

Inside

Nutrition Assistance in Aisle Two! 2
Check out supermarket health resources.

Maple Syrup's Hidden Compounds. 3
This naturally-derived sweetener contains intriguing bioactives.

The Best of the Convenience Store. 5
EN's food picks for your road trip.

Uncovering Acrylamide Fears. Get 7
the facts on this food compound.

Pick Sunflower Seeds for Health. 8
Enjoy their crunchy, nutty flavor.

Just In

MyPlate, a Useful Tool for Healthy Eating

The American Dietetic Association, the world's largest organization of food and nutrition professionals, gives MyPlate, the U.S. government's new graphic symbol for nutrition advice, the thumbs up. They reported that MyPlate will be a useful, intuitive way for people to eat well and improve their health. The new MyPlate icon, which is based on the 2010 Dietary Guidelines for Americans, is a plate split into four sections, each representing a different type of food (protein, whole grains, fruits, and vegetables.) The sections vary in size depending on the recommended portion of each food people should eat. A circle next to the plate represents dairy products. By viewing the icon at www.choosemyplate.gov, you can click on each section of the plate for more information. In addition, you can see how many servings you should choose of each food category, based on your individual needs. **EN**

Source: The American Dietetic Association, June 2, 2011



Phytochemicals Fight Disease

Scientists know that plants possess thousands of bioactive compounds, called phytochemicals, that impart health benefits when we eat them. These benefits range from protection of the eye against age-related macular degeneration to preventing the damaging effects of atherosclerosis that lead to heart disease. In fact, scientists believe that phytochemicals might be partially responsible for the excellent health typically seen among people who eat large amounts of plant foods.

Plants' survival system. Over thousands of years, plants have developed powerful protective defense systems. In fact, the oldest living organisms on earth are plants, specifically trees. "Plants can't just get up and run away from harmful predators, insults or injuries, such as sunshine and insects. So, plants developed compounds [phytochemicals] to protect themselves," reported Navindra Seeram, Ph.D., botanical researcher and Assistant Professor of Pharmacognosy at the University of Rhode Island, at the Berry Health Benefits Symposium at Westlake Village, CA on June 27, 2011. Many of these phytochemicals

Plants as Medicine

Plant components, from their fruits and leaves to their bark and roots, have been used as medicine since the dawn of time. Over the centuries, our ancestors collected a variety of plants to provide energy and nutrients, as well as for their medicinal properties. This practice is still followed around the globe; the World Health Organization estimates that 80 percent of the world's population still uses plants—in their whole form or as spices, tinctures, teas and soups—as their major source of medicine. And modern science is beginning to confirm that plants might be able to treat and prevent disease.

are pigments concentrated in the plant peel that are responsible for their vibrant hue—from the deep blue of blueberries to the rich red of tomatoes.

This defense system also works to ensure the plants' propagation. For example, "Plants makes berries colorful to attract seed dispersants," says Seeram, who has studied the habits of migratory birds off the Northeast coast of the U.S.

(continued on page 4)

Slim Support for Supplements

Americans are an impatient bunch. We prefer a quick fix over a slow solution to our problems. And when it comes to weight loss, it's no different. Rather than endure lifestyle changes that involve sacrifice and waiting for results, many of us would rather pop a weight loss supplement pill or endure painful injections if it means quicker, faster, better. And there's certainly no shortage of weight loss supplements—many of which are aggressively marketed—including CLA (Conjugated Linoleic Acid,) L-carnitine, guarana seed powder, bena extract, konjac extract, polyglucosamine, cabbage powder, pyruvate, xanthigen, chitosan, EGCG, whey protein and hCG. This array of weight loss aids is profitable; according to the market research and consulting

firm Marketdata Enterprises, the herbal weight-loss supplement market was estimated at \$20 billion last year.

Do weight loss supplements work?

Weight loss supplements may boast miraculous fat-burning and trimming properties, but there's little proof to back up most of these claims. "There are no dietary supplements that have been shown to be effective, as well as safe long term, for weight loss," says Robert Kushner, M.D., Professor of Medicine and Clinical Director of the Northwestern Comprehensive Center on Obesity, Northwestern University Feinberg School of Medicine in Chicago.

It's important to keep in mind that supplements are *not approved* for *(continued on page 6)*



Supermarket Nutrition Resources

As you push your cart down the supermarket aisle, you face dozens of decisions that impact the health of your family. Perhaps you're searching for gluten-free foods for someone with celiac disease, or you're simply interested in losing five pounds. How can you read past the nutrition hype on food packages to figure out which foods you

should toss into your shopping cart in order to meet your health goals?

It would be nice to have a nutrition professional guide you down the supermarket aisle, coaching you towards optimal health decisions along the way, and that's exactly what many stores are offering their customers. Supermarkets are giving shoppers a lifeline by offering

a wide range of nutrition services provided by registered dietitians, reported Barbara Ruhs, M.S., R.D., dietitian for Arizona-based Bashas' supermarkets, at the Oldway's Supermarket Dietitian Symposium in Santa Rosa, CA on March 30, 2011. *EN* conversed with supermarket dietitians to come up with our list of top supermarket nutrition resources. Check out your supermarket's website to take advantage of these programs today. *EN*

—Sharon Palmer, R.D.

Top 8 Most Valuable Supermarket Nutrition Resources

1 Cooking education. The path to a healthy diet rich in unprocessed foods leads through the kitchen. Get back to simple, everyday cooking in order to take control of your health. Dietitians in supermarkets such as Giant Eagle—a chain in the eastern U.S.—offer cooking demonstrations, cooking classes, and recipes via the store website, magazine and brochures. While the recipes are planned to promote an overall healthy lifestyle, some supermarkets even offer specialized cooking education for conditions like diabetes, gluten intolerance, heart disease, or obesity.

