste conditioning process" theory may explain "puzzling results" from other studies, such as a recent one from researchers at the University of Massachusetts, who found links between diet soda consumption (among children) and a higher risk of obesity, diabetes and heart disease, but further research is necessary with older animals using a variety of taste-related cues.

Source: *Obesity*, 2007, 15(8):1969-1979 (August)

Metabolic Syndrome Linked to Soft Drink Consumption

Though consumption of soft drinks has been linked to obesity in children and adolescents this research reports the incidence of metabolic syndrome and its components has been linked to soft drink consumption in adults. Over 6,000 adults in the Framingham Heart Study with a mean age of 52.9 years were pre-screened for the existence of the incidence of metabolic syndrome. Adjustments were made for age, sex, physical activity, smoking, dietary intake of saturated fat, *trans* fat, fiber, magnesium, total calories, and glycemic index. Researchers then examined the relationship of the incidence of metabolic syndrome to the consumption of soft drinks. The study concluded that in middle-aged adults, soft drink consumption as low as one soft drink per day was associated with a higher prevalence and incidence of multiple metabolic risk factors including obesity, increased waist circumference, impaired fasting glucose, higher blood pressure, hypertriglyceridemia, and low high-density lipoprotein cholesterol.



Source: *Circulation*. 2007, 116:480-488 (July)

Resources

Portion Size Quiz

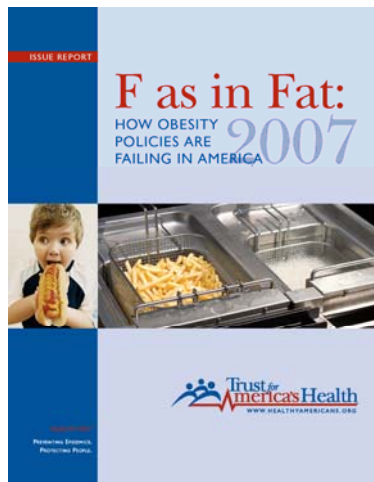
Do you REALLY know how much you eat? The University of Nebraska-Lincoln Extension in Lancaster County has put together a short 6-question quiz on portion size based on the research of Brian Wansink, Ph.D., and director of the Cornell University Food and Brand Lab. "Most of us don't overeat because we're hungry," says Dr. Wansink in his book, *Mindless Eating: Why We Eat More Than We Think*. Dr. Wansink suggests we overeat by as much as 20 percent because we are influenced by family, friends, packaging, plates, labeling, shapes, distances and containers. Those extra calories can add up, too.



Take the quiz at <http://lancaster.unl.edu/food/fta-s07.shtml>

Trust for America's Health Releases 2007 "F as in Fat" Report

Trust for America's Health (TFAH) released its fourth annual *F as in Fat: How Obesity Policies are Failing in America, 2007* report which indicates that 66 percent of adult Americans are overweight or obese. Obesity rates have continued to rise in 31 states over the past year. Colorado and Massachusetts are the only states with adult obesity rates less than 20 percent. In 1991, none of the states exceeded 20 percent.



The *F as in Fat* report, which is made possible through a grant from the Robert Wood Johnson Foundation, encompasses an overview of obesity rates and related trends, identifies federal and state obesity-related legislation and initiatives, and provides an analysis of physical activity. It also includes the results of two surveys—an expert survey on future strategies to combat obesity and a public opinion survey about obesity and strategies for reversing current trends. Additionally, the report includes recommendations for combating obesity at the federal, state, community, and individual level.

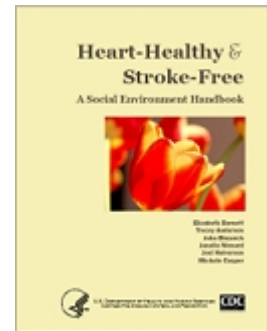
To view the entire report, click [here](#). To view an interactive map of states' obesity related facts from 2006, click [here](#).

Heart Healthy and Stroke Free: A Social Environment Handbook

Heat Healthy and Stroke Free: A Social Environment Handbook includes specific strategies for identifying the barriers and health-promoting aspects for heart-healthy and stroke-free living in local environments. Written for a broad audience (e.g. concerned community and state leaders along with public health professionals) it focuses on the connections between the social environment and the prevention and treatment of heart disease and stroke. All of the specific examples, tables, and worksheets relate directly to heart disease and stroke risk factors, prevention challenges, and treatment issues.

The chapters in this handbook are organized into three sections:

- Aspects of the social environment important for heart-healthy and stroke-free communities.
- Practical community assessment methods.
- Worksheets that can be photocopied along with a list of resources.



