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NOVEMBER 2011 \$2.50

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Safe at Home

How to keep your kitchen from making you sick

BY DAVID SCHARDT

Photos: Jorge Bach (cover), De Wood for the USDA Agricultural Research Service (inset).

The smell of percolating coffee in the morning. The aroma of dinner cooking in the evening. Scene of family meetings and midnight snacks.

The kitchen is a central location in most households. But it also has a dark side. Of all the rooms in your house, the kitchen is likely to be the germiest, more so than even the bathroom.

Here's how to keep you and your family safe at home.

Continued on page 3.



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STATEMENT OF OWNERSHIP, MANAGEMENT, AND CIRCULATION (All Periodicals Publications Except Requester Publications) 1. Publication Title: *Nutrition Action Healthletter*. 2. Publication Number: 0007-704. 3. Filing Date: September 14, 2011. 4. Issue Frequency: Monthly except for combined issues in Jan-Feb and July-Aug. 5. Number of Issues Published Annually: 10. 6. Annual Subscription Price: US\$24.00. 7. Complete Mailing Address of Known Office of Publication (not printer): 1220 L St., N.W., Suite 300, Washington, D.C. 20005-4053. Contact Person: Dennis Bass. Telephone 202-332-9110. 8. Complete Mailing Address of Headquarters or General Business Office of the Publisher (not printer): Same as #7. 9. Full Names and Complete Mailing Addresses of Publisher, Editor, and Managing Editor: Publisher: Michael F. Jacobson, same address as #7; Editor and Managing Editor: Stephen B. Schmidt, same address as #7. 10. Owner: Full Name: Center for Science in the Public Interest, Inc., a nonprofit corporation. Complete Mailing Address: Same as #7. 11. Known Bondholders, Mortgagees, and Other Security Holders Owning or Holding 1 Percent or More of Total Amount of Bonds, Mortgages or Other Securities. If none, check box: None. 12. Tax Status (For completion by nonprofit organizations authorized to mail at nonprofit rates): The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes has not changed during the preceding 12 months. 13. Publication Title: *Nutrition Action Healthletter*. 14. Issue Date for Circulation Data Below: September 2011. 15. Extent and Nature of Circulation: 15.a. Total Number of Copies (net press run): Average no. copies each issue during preceding 12 months, 781,008; No. copies of single issue published nearest to filing date, 804,874. 15.b. Paid Circulation (By Mail and Outside the Mail): 15.b.1.

Mailed Outside-County Paid Subscriptions Stated on PS Form 3541 (Include Paid distribution above nominal rate, advertiser's proof copies, and exchange copies): Average no. copies each issue during preceding 12 months, 738,712; No. copies of single issue published nearest to filing date, 758,568. 15.b.2. Mailed In-County Paid Subscriptions Stated on PS Form 3541 (Include Paid distribution above nominal rate, advertiser's proof copies, and exchange copies): Average no. copies each issue during preceding 12 months, 0; No. copies of single issue published nearest to filing date, 0. 15.b.3. Paid Distribution Outside the Mails Including Sales Through Dealers and Carriers, Street Vendors, Counter Sales, and Other Paid Distribution Outside USPS: Average no. copies each issue during preceding 12 months, 1,845; No. copies of single issue published nearest to filing date, 1,388. 15.b.4. Paid Distribution by Other Classes of Mail Through the USPS (e.g. First-Class Mail): Average no. copies each issue during preceding 12 months, 1,313; No. copies of single issue published nearest to filing date, 1,286. 15.c. Total Paid Distribution (sum of 15.b(1), (2), (3), and (4)): Average no. copies each issue during preceding 12 months, 741,870; No. copies of single issue published nearest to filing date, 761,242. 15.d. Free or Nominal Rate Distribution (By Mail and Outside the Mail): 15.d.1. Free or Nominal Rate Outside-county Copies included on PS Form 3541: Average no. copies each issue during preceding 12 months, 29,284; No. copies of single issue published nearest to filing date, 28,561. 15.d.2. Free or Nominal Rate In-County Copies included on PS Form 3541: Average no. copies each issue during preceding 12 months, 0; No. copies of single issue published nearest to filing date, 0. 15.d.3. Free or Nominal Rate Copies Mailed at Other Classes Through the USPS (e.g. First-Class Mail):

Average no. copies each issue during preceding 12 months, 25; No. copies of single issue published nearest to filing date, 25. 15.d.4. Free or Nominal Rate Distribution Outside the Mail (Carriers or other means): Average no. copies each issue during preceding 12 months, 0; No. copies of single issue published nearest to filing date, 0. 15.e. Total Free or Nominal Rate Distribution (sum of 15.d(1), (2), (3), and (4)): Average no. copies each issue during preceding 12 months, 29,309; No. copies of single issue published nearest to filing date, 28,586. 15.f. Total Distribution (sum of 15.c. and 15.e.): Average no. copies each issue during preceding 12 months, 771,179; No. copies of single issue published nearest to filing date, 789,829. 15.g. Copies not Distributed: Average no. copies each issue during preceding 12 months, 9,829; No. copies of single issue published nearest to filing date, 15,045. 15.h. Total (sum of 15.f. and 15.g.): Average no. copies each issue during preceding 12 months, 781,008; No. copies of single issue published nearest to filing date, 804,874. 15.i. Percent Paid (15.c. divided by 15.f. times 100): Average no. copies each issue during preceding 12 months, 96.2%; No. copies of single issue published nearest to filing date, 96.4%. 16. Publication of Statement of Ownership. If the publication is a general publication, publication of this statement is required. Will be printed in the November 2011 issue of this publication. 17. I certify that all information furnished on this form is true and complete. I understand that anyone who furnishes false or misleading information on the form or who omits material or information requested on the form may be subject to criminal sanctions (including fines and imprisonment) and/or civil sanctions (including civil penalties). Signature and Title of Publisher: Michael F. Jacobson, Ph.D. (signed), Publisher, September 14, 2011.

Nutrition Action Healthletter (ISSN 0885-7792) is published 10 times a year (monthly except bi-monthly in Jan./Feb. and Jul./Aug.).

POSTMASTER: Send changes to *Nutrition Action Healthletter*, 1220 L St., N.W., Suite 300, Washington, DC 20005-4053.

Application to mail at Periodical postage rates approved at post office of Washington, DC, and at additional offices.

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NOVEMBER 2011 Volume 38 Number 9

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Safe at Home

How to keep your kitchen from making you sick



Earlier this year, NSF International—a non-profit agency that sets safety standards for water filters and other equipment—asked 22 families in the Ann Arbor, Michigan, area to swab 30 everyday items and sites around their homes, including their wallet or purse, car steering wheel, iPod, toilet seat, cell phone, TV remote, pet’s bowl, and different spots in the kitchen.

NSF was looking for coliform bacteria (a sign of fecal contamination), *Staphylococcus* bacteria (which, like coliform, can cause diarrhea and vomiting), and yeast and mold (which can trigger allergic reactions). The agency hit pay dirt most often in the kitchen.

We’ll never live in a germ-free environment, and odds are you won’t get food poisoning from what’s in your kitchen. But if there are vulnerable people in your household—or you just want to clean up your act—it’s important to know what researchers have learned.

Welcome to Germ Central. It’s easy for bacteria and other bugs to find their way around the kitchen as they travel from soiled hands and raw foods to countertops, sponges, and sinks. Once there, they can contaminate hands and food, sometimes for up to a week.

Sponges & Dish Cloths

“Sponges are usually the dirtiest thing in the kitchen and difficult to keep clean,” says microbiologist Manan Sharma of the United States Department of Agriculture’s Food Safety Laboratory in Beltsville, Maryland.