2 Shop seasonally and locally. You don't have to only shop at farmers markets to get connected to your food supply. Many supermarkets connect from field to fork by offering fresh, seasonal produce from local farms. For instance, Balls Food Stores/Hen House Markets/Price Choppers established a CSA (community supported agriculture) to allow local farmers to share their bounty with shoppers who sign up for the program.

3 Fruits & veggies promotion. That's the top priority for many supermarket dietitians. They're trying to increase your health-promoting fruits and vegetables intake through many strategies, including special educational or promotional campaigns on seasonal produce and cooking classes. For example, Wegmans Food Markets have "veggie coaches" in stores that encourage you to try new veg-

etables by teaching cooking techniques that add nutrients and flavor to your meals.

4 Managing food intolerances. It's no surprise that the incidence of food allergies and intolerances is on the rise, and many supermarkets have responded by offering solutions to help you manage them. Dietitians are educating supermarket staff about food allergies, stores are creating clearly labeled sections for gluten-free foods, and allergen product lists are often available. At PCC Natural Markets in Washington, shelf tag systems identify gluten in food products, and staff are trained in a gluten education program endorsed by the Gluten Intolerance Group.

5 Teaching kids about healthy eating. Everyone knows about the childhood obesity epidemic—especially supermarkets. That's why you'll find a major focus on promoting child nutrition in many stores. Considering many public schools don't offer home economics or nutrition education anymore, supermarkets help pick up the slack. Supermarkets host store tours, cooking classes, and nutrition education programs just for kids. In fact, Giant Eagle's "Be a Smart Shopper" program reaches 10,000 children per year.

6 Reliable nutrition information. While you're never sure about the credibility of nutrition information you read on non-science based websites, you can feel pretty good

about the reliability of information written by a registered dietitian on a supermarket website or magazine. For example, the dietitians at Pennsylvania-based Weis Markets contribute nutrition articles to Weis' Healthy Bites Magazine, brochures, and website, in addition to hosting an "Ask a Dietitian" program.

7 Eat well programs. If you need the structure and challenge of a wellness program to get you motivated to eat well and get fit, look to your grocery store for help. Some offer wellness programs that track your success at no cost. For instance, Wegmans' "Eat Well, Live Well" challenge includes videos, articles, tips, and inspiring stories that challenge you to get fit through four steps: Strive for five cups of fruits and vegetables daily, get moving, calories count, and measure your progress.

8 Understanding food labels. What with health claims, marketing lingo, and nutrient facts plastered all over food packages, it's really tough to understand if a particular food is right for you. That's why many supermarkets offer assistance on deciphering food labels, through store tours, brochures, website resources, store displays, and nutrition education classes. Many stores, such as Skogen's Festival Foods in Wisconsin, are taking it a step further by adapting nutrition scoring systems such as NuVal, which places food scores (based on a scale of 1-100 dependent on nutrient value) directly on shelf price tags.

EDITOR: Sharon Palmer, R.D. **CONTRIBUTING EDITORS:** Christine M. Palumbo, M.B.A., R.D.; Heidi McIndoo, M.S., R.D.; Lori Zantesson **GROUP DIRECTOR:** Diane Muhlfeld **EDITORIAL ADVISORY BOARD:** Nancy Clark, M.S., R.D., Director, Nutrition Services, Sports Medicine Brookline, Brookline, MA; Isobel Contento, Ph.D., Coordinator, Program in Nutrition and Education, Teachers College, Columbia University, New York City; Jo-Ann Heslin, M.A., R.D., Nutrition Consultant, NRH Nutrition Consultants, Inc., New York City; Bonnie Taub-Dix, M.A., R.D., Nutrition Consultant in private practice, New York City and Long Island.

B *Environmental Nutrition* (ISSN: 0893-4452) is published monthly by Belvoir Media Group, LLC, 800 Connecticut Avenue, Norwalk, CT 06854-1631; www.environmentalnutrition.com. Robert Englander, Chairman and CEO; Timothy H. Cole, Executive Vice President, Editorial Director; Philip L. Penny, Chief Operating Officer; Greg King, Executive Vice President, Marketing Director; Ron Goldberg, Chief Financial Officer; Tom Canfield, Vice President, Circulation. © 2011 Belvoir Media Group, LLC. Postmaster: Send address corrections to *Environmental Nutrition*, PO Box 8535, Big Sandy, TX 75755-8535.

Regular Subscription Rates: \$39 in U.S., \$49 in Canada (U.S. \$ only). Single copy, \$5. Subscriptions, change of address and customer service: Visit www.environmentalnutrition.com/cs. Environmental Nutrition, PO Box 8535, Big Sandy, TX 75755-8535 or 800-829-5384.

Reprints for publication and web posting available. Contact Jennifer Jimolka, Belvoir Media Group, 203-857-3144. Special written permission is required to reproduce, by any means, in whole or in part, the material contained herein. This newsletter is not intended to provide advice on personal health matters. Consult a qualified health care provider.

Maple Syrup's Sweet Phenolic Profile

Maple syrup is as all-American as apple pie, and now it looks like it's a natural sweetener that you can enjoy in moderation without too much guilt. Thanks to new research, scientists have discovered that maple syrup—a plant-derived, natural product—is chock full of unique phytochemicals that may possess health benefits. Given that maple comes from plants—namely maple trees—this discovery shouldn't be surprising.

Maple syrup 101. One of the few agricultural crops of the Native Americans, maple syrup was later industrialized by the colonists. The only trees that can produce maple syrup are maple trees, primarily the sugar maple (*Acer saccharum* Marsh.), which is native to the northeast region of North America (85 percent comes from Canada.) The bark is tapped in late winter to early spring, when the temperature is freezing at night and warm during the day, in order to collect a watery, colorless sap at the rate of about one liter per tree per season. Then the sap is boiled down in order

to concentrate the liquids; 40 liters of sap will become 1 liter of syrup. This process allows the syrup to take on its characteristic flavor, color, and odor.