Access the handbook here: http://www.cdc.gov/dhdsp/library/seh_handbook/index.htm

Low Literacy Health Education Materials



The Children's Health Fund has made available low-literacy health education materials to help children and their families learn about health related topics. Available in English and Spanish, the booklets are culturally relevant. The materials make vital health information accessible to children, teenagers, parents and other care givers. As an example *Think Healthy!* helps children and their families understand the connection between eating well and feeling good. Access the materials directly at: <http://www.childrenshealthfund.org/publications/healthed.php#thinkHealthy>.

Childhood Obesity Video

Food & Fitness Matter: Raising Healthy, Active Kids is a video that addresses childhood obesity. The video presents:

- practical tips for parents to improve diet and fitness at home;
- profiles of schools and districts that successfully switched to healthier foods;
- inspiration for parents to join together and press for changes in their schools.



The video is available for \$10.00 at - <http://store.parentsactionstore.org/prostores/servlet/Detail?no=647>.

Instructional Materials for Adolescent and School Health

The Centers for Disease Control and Prevention (CDC) has developed a wide variety of science-based and other instructional materials that can help schools enhance existing health education curriculum and instruction. CDC's *School Health Education Resources* (SHER) is a unique, user-friendly web tool that consolidates these resources in one convenient location. SHER helps Pre-K-12 classroom teachers, school nurses, counselors, curriculum directors, and school administrators easily locate CDC's health education resources.

SHER features instructional materials aligned with the National Health Education Standards, Second Edition, 2007, and CDC's Characteristics of Effective Health Education Curriculum. The online database is searchable by:

- Health education topics commonly found in a comprehensive school health education curriculum.
- Four types of resources (curriculum and lessons, teacher instructional materials, student materials, and fact sheets).
- Grade level groupings (Pre-K-2, 3-5, 6-8, 9-12).

Visit CDC's SHER online at <http://www.cdc.gov/healthyouth/SHER>



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

Did You Know . . . ?

Q. I have been hearing a lot about the importance of increasing vitamin D to protect my heart health. What should I do to make certain I'm getting enough vitamin D?

A. It is true that if you want to help your heart you should get adequate vitamin D. Additionally, a recently published study suggests that low vitamin D status could be associated with higher mortality from life-threatening conditions including cancer, cardiovascular disease, and diabetes mellitus that account for 60% to 70% of total mortality in high-income countries. Researchers have not yet determined the exact link vitamin D has with heart health, but studies have shown that vitamin D can lower inflammation which otherwise contributes to heart disease. Vitamin D can also lower blood pressure which has a heart-healthy effect.

Vitamin D is a fat-soluble vitamin though toxicity is rare. Vitamin D2 is found in plant sources. Vitamin D3 (cholecalciferol) occurs naturally and is synthesized in the skin after exposure to the sun's UV rays. It is found in the diet in fish liver oils and saltwater fish. When buying supplements, check the ingredients for vitamins D3 or cholecalciferol to get the most benefit. Also, milk and cereal are fortified with vitamin D which means that vitamin D does not occur naturally in these foods.

Many people do not realize that the liver and kidneys convert vitamin D to a physiologically active form which then functions as a hormone. Its role as a hormone is to help absorb calcium and phosphorous which also have important functions in the body.

Though some researchers argue that the evidence supports higher intakes of vitamin D, the Institute of Medicine has determined Adequate Intakes (AI) for vitamin D to be 400 IU (10 mcg) for adults up to age 69. For adults aged 70 and above, the AI is 15 mcg or 600 IU's.

Food	International Units(IU) per serving	Percent DV*
Cod liver oil, 1 Tablespoon	1,360	340
Salmon, cooked, 3½ ounces	360	90
Mackerel, cooked, 3½ ounces	345	90
Tuna fish, canned in oil, 3 ounces	200	50
Sardines, canned in oil, drained, 1¼ ounces	250	70
Milk, nonfat, reduced fat, and whole, vitamin D fortified, 1 cup	98	25
Margarine, fortified, 1 Tablespoon	60	15
Ready-to-eat cereals fortified with 10% of the DV for vitamin D, ¾ cup to 1 cup servings (servings vary according to the brand)	40	10
Egg, 1 whole (vitamin D is found in egg yolk)	20	6

To view a fact sheet on Vitamin D go to: <http://ods.od.nih.gov/factsheets/vitamind.asp#h2>.

Source: *Archives of Internal Medicine*, 2007, 167(16):1730-1737 (September).

Spotlight

Marisa Bunning, Ph.D.