That was true in the recent NSF International survey of U.S. homes, where 77 percent of the sponges and dish cloths contained coliform bacteria, 86 percent had yeast and mold, and 18 percent had *Staph* bacteria.¹

Why are sponges so dirty? “They come into contact with food residues that can build up in them and that provide nutrients for bacteria and other microorganisms to grow,” explains Sharma. What’s more, sponges are often wet and are left in damp areas in or near the sink, which are ideal conditions for germs to multiply.

“They also have many nooks and crannies, which can be great

places for germs to multiply,” notes NSF microbiologist Rob Donofrio, who adds that “sponges are typically not properly—or regularly—sanitized before their next use.”

That’s why the Food and Drug Administration’s Food Code prohibits restaurants from using sponges to make the final wipe of surfaces that come into contact with food.

“A safe kitchen is a dry kitchen where there are no wet sponges and no wet towels for bacteria to grow overnight,” says O. Peter Snyder, whose Hospitality Institute of Technology and Management

in St. Paul, Minnesota, provides training for the food and restaurant industries in sound food-safety practices.

What to do: “Just rinsing and squeezing out a sponge under running water is not going to do a whole lot,” says Sharma. “But microwaving your wet sponge for one minute gets rid of a significant portion of the bacteria.”

After Sharma and his colleagues at the USDA soaked sponges for two days in a slurry of ground beef and soy broth, microwaving at full power for one minute was the most effective way of killing the bacteria in the sponges.²

Running them through the dishwasher killed almost as many bugs. Soaking them in 10 percent bleach (about twice as concentrated as household bleach) for three minutes or in lemon juice or water for one minute wasn’t much better than doing nothing.

Don’t try to microwave sponges that have metal in them, cautions Sharma. “And make sure the sponge is wet so it won’t catch fire.”

If you don’t want to go through all that to keep your sponges clean, keep a supply of clean dish cloths handy. Start out each morning with a fresh, dry one and at the end of the day toss the used cloth into the laundry hamper.

Countertops

In the NSF survey, 32 percent of kitchen countertops were contaminated with coliform bacteria and 18 percent had yeast and mold.

A major source of contamination: our fingers.

“We use our hands, in particular the fingers, for so many things that we tend to forget where they’ve been and where they’re going,” says food-safety expert Ewen Todd of Michigan State University. “We just tend to use them automatically.”

Then there’s wiping countertops with dirty sponges and dish cloths.

Even after a wet sponge has been squeezed out, it still holds two and



If you don’t microwave your sponges or run them through the dishwasher every day, use dish cloths on your kitchen surfaces. Start with a fresh one each morning and toss it into the hamper each night.





There's only one way to know if your refrigerator or freezer is cold enough: use a thermometer.

a half times its weight in water.

When you use the sponge to wipe off a countertop, some of that water—and from 20 to 40 percent of the microbes in it—can be left behind.³ And the non-porous surface of a countertop is ideal for spreading microorganisms to anything that touches it, including fingers, utensils, and food.

“The risk of cross-contamination in the kitchen is fairly high,” says Todd. “The danger is that we transmit microorganisms to vegetables or fruit or any other ready-to-eat food that is not going to undergo further preparation like cooking, which would kill them.”

What to do: “Cleaning your kitchen surfaces with soap and water is enough for most normal healthy people,” says Joseph Frank of the University of Georgia’s Center for Food Safety.

Using soap or detergent and water physically removes germs and dirt from surfaces and rinses them away. While that doesn’t kill them, it does lower their numbers and, therefore, the risk of spreading infection.

For most purposes, that’s enough. It’s not necessary to bring out the big guns—chemical disinfectants—to kill the germs.

“It’s more important to keep things clean than it is to have things disinfected, because cleaning removes 99 percent of the microorganisms, and disinfectants don’t work unless the surface is cleaned first anyway,” says Frank.

And disinfectants—products like Pine-Sol, Lysol, and Clorox—don’t kill viruses, parasites, or even all disease-causing bacteria, adds O. Peter Snyder.

“The only way to take care of viruses

and parasites is to wash them off with soap and water,” he notes.

But, adds Frank, “if you have people in your household who have a greater risk of getting sick, such as the immunocompromised, the very elderly, and perhaps small children, I would definitely consider using a disinfectant on countertops and the sink.”

If you do, make sure you know how to use it.

“Just wipe, toss, and you’re done,” Clorox tells consumers about its Disinfecting Wipes. Turns out it’s not that simple.

“You should always clean the surface first with soap and water,” says Frank. “If the surface has dirt,

especially grease, the disinfectant won’t work.”

And many disinfectants don’t kill bacteria immediately, like bleach does. “They have to remain in contact with the surface for 30 seconds, a minute, sometimes several minutes or more,” notes Frank. For the liquid in Clorox Disinfecting Wipes, for example, it’s four minutes. For Lysol brand disinfectant spray, it’s 10 minutes.

“And if the surface is going to come into contact with food,” adds Frank, “it must be rinsed with clean water afterwards, since these disinfectants haven’t been approved as safe in food.”

That’s not the case with a simple, effective disinfectant you can easily make at home: Add one tablespoon of unscented bleach to a gallon of water and shake.

“Flood the countertop with the solution, allow it to sit for a few minutes, then pat with clean, dry paper towels or allow to air dry,” recommends the U.S. Department of Agriculture. You don’t need to rinse the countertop because the bleach solution breaks down into salt and water. What you don’t use will keep for a week if it’s tightly covered.

Other homemade disinfectants like vinegar and baking soda are too weak to be effective, says William Rutala of the University of North Carolina. In his studies, vinegar had little effect on the common food bug *Staphylococcus aureus*, while baking soda was no match for *E. coli*.⁴

Sinks

“Sink drains are really dirty places,” says the University of Georgia’s Joseph Frank. Food particles get trapped in the drain and

disposal, creating a perfect environment for bacterial growth.

“You’ll find *Listeria* in a good many drains, and probably *Salmonella* too, especially if people use the sink for rinsing off raw meat or poultry,” says Frank.

In the NSF survey, 45 percent of kitchen sinks were contaminated with coliform bacteria and 27 percent with yeast and mold.

What to do: “If you have people at a higher risk of infection in your household, I would sanitize the drain periodically with a bleach solution,” says Frank. (You can use the same homemade solution that works on your countertops: a tablespoon of unscented bleach in a gallon of water.)

“And I wouldn’t fill up the sink with water to rinse off your vegetables or lettuce because there’s a good chance of pathogens’ being there from the drain,” adds Frank. “Do that in a separate clean bowl.”

Cutting Boards

Which is safer: a wooden or a plastic cutting board? “Either one is fine and either one can give you problems,” says Frank.

“It’s more a matter of the integrity of the board’s surface,” he explains. “New wood and plastic boards all work fine and are easy to clean. It’s after you’ve been using them for a while and they start getting cuts and gashes that it can become difficult to get all of the food residues out of them.”

Worn and knife-scarred plastic boards are “impossible to clean and disinfect manually, especially when food residues such as chicken fat are present,” wrote Dean Cliver of the University of California at Davis on the University’s Web site.⁵ (Cliver, a leading authority on keeping cutting boards clean, died last May.)

Wooden boards, on the other hand, have a certain degree of built-in protection, Cliver found. Whether new or used, they absorb bacteria from food into their interior, where the bugs gradually die, he wrote.

Special cutting boards that have antimicrobial compounds incorporated into them are a waste of money, notes Frank.

“They kill only the pathogens that are in direct contact with the board, but most of the time pathogens are in grease or food and are not contacting the board.”

If you don't clean it, an antimicrobial board is not going to help you, says Frank. "And if you do clean it, then you don't need it because your cutting board is already clean."

What to do: Clean your cutting boards with soap and water. You can also run plastic or solid wooden boards through the dishwasher. Small wooden boards can be disinfected in the microwave, Cliver found, though "care must be used to prevent overheating."

If the surface of any of your cutting boards—wood or plastic—is so rough that you can still see food remnants after you've cleaned it, "buy a new cutting board," says Frank. "They're not that expensive."

