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Just In

America Gets a Poor Report Card on Fruit and Vegetable Intake

If there's one simple thing you can do for better health it's to eat more fruits and veggies. That's why the Centers for Disease Control and Prevention developed a National Action Plan (NAP) in 2005 that provided a comprehensive approach to improve public health through increased fruit and vegetable intake. After five years, the report card is in, evaluating the progress schools, restaurants, supermarkets, and governments have made toward getting people to meet their recommended intake (two cups of fruits and 2½ cups of vegetables for the average adult.) The NAP report card gave adults an "F" for an average intake that falls far below recommended levels; only six percent achieved their goals in an average day. Food consumed away from home made up one-third of average daily calories, yet it only accounted for 11 percent of all fruit and vegetable intake. The CDC called upon schools, restaurants and worksites to do a better job providing access to fruits and veggies. 

Source: National Fruit & Vegetable Alliance

The Great Fat Debate Continues

"Eat a low-fat diet." That was the public health message 30 years ago—which turned out to be dead wrong and set off a national fat phobia. Some of the country's leading nutrition experts discussed this decades-old debate about optimal fat intake at the American Dietetic Association's Food & Nutrition Conference & Expo on November 8, 2010. Walter Willet, M.D., Ph.D., chairman of the nutrition department at the Harvard School of Public Health, reported at the conference, "Data in the 1980s found that total fat and coronary heart disease had no co-relationship; it was the *type* of fat—not total fat—in the diet that was important." At that time, research didn't link low-fat diets with energy balance and a lowered risk of type 2 diabetes or breast and colon cancer, either. But that didn't stop health experts from promoting low-fat diets for all.

Low-fat mania. Alice Lichtenstein, D.Sc., director of the cardiovascular health laboratory at Tufts University, reported at the conference that three de-

acades ago advice to lower fat came out of an oversimplification of diet recommendations; instead of emphasizing *replacing* saturated fats with unsaturated fats, the advice was, simply, "lower fat intake." Soon the "eating fat makes you fat" myth took hold and the food industry created "low-fat" everything, from cookies to snack foods. The manufacturers skimmed off part of the fat in their formulations and dumped in refined carbs like white flour and sugar to fill in the flavor gaps. People started reaching for the low-fat version of foods, patting themselves on the back for making a "healthy" decision. And since the low-fat food was "healthy," why not eat the whole box?

Fat revisited. Let's take a fresh look at the types of fat and cholesterol and how they impact health.

Total fat. Dietary fats are a class of nutrients that include specific fatty acids, such as polyunsaturated fatty acids (PUFAs) and monounsaturated fatty acids. *(continued on page 4)*

Fight Metabolic Syndrome with Diet

Health experts are calling metabolic syndrome the scourge of our modern era. Often abbreviated as MetS, metabolic syndrome is not an actual disease, but a collection of unhealthy body measurements that together dramatically increase your risk of heart attack, stroke and type 2 diabetes. For example, if you have MetS you are five times more likely to develop type 2 diabetes and twice as likely to develop heart disease. And that's not all. Preliminary research even links MetS to other diseases such as breast cancer.

A condition on the rise. Thanks to our nation's growing waistlines, the incidence of MetS is increasing, even among younger adults. According to a recent study published in the October 2010 issue of *Diabetes Care*, a whop-

ping 34 percent of Americans have the condition—up from 29 percent just a few years ago. Researchers looked at data from two waves of the National Health and Nutrition Examination Survey, the first conducted between 1988 and 1994 and the second between 1999 and 2006, in order to understand the prevalence of MetS in adults. The most significant increases occurred in women between the ages of 20 and 39. "That was a little surprising to us," reports Gary Liguori, Ph.D., assistant professor of Health, Nutrition and Exercise Sciences at North Dakota State University. "However, taking an epidemiologic perspective, starting in 1980 we saw an exponential increase of obesity in children. It's [now] manifesting itself in metabolic syndrome and diabetes."

(continued on page 6)



The Future for Bisphenol A in the Food System

Bisphenol A (BPA), a chemical used to make hard, clear plastic called polycarbonate, is at the center of one of the biggest food safety controversies of the year. Found widely in the food system for decades, BPA is used in baby and sports bottles and epoxy resins used as protective linings in metal food and beverage cans. Leached BPA from food containers into food has led to widespread human exposure; in a 2005 study conducted by the U.S. Centers for Disease Control, 95 percent of people had measurable amounts of BPA in their urine. The chemical has come under fire because it mimics the hormone estrogen. Although BPA research has led to conflicting results, some studies have linked exposure to the plastic with a number of possible negative effects, including developmental problems in fetuses, infants and children.

The growing publicity over the potential dangers of BPA has led to action. In Canada, BPA was banned from baby bottles in 2008. Legislation to ban BPA has since been introduced in the U.S., and some U.S. food companies have removed BPA from baby and sports bottles and cans. The Natural Resources Defense Council filed a lawsuit in June 2010 against the U.S. Food and Drug Administration (FDA) for its failure to act on a petition to ban BPA in food containers and other materials likely to come into contact with food. In the past months, governments around the world have examined the scientific evidence on BPA in order to issue public safety recommendations.