Maple nutrition. The dominant sugar in maple syrup is sucrose, but it also contains organic acids, amino acids, minerals and flavor compounds. Among the phytochemicals found in maple syrup, phenolics dominate the bunch. In a 2010 article published in the *Journal of Agricultural and Food Chemistry*, University of Rhode Island researchers identified 23 phenolic compounds in maple syrup. In 2011, the research team reported in the same journal the identification of an additional 30 phytochemicals in maple syrup, four of which were newly discovered compounds. The researchers also reported in a 2011 *Journal of Functional Foods* the discovery of a brand new phenolic compound, which they named quebecol after Quebec, the world's leading producer of maple syrup. Quebecol seems to be produced during the processing of maple syrup. The phytochemical

profile of maple syrup appears to be promising; phenolic compounds have been linked with antioxidant and anti-inflammatory benefits that offer protection against chronic disease. In a 2011 study published in *Journal of Functional Foods*, the research team concluded that the phenolic profile of maple syrup extract (without sucrose) may make it suitable to provide benefits for type 2 diabetes management.

Sweet perspective. The bioactive compounds in maple syrup are intriguing, but more research needs to occur before clear benefits can be established. Maple syrup contains sucrose—one tablespoon contains 52 calories and 12 grams (3 teaspoons) sugar. Because excessive sugar intake has been linked with metabolic abnormalities, the American Heart Association recommends an upper limit for daily added sugar intake at no more than 100 calories for women (about six teaspoons) and 150 (about nine teaspoons) for men. For now, it seems best to enjoy maple syrup in moderation. And remember to look for the real stuff—imitation maple syrup is made with corn syrup and artificial flavors that don't provide this rich phytochemical profile. **EN**

You Should Know

Beta-Glucans: A Safe Bet for Health

You've probably heard about the benefits of soluble fiber—it can help you maintain healthy cholesterol levels, regulate your bowel motility, and even reduce your risk for diseases like heart disease and certain cancers. And now, promising research on beta-glucans, a type of soluble fiber, helps explain why incorporating it into your diet could be beneficial.

How they work. Naturally occurring in certain foods, beta-glucans (or β -glucans) are branches of glucose molecules that can't be broken down into energy by human digestive enzymes because of their biochemical shape. Upon reaching the intestine, beta-glucans become a gel-like

substance that slows the progress of food through the gastrointestinal tract and binds to dietary cholesterol, preventing it from being absorbed and lowering blood cholesterol levels. The Natural Standard Database, a website that investigates health claims of foods and herbs, reports that studies show about 3 grams/day can reduce cholesterol levels and aid blood sugar control in type 2 diabetes. Evidence suggests that up to 15 grams/day is safe.

More possible beta-glucan benefits include improved endothelial (blood vessel) function in cardiovascular disease, enhanced immune response, weight loss, anti-cancer activity, and wound healing. For example, topical applications of beta-glucan instead of surgical dressings have proven useful in treating burn victims. And in a January 2007 study published in *International Immunopharmacology*, oral beta-glucans seemed to stimulate monocytes, a type of cell produced by

the body when the immune response is activated, in women with breast cancer. Since immune response can be compromised during cancer treatment, this function is of particular interest. Further research is needed to clarify these benefits.

Where to find them. You might not realize it, but you're probably already eating beta-glucans. Found in yeast, oats, barley, and some mushrooms, beta-glucans

appear at varying levels and are categorized by terms that describe their chemical structure. In yeast and mushrooms, the branched links occur between the first and third or sixth carbon in the molecule, denoted as "beta- 1,3 or 1,6 glucan," respectively. In oats and barley they are between the first and third or fourth carbon, written as "beta- 1,3 or 1,4 glucan." Many supplements that contain beta-glucans have these numbers listed on the bottle, and some evidence suggests that the type made from yeast is more biologically active. For an added bonus, the foods that naturally supply beta-glucan are also good sources of important nutrients. **EN**

Supplement Facts		
Serving Size: 2 Capsules Servings Per Container: 30		
Amount Per Serving		% DV
Vitamin D3 (Cholecalciferol)	4,000 I.U.	1000%
1,3 Beta Glucan (Yeast)	200 mg	**
Proprietary Blend	280 mg	**
Andrographis (<i>Andrographis paniculata</i>)(plant), Astragalus (<i>Astragalus membranaceus</i>)(root), Rhodiola (<i>Rhodiola rosea</i>)(Root), Elderberry extract (<i>Sambucus nigra</i>)(flower).		
**Daily Value not established.		

Beta-glucan in Foods

These sources provide about 3 grams of beta-glucan

¼ c. uncooked (or 1 cup cooked) pearl barley*

1 ½ c. uncooked (or 6 cups cooked) rolled oats*

3 ½ c. raw mushrooms (shitake, oyster, abalone)

Available in dietary supplements in varying amounts

*Research indicates beta-glucan is not affected by cooking.

Phytochemicals Fight Disease

(continued from page 1)

Before they start their long journey south, the birds switch from a diet of insects to berries, consuming three to four times their body weight in berries. These birds, who can see color the same as humans do, select the darkest berries that are highest in plant pigments over the lighter colored ones. This high consumption of berries appears to protect the birds before their stressful migration. When they consume the berries, the birds expel the seeds over a wide area and promote the survival of the plant—a mutually beneficial relationship.

Humans + plants = health. Phytochemicals are not classified as nutrients are, for example, vitamin C and iron, which have been established as essential for human health. Yet phytochemicals provide benefits beyond the mere maintenance of normal health. “Phytochemicals are compounds, just like Advil is a compound. The plants go through secondary metabolism [when plants themselves produce the phytochemicals],” explains Seeram.

Like birds, humans evolved with plants and developed a long, beneficial relationship with them. “In tropical Africa, man wandered over large areas and ate over 800 varieties of plant foods, providing 25,000 different phytochemicals,” Seeram adds.