Refrigerators

Cold temperatures keep most bacteria in a state of suspended animation, so they don't multiply. To do that, though, your refrigerator needs to stay at 40°F or below.

Using a refrigerator thermometer is the only way to know for certain how cold your fridge is. (That's especially important after a power outage, because it eliminates the guesswork about how warm your food was.)

Just one in nine U.S. households use a refrigerator thermometer, according to a recent survey.⁶ And when the investigators gave thermometers to 2,037 survey participants, more than a quarter of them discovered that the inside of their refrigerator was warmer than 40°F.

What to do: Put a thermometer that's designed for refrigerators in the middle of a middle shelf. Leave it there for five to eight hours. If the temperature is above 38°F to 40°F, lower the temperature setting and check again after another five to eight hours.

Just keep in mind that some foodborne pathogens can grow at 40°F or below.

One is *Yersinia enterocolitica*, a bacterium that is sometimes found in raw or undercooked pork. It causes about 100,000 illnesses and 30 deaths a year in the United States.

A more serious threat is *Listeria monocytogenes*, which is often found in cold cuts, hot dogs, and soft cheeses. The annual toll from *Listeria* in cold cuts and dairy products: about 1,000



Washing 101

"Over and over again, studies have shown that handwashing is one of the most effective ways to prevent the spread of many cases of infection and illness, including foodborne illness," says Michael Beach of the Centers for Disease Control and Prevention (CDC) in Atlanta.

But that's only if you wash your hands properly. According to the CDC, here's what that means:

■ **Wash for 20 seconds.** That means scrubbing under running water with soap long enough to hum the "Happy Birthday" song twice. Rinse with clean water and then dry your hands with a clean towel or let them air dry.

"Putting your hands under running water only gets rid of the loose surface contamination," explains food-safety expert Ewen Todd of Michigan State University.

But rubbing your hands together with soap or detergent removes surface skin cells along with bacteria and viruses, which are carried away by rinsing. And drying your hands with a towel removes additional germs by friction and by wicking away moisture that contains more bugs.

■ **Don't worry about the temperature.** "The water doesn't need to be hot," says Todd. "Clearly, you want a temperature that's comfortable, but whether the water is hot, lukewarm, or cold is less important than the length of time of scrubbing and the degree of friction created." In fact, washing your hands with water that's at 40°F removes the same amount of germs as washing with water that's at 120°F.¹

■ **Use a nail brush.** Don't forget to clean underneath your fingernails, where pathogens may be hiding. In studies at the Center for Food Safety at the University of Georgia, people who used nail brushes had the most success at cleaning hands with dirty fingernails. People with the longest nails had the least success.

■ **Don't use antibacterial hand soap or dish detergent.** Dawn, Joy, Ajax, and other brands of antibacterial dish detergent contain the chemical triclosan, which can kill bacteria. But it's more a marketing tool than anything else, especially for use in the home.

For one thing, studies that demonstrate the effectiveness of antibacterial soaps typically test them by having people scrub for 60 to 90 seconds or longer. That's far more than most people would scrub for in their homes.

"And these products work by gradually building up an antibacterial surface on your hands after using them repeatedly over a period of time," says Todd. "Using antibacterial soap just once or twice a day is not often enough to do that."

Only one good published study has compared soaps with and without triclosan at a concentration similar to what's in popular soaps. After volunteers washed for 30 seconds at a time (think three verses of "Happy Birthday"), six times a day for five days, bacterial counts on the hands of the triclosan-soap users were no lower than counts on the hands of the ordinary-soap users.²

What's more, people in households that use triclosan-containing products are no less likely to get sick than people in households that don't use them.³

The Food and Drug Administration's bottom line: "The agency does not have evidence that triclosan in antibacterial soaps and body washes provides any benefit over washing with regular soap and water."

In fact, the FDA is considering a ban on triclosan because it may affect the body's regulation of hormones. (Exposure to high doses suppresses thyroid hormone levels and increases the impact of estrogen in laboratory rats.⁴) Triclosan may also help make bacteria resistant to antibiotics.

¹ *Dairy Food Environ. Sanitation* 21: 997, 2001.

² *Am. J. Infect. Control* 17: 83, 1989.

³ *Clin. Infect. Dis.* 45 (Suppl 2): S137, 2007.

⁴ *Toxicol. Sci.* 117: 45, 2010.



Keeping Food Safe

Nearly two-thirds of consumers use their eyes or nose to decide whether to eat a questionable refrigerated food, according to a 2007 survey.¹ Unfortunately, that won't tell you if the food is safe.

"Eyeballing and sniffing just detects the presence of spoilage microorganisms, not necessarily food pathogens," says food-safety expert O. Peter Snyder of the Hospitality Institute of Technology and Management. "Most of the organisms in food that can make you sick do not create slime, stink, and smell."

The "sell by," "best if used by," and "use by" dates on packages of perishable foods aren't much help either. Those are just clues to how long the taste or peak quality of a food is expected to last. They don't tell you whether the food is safe.

Here are a few things you can do:

■ **Avoid moldy foods.** Since molds can cause allergic reactions and respiratory problems, it's not a good idea to sniff food that has visible mold on it. If a food is covered with mold, discard it, says the U.S. Department of Agriculture's Food Safety and Inspection Service. Ditto if there are spots of mold on porous foods like bread or on soft foods with high moisture content like yogurt, soft cheeses, and luncheon meats, since they could also be contaminated below the surface.

But it's difficult for molds to penetrate dense foods like hard cheeses or firm fruits or vegetables like carrots and bell peppers, so it's safe to trim off any moldy spots and eat the rest. Foods like hard salami and dry-cured country ham are supposed to have surface mold.

■ **Follow food recalls.** Last year, the FDA recalled 1,499 Class I food products. (That includes all foods except meat, poultry, and raw eggs, which are regulated by the USDA.) A Class I recall means that there is a "reasonable probability" that consuming the food will cause serious health consequences or death.

Six in seven Americans say that they pay attention to news reports of food recalls, according to a 2009 survey. Yet only 59 percent report that they have ever looked for a recalled product in their home. Aside from paying attention to the news, the easiest way to keep up with foods that have been recalled is to visit the government Web site recalls.gov/food.html.

■ **Know what to do when the power goes out.** Keep the freezer and refrigerator doors closed as much as possible to keep the cold air in. Unopened, a refrigerator will keep food cold for about four hours, while a freezer will keep food frozen for two days if full and one day if half full.

Meat, poultry, and seafood can be refrozen if they still contain ice crystals or they (or the freezer) haven't risen above 40°F. Refrigerated perishable foods like milk, meat, leftovers, and deli foods should be discarded after four hours without power.

■ **Prevent cross-contamination.** Keep raw meat, poultry, seafood, and eggs separate from other foods. Keep a separate cutting board and utensils for them. Try to prepare your vegetables and salad before you take the raw meat, poultry, seafood, or eggs out of the refrigerator.

■ **Ignore the five-second rule.** Some people believe that if you pick up food just a few seconds after it has fallen on the floor, it somehow won't become contaminated with germs. "That's a myth," says microbiologist Paul Dawson of Clemson University. "Food picks up bacteria immediately on contact."

To show that, Dawson and his students applied *Salmonella* bacteria to three different surfaces—tile, wood flooring, and carpet—and then dropped bread and bologna on them. "Whether the food was in touch with the surfaces for just a few seconds or a few minutes, it picked up enough bacteria to make you sick," says Dawson.²

■ **Know where to turn for help.** For information on all aspects of food safety from the U.S. Department of Agriculture, visit www.fsis.usda.gov/ask_karen or www.fsis.usda.gov/factsheets. The USDA's Meat and Poultry Hotline (888-674-6854) answers food-safety questions on weekdays year-round. Or you can e-mail your questions to mpholine.fsis@usda.gov.

¹ *Food Protection Trends* 31: 428, 2011.