The FDA perspective. According to the FDA, studies using standardized toxicity tests have supported the safety of our current low levels of exposure to BPA, but recent studies using new approaches to test for subtle effects have raised con-

cerns. The National Toxicology Program Center for the Evaluation of Risks to Human Reproduction, part of the National Institutes of Health, completed a review of BPA in September 2008 and concluded that there is “*some concern* for effects on the brain, behavior, and prostate gland in fetuses, infants, and children at current human exposures to bisphenol A.” As a result, FDA’s National Center for Toxicological Research is carrying out in-depth studies to understand the risks of low doses of BPA, and the National Institute of Environmental Health Sciences is providing \$30 million to study BPA. In the meantime, FDA supports the food industry’s actions to stop making BPA-containing baby bottles and infant feeding cups, as well as efforts to minimize BPA in food can linings.

The world weighs in. In October 2010, the European Food Safety Authority (EFSA) released its scientific opinion on the safety of BPA. They concluded that there is no convincing evidence to revise its current safe intake levels for BPA, and that data currently available does not provide convincing evidence of neuro-behavioral toxicity of BPA. While the EFSA scientific panel acknowledged that some recent studies showed adverse effects, such as biochemical changes in the central nervous system, effects on the immune system and enhanced susceptibility to breast cancer with low-dose BPA exposure, these studies had many shortcomings. Yet, France and Denmark adopted national measures to restrict the use of BPA in infant feeding bottles, and in November 2010 the European Union issued a directive to all EU countries to ban BPA from plastic infant feeding bottles by March 2011.

Food Standards Australia New Zealand evaluated the safety of BPA and concluded that levels of BPA intake are

very low and do not pose a risk to babies’ health. But due to public pressure to eliminate BPA from food contact materials, the Australian government recently announced a deal with major retailers to begin phasing out baby bottles containing BPA.

However, the Canadian government looked at the scientific evidence on BPA differently. In October 2010, Canada took a precautionary approach to the human health risks of BPA and called the chemical “toxic” to both human and environmental health, which experts predict will pave the way for its removal in all food containers.

What to do? “We don’t know anything for sure with BPA,” stressed Julie Jones, Ph.D., professor at the University of Minnesota, at an October 26, 2010 International Food Information Council Foundation seminar on BPA. But if you choose to take a cautious strategy, you can limit your BPA exposure. Keep in mind that heat and contact with acidic foods (e.g., soda, fruits, and vinegar) accelerates BPA’s leaching into foods and beverages; thus, using canned products and repeated washing of polycarbonate plastics increases exposure. You can also search for alternatives to polycarbonate plastic containers, such as plastics that are labeled BPA-free, stainless steel, aluminum, and glass. And some food manufacturers, such as Eden Foods, use BPA-free cans. But Jones points out that alternative BPA-free cans may raise even more questions for food safety, as they have not been fully tested. Most important, don’t let the BPA scare over canned foods lead you to shun canned fruits and vegetables. Jones adds, “The small risk for consumers is not worth lowering fruit and vegetable intake.” ^{EN}

—Sharon Palmer, R.D.

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On the Run? Reach for Organic Bistro Frozen Meals

The buzz. If healthful eating is a priority for you, then you probably already feast on a diet rich in whole foods such as seafood, whole grains, fruits and vegetables. And perhaps you even take it a step further by buying organic foods. But what are your options when you're eating on the run? The frozen food aisle in the supermarket may boast dozens of varieties of frozen meals, but they usually don't fit into this eating philosophy. Enter Organic Bistro, a line of single-serving frozen meals aimed at providing a sustainable, whole-foods approach to eating on the fly.

The basics. Organic Bistro makes several organic meals that include ingredients like wild Alaskan salmon, chicken, turkey or shrimp; whole grains, and vegetables. (See Organic Bistro Nutrition Comparison)

The bonus. Organic Bistro meals are nutritionally balanced and satisfying.

The sodium content is low to modest (65 to 430 milligrams per meal,) the protein levels (excluding the meat-free Pasta Puttanesca) are adequate (18 to 35 grams per meal) and the dietary fiber levels aren't bad (6 to 8 grams per meal.) There's a lot to like about Organic Bistro's ingredients list, which stars plenty of "real" organic food ingredients. The meals even taste good—our favorite is Wild Salmon in Rosemary Orange Glaze with Cranberry Pilaf & Broccoli.

The bust. They may be nutritious and delicious, but priced at about \$4 to \$7 per meal (may vary depending on store) Organic Bistro doesn't come cheap. Considering the quality of ingredients, such as wild salmon, organic mushrooms, and Kalamata olives, it's understandable that the price is higher compared with other frozen entrees. While home-cooked meals are still your best bet, when time or circumstances don't permit it Organic Bistro comes in handy—and healthy. [EN](#)