Marisa Bunning, Ph.D., recently joined the faculty in the Department of Food Science and Human Nutrition at Colorado State University (CSU) as an assistant professor and Extension food safety specialist. Food has always been a favorite interest, but she took a detour through plant sciences before finding her way to food science and safety. Marisa graduated from Cameron University in Lawton, Oklahoma, with a B. S. in botany and went on to get an M. S. in plant physiology at Oklahoma State University. Marisa has had a variety of interesting work experiences including assisting with plant collections at the Harvard herbarium and working as a guest researcher at the Centers for Disease Control lab in Fort Collins. At CSU Marisa has collaborated on several interdisciplinary research projects involving produce crops. This research deals with the examination of nutritional and sensory profiles of locally grown vegetables and assessing consumer opinions about produce purchases. Her Ph.D. research focused on the evaluation of different types of lettuce, but that interest has expanded to include other leafy vegetables.



This fall she is gathering information about unusual leafy greens that might grow well in Colorado – taking a botanical approach to the study of fruits and vegetables.

When wearing her Extension hat, Marisa particularly enjoys helping consumers find answers to their questions and solutions to their food preparation problems. Working in the area of food safety has been rewarding and challenging at the same time. Because pathogens, people, and food production methods undergo changes, new challenges are sure to arise. She has recently been working on the development of outreach materials regarding the safe handling of fresh produce and information about shopping at farmers' markets. Another current project is the updating of CSU's Food Processing Support Services Laboratory. The lab has been undergoing updating and renovation with the installation of new computer equipment and appliances, but has continued to be in operation for the analysis of local food products. The best experience in "learning the ropes" with this position has been the chance to learn from experts in food safety, food science, and outreach programs.

Marisa's husband, Mike, will retire from the Air Force next July. As a military family, the Bunnings have lived in a number of interesting locations—California, Alabama, Massachusetts, Hawaii, Spain and Turkey—before deciding to make Fort Collins their permanent home. All three children, Abbey, Josh, and Luke, graduated from Rocky Mountain High School but have now scattered to three different time zones. The family manages to stay connected with the help of cell phones, email, Skype, and Travelocity which is especially nice now that she has a new grandson who lives across country.

Dining a la Health

Fruits and Vegetables can Boost General Health

Many of you may not always make fruit and vegetable consumption a priority. If you feel like you're likely to fall short on that score consider setting a goal to increase your intake and make small changes over time. It will likely seem easier, too, if you can build on the positive aspects of your current diet.

Think about the fruits and vegetables you already like and start by adding those more often to other favorite dishes. Here are some simple tips to help you get started.



- Add any form of fruit—fresh, frozen, canned or dried—to a simple salad. Sweet fall pears and chopped apples can add just the right touch to leafy greens. If you're using canned fruit, choose fruit canned in juice without added sugar.
- Hungry for a sweet snack? Reach into your backpack or briefcase for dried fruit. Today's options are plentiful—dried berries, apricots, peaches, and nectarines—to name a few. Mix them with nuts or toss in whole grain cereal for crunch. Instead of stocking your desk drawers at work with salty, high fat snacks, consider an assortment of dried fruit.
- Keep your fruits and veggies in plain sight. If they're refrigerated, consider moving them to a more visible shelf. If they don't require refrigeration, exchange the salty, sweet, high-fat snacks for dried and canned fruit on the snack shelf. Fill a bowl on the kitchen counter with colorful fresh fruits and veggies that can be kept at room temperature. That will encourage you to grab something healthier when you're on-the-run.



- Tweak your recipes to find ways to add more veggies. Pre-prepared soups and pasta dishes lend themselves easily to this. One quick idea is to add cooked carrots or peas to macaroni and cheese—a typical kids' favorite. If your kids aren't fond of veggies, consider using veggie purees to pump up nutrition in casseroles.

Here are a few words of caution. Sometimes too much of a good thing isn't good. In essence don't cancel out the good nutrition by overdoing it on sugar, fat and salt.

- Though dried fruit is healthy and nutritious it's also a concentrated form of sugar so it's not good to think you can eat all you want. If you're thinking that you could have a cookie for the same number of calories, it's not a fair trade. On the other hand adding dried fruit to a cookie certainly boosts its nutritional value.
- Veggies slathered with butter and salt don't rank high on the list of healthy choices either. Have you ever tried spraying your cooked veggies with butter flavored oil spray and sprinkling with herbs? It can be quite tasty as well as healthful.

In conclusion, consider setting a goal to try a new fruit or vegetable on a regular basis. If you have children in your family, involving them in produce selection or preparation is a great first step toward getting them to eat more fruits and veggies, too.