² *J. Appl. Microbiol.* 102: 945, 2007.



hospitalizations and 175 deaths, mostly in pregnant women and people who have weak immune systems.

To protect yourself from *Listeria*, eat ready-to-eat refrigerated foods like hot dogs and luncheon meats "as soon as possible," says the Food and Drug Administration. The longer you store them, the more chance *Listeria* has to grow.

And clean the inside of your refrigerator regularly with soap and water to remove spills and leakages of food where *Listeria* can grow. Only one in two U.S. consumers say they've cleaned their refrigerator's interior within the past month.

If you're pregnant or have a weakened immune system, don't eat hot dogs or luncheon meats unless they've been reheated until steaming hot. And keep in

mind that freshly sliced cold cuts from the deli are five times more likely to cause a *Listeria* infection than lunch meats from sealed packages.⁷

Freezers

Foods kept frozen continuously at 0°F or colder are safe to eat indefinitely, although the taste will eventually deteriorate and they may develop unappetizing, leathery spots known as freezer burn.

What to do: To measure your freezer's temperature, place a freezer thermometer between frozen food packages. Wait five to eight hours. If the temperature is greater than 0°F to 2°F, lower the freezer temperature and check again after another five to eight hours.

Microwave Ovens

Microwave ovens cook food by bombarding it with short-wavelength radio waves. The microwaves cause the molecules of water, fat, and sugar in the food to vibrate, which creates heat.

"The challenge of cooking in a microwave oven is that food doesn't cook evenly, so cold spots can develop where harmful bacteria can survive," says the Hospitality Institute of Technology and Management's O. Peter Snyder. "Food two inches apart can be 15 degrees different in temperature," he explains. That can mean the difference between germs' dying or surviving.

"And microwaves penetrate solid foods like meat to a depth of only about three-

quarters of an inch," adds Snyder, "so you have to leave enough time for the rest of the food to heat by conduction."

Internet rumors that microwaving turns food "toxic" are based largely on an amateurish study conducted in a hotel during the late 1980s by a maverick Swiss food scientist named Hans Hertel. Although Hertel later dropped out of sight and his "research" was never published in a scientific journal or confirmed by others, it has attained immortality on the Internet.

What to do: The safest way to cook a food like soup or stew in a microwave oven is to heat it, remove it from the oven, stir it, then take its temperature, says Snyder. "If it's not hot enough, put it back in the microwave and heat it some more until it reaches the recommended temperature."

As for solid food, "it's important to let it stand for a few minutes after cooking, so the heat can spread throughout the food," says Snyder.

It's also important to know whether your microwave has enough firepower to cook the food thoroughly. Four years ago, when an estimated 15,000 people got sick after eating Banquet pot pies, ConAgra changed its microwave cooking directions. The company now recommends cooking the pies in a conventional oven or in a microwave rated at 1,100 watts or more. Many microwaves have a lower wattage than that.

(A microwave oven's wattage is typically printed inside the door or on the back. The American Frozen Food Institute publishes information about the wattages of popular ovens at microwaveovenfacts.com.)

You should also only cook or reheat food in containers labeled "microwave safe." Don't reuse frozen or shelf-stable food containers whose directions call for just one use. Thick, non-decorative glass (like Pyrex or CorningWare) is safe.

Containers like yogurt cups, margarine tubs, or Styrofoam cups and plates aren't meant to be microwaved. They can warp or melt, leaching chemicals (like the plasticizers that make the containers flexible) into your food.

Dishwashers

"A dishwasher has a lot going for it to prevent foodborne illness," says University of Georgia food-safety expert Joseph Frank.

"It can use a much stronger, more effective cleaning agent than dish detergent,

since you're not sticking your hands in it. And the very strong alkali solution of dishwasher soap gets dishes very clean, while the heat-dry cycle gives you an additional kill."

Contrary to what some people believe, modern dishwashers use less water than hand washing dishes in the sink, according to the U.S. Environmental Protection Agency.

What to do: "If your household has members who are at high risk of infection, everything should go through the hot water and heat-dry cycles in the dishwasher," says Frank. "In my house, we don't use any dish or utensil that hasn't."

Whether you wash dishes by hand or in the dishwasher, "it's important to rinse them off soon after eating," says Melvin Pascall of Ohio State University, who studies kitchen sanitation in the foodservice industry.

"Do that right away before the food dries, because the longer eating utensils and dishes sit in the sink with food on them, the more the bacteria on them will grow and the harder it will be to clean the bacteria off," he notes.

If dirty dishes are going to sit in the dishwasher overnight, the EPA suggests using the dishwasher to rinse them off, since the rinse cycle uses only a fraction of the water used in hand rinsing dishes.

What's the toughest utensil to clean of bacteria? The fork, says Pascall.

"Some foods, especially fatty foods, get stuck between the tines, which actually shield the food from the action of scrubbing," he notes. "Taking extra time to wash forks is a good idea, especially those covered with fatty, sticky foods like cheese."

It's also important to clean the inside of your dishwasher—including the rubber seals—regularly with a disinfectant or bleach solution.

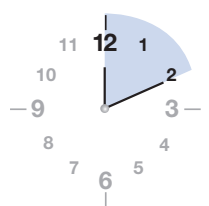
This year, an international team of researchers sampled 189 private homes in

101 cities on six continents. They found two nasty species of black yeast along the rubber seals of the doors in 56 percent of the dishwashers they examined.⁸

Black yeast, which are rarely encountered in nature, are resistant to high temperatures and detergents. They seem to have found a worldwide niche in dishwashers, where they thrive in the heat and moisture, the researchers reported.

The yeast can cause diseases like myce-

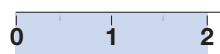
Rules for Leftovers 2 Hours — 2 Inches — 4 Days



2 Hours

from oven to refrigerator.

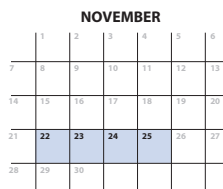
Refrigerate or freeze leftovers within 2 hours of cooking. Otherwise throw them away.



2 Inches

thick to cool it quick.

Store food at a shallow depth—about 2 inches—to speed chilling.



4 Days

in the refrigerator— otherwise freeze it.

Use leftovers from the refrigerator within 4 days. Exception: use stuffing and gravy within 2 days. Reheat solid leftovers to 165°F and liquid leftovers to a rolling boil. Toss what you don't finish.

The cleanest kitchen won't keep you safe if you don't know how to handle and store leftover food.

toma, a rare skin infection. They can also colonize the lungs of patients with cystic fibrosis, leading to respiratory infections, though that's more common in Europe than in North America. 🍌

¹ nsf.org/consumer/home_and_family/germs_home.asp.

² *Food Control* 20: 310, 2009.

³ *Int. J. Food Microbiol.* 85: 227, 2003.

⁴ *Infect. Control Hosp. Epidemiol.* 21: 33, 2000.

⁵ faculty.vetmed.ucdavis.edu/faculty/docliver/Research/cuttingboard.htm.

⁶ *J. Food Prot.* 70: 1640, 2007.

⁷ *J. Food Prot.* 73: 612, 2010.

⁸ *Fungal Biology*, doi:10.1016/j.funbio.2011.04.007.



Walk to Whittle your Middle

Aerobic exercise beats strength training when it comes to trimming deep belly (visceral) fat.

Researchers assigned roughly 150 overweight, sedentary, middle-aged men and women with high LDL (“bad”) or low HDL (“good”) cholesterol to aerobic training, strength training, or both.

The aerobic training meant doing the equivalent of 12 miles a week at a vigorous

pace on treadmills, elliptical trainers, or stationary bicycles. For strength training, participants did three sets of each of eight exercises, with eight to 12 repetitions per set, three days a week.

After eight months, those who did just strength training lost only subcutaneous (below-the-skin) abdominal fat. In contrast, those who did aerobic training—with or without strength training—lost deep belly fat, subcutaneous belly fat, and fat from around the liver. What’s more, they were less insulin resistant—that is, their insulin was more effective at admitting blood sugar into their cells.