ORGANIC BISTRO FROZEN ENTREE NUTRITION COMPARISON

Frozen Meal (1 each)	Cal	Pro	Carb	Fat	Sodium	Fiber
Ginger Chicken with Green Tea Veggies & Almond Pilaf	360	24 g	37 g	14 g	430 mg	7 g
Savory Turkey in Rosemary Mushroom Sauce with Green Beans & Lentil-Quinoa Pilaf	370	31 g	40 g	10 g	240 mg	7 g
Alaskan Salmon Cake with Three Bean Medley & Confetti Pilaf	410	28 g	39 g	16 g	250 mg	8 g
Wild Alaskan Salmon in Rosemary Orange Glaze with Cranberry Pilaf & Broccoli	390	28 g	43 g	13 g	65 mg	6 g
Chicken Citron over Spinach with Herbed Quinoa & Sundried Tomato Edamame	450	35 g	38 g	18 g	430 mg	8 g
Moroccan Chicken with Veggies & Chicken-Almond Pilaf	340	22 g	41 g	10 g	300 mg	7 g
Pasta Puttanesca (Tomato-Porcini Sauce, Olives, Broccoli & Artichoke Hearts over Penne)	320	11 g	55 g	6 g	380 mg	8 g
Jamaican Shrimp Cake with Red Pepper-Green Bean Salad & Mango-Black Bean Rice	320	18 g	49 g	7 g	105 mg	6 g

Note: g=gram, mg=milligrams, cal = calories, pro=protein, carb=carbohydrates; Source: food label/website

You Should Know

Get the Facts on Fermented Foods and Your Health

Fermented foods such as natural pickles (using lactic acid fermentation), kimchi (made with cabbage), tempeh and miso (made from soy), yogurt and kefir, and sauerkraut have been celebrated by many cultures for centuries, but today they're in the spotlight for their potential health benefits.

Fermentation 101. Introduced long before the advent of modern technology, such as refrigeration, fermentation is a method of food preservation and preparation brought about by the action of microorganisms. The process often relies upon a series of steps, such as cleaning, grinding, soaking, cooking, and packing. Foods that are fermented include grains, milk, fish, meat, legumes, and vegetables. A common agent of fermentation is lactic acid bacteria; these are naturally present in food, or added with a lactic acid bacteria starter culture. For example, in Africa, fermented grain products such as millet are produced by soaking grains in water for a few days, during which naturally occurring lactic acid bacteria grow or a starter culture is added.

Nutrition and health bonus. Fermentation can change the nutritional quality of foods. It can decrease the gas-producing compounds in legumes, increase the availability of certain nutrients like the vitamin B group, preserve levels of nutrients like vitamin C, and decrease the level of antinutrients (see page 7, "Antinutrients in Plant Foods Exposed") that may interfere with nutrient availability.

Although we have much more to learn about fermented foods and human health, scientists are making headway. According to a December 2010 review published in *Critical Reviews in Microbiology*, lactic acid bacteria are part of the normal intestinal flora of humans and produce beneficial effects. These include alleviation of lactose intolerance, diarrhea, and peptic ulcer; stimulation of the immune system, anti-allergic effects, antifungal actions, and prevention of colon cancer. Possible colon cancer-protective effects may be due to binding cancer-causing agents in the intestines, suppressing the growth of bacteria that become carcinogenic, or enhancing the immune system.

Some studies have raised questions about fermented foods' health potential. Italian researchers reported in the November 2010 issue of *European Journal of Clinical Nutrition* that some species of lactic acid bacteria can produce biogenic amines, nitrogen-containing compounds derived from amino acids that can occasionally accumulate in high concentrations in foods and have toxicological consequences, such as headache, nausea and vomiting. And a January 2011 meta-analysis of observational studies conducted by the National Cancer Center in Korea and published in *Cancer Science* found that among Japanese and Korean populations, a high intake of fermented soy foods was significantly associated with an increased risk of gastric cancer, while an increased intake of non-fermented soy foods was significantly associated with a decreased risk. Keep in mind that the majority of studies reveal benefits for eating fermented foods in moderation, so consider adding them to your diet—for both good flavor and good health. [EN](#)

EN Cuts through the Controversy on Healthy Fats

(continued from page 1)

acids (MUFAs.) Many foods contain a combination of different kinds of fats. While it's well established that you should no longer obsess over lowering total fat, consider this: Fat contains nine calories per gram (carbs and protein contain four calories per gram), so they are a key factor in maintaining calorie and weight balance. A healthy weight is one of the most important ways to prevent chronic disease. Though science reveals no perfect formula of fat, carbs and protein that leads to the most successful weight loss, there is evidence that dietary patterns relatively low in calorie density—high in vegetables, fruit, and total fiber and relatively low in total fat and added sugars—are associated with healthy body weights. The Dietary Guidelines Advisory Committee (DGAC,) a panel of experts tasked to review the database of science in order to devise guidelines for eating, recommends a total fat intake of 20 to 35 percent of calories for adults, which adds up to 44 to 78 grams (g) for the average person—with further emphasis on the *types* of fats within this range.

Saturated fat. Saturated fats found in animal fats and tropical oils (palm, coconut) have consistently been painted as the “bad guy” of the fat world, but recently that idea has encountered argument. A meta-analysis published in the January 2010 *American Journal of Clinical Nutrition* showed no significant evidence that saturated fat is linked with increased risk of coronary heart disease (CHD) or cardiovascular disease (CVD.) Dariush Mozaffarian, M.D., Ph.D., associate professor at the Harvard School of Public Health, reported at the conference, “If you replace saturated fats with PUFAs you see an overall benefit. If you replace saturated fats with processed carbs, the risk increases significantly. It's not useful to focus on saturated fats any longer.”