Phytochemical science. When phytochemical research first took off, the emphasis was on total antioxidant capacity, as measured in a test tube. This resulted in a race to see which plant food—from blueberries to walnuts to coffee—contained the highest levels of antioxidants. However, while antioxidants are impor-

tant—they counteract the damaging effects of oxidative stress that can lead to chronic disease—the antioxidant activity in a test tube often doesn’t translate to the same activity in the human body.

Today, scientists know that the benefits of phytochemicals extend far beyond their antioxidant status. Many have anti-inflammatory effects, and chronic inflammation is widely accepted as the root of many chronic diseases, including heart disease, cancer, neurodegenerative diseases, and rheumatoid arthritis. Some phytochemicals become absorbed into body tissues, where they appear to work to protect health. For example, research shows that berry phytochemicals cross the blood-brain barrier and get into brain tissues, which helps to explain why they are linked with cognitive protection.

What’s ahead. The latest frontier in phytochemical research is to explore how the microflora (bacterial environment) in your gastrointestinal (GI) tract may convert phytochemicals into other bioactive compounds. Since each person has his or her own distinctive mix of beneficial and harmful bacteria populating their gut, researchers believe that there may be unique responses to the phytochemicals in the GI tract. “If you have the right microflora you might get the best bang for your buck from eating broccoli,” adds Seeram. The modern diet—high in meat and processed foods and low in plant foods and fiber—has been linked with lower levels of “healthy” bacteria in the GI tract. While scientists don’t fully understand the role that the microflora play in phytochemical bioactivity, it does appear that these “friendly” bacteria can help you gain the benefits of phytochemicals. Phytochemi-

WATERMELON, BLUEBERRY, WALNUT & CHICKEN SALAD

- ¼ cup lime juice
 - ¼ cup olive oil
 - 2 Tbsp honey
 - ½ tsp salt
 - ¼ tsp ground black pepper
 - 2 cups seedless watermelon, cubed
 - 1 cup fresh blueberries
 - 1 cup walnuts, chopped
 - 1 yellow bell pepper, cut in bite-size pieces
 - 6 cups mixed baby greens
 - 4 skinless, boneless chicken breast halves (4 oz each), grilled or sautéed
1. Preheat oven to 350°F; toast walnuts on baking sheet for 8 minutes and cool.
 2. To prepare vinaigrette, whisk together lime juice, oil, honey, salt and pepper.
 3. For the salad, toss watermelon, blueberries, walnuts and bell pepper with half of vinaigrette. Toss greens with remaining vinaigrette and divide among 4 plates; top with fruit mixture and sliced chicken breast.

Makes 4 servings.

Nutrition information per Serving:

535 calories, 32 grams (g) protein, 29 g carbohydrate, 5 g fiber, 35 g total fat, 378 milligrams sodium.

Recipe Adapted Courtesy California Walnut Board

als also appear to have synergistic effects, which confer greater benefits than the sum of their individual effects. When phytochemicals are isolated from the plant, as in the case of supplements, they often don’t produce the same health benefits as occur when you eat the whole plant, which is rich in hundreds of other bioactives, including phytochemicals, vitamins, and minerals.

Fight for phytochemicals. Today’s diet is a far cry from our early ancestors’ diet, which contained a variety of colorful plant foods. Seeram reminds us that today we often get our colors from neon-colored yogurt and macaroni and cheese. While researchers continue to unveil the mysteries of how phytochemicals work in your body to protect health, one thing seems like a safe bet: Eat more plant foods—fruits, vegetables, nuts, and grains—in every shade of the rainbow—blue, purple, red, orange, yellow, green, white—to receive a spectrum of plant compounds that offer a cornucopia of health bonuses. **EN**

—Sharon Palmer, R.D.

Phytochemicals at a Glance

Here’s a look at some phytochemicals found in plant foods.

PHYTOCHEMICALS	PLANT SOURCE	POSSIBLE BENEFITS
Genistein, Daidzein	Soy Beans, Soy Milk, Tofu	Reduction in blood pressure, increased vessel dilation
Anthocyanins	Strawberries, Red Wine, Blueberries	Improved vision, inhibition of oxidative stress, initiation of apoptosis (programmed cell death), decreased platelet aggregation, neuroprotective effects
Proanthocyanidins, Flavan-3-ols	Red Wine, Grape Juice, Grape Extracts, Cocoa,	Inhibition of oxidation and of proinflammatory responses in the arterial wall
Sulfides, Thiols	Garlic, Onions, Leeks, Olives	Decreased LDL cholesterol
Dietary Fiber	Wheat Bran, Oats	Reduced risk of colon and/or breast cancer
Carotenoids, i.e., Lycopene, Beta-carotenes	Carrots, Tomato Products	Neutralization of free radicals that cause cell damage
Sulforaphane	Cruciferous Vegetables, i.e., Kale Broccoli, Cabbage, Cauliflower	Neutralization of free radicals, reduced risk of some cancers

Source: University California, Davis

EN's Best Picks for Grab & Go Eating

Convenience Store Nutrition Comparison

As with all EN comparisons, this is only a sampling of what's available. Products are listed alphabetically.

✓ = **EN's Picks.** Hot Food picks contain no more than 350 calories (18% DV), 15 g fat (23% DV), 4 g sat fat (20% DV), and 550 mg sodium (23% DV). Baked Good, Drink, and Snack picks contain no more than 200 calories (10% DV), 14 g fat (22% DV), 2 g sat fat (10% DV), 200 mg sodium (8% DV) and 27 g sugar.