What to do: Try to combine aerobic exercise (to lose the most fat and curb insulin resistance) with strength training (to minimize the loss of muscle that occurs as you age).

Am. J. Physiol. Endocrinol. Metab. 2011, doi:10.1152/ajpendo.00291.2011.

Broccoli vs. Fried Meat

Cruciferous vegetables, probiotic yogurt, and chlorophyllin tablets cut in half the DNA damage to colorectal cells that was caused by eating meat fried at high temperatures.

Researchers fed eight healthy men and women ground beef and pork sausage that had been fried at either a high temperature (480°F) or a low temperature (212°F). After two weeks, the urine and feces of the participants who ate 7 to 12 ounces a day of the meat fried at the higher temperature had more mutagens than the urine and feces of those who ate the same amount of meat fried at the lower temperature.

Then the researchers fed eight similar men and women meat cooked at the higher temperature along with an “inhibitor diet” that included cruciferous vegetables (1¼ pounds a day of broccoli, Brussels sprouts, green and

red cabbage, and cauliflower—half raw and half cooked), yogurt (6 to 9 ounces a day of the probiotic yogurt drink DanActive), and chlorophyllin tablets (300 mg a day). (Chlorophyllin is a relative of the chlorophyll that’s found in green leafy vegetables like spinach.)

When the participants ate the inhibitor diet along with the fried meat, their feces were less mutagenic and the DNA damage in their rectal cells dropped by half.

What to do: Until researchers do a larger study—and look separately at vegetables, yogurt, and chlorophyllin—it’s worth eating more nutrient-rich veggies like broccoli, Brussels sprouts, cabbage, and cauliflower. And avoid meat cooked at high temperatures (especially bacon, which has far more mutagens than sausage or ground beef).

PLoS ONE 6: e18707, 2011.

Coffee & Stroke

Does coffee raise or lower the risk of stroke? To find out, researchers pooled the results of 11 studies that tracked nearly 480,000 people in six countries for up to 24 years.

Compared with those who drank no coffee, the risk of stroke was 8 percent lower in those who drank one cup a day and from 13 to 17 percent lower in those who drank two to six cups a day. The researchers couldn’t determine whether regular coffee, decaf, or both led to the lower risk.

What to do: If you drink coffee, enjoy it. (If you’re pregnant, have no more than a cup a day or drink decaf.) Coffee may also lower your risk of Parkinson’s disease and diabetes.

Am. J. Epidemiol. 2011, doi:10.1093/aje/kwr226.

Soy Protein & Arteries

If you’re within five years of menopause, soy protein may help keep your arteries clear, but it may also cause side effects.

For three years, researchers gave 325 healthy postmenopausal women either 25 grams of soy protein or 25 grams of milk protein a day in beverage powders or food bars. The soy protein contained 91 milligrams of isoflavones (estrogen-like compounds in soy).

Overall, the soy-protein eaters had just as much thickening in their carotid arteries, which carry blood to the brain, as the milk-protein eaters.

However, among the 68 women who were within five years of menopause when the study started, the rate of carotid thickening was 68 percent lower among soy eaters than among those who got milk protein.

But the large daily dose of soy—a serving of tofu, soy milk, or soy bars typically has about 6 to 8 grams of soy protein—had some side effects. Soy eaters were more likely to report urinary tract and respiratory infections (like colds or the flu). And breast pain or tenderness and vaginal bleeding were more evident in the soy eaters, according to the researchers.

What to do: Soy foods can replace meats and other sources of saturated fat, but don’t load up on soy bars and soy powders. Overall, there is too little evidence to conclude that they lower your risk of heart disease, breast cancer, hot flashes, or osteoporosis. 🍌

Stroke 2011, doi:10.1161/STROKEAHA.111.620831.

FIGHTING INFLAMMATION

It's not as simple as some claim

BY BONNIE LIEBMAN

Heat disease, cancer, Alzheimer's disease, the metabolic syndrome, physical disability. That's just a partial list of the illnesses that have been linked to chronic inflammation.

"It's different from the classic, red, swelling, white-cell kind of inflammation that we're used to thinking of," explains Walter Willett, chair of the Nutrition Department at the Harvard School of Public Health.

Instead, it's more of a slow burn that's detected only by a rise in inflammatory signals, or markers—proteins produced by the immune system to fight infection or heal an injury (though not the kind of injury you can necessarily see or feel). The question is: how can you douse the flames?

So far, only one thing is clear, says Willett. "The most powerful way to reduce your inflammatory factors is to lose excess weight."

INFLAMMATION'S HARM

Judging by the advice from Andrew ("Anti-Inflammatory Food Pyramid") Weil, Barry ("The Zone Diet") Sears, Nicholas ("Get a Face Lift...in Your Kitchen?") Perricone, and others, you'd think that if you ate the right foods, it would be easy to fight inflammation.

But does less inflammation mean less disease, or is inflammation just a bit player or an innocent bystander? And if curbing inflammation matters, which, if any, foods can do it? The answers to both questions are elusive.

Heart Disease

"Inflammation plays two key roles in coronary heart disease," explains Penny Kris-Etherton of Pennsylvania State University.

First, it helps build the plaque that narrows arteries. The process starts when the immune system mobilizes to heal an "injury" in the artery wall, often caused by oxidized LDL cholesterol. Smoking, high blood pressure, and high blood sugar can also damage the arteries and lead to plaque buildup.¹ (See illustration, p. 10.)

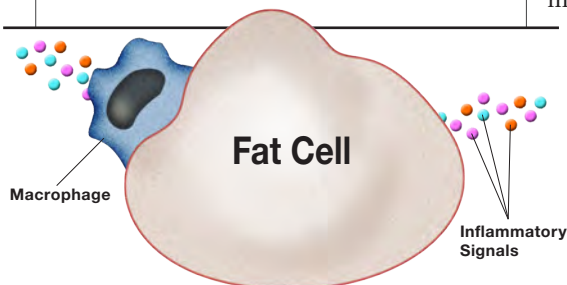
"And every single step of the way, inflammatory signals produced in the plaque fuel the process," says Kris-Etherton.

After decades, the plaque—now filled with cholesterol, calcium, and cell debris—gets covered with a fibrous cap of smooth muscle cells. Then, once again, inflammation wreaks havoc.

"Inflammation causes ruptures of

unstable plaque, which results in a clot," says Kris-Etherton. "That can block the flow of blood through the arteries, which can lead to a myocardial infarction, a stroke, or peripheral artery disease."

"So inflammation is very significant," she adds. Controlling it with "diet, lifestyle, and maybe even low-dose aspirin is absolutely important."



Stuffed fat cells and invading macrophages send out interleukin-6, tumor necrosis factor-alpha, and other signals that cause inflammation.

Metabolic Syndrome

An astounding two out of five Americans have the metabolic syndrome, which raises the risk of heart disease and diabetes. That includes you if you have at least three of the following:

- blood pressure: 130 over 85 or higher
- fasting blood sugar: 100 or higher
- waist: at least 35 inches (women) or 40 inches (men)
- HDL ("good") cholesterol: below 50 (women) or 40 (men)

- triglycerides: 150 or higher.

"The metabolic syndrome is clearly an inflammatory condition," says Ishwarlal Jialal of the University of California, Davis. That's because fat cells spew inflammation-causing markers into the bloodstream (see illustration below).

"Adipose tissue produces noxious factors like C-reactive protein, tumor necrosis factor-alpha, and interleukin-1, 6, and 8," says Jialal.

His new study found that it's not just visceral (deep belly) fat, but also subcutaneous (under-the-skin) fat, that's to blame.² "There is no innocent fat," notes Jialal.