But don't stock up on bacon just yet. Linda Van Horn, Ph.D., R.D., chair of the DGAC, said at the conference, “No one advocates *higher* saturated fats; [rather], the increase in fats should be derived from unsaturated fats.” Indeed, the DGAC reports there is strong evidence that saturated fats are associated with increased total and LDL (“bad”)

CHOOSING HEALTHY FATS

It's easy to switch out saturated and trans fats for healthy PUFAs and MUFAs.

Instead of this	→	Choose this
Marbled cuts of red meat	→	Seafood
Bacon	→	Avocado
French fries, baked goods	→	Nuts
Butter	→	Soft margarine containing liquid vegetable oil as first ingredient
Cream	→	Olive, canola, sunflower, or safflower oil

cholesterol, insulin resistance, type 2 diabetes and CVD risk. It recommends consuming less than 10 percent of calories from saturated fats (22 g for the average person,) gradually reducing that amount to under seven percent (16 g on average.)

MUFAs and PUFAs. Strong evidence indicates that if you reduce saturated fats in your diet and replace those calories with MUFAs or PUFAs, you can decrease the risk of CVD and type 2 diabetes risk, because these fats improve the blood lipid profile and the responsiveness of insulin in the body. MUFAs are found in sources like avocados, peanut butter, nuts, seeds and oils such as olive, canola, peanut, sunflower and sesame. PUFAs are found in nuts, seeds, and vegetable oils such as safflower, corn, sunflower, soy and cottonseed oils.

Since Americans consume about 11-12 percent of their calories from saturated fats, the DGAC recommends that people would benefit from replacing about five percent of that fat with MUFAs or PUFAs. That means the average person should swap out about 11 g of saturated fats for MUFAs or PUFAs. It's not hard to do. If you're looking for MUFAs, one tablespoon of olive oil has 10 g, one-fourth of an avocado has 5 g, one ounce of mixed nuts has 9 g, and one tablespoon of peanut butter has 4 g. And just one tablespoon of safflower oil contains 10 g of PUFAs.

Omega-3 fatty acids. There's no doubt that this type of PUFA is in the healthy fat category, as omega-3 fatty acids have been shown to reduce inflammation and lower the risk of some chronic diseases. The DGAC studied various types of omega-3 fatty acids from whole foods:

alpha-linolenic acid (ALA) from plant sources like flax and walnuts, and docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA) from seafood sources. It concluded that there is moderate evidence that eating two four-ounce servings of seafood per week, for an average 250-milligram (mg) intake of EPA+DPA, is linked with reduced sudden death or cardiac mortality from CHD. Since limited evidence indicates that higher amounts of ALA may reduce mortality in people with CVD, the DGAC recommends ALA intake of .6 to 1.2 percent of total calories—1.3 to 2.7 g per day for the average person. Two tablespoons of whole flaxseed contains 5.2 g, one ounce of walnuts contains 2.5 g, and one tablespoon of canola oil contains 1.6 g of ALA.

Dietary cholesterol. Though it's technically not a fat, dietary cholesterol found in animal products such as egg yolks, dairy products and meats can still have an impact on blood lipids. Aim for less than 300 mg per day, or less than 200 mg per day if you are at high risk for CVD or type 2 diabetes, evidenced by elevated LDL cholesterol and/or blood glucose levels. (There's fresh news on eggs, once bashed for their high cholesterol content. Clinical trials show that eating one egg a day is not linked with risk of CHD or stroke in healthy adults.) But if you're at higher risk for CVD or diabetes and aim for 200 mg of dietary cholesterol per day, further reduction of eggs, meat and animal fats may be necessary.

Trans fatty acids. There's little disagreement that artificial trans fats serve no benefit; they are linked with poor blood lipid profiles and increased risk of CVD. Produced by partially hydrogenating PUFAs so that they become more solid, trans fats were developed to replace saturated fats in products like margarine, snacks, baked goods and fried foods. Even though not enough is known about the effects of trans fats found naturally in small amounts in red meats and dairy products, the DGAC allows for small amounts of the naturally occurring type of trans fat while recommending that we avoid industrial (i.e., added) trans fats altogether. [EN](#)

—Sharon Palmer, R.D.

Do You Know the Muffin Man? Let EN Introduce You

Muffin Nutrition Comparison

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

✓ = EN's Picks. Muffin picks contain no more than 300 calories (15% DV), 11 grams (g) fat (17% DV), 4 g saturated fat (12% DV), and 26 g (4.5 tsp) sugar.