	Serv Size	Cal	Fat (g)	Sat Fat (g)	Carb (g)	Fiber (g)	Sugar (g)	Sodium (mg)	Pro (g)
HOT FOODS									
7-11 Big Bite Hot Dog, 1/3 pound, without bun (1)	150 g	480	45	19	3	0	2	1510	15
✓ 7-11 Buffalo Chicken Taquito (1)	85 g	180	8	2	22	1	1	470	6
✓ 7-11 Chicken & Pepper Jack Cheese Burrito Roller (1)	99 g	230	9	3.5	23	0	0	510	13
✓ 7-11 Chicken Tender Sandwich (1)	167 g	350	8	2	45	1	4	550	22
7-11 Corn Dog Roller (1)	96 g	320	21	7	23	3	5	840	10
7-11 Pepperoni Pizza (1 slice)	112 g	300	14	7	30	2	2	720	14
✓ 7-11 Spicy Wing Zings (1)	34 g	80	4.5	1	3	0	0	480	6
Don Miguel The Bomb Beef, Cheese & Bean Burrito (1/2)	198g	500	19	8	60	6	3	960	16
White Castle Cheeseburger (2)	104 g	310	17	8	26	1	3	600	14
SANDWICHES									
7-11 Big Eats Smoked Turkey, Jack Cheese & SW Mayo (1)	216 g	540	26	5	49	2	8	1280	23
7-11 Black Forest Ham & Havarti Cheese/Onion Roll (1)	185 g	420	15	8	43	3	9	1500	26
7-11 Tuna Salad on Wheat Bread (1)	185 g	450	19	2	48	2	11	1000	20
7-11 Turkey and Cheddar Sub (1)	136 g	280	6	2.5	37	1	3	780	19
Cumberland Farms Pretzel Sandwich (1)	n/a	530	14	6	76	2	11	1480	26
SOUPS									
7-11 Chicken Noodle Soup	12 oz	180	4.5	1	24	1	2	1590	9
7-11 Chicken Tortilla Soup	12 oz	120	2.5	0	15	3	4	1210	8
7-11 New England Clam Chowder	12 oz	470	25	2	42	1	1	300	8
BAKED GOODS									
✓ 7-11 7 Select Blueberry Mini Muffins, 3-pack (1 muffin)	25 g	100	5	1	11	0	6	150	1
7-11 7 Select Iced Cheese Danish (1)	113 g	470	20	10	68	1	39	440	5
7-11 Fresh to Go Fudge Brownie (1)	104 g	410	19	3.5	59	2	39	310	2
✓ 7-11 Fresh to Go M & M Candies Cookie 3 pack (1 cookie)	128 g	180	7	2	26	1	11	200	2
Tedeschi Select Cherry Danish (1)	128 g	350	20	10	43	1	18	360	4
Tedeschi Select Chocolate Yogurt Pound Cake (1)	142 g	590	34	7	73	3	44	500	8
Tedeschi Select Jumbo Corn Muffin (1)	142 g	510	20	3	75	4	35	870	8
DRINKS									
Cumberland Farms Berry Backlash	20 oz	190	0	0	48	0	47	10	0
Cumberland Farms Monkey Freeze	20 oz	200	0	0	48	0	48	10	0
F'real Strawberry Banana Smoothie	16 oz	270	0	0	65	3	60	50	3
F'real Frozen Cappuccino	16 oz	310	3.5	2	59	0	58	150	10
F'real Chocolate Milkshake	16 oz	580	23	14	81	2	64	210	12
SNACKS									
3 Musketeers Candy Bar (1)	60 g	262	8	5	47	1	40	116	2
✓ Apple (1 medium)	182g	95	<1	0	25	4	19	2	<1
Cheerios Bowl (1)	37 g	146	2	n/a	27	3	2	337	4
Corn Nuts, Nacho Cheese Flavor (1 pkg)	48 g	224	9	2	33	3	0	413	5
Cumberland Farms Colby Jack Cheese Stick (1)	28 g	110	9	5	1	0	0	180	7
Doritos, Cool Ranch Flavor (1 pkg)	50 g	245	12	2	32	2	2	297	4
✓ Hard Boiled Egg (1 large)	50 g	78	5	2	1	0	1	62	6
Reduced Fat Mozzarella Cheese Stick (1)	21 g	50	2.5	1.5	1	0	0	180	6
✓ Peanuts, Salted (1 pkg)	28 g	162	14	1	5	1	1	116	8
Yoplait Low Fat Blueberry Yogurt (1 carton)	170 g	170	1.5	1	33	0	27	80	5

Note: g=gram, mg=milligram, sat fat=saturated fat, oz=ounces; Source: product labels and website, calorieking.com, ESHA Food Processor

Sure, ideally, every meal you have would be eaten at home comprising a variety of wholesome ingredients. But for most of us, the ideal world and the real world are miles apart most of the time. So, we do what we can with what we have; sometimes that means the occasional meal from a convenience store or filling our bellies while we're filling our gas tanks. At one time a meal from such an establishment meant either a week-old donut or that lone hotdog that looked as if it had been spinning on the hot dog cooker since the day the store opened. But, not anymore. You can still find donuts and hotdogs, but you can also pick up chicken wings, brownies, fruit, hardboiled eggs, and much more. And, as you can see just from those examples, there are a variety of options if you're attempting to stick to a healthy eating plan or opting for a more carefree attitude about your food choices.

Helpful hints. When you find yourself faced with the culinary offerings of the nearest 7-Eleven or Cumberland Farms for your next meal, consider these tips to help find healthier offerings.

- **Try to include as many food groups as possible.** Most "quick-pick up" stores offer fresh fruit and fruit cups, as well as salads and cut up veggies. They can provide much needed fiber and nutrients often missing from other convenience food fare, such as donuts and chips. Plus, they provide fewer calories, fat, sodium, and added sugar, which can help balance a less-than-stellar entrée choice.

- **Drink with caution.** Many convenience stores are famous for their frozen and mega-size drink concoctions. In fact, one in particular is known for a cup size called the "Double Gulp," which, when filled with soda, provides a whopping 186 grams of sugar (the equivalent of 47 teaspoons of sugar) and 744 calories. Fortunately, their coolers are also filled with an array of calorie-free waters, as well as 16-ounce containers of skim or 1% milk, which, at roughly 160 calories, is a huge calorie saving.