Some of those same inflammatory markers that are spit out by fat cells also cause insulin resistance—the body's inability to use insulin to admit blood sugar into cells—which leads to diabetes.³

"That's a fundamentally important observation," says Willett.

Cancer

"We have evidence that local inflammation can be related to cancer," says

Willett. A prime example: when a bacterium called *Helicobacter pylori* colonizes the stomach, it boosts the risk of stomach cancer (and ulcers).

"The infection causes an inflammatory reaction and that leads to cell multiplication, which may be part of the underlying cancer process," notes Willett.

But inflammation may be involved in some cancers even when bacteria aren't. "We have definitive evidence that aspirin reduces colon cancer risk, and it's very likely through inflammatory pathways," says Willett.⁴

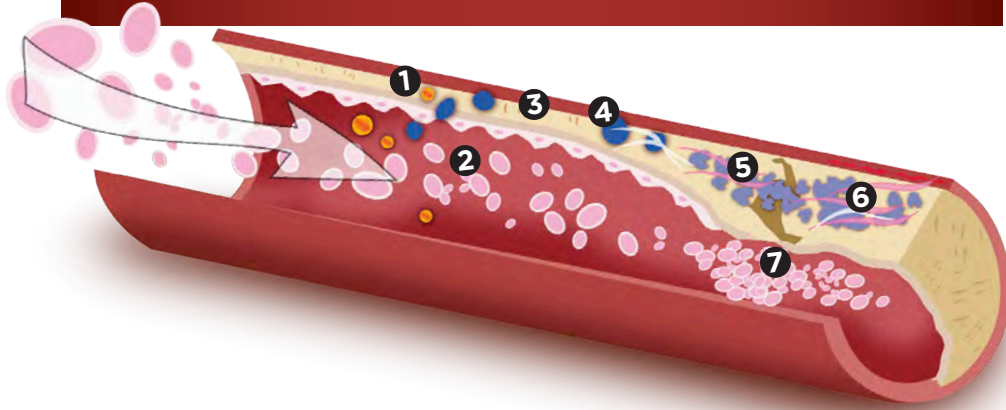
Other evidence suggests that inflammation may play a role in cancers of the lung, esophagus, cervix, and liver.^{5,6}

That's not to say that inflammation is linked to all cancers. For example, "it's less clear for breast cancer," says Willett. "There are associations with inflammatory factors but also with overweight and obesity, so it's difficult to separate the effect of inflammation from the effect of insulin resistance."

In fact, neither may be the key. "The clearest pathway is probably estrogen," says Willett, since it promotes most breast

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From Inflammation to Heart Attack



1 Oxidized LDL cholesterol creates an “injury” by burrowing into the artery wall. 2 The immune system sends inflammatory cells like monocytes to heal the injury. 3 Monocytes enter the wall and turn into macrophages, which gobble up the LDL cholesterol. 4 The LDL-stuffed macrophages form a “fatty streak.” 5 Over decades, more cholesterol, connective tissue, calcium, and cell debris accumulate, turning the streak into plaque. Smooth muscle cells form a fibrous cap over the plaque. 6 Macrophages break down the cap. 7 The cap ruptures. When a clot forms around the rupture, blood flow is blocked, which triggers a heart attack or stroke.

tumors, and fat cells are the chief source of estrogen after menopause.

Memory Loss

The first clue that inflammation is linked to Alzheimer’s disease came from autopsies.

“There is a very high concentration of inflammatory markers around the beta-amyloid plaques that are found in the brains of people with Alzheimer’s disease,” says Zaldy Tan, assistant professor of medicine at Harvard Medical School.

“And now several studies have found that people with higher levels of circulating inflammatory markers are at increased risk of developing dementia.”

One example: in Tan’s study of nearly 700 people in their 70s and 80s, those who had higher levels of inflammatory markers were twice as likely to be diagnosed with Alzheimer’s over the next seven years as those with lower levels.⁷

What’s more, “some studies found that people taking anti-inflammatory drugs like ibuprofen and naproxen for arthritis or other reasons seemed to have a lower risk of developing dementia,” says Tan.

However, clinical trials that gave anti-inflammatory drugs to people at risk for Alzheimer’s found that they had either the same or a greater decline in mental function as those who got a placebo.⁸

“It’s always possible that if you give the drugs for a longer time or earlier in the disease, the results might be different,” notes Tan.⁹ It’s also possible that curbing inflammation simply doesn’t help.

“We don’t know if inflammation is a cause or an effect of dementia,” says Tan. It could simply be the immune system’s response to beta-amyloid plaques. “In-

flammation could be a culprit or just an innocent bystander.”

Disability

Inflammation may eat away at your muscles as you age.

“There’s a strong association between inflammation and a loss of muscle mass and strength,” explains Barbara Nicklas, professor of geriatrics at Wake Forest Medical School in Winston-Salem, North Carolina.

For instance, in the Health, Aging, and Body Composition Study of 2,000 men and women aged 70 to 79, those with higher levels of inflammatory markers were more likely to lose thigh muscle and grip strength over the next five years.¹⁰

“People with higher levels of inflammatory markers are less physically able to do things,” says Nicklas.

And sarcopenia—muscle loss—can occur no matter what you weigh.¹¹ “Usually people who are obese have more muscle because they have to carry the weight around,” Nicklas explains. “But a sarcopenic obese person has a lot of fat and too little muscle.” And that can lead to falls.

It’s not clear why inflammatory markers go up with age. One possibility: “You gain fat and lose muscle as you age, no matter how hard you try,” says Nicklas.

Inflammation may also rise because of impending illness, she adds. “And some researchers think that the mucosal linings of the gut or nose or other organs break down as we age, and that leads to more pathogens in the body, so inflammation creeps up.”

But it’s still not clear if inflammation causes the loss of muscle or if something else causes both. Says Nicklas, “we don’t know if inflammation is the culprit.”

WHAT MAY HELP

Weight Loss & Exercise

It doesn’t matter if you lose weight by cutting calories, exercising more, or both. If you’re carrying extra pounds, losing them can curb inflammation. “Weight is the big factor,” says Harvard’s Walter Willett.

What about exercise? “For the normal, healthy, average person, exercise programs don’t really make a difference for inflammation,” says Nicklas.

“There are only two ways in which exercise training will make a dent in inflammation,” she adds. One is exercise that leads to weight loss.¹²

The second: “Exercise may also have a benefit if you’re highly inflamed to start with,” says Nicklas. “If you have arthritis or have heart failure or some other chronic condition, or if your inflammatory markers are at the higher end of normal.”

That includes many older people. In her study of 424 people aged 70 to 89, those assigned to do aerobic, strength, balance, and flexibility exercises several times a week had lower levels of interleukin-6 after a year.¹³

But think twice before you rush out to run that 5K race. “A single bout of exercise at a higher intensity *increases* inflammation,” warns Nicklas. “In an older person, the inflammation may contribute to overall muscle breakdown and fatigue.”

But that’s no reason to sit on the couch.

“If you keep up the exercise,” notes Nicklas, “the amount of inflammation isn’t as bad, because you get better fitness. Your muscles are getting stronger.”

And regardless of your age, exercise lowers the risk of heart disease, diabetes, colon and breast cancer, frailty, and more.

“There is no drug to maintain muscle mass,” says Nicklas. “The only thing you can do at any age is strength train.”

Omega-3 vs. Omega-6 Fats

Why would omega-3 fats—like the EPA and DHA in fish oil or the ALA in flaxseed—quiet inflammation?

“It goes back to the idea that the omega-6 fatty acids produce eicosanoids that have pro-inflammatory effects,” explains William Harris of the University of South Dakota Sanford School of Medicine. (Corn, soybean, and sunflower oils are rich in omega-6s.)

“The omega-3 fats produce their own version of those eicosanoids, which are kinder and gentler,” he adds.