Muffins	Serv Size (oz)	Calories	Fat (g)	Sat Fat (g)	Carb (g)	Fiber (g)	Sugar (g)	Sodium (mg)
GROCERY STORE								
Albertson's Cream Cheese Streusel	5.5	670	36	6	72	1	40	550
Albertson's Honey Raisin Bran	5.5	440	13	2	80	6	44	597
Albertson's Pineapple Coconut	5.5	566	28	5.5	71	1	38	550
Costco-Kirkland Almond Poppy	5.8	670	38	7	75	2	42	650
Costco-Kirkland Blueberry	5.8	610	32	6	71	2	40	590
Costco-Kirkland Double Chocolate	5.8	690	38	11	79	3	48	590
✓ Fiber One Ready To Eat Apple Cinnamon Bun	2.3	170	4.5	1.5	34	7	18	170
✓ Fiber One Ready To Eat Mixed Fruit, Nuts & Honey	2.3	170	4.5	1	34	7	16	190
✓ Fiber One Wild Blueberry & Oats	2.3	170	4	1	33	7	16	200
✓ Otis Spunkmeyer Delicious Essentials Reduced Fat Apple Cinnamon	1.8	170	5	1	27	1	15	180
Otis Spunkmeyer Harvest Bran	4	398	18	3	58	4	32	418
✓ Otis Spunkmeyer Reduced Fat Whole Grain Banana	1.8	170	5	1	27	1	15	180
Uncle Wally's Fat Free Cranberry Orange Supreme	2	140	0	0	32	1	19	210
Uncle Wally's Rich & Moist Chocolate Chip	4	410	20	5	54	1	32	320
✓ Uncle Wally's Sugar Free Sweet Chocolate Dreams	2	130	3	0.5	29	1	1	290
Wegmans Blueberry	4.6	410	19	3.5	55	1	32	360
Wegmans Pistachio Flavored with Walnuts	4.9	540	30	5	59	2	32	380
Wegmans Whole Wheat Wild Berry	3.0	290	13	3	39	3	23	250
✓ Weight Watchers Blueberry	2.3	180	3	1	38	3	20	350
✓ Weight Watchers Double Chocolate with Chocolate Chips	2.5	190	4	1	35	5	19	350
RESTAURANT/BAKERY								
Au Bon Pain Carrot Walnut	5.8	560	27	6	72	4	40	820
Au Bon Pain Lowfat Triple Berry	4.4	300	3	0	65	2	33	720
Au Bon Pain Pumpkin	6.2	530	19	4	80	4	39	570
Dunkin Donuts Blueberry	n/a	480	15	1.5	81	2	46	470
Dunkin Donuts Coffee Cake	n/a	630	25	7	95	1	55	510
Dunkin Donuts Reduced Fat Blueberry	n/a	430	9	1	80	2	41	650
Old Country Buffet/Hometown Buffet Corn	3.8	320	12	2	n/a	n/a	n/a	n/a
Old Country Buffet/Hometown Buffet Hot Fudge Sundae	3.3	290	12	3.5	n/a	n/a	n/a	n/a
Old Country Buffet/Hometown Buffet Pina Colada	3.2	220	9	1.5	n/a	n/a	n/a	n/a
Panera Carrot Walnut	5	500	21	4.5	72	4	37	580
✓ Panera Chocolate Chip Muffie	2.5	280	12	3.5	40	1	24	180
Panera Cranberry Orange	5.25	480	19	3	71	3	40	360
✓ Panera Pumpkin Muffie	3	290	11	2	45	1	26	240
Starbucks Lowfat Red Raspberry	n/a	340	6	n/a	65	2	n/a	n/a
Starbucks Zucchini Walnut	n/a	490	28	n/a	52	2	n/a	n/a
Tim Horton's Chocolate Chip	4.1	440	16	5	62	2	39	440
Tim Horton's Raisin Bran	4.1	360	10	1.5	65	6	37	790
Tim Horton's Whole Grain Raspberry	4.2	400	16	4	60	4	29	500
Winchell's Blueberry	4.7	430	18	4.5	63	1	37	640
Winchell's Bran	5.9	450	16	4	74	8	45	990
Winchell's Cranberry Nut	7.3	670	37	6	74	5	43	640

Note: oz=ounce, g=gram, mg=milligrams, sat fat=saturated fat, carb=carbohydrate, n/a=not available; DV=Daily Value, daily requirement based on 2,000 calorie/day diet. Source: food label, company website, www.calorieking.com

Who doesn't like a good muffin—especially fresh out of the oven? Spread a little dab of butter on top and it's heaven. And of course, they're often filled with fruits, nuts and vegetables—think banana, zucchini, pumpkin, apples, walnuts and more. They're certainly a healthy choice for breakfast, coffee break or snack-time, right? Nope, not so fast.

Unfortunately, outside of a few beneficial ingredients like fruits, whole grains and nuts, standard muffin ingredients usually include a good dose of oil or shortening, and sugar. In fact, one muffin can contain almost 14 teaspoons of sugar and half a day's worth of fat. And don't think that because this is a sweet treat you're out of the woods when it comes to sodium. We found muffins that contain more than 60 percent of your daily sodium recommendation (as suggested by the Dietary Guidelines Advisory Committee). So, let's find out what's in your little (or not so little) favorite muffin (see chart).

Helpful hints. There's no need to banish muffins from your menu. We found a few that can fit fairly easily into a healthful eating plan, and these tips can help out, as well.

- **Mega muffins.** Twenty years ago a typical muffin weighed about 1.5 ounces. These days muffins have definitely been hit by the supersizer—they're the size of a softball! Many are four to five times that size. This is a great opportunity to share with a friend or save some for another occasion (or two).
- **Fat-free fantasy.** Just because the label says fat-free or low-fat, that's no guarantee you'll be saving a ton of calories. Manufacturers often replace the fat they've removed with sugar—not much of a calorie saver there.
- **Make your own.** Getting into your kitchen provides lots of opportunities to enjoy muffins in a healthier way. Certainly, you can keep the size in check. And you can also use less sugar and healthier fat sources, such as canola oil or mashed ripe avocado, which makes a great fat replacer for up to half of a recipe's suggested fat content. [EN](#)

—Heidi McIndoo, M.S., R.D.