- **Think small.** Who says a meal has to be one big entrée? Consider feasting on a variety of small items. For example, a couple of hardboiled eggs, some yogurt, nuts, a banana and carrot sticks with hummus would make a perfectly balanced, healthy lunch on the go. [EN](#)

— Heidi McIndoo, M.S., R.D.

Slim Support for Supplements

(continued from page 1)

effectiveness or safety by the Food and Drug Administration under the Dietary Supplement Health and Education Act of 1994 (DSHEA.) Kushner adds, “Dietary supplements are not held to the same standard as drugs, so it’s very difficult to evaluate their effectiveness, as well as their safety. I suspect many of these supplements are safe, but safety is really determined by long term use and careful observation. And none of these dietary supplements have been held to that standard that we see for drugs.”

Beyond weight loss pills. In the case of weight loss supplements, the only thing that is slim is the evidence that they con-

tribute to safe and effective weight loss. However, many people believe that they have tried *everything* to lose weight, so weight loss supplements may appear to be their last, great hope. Yet, Kushner reports that there are other options. “If someone says they’ve tried everything—and I hear this all the time—a lot of times what they mean is that they’ve tried everything *on their own*. It’s very important that people who are obese—a long-term, chronic condition for many people—need support, guidance and further evaluation,” says Kushner. He suggests that your healthcare provider can provide professional guidance, such as evaluating your medical conditions or medications that might promote weight gain.

So, get back to the basics as we’ve always known them: Eat *fewer* calories and burn *more* calories by moving your body more throughout the day. Scientific evidence backs the strategy of filling up on high-volume, low-calorie foods such as vegetable soup, salads, and raw or cooked veggies. Incorporate more energy-using physical movements, such as shunning drive-thrus, taking the stairs, and standing or walking when on the telephone, as well as an activity program that incorporates regular exercise, such as walking, along with strength training every week. Finally, aim for seven to eight hours of sleep every night. Sleep deprivation has been linked to weight gain due to hormonal influences on satiety. Remember, there are no easy short-cuts for weight loss. **EN**
—Christine M. Palumbo, M.B.A., R.D.

EN’s Guide to 5 Top Weight Loss Supplements

While there are dozens of supplements marketed for weight loss, *EN* reviewed five of the most popular supplements on the market in order to fill you in on their weight loss potential.

1 Supplement: SENSEA®

Origins: It is a granular product, which is sprinkled on foods, that contains maltodextrin, tricalcium phosphate, silica, natural and artificial flavors.

Weight Loss Claims: According to the makers of SENSEA, as you eat, smell and taste, receptors send messages to your brain, which releases hormones that tell your body it’s time to stop eating. They call this phenomenon “sensory-specific satiety,” because SENSEA is supposed to enhance smell and trigger your sense of feeling full so that you eat less.

Science: The founder, Alan Hirsch, M.D., F.A.C.P., has published several clinical studies showing how users lose more weight than non-users. However, the studies have not been accepted for publication in any peer-reviewed journals.

Bottom Line: Skip it, due to lack of published research proving its effectiveness.

2 Supplement: hCG

Origins: hCG (human chorionic gonadotrophin) is a hormone produced in pregnancy.

Weight Loss Claims: Combined with a 500-calorie diet, hCG marketers claim that it enables dieters to mobilize stored fat without being hungry. Available as drops, tablets or by physician-provided injections, hCG was given a boost this year when The Dr. Oz Show featured an investigation on it.

Science: There is no peer-reviewed, published

science to prove these claims, only testimonials. While a 500-calorie diet should result in weight loss, it is an inappropriately low level of calories without direct medical supervision.

Bottom Line: Skip it; any time calories are severely restricted, nutritional inadequacies may result, according to the American Dietetic Association’s Evidence Analysis Library.

3 Supplement: Xanthigen

Origins: Xanthigen is a botanical compound derived from brown seaweed and pomegranate seed oil.

Weight Loss Claims: It helps premenopausal women with non-alcoholic fatty liver disease lose weight, according to the supplement makers, because when fat accumulates within the liver’s cells, the liver is no longer able to regulate fat production, distribution and utilization and is linked with gradual accumulation of fat in the body. The supplement is purported to reduce liver fat and about one week later, body weight begins to drop.

Science: A 16-week study published in January 2010 in *Diabetes, Obesity, and Metabolism* found that in 151 subjects who took daily xanthigen supplements containing 300 milligrams (mg) pomegranate seed oil + 300 mg brown seaweed extract in addition to an 1800-calorie diet, liver fat and body fat was reduced.

Bottom Line: This product may have potential, although the research is preliminary. It’s important to consider that other forms of weight loss also decrease liver and body fat. Look for future research to clarify its role in weight loss.

4 Supplement: Green Tea Extract

Origins: Green tea, rich in catechins like EGCG (epigallocatechin gallate,) comes from the *Camellia sinensis* plant.

Weight Loss Claims: Many green tea supplements boast of their supposed fat-burning and metabolism-boosting action, which lead to weight loss.

Science: Preliminary evidence suggests that green tea extract (270 mg EGCG per day) may help reduce weight in overweight individuals who follow a reduced-calorie diet. EGCG has been shown to boost calorie burning by 50-100 calories/day.

Bottom Line: It’s not a miracle worker; a reduction of 50-100 calories a day probably won’t make a significant impact on your weight.

5 Supplement: Stimulant Laxatives,

such as aloe, buckthorn, cascara, frangula, rhubarb root and senna

Origins: Naturally-occurring botanicals long known for their laxative properties.

Weight Loss Claims: Quick weight loss due to a diarrheal effect (loss of water and solid waste.)