That’s how omega-3s got their anti-inflammatory reputation. “And it’s been

The Bottom Line

- Inflammation has been linked to heart disease, cancer, metabolic syndrome, Alzheimer's disease, and muscle loss with aging. But the evidence is inconclusive that lowering inflammation prevents those diseases.**
- Losing excess weight is the best way to curb inflammation.**
- Exercise can reduce inflammation if it helps you lose weight or if you have high levels of inflammation, which are common among older people.**
- It's wise to eat a diet rich in seafood, beans, vegetables, fruit, and whole grains and to replace butter and margarine with oils. However, it's too early to know if those changes can curb inflammation.**

seen in some rheumatoid arthritis trials," where inflammation is rampant and "where relatively high doses of omega-3s reduce sore joints," says Harris.

At first, the evidence that omega-3s could also quell inflammation in people with lower levels of inflammation seemed promising.

"Studies found that people with higher omega-3 intakes had lower inflammatory marker levels," says Harris. But when researchers gave omega-3s to people with or without heart disease, inflammation didn't budge.¹⁴

"In the majority of studies where they've given fish oil to people in a randomized trial, it didn't lower inflammatory markers," acknowledges Harris, who is also president and CEO of a company that measures omega-3 levels in red blood cells. "There are counter examples, but that's the usual experience."

It's not clear why. "It could take years of a high intake to change the markers," Harris suggests. "Or it could be that people who eat more fish are more careful about other lifestyle factors," and that's why they have less inflammation.

Another possibility: maybe the studies aren't measuring the right thing.

"If you get exposed to bacteria or a virus, you want an inflammatory response because it helps with healing and fighting the infection," says Penn State's Penny Kris-Etherton. "It's only when the inflammation smolders for a long time that it wreaks havoc."

So she's launching a new study to test the body's response to infection. "We're giving people EPA and DHA"—the omega-3s in fish oil—"at different doses over a long period of time and then injecting them with *E. coli* bacteria at a very, very low dose," she explains.

The question: "If you supersaturate your cells and membranes with omega-3 fatty acids, will that not only quell an inflammatory response, but also quicken a resolution?"

Fish oil may protect the heart whether or not inflammation plays a role. In one Italian trial, fish oil lowered the risk of a second heart attack.¹⁵ And in a Japanese trial on 18,000 people who were taking cholesterol-lowering statin drugs, EPA helped those who had high triglycerides and low HDL ("good") cholesterol.¹⁶ "They had a 50 percent drop in risk of cardiac events," notes Harris.

In view of those trials and other evidence, the American Heart Association recommends that everyone eat fatty fish at least twice a week.¹⁷

ings of fruits and vegetables a day had lower levels of the inflammatory marker C-reactive protein (CRP) than those told to eat 2 servings a day, but the difference was partly due to a rise in CRP in the 2-serving group.²⁶ Another study found no change in CRP when overweight postmenopausal women were told to eat 2, 5, or 10 servings of vegetables a day.²⁷

■ **Legumes.** In a Spanish study of 30 obese men and women, those told to cut calories and eat four servings (each about a cup) of lentils, chickpeas, peas, or beans a week had lower CRP levels than those who cut calories without eating legumes.²⁸ (The bean eaters lost more weight, but the researchers adjusted for that.)

But none of that is enough evidence to be sure that beans—or any foods—matter.

"I wouldn't recommend making a decision based on one or two studies or on observational data alone," says Alice Lichtenstein, director of the Cardiovascular Nutrition Laboratory at the Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University.

The bottom line: replacing meats, sweets, and refined grains with beans, fruits, vegetables, whole grains, and fish—and substituting oils for butter and margarine—is smart, even if it doesn't change your inflammatory markers one iota.

"Can you change inflammation with diet?" asks Lichtenstein. "The data are equivocal. You can change it by losing weight. And there are lots of other good reasons for the majority of Americans to lose weight." 🍌

Do you also need to cut back on the omega-6 fats that are found in many oils? No, says the Heart Association panel that Harris chaired.¹⁸

"Eating less omega-6 fat doesn't make a difference," says Harris. The body doesn't convert much of it to inflammatory eicosanoids. "So the whole mantra—eat less vegetable oil and you'll make less inflammatory eicosanoids—is wrong."

But eating more omega-3s may help since it means that "less of the omega-6-based inflammatory eicosanoids will be produced," adds Harris.

Other Foods

■ **Mediterranean diet.** Italian researchers assigned 180 people with the metabolic syndrome to eat either a Mediterranean diet (rich in fruits, vegetables, whole grains, beans, and olive oil and low in saturated fat) or to follow advice on "healthy food choices."¹⁹

After two years, the Mediterranean group had lower levels of several inflammatory markers, but that may be because they also lost more weight.¹⁹

■ **Olive oil & nuts.** In a Spanish study of roughly 100 people at risk for cardiovascular disease, inflammatory markers dropped more in those assigned to eat a Mediterranean diet with extra olive oil or nuts than in those who ate the same diet without extra olive oil or nuts.²⁰ But results from other studies differ.^{21, 22}

■ **Whole grains.** In three studies, inflammatory markers were no lower in people assigned to eat whole grains than in those who got refined grains.²³⁻²⁵

■ **Fruits & vegetables.** In a German study, men who were told to eat 8 serv-

¹ *N. Engl. J. Med.* 352:1685, 2005.

² *J. Clin. Endocrin. Metab.* doi:10.1210/jc.2011-1577.

³ *J. Clin. Invest.* 121: 2111, 2011.

⁴ *Lancet* 369: 1603, 2007.

⁵ *Cancer Epidemiol. Biomarkers Prev.* 14: 2413, 2005.

⁶ *Nature* 420: 860, 2002.

⁷ *Neurology* 68: 1902, 2007.

⁸ *Arch. Neurol.* 65: 896, 2008.

⁹ *Alz. Res. Ther.* 2: 6, 2010.

¹⁰ *J. Gerontol. A Biol. Sci. Med. Sci.* 64:1183, 2009.

¹¹ *J. Appl. Physiol.* 102: 919, 2007.

¹² *Am. J. Physiol. Endocrinol. Metab.* 298: E824, 2010.

¹³ *J. Am. Geriatr. Soc.* 56: 2045, 2008.

¹⁴ *Inflamm. Res.* 60: 309, 2011.

¹⁵ *Lancet* 354: 447, 1999.

¹⁶ *Atherosclerosis* 200: 135, 2008.

¹⁷ *Circulation* 106: 2747, 2002.

¹⁸ *Circulation* 119: 902, 2009.

¹⁹ *JAMA* 292: 1440, 2004.

²⁰ *Am. J. Clin. Nutr.* 89: 248, 2009.

²¹ *Nutr. Metab. Cardiovasc. Dis.* 21 Suppl 1: S14, 2011.

²² *Br. J. Nutr.* 97: 1144, 2007.

²³ *Am. J. Clin. Nutr.* 92: 733, 2010.

²⁴ *J. Nutr.* 137: 1401, 2007.

²⁵ *Br. J. Nutr.* 104: 125, 2010.

²⁶ *Am. J. Clin. Nutr.* 82: 1052, 2005.

²⁷ *J. Nutr.* doi:10.3945/jn.111.139659.

²⁸ *Eur. J. Nutr.* 50: 61, 2011.



ON SIDES

BY KATE SHERWOOD

Maybe there's no talking you out of the Thanksgiving turkey. But if vegetables are going to take up half your plate, it doesn't hurt to have a trio of side dishes that are good for you *and* that keep you coming back for more.

Got a question or suggestion? Write to Kate at healthycook@cspinet.org.

Butternut Squash with Pumpkin Seeds & Cranberries

Total Time: 15 min



- 1 lb. butternut squash, cut into ½-inch dice
- 2 tsp. Dijon mustard
- 1 tsp. balsamic vinegar
- 2 Tbs. pomegranate juice or orange juice
- ¼ tsp. kosher salt
- 2 Tbs. extra-virgin olive oil
- ⅓ cup pumpkin seeds, toasted
- 3 Tbs. dried cranberries

You can also use half beets, half butternut squash.