Reduce Metabolic Syndrome Risk with Healthy Habits

(continued from page 1)

Metabolic syndrome defined. How do you know if you have MetS? According to the National Institutes of Health, if you have three or more of the following measurements—each related to diet and exercise—then, unfortunately, you’ve got it. Note that even if you’re taking meds to treat low HDL or high triglycerides, blood pressure, or blood sugar levels, they still count as risk factors on the MetS checklist.

✓ **Large waistline.** A waist circumference measurement greater than 35 inches for women and 40 inches for men.

✓ **High triglycerides.** A blood triglyceride measurement higher than 150 milligrams per deciliter (mg/dL.)

✓ **Low HDL (“good”) cholesterol.** A HDL cholesterol level measurement less than 50 mg/dL for women or 40 mg/dL for men.

✓ **High blood pressure.** A blood pressure measurement of 130 mm Hg (milli-

meters of mercury) or higher for systolic blood pressure (the top number) and 85 mm Hg or higher for diastolic blood pressure (the bottom number.)

✓ **High fasting blood sugar levels.** A fasting blood glucose level of 100 mg/dL or higher.

Are you prone to metabolic syndrome? A variety of genetic and health factors may play a role in whether you’re more likely to develop this condition, alerting you to the need to focus even more intently on lifestyle measures to prevent MetS. Researchers are currently investigating why some people are more likely to develop MetS than others.

- **Age.** You’re at greater risk as you age.
- **Race.** While it occurs in all races, African-Americans, Hispanics and Asians have a higher prevalence than Caucasians.
- **Overweight.** A body mass index of more than 25 increases your risk. In

addition, abdominal obesity (apple shape versus pear shape) increases risk for MetS, especially for women.

- **History of diabetes.** If a close relative has type 2 diabetes, or you had diabetes while pregnant, that ups your risk.
- **History of polycystic ovary disease.** MetS risk rises for women who have suffered from this hormonal disorder.
- **Stress.** Preliminary research suggests that women with MetS experience more stressful life events than those who don’t have the condition.
- **Depression.** Scientific evidence suggests that depression significantly ups the chance of developing MetS.
- **Sleep problems.** A December 2010 study in the journal *Sleep* found that people who have difficulty falling asleep, snore loudly, and do not experience refreshing sleep are at significantly greater risk of MetS. [EN](#)

—Christine M. Palumbo, M.B.A., R.D.

Four Lifestyle Changes to Help Fight Metabolic Syndrome

If you make substantial lifestyle changes, you can delay or perhaps even prevent the development of MetS and its complications that include diabetes, stroke and heart disease.

1 Eat an optimal, overall dietary pattern. Eating a healthful diet is truly the cornerstone of prevention and treatment of MetS. While there is no official consensus as to what the optimal diet should be, an overall pattern similar to that eaten in the Mediterranean—low in saturated fats and sugars and high in fruits, vegetables, seafood, whole grains and monounsaturated fats—appears to help prevent and treat MetS, according to a June 2010 review published in *Metabolic Syndrome and Related Disorders*. Liguori suggests dietary approaches that include “eating more fiber, avoiding trans fat, limiting refined carbohydrates, and generally eating more foods in their natural state. Most importantly, avoid overeating.” Try focusing on the following foods for protection against MetS.

• **Whole grains.** According to research from the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University, people who enjoy several servings of whole grains per day while limiting refined grains have less of the abdominal fat linked to MetS. While seeking out whole grains, look beyond the whole wheat bread aisle; other whole grains include bulgur, oats, brown rice, quinoa and barley.

• **Nuts and flaxseed.** In a small Chinese study published in the November 2010 issue of the *Journal of Nutrition*, researchers compared the effects of a heart healthy diet and the same diet supplemented with ground flaxseed or walnuts on people with MetS. The diet supplemented with flaxseed and walnuts provided additional benefits, according to Frank B. Hu, M.D., Ph.D., professor of nutrition and epidemiology at Harvard School of Public Health. He reports that these alpha-linoleic acid (ALA) containing foods improve central obesity and other metabolic components. Hu adds, “It is possible that the combination of ALA, fiber, and phytochemicals in these foods contributes to their beneficial effects on the metabolic syndrome.”

• **Vegetables and whole fruit.** “These plant-based foods have high amounts of fiber, antioxidant vitamins, minerals and phytochemicals that can reduce inflammation and insulin resistance as well as improve blood lipids,” reports Hu. Insulin resistance is a condition in which the body’s supply of insulin becomes less effective at lowering blood glucose levels.

2 Maintain a healthy weight. If you’re overweight, losing as little as five to 10 percent of your body weight can increase insulin sensitivity—making your insulin more effective at normalizing blood glucose levels—and reduce blood pressure. For example, if you weigh 180 pounds, aim to reduce (and keep off) between nine and 18 pounds.

3 Become physically active. Aim for at least 150 minutes of physical activity every week, per the 2008 recommendations for physical activity issued by the U.S. Department of Health and Human Services. In an August 2010 study, published in *Metabolic Syndrome and Related Disorders*, older adults ages 70-79 experienced a 39 percent reduction in the rate of MetS if they walked at least 150 minutes per week over a period of six years, compared to those who walked just 50 minutes each week.