Science: Temporary weight loss occurs. By the time laxatives act on the large intestine, most of the calories of foods eaten have already been absorbed by the small intestine. Chronic use of laxatives can lead to dehydration, electrolyte imbalance, kidney failure and even death due to the loss of water and electrolytes.

Bottom Line: Skip it. Laxatives do not promote long term weight loss; they simply speed things up in the gastrointestinal tract.

Dramatic Nutrition in Black Foods

Q *Black foods are getting popular. Are there any health benefits?*

Chefs have turned to the chic shade of black to infuse drama across a stark, white dinner plate. They know that the deep, glossy shade of say black quinoa or black rice can do wonders for the visual appeal of a meal. But are there any nutritional rewards that come along with this elegant color palette? It seems like brightly colored fruits and vegetables, such as scarlet tomatoes and verdant spinach get all of the attention in the nutrition world. But you might be surprised to find out that the color black is a calling card for a plant's health-protective nutrient load.

Dark nutrient cache. Food scientists discovered that many dark foods are colored by naturally-occurring pigments called anthocyanins, which are a class of flavonoids found in plants. These anthocyanins, which also lend blueberries their deep blue color, protect the plant against oxidation, pests,

and harmful UV radiation; and some of the health benefits are passed on to you when you bite into their dark flesh. Anthocyanins act as antioxidants and anti-inflammatory agents, fending off the development of chronic diseases, such as Alzheimer's disease, diabetes, heart disease, and certain types of cancer. And that's not all; many black foods contain other phytochemicals (see page 1 "Phytochemicals Fight Disease") such as the polyphenols found in black tea and dark chocolate that offer antioxidant and anti-inflammatory properties.

Emerging evidence indicates that black foods may be even richer in antioxidants than their paler counterparts. For example, in a 2009 study published in the *Journal of Agricultural and Food Chemistry*, the phytochemical composition of 18 colored seed coat soybeans were analyzed by researchers from the University of Maryland. They discovered that black seed coat soybeans had the highest levels of polyphenols, isoflavones (plant estrogens linked with heart health and cancer

protection,) total antioxidant capacity, and cyanidin-3-glucoside—a potent anthocyanin that scientists believe may be one of the most promising of the bunch.

Let your diet sparkle with more deep-colored foods. Top salads and wraps with black beans; switch to black rice as a side dish, sip on black tea or espresso, treat yourself to a small piece (one ounce) of dark chocolate, use black quinoa in pilafs, and eat blackberries and black popcorn as a healthy, whole plant-based snack. **EN**

Paint Your Plate Black

Here's a sampling of our favorite black plant foods:

BLACK BEANS, SOYBEANS, CHICKPEAS, LENTILS
BLACK RICE, QUINOA
BLACKBERRIES
BLACK RASPBERRIES, CHERRIES, CURRANTS
BLACK GARLIC, PEPPER, OLIVES
BLACK POPCORN, SEAWEED
BLACK SESAME SEEDS, WALNUTS
BLACK TEA OR ESPRESSO (COFFEE)
DARK CHOCOLATE

What You Should Know About Acrylamide

Q *What is acrylamide and is it dangerous in foods?*

Dietary acrylamide has been a part of our diet since humans began cooking their food. A naturally occurring compound, acrylamide is found in a wide range of plant-based, high carbohydrate foods, such as cereals, breads and French fries, when they are cooked at high temperatures for long periods of time. The appealing taste and browning that result, known as the Maillard reaction, is the result of interaction between sugars and the amino acid, asparagine; with acrylamide as a byproduct.

For years, acrylamide was known only as an industrial chemical used in the production of paper, dyes, plastics, water treatment products and grouts. Its presence was also known in tobacco smoke. Laboratory research shows high levels of acrylamide to be a neurotoxin and probable carcinogen in lab animals.

Acrylamide-food connection. Because it's not something that is added to foods, it wasn't until 2002 that researchers at the Swedish National Food Administration discovered high levels of acrylamide in

high carb foods such as cereals, breads, chips, French fries, coffee, almonds, chocolate, as well as fruits and vegetables. The news, which alarmed consumers and food safety authorities alike, set forth a reaction of more than 200 studies around the world.

Research has shown there's little cause for concern, due to the extremely low average human dietary exposure levels to acrylamide. The current level would have to increase 600 times to be considered an increased risk, according to Carl Winter, Ph.D., director of the Food Safe Program at the University of California at Davis. However, two studies published in *Cancer Epidemiology* in 2008 and 2010 found a link to postmenopausal endometrial and ovarian cancer among high consumers.

Current levels of acrylamide are lower in many foods than in years past, due to research by food, health, and governing agencies. A 2011 study published in the *International Journal of Food Science and Technology* showed that taurine, an amino acid found naturally in foods like meat, can reduce the production of acrylamide during the Maillard reaction. When researchers exposed French fries to a taurine solution before frying, the fries had 96 percent less acrylamide. Lecithin

may also reduce acrylamide formation, according to findings in the May 2011 *Food Chemistry*. And foods with higher protein content have less acrylamide.

Bottom line. Regulatory agencies worldwide, such as the U.S. Food and Drug Administration and the World Health Organization recommend no dietary changes, but emphasize eating a balanced diet that includes a variety of fruits, vegetables and grains. The U.S. Environmental Protection Agency, however, suggests avoiding large amounts of carbohydrate foods cooked at high temperatures, as well as over-cooked, over-browned, and charred foods. **EN**

Editor's Note: On page 6 of the July 2011 issue, we mistakenly listed "six to 10 grams [600 to 1,000 mg] of fish oil." The correct amount is "six to 10 grams [6,000 to 10,000 mg] of fish oil."

Write to us if you have a question. We'll answer those of most interest to our readers. We regret, however, that we cannot personally respond. Send to:

Environmental Nutrition
P.O. Box 5656, Norwalk, CT 06856-5656
Phone: 800-424-7887 Fax: 203-857-3103
e-mail: customer_service@belvoir.com
www.environmentalnutrition.com
(click on "Contact Us")

Warm Up to Nutty Sunflower Seeds

The folklore. For thousands of years, Native Americans used sunflower seeds, which originated in Mexico and Peru, for food and oil, and used the plant's roots, stem, and flowers for medicines and dye pigment. One of the first plants cultivated in the U.S., the sunflower provides one of our favorite snacks.

The facts. Spiraled artistically inside the large flowering head of the sunflower (*Helianthus annuus*), the many small, tubular flowers become sunflower seeds. Each plant can grow up to twelve feet with a flower diameter of one foot, and produces an average of 800 to 2,000 seeds. Thin shells of black, gray, or gray and white stripes encase gray-green or black seeds. All are edible, though black seeds are generally pressed into sunflower oil, which is rich in linoleic acid. One ounce of seeds has nearly half of the daily requirement for heart healthy vitamin E, as well as rich supplies of fiber, protein, thiamin, niacin, vitamin B6, folate, magnesium, phosphorus, copper, manganese, and selenium.

The findings. Vitamin E, an important antioxidant, protects against the oxidation of cholesterol, which can initiate atherosclerosis and lead to blocked arteries, stroke or heart attack. In fact, some studies suggest that this important nutrient may help or prevent the onset of coronary heart disease. But when it comes to vitamin E, evidence suggests that you're better off getting it naturally in foods, such as sunflower seeds, than in supplements. Sunflower seeds are also rich in phytosterols, compounds similar to cholesterol that block the absorption of cholesterol in the intestines. This, according to the November 2009 *American Journal of Clinical Nutrition*, lowers LDL cholesterol levels in humans. Tiny as they are, sunflower seeds are rated among the highest sources of phytosterols, compared to other commonly consumed nuts and seeds, according to a study in the November 2005 *Journal of Agriculture and Food Chemistry*.

The finer points. Raw or roasted, shelled or unshelled, the sunflower seed has a huge following of snackers and cooks alike. The freshest, unshelled seeds have firm shells that aren't broken or dirty. Avoid shelled seeds that are

yellow or smell "off." High in oil, they are prone to rancidity, so refrigerate or freeze them in an airtight container. An easy and satisfying snack on its own, the mildly nutty sunflower seed partners well with every food group, while kicking up the nutrition. Saute with veggies, sprinkle atop fresh fruit, fold into an omelet, or mix into ground meats, bread and cookie batters. [EN](#)

—Lori Zanteson

Notable Nutrients

Sunflower Seed Kernels, dried, 1 ounce (28 g)

Calories: 164

Fiber: 2 g (10% DV)

Vitamin E: 9.3 mg (47% DV)

Thiamin: .4 mg (28% DV)

Vitamin B6: .4 mg (19% DV)

Magnesium: 91 mg (23% DV)

Phosphorus: 185 mg (18% DV)

Copper: .5 mg (25% DV)

Manganese: .5 mg (27% DV)

Selenium: 14.8 mcg (21% DV)

DV=Daily Value, g=grams, mg=milligrams, mcg=micrograms

EN'S OWN SUNFLOWER OMELET

- 4 large eggs, beaten
- 1 tsp sunflower oil
- 2 Tbsp raw sunflower seed kernels
- ¼ cup onion, sliced
- ¼ cup arugula
- ¼ cup tomato, diced
- ¼ cup mushrooms, sliced
- 2 Tbsp basil, chopped
- 2 Tbsp feta cheese, crumbled

1. Heat sunflower oil in sauté pan over medium heat, add sunflower seeds, stirring and toasting for 3 minutes. Add onions and cook 1-2 minutes longer.

2. Lower heat and pour in eggs, cooking until firm. Add arugula, tomato, mushrooms, and half of basil and feta cheese to one half of pan. Cook for 3-4 minutes, fold omelet in half, slide onto a plate, and garnish with basil and feta. Serves 2.

Nutrition Information Per Serving: 251 calories, 15 grams (g) protein, 4 g carbohydrates, 19 g fat, 252 milligrams sodium, 1 g dietary fiber.

- **Fiber reduces risk of death.** Using data from the National Institutes of Health-AARP Diet and Health Study, which included more than 20,000 men and 11,000 women, researchers found that dietary fiber intake was linked with a significantly lower risk of total death in both men and women, as well as lower risk of death from cardiovascular, infectious, and respiratory diseases by 24 to 56 percent in men and 34 to 59 percent in women.

Archives of Internal Medicine,
June 27, 2011

- **Food and beverage prices affect children's weight.** In a U.S. Department of Agriculture study, the relationship between food prices and children's body mass index (BMI) was explored using data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 and the Quarterly Food-at-Home Price Database. Higher prices for soda, 100 percent juices, starchy vegetables, and sweet snacks were linked with lower BMIs; conversely, lower prices for dark green vegetables and low-fat milk also were linked with lower BMI's.

Economic Research Report No. (ERR-118), June 2011

- **Healthy lifestyle reduces risk of sudden cardiac death in women.** Among nearly 82,000 women who took part in the Nurses' Health Study, researchers identified four factors of a low risk lifestyle that were significantly and independently linked with a lower risk of sudden cardiac death: Not smoking, body mass index of less than 25, exercise for at least 30 minutes per day, and adherence to a Mediterranean diet that emphasizes vegetables, fruits, nuts, legumes, whole grains, fish and moderate alcohol intake.

The Journal of the American Medical Association,
July 6, 2011

In Coming Issues

- **Best-Odds Diet for Cancer Survival.** Lower your risk of cancer recurrence through healthy lifestyle choices.
- **Spell IBS Relief with Nutrition.** *EN* reports on the best strategies to control irritable bowel syndrome symptoms.
- **Golden Squash.** Turn to squash this fall for a rich nutrient and flavor profile.