4 Avoid smoking. According to the Mayo Clinic, smoking cigarettes increases insulin resistance and heightens the negative impact of MetS.

Urban Legends on Wine Headaches and Sensitivities Abound

Q Why are people sensitive to wine?

A Through the ages, wine has been both praised and cursed for its side effects. For some, those effects go beyond one glass too many: Just a few sips can induce headache, congestion and runny nose. Though the symptoms may be very real, allergy specialists say a true wine allergy is unlikely.

Inside a glass of red wine. A high prevalence of hypersensitivity symptoms after intake of red wine have been reported, according to a June 2008 article in *Current Opinion in Allergy and Clinical Immunology*. In fact, red wine headache (RWH) is so common, it's become a bit of an urban legend. Nobody really knows what leads to RWH, but a number of wine compounds have been blamed as the culprits, providing good fodder for discussion at countless cocktail parties.

- **Sulfites.** This preservative, which is added to wine and also occurs naturally during fermentation, has taken the bulk of the blame for RWH since the Food and Drug Administration

(FDA) determined that one percent of the population is allergic to sulfites. For the past two decades the FDA has required wines containing certain levels of sulfites to be labeled "contains sulfites." Sulfite sensitivity can be a true allergy, but the most common symptom is wheezing—headache is usually a symptom for those who suffer from asthma. White wines contain more sulfites than red wines, and dried fruit can contain higher levels of sulfites than wine.

- **Tannins.** The flavonoids responsible for the dry pucker that characterize many red wines are also often pegged as the cause of those head pounders. Tannins cause the release of serotonin, which in high levels can cause headaches in migraine sufferers, but usually not in others. Other foods, like tea and red-skinned apples and pears, contain tannins, but you don't hear many people complaining of a headache after eating these foods.
- **Histamines.** Depending on variety, red wine is 20-200 percent higher in histamines than white wine, causing them to be blamed for RWH. Those

who are allergic to histamines are deficient in an enzyme that, combined with alcohol, can cause a headache. But a 2001 study of 16 wine-intolerant subjects published in the *Journal of Allergy and Clinical Immunology* found no difference in reactions to high and low histamine wines.

- **Other sensitivities.** There's more than grapes in that bottle of vino, which has some researchers looking to contaminants, both chemical and biological. Some come from certain hymenoptera insects (wasps and bees) that fall into the wine when grapes are processed. Studies show patients sensitive to hymenoptera venom experience allergic symptoms during wine consumption.

We don't yet have all of the answers on how you can enjoy a headache-free glass of wine. While homegrown "remedies" abound, like sipping black tea between glasses, for now the best advice is to experiment with a variety of brands, grape varieties, and origins ("terroir") until you find a wine that agrees with you. And remember, moderation is key. **EN**

Antinutrients Found Naturally in Plant Foods Exposed

Q What are antinutrients?

A Antinutrients may sound like a new nutrition buzz word, but scientists have been aware of these chemically active plant substances for decades. Found in a variety of edible plants, antinutrients act to reduce the nutrient availability of a food or provide some sort of adverse effect. For example, some antinutrients bind nutrients, thereby limiting digestion and use by the body, while other antinutrients are toxic at high levels. Antinutrients are a normal part of the plant structure, often found in leaves, roots and seeds of the plant, and scientists believe that their presence helps ensure the survival of the plant species.

Antinutrients up close. While a number of plant foods possess antinutrients, they are found in significant amounts in cereals and legumes, such as wheat and beans. There are dozens of different antinutrients; including enzyme inhibitors, flatus factors, saponins, and phytates. One example is phytates found in grains, which reduces

the bioavailability of minerals and the digestibility of proteins and carbohydrates found in the grain. Fortunately, processing, like cooking, soaking, germination and fermentation of particular plant foods, decreases the action of antinutrients. This explains why people figured out long ago that certain foods like legumes should be soaked and cooked rather than eaten raw.

While scientists know about the existence of antinutrients, they still have much to learn about their overall function in health. A new theory is that low levels of antinutrients may contain beneficial properties. This makes sense, given that a large body of research links whole plant food consumption with a variety of health-protective benefits. University of Toronto nutrition scientist, A. Venket Rao, Ph.D., reports that some antinutrients such as saponins found in grains and legumes may be useful in managing cancer, diabetes, and elevated cholesterol. Past research indicates that higher intakes of phytic acid and lectins in food produce lower levels of blood glucose in

healthy adults and adults with diabetes.

Another view of antinutrients has made the rounds on the Internet. The opinion expressed on many non-scientific based blogs and websites is that antinutrients are proof that people should not consume grains and legumes. But this view is contrary to a base of knowledge that finds a plethora of health benefits—including lowered risk of diabetes, heart disease, hypertension, and some types of cancer—from eating more whole grains and legumes. There's no reason to let antinutrients get in your way of enjoying a diet that includes a variety of plant foods. **EN**

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:

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Broccoli Rabe: Broccoli's Bolder Cousin

The folklore. A centuries-old staple in Italian and Chinese cuisine, broccoli rabe (pronounced “rob”) is gaining popularity on the American plate. Despite its name, this dark leafy green is actually a closer relative of the turnip family than broccoli. While it was originally cultivated in the Mediterranean and China, it is well known around the world by many names, such as rapini, Italian or Chinese broccoli, and turnip broccoli.

The facts. Because both are members of the Brassica genus, the resemblance between broccoli and broccoli rabe (*Brassica rapa*) is unmistakable. Yet broccoli rabe's ruffled leaves and tiny florets have a softer look that's countered by a bitter flavor more reminiscent of mustard greens or kale than broccoli. It's bite is as bold as its nutritional contribution: A one-cup serving provides more than 100 percent of the daily value (% DV, based on 2,000 calories per day) of vitamin K (shown to help build bone density in women) and the powerful antioxidant vitamins A (21% DV) and C (13% DV.) In addition, broccoli rabe contains folate, iron and calcium.

The findings. Broccoli rabe, like all Brassicas, has cancer-preventing potential due to substances called glucosinolates that serve as a natural defense system to protect the tender buds from pests. Glucosinolates are converted in the body into bioactive compounds called sulforaphanes. Studies suggest that they may protect against cancers of the stomach, lung, esophagus, colon and breast. Broccoli rabe also contains lutein and zeaxanthin, phytonutrients that protect the retina of the eye from oxidative damage and may slow the onset of age-related macular degeneration. Studies show that those who get the most lutein have a 20-50 percent reduced risk of cataracts when compared to those who eat the least. (See EN May 2010, Foods in Focus.)

The finer points. Its slightly bitter edge is the ideal counterpoint to the sweet and spicy flavors of China and the starchy dishes of Italy. Yet, it's prepared as simply as any American green. Every part of broccoli rabe is edible, though the tough stem bottoms are usually removed before cooking. Blanching them briefly in lightly salted water will reduce bit-

terness. Broccoli rabe is available year round, but peak season is late fall to early spring when cool weather softens its flavor. Choose young rabe with crisp, vibrant-colored leaves for milder flavor. Wrap loosely in plastic and refrigerate up to three to four days. Enjoy broccoli rabe steamed, stir-fried, sautéed, or braised, just as with any greens. It combines well with pasta and rice, especially in Asian and Italian dishes. **EN**

—Lori Zanteson

Notable Nutrients

1 cup raw (40 grams)

Calories: 9

Vitamin A: 1049 International Units (21% DV)

Vitamin C: 8.1 milligrams (13% DV)

Vitamin K: 89.6 micrograms (112% DV)

Folate: 33.2 micrograms (8% DV)

Calcium: 43.2 milligrams (4% DV)

Iron: 0.9 milligrams (5% DV)

Manganese: 0.2 milligrams (8% DV)

Dietary Fiber: 1.1 gram (4% DV)

Lutein + zeaxanthin: 448 micrograms

(DV = Daily Value)

EN'S OWN BROCCOLI RABE SAUTÉ

2 bunches broccoli rabe

2 Tbsp olive oil

3 cloves garlic, minced

½ tsp red pepper flakes

¼ cup sundried tomatoes, thinly sliced

Freshly ground pepper (optional)

Pinch sea salt to taste (optional)

2 Tbsp pine nuts, toasted

1. In a large pot, bring lightly salted water to a boil. Trim bottom 1-2 inches from rabe stems. When water is boiling, add broccoli rabe for 1 minute, drain, and set aside.

2. Heat olive oil in a sauté pan over medium heat. Add garlic and red pepper flakes and sauté until golden. Add broccoli rabe and sundried tomatoes to pan and toss to coat, about 2-3 minutes.

3. Season lightly with salt and pepper as desired and top with toasted pine nuts. Makes 6 servings.

Nutrition Information per Serving: 124 calories, 6 grams (g) carbohydrates, 6 g fat, 94 milligrams sodium, 4 g dietary fiber

- **Grapes may protect your health.** A review examining evidence on health benefits linked with grapes and grape products found that they can positively influence risk factors for cardiovascular disease, cancer, neurodegenerative disease, and age-related cognitive decline. Further, beneficial effects of grapes on oral health, immune function, and antiviral activity also have been reported. These effects are likely due to the antioxidant activity and function of flavonoid compounds found in grapes, as well as other actions.

(*Nutrition Reviews*, November 2010)

- **Component of orange juice may benefit heart.** French researchers studied the effects of hesperidin, a flavanone compound found in orange juice, in a randomized controlled study including 24 healthy, overweight men. Both orange juice and a drink containing hesperidin significantly improved markers for cardiovascular disease, including blood pressure, as well as endothelial function compared with the placebo beverage.

(*American Journal of Clinical Nutrition*, January 2011)

- **Green tea increases satiety.** A study from Lund University in Sweden examined the effects of green tea on 14 healthy subjects. When green tea was consumed with a breakfast of white bread and sliced turkey, no significant effects were found in blood glucose or insulin levels. However, the subjects reported significantly higher satiety (sense of fullness) and a less strong desire to eat their favorite food, compared with subjects that drank water at the same meal.

(*Nutrition Journal*, November 2010)

In Coming Issues

- **The Weight Gain-Menopause Paradox.** Is it possible to fight weight gain during menopause? EN delves into the science.
- **Adapt Good Kitchen Eco-Habits.** “Paint” your kitchen “green” with these simple, daily tips.
- **Sushi: Nutrition Nuggets.** We searched supermarkets and restaurants to find our best sushi picks.