Steam the squash until tender, 3-5 minutes. Drain any water. • In a large bowl, whisk together the mustard, vinegar, juice, salt, and oil. Toss the squash in the bowl with the dressing. Sprinkle with the pumpkin seeds and cranberries. • Serves 4.

PER SERVING (¾ cup)—Cals: 190 / Total Fat: 12 g / Sat Fat: 2 g
Protein: 4 g / Carbs: 19 g / Fiber: 3 g / Sodium: 150 mg

Brussels Sprouts with Shallots & Almonds

Total Time: 20 min



- 2 large shallots, sliced
- 1 tsp. + 1 Tbs. extra-virgin olive oil
- 1 lb. Brussels sprouts, trimmed and sliced
- ¼ tsp. kosher salt
- Zest and juice of ⅓ lemon, more to taste
- ¼ cup slivered almonds, toasted

If you're not a Brussels sprouts fan, try sliced cauliflower florets.

In a large non-stick skillet, sauté the shallots in the 1 tsp. of oil until they are golden brown, about 3 minutes. Remove the shallots from the skillet and reserve. • Add the remaining 1 Tbs. of oil and sauté the Brussels sprouts until lightly brown and tender-crisp, about 5 minutes. • Add the sprouts to the shallots and season with up to ¼ tsp. of salt and the lemon zest and juice. Sprinkle with the almonds. • Serves 4.

PER SERVING (¾ cup)—Cals: 150 / Total Fat: 8 g / Sat Fat: 1 g
Protein: 6 g / Carbs: 17 g / Fiber: 5 g / Sodium: 150 mg

Creamed Spinach

Total Time: 20 min



- 1 small onion, diced
- 2 Tbs. canola oil
- 2 Tbs. whole wheat pastry flour
- 1¼ cups fat-free milk
- 1 lb. spinach
- ¼ cup grated Parmesan cheese
- Freshly ground nutmeg
- Freshly ground black pepper

Make a double batch and freeze what you don't eat.

In a medium pot, sauté the onion in the oil until lightly browned, 8-10 minutes. Sprinkle in the flour and cook while stirring for 1 minute. Whisk in the milk and continue whisking until the sauce is smooth and starts to thicken, 1-2 minutes. Simmer for 5 minutes. • Steam or blanch the spinach until tender and bright green, about 1 minute. Rinse under cold water to stop the cooking, drain, and squeeze out the excess water. Chop or pulse in a food processor until coarsely chopped. • Stir the spinach and Parmesan cheese into the milk sauce. Season with nutmeg and pepper to taste. • Serves 6.

PER SERVING (½ cup)—Cals: 100 / Total Fat: 3.5 g / Sat Fat: 1 g
Protein: 5 g / Carbs: 13 g / Fiber: 4 g / Sodium: 200 mg

Food Court Cuisine

BY JAYNE HURLEY & BONNIE LIEBMAN



Stick with one entrée like String Bean Chicken Breast and swap the rice for a side of veggies.

healthiest entrées: Mushroom Chicken and String Bean Chicken Breast. Each has about 200 calories' worth of vegetables (roughly a cup) and two ounces of chicken that hasn't been battered and deep fried.

Unfortunately, each has far too much sodium (around 750 milligrams). But the only entrées with considerably less (300 to 450 mg) are battered, fried, sugar-heavy dishes like Sweet & Sour Chicken or Pork and SweetFire Chicken Breast. Swapping veggies for batter and sugar isn't the best way to dodge salt.

2. Pick mixed vegetables instead of rice or noodles as your side. It's not worth ordering 380 calories' worth of Steamed (white) Rice as a side dish simply because it's salt-free. The generous side of Mixed Veggies—about 1½ cups—is salt-laden (530 mg), but it delivers only 70 calories and a bolt of potassium that helps counter the sodium's impact on your blood pressure. One thing's for sure: you're worse off with either the Chow Mein or the Fried Rice, each of which supplies about 500 calories' worth of refined carbs seasoned with 800 to 1,000 mg of sodium.

3. Choose veggie-rich dishes. Eggplant Tofu is one of the few vegetarian options on Panda's menu (other than Mixed Veggies, which don't have much protein). The Eggplant Tofu is a good deal for calories (310) and middle of the pack for sodium (570 mg).

Note: All charts are ranked from least to most calories, then saturated fat, then sodium. Dishes that come with sauce or dressing are ranked that way.

Daily Limits (for a 2,000-calorie diet): **Saturated Fat:** 20 grams.

Sodium: 1,500 milligrams.

Source: company information. The use of information from this article for commercial purposes is strictly prohibited without written permission from CSPI.

Who's guilty. Who's (almost) innocent.

Shopping malls. Airports. Sports arenas. Office buildings. Food courts are everywhere these days, and the choice of cuisines has grown.

You can almost always find Chinese, Mexican, and, in some cases, Japanese and salad chains sandwiched between the McDonald's, Starbucks, Mrs. Fields, and other fast-food, coffee, cookie, and ice cream stalls.

What's worth a try and what should you avoid? Here's our take, based on the chains' own numbers.

Melissa Pryputniewicz and Emily Caras compiled the information for this article.

You'd be hard pressed to find a food court with no Chinese food. And with 1,378 locations in 41 states and Puerto Rico, the odds are greatest that you'll end up at a Panda Express.

Like with any Asian cuisine, Panda's revolving menu of more than a dozen entrées is typically low in saturated fat but high in sodium. And Panda makes it easy to load up on vegetable sides instead of the usual white rice or noodles. Yesss!

ORDERING CHINESE

1. Order no more than one entrée and one side. At Panda Express, that's called a Panda Bowl. The

4. Avoid deep-fried entrées. If you're a beef eater, you're better off spending 130 calories on the Broccoli Beef than 700 calories on the popular breaded and deep-fried Beijing Beef. Other deep-fried entrées—like Orange Chicken, Sweet & Sour Chicken or Pork, or Honey Walnut Shrimp—also pour on the grease-soaked breading.

Panda is proud of its Wok Smart symbol, which appears on the menu next to items with 250 calories or less per serving. It may help you cut calories, but it's not smart to swallow the Hot & Sour Soup's 930 mg of sodium. Or the mostly fried white flour in the Chicken Egg Roll or the Veggie Spring Rolls or Cream Cheese Rangoons.

5. Don't add extra sodium. A packet of soy sauce will set you back 400 mg. Hot mustard or duck sauce is around 100 mg a pop.

| | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|------------------------------|----------|-------------------|-------------|-------------|
| Appetizers & Soup | | | | |
| Hot & Sour Soup | 100 | 1 | 4 | 930 |
| Veggie Spring Rolls (2) | 160 | 1 | 4 | 540 |
| Cream Cheese Rangoons (3) | 190 | 5 | 5 | 180 |
| Chicken Egg Roll (1) | 200 | 4 | 8 | 390 |
| Chicken Potstickers (3) | 220 | 3 | 7 | 280 |
| Entrées | | | | |
| Broccoli Beef | 130 | 1 | 10 | 710 |
| String Bean Chicken Breast | 170 | 2 | 15 | 740 |
| Kobari Beef | 210 | 2 | 15 | 840 |
| Mushroom Chicken | 220 | 3 | 17 | 760 |
| Black Pepper Chicken | 250 | 3 | 19 | 930 |
| Crispy Shrimp (6) | 260 | 3 | 9 | 810 |
| Kung Pao Chicken | 280 | 4 | 18 | 800 |
| Eggplant Tofu | 310 | 4 | 7 | 570 |
| Mandarin Chicken | 310 | 4 | 34 | 740 |
| Barbecued Pork | 360 | 8 | 34 | 1,310 |
| Honey Walnut Shrimp | 370 | 4 | 14 | 470 |
| Sweet & Sour Chicken | 380 | 3 | 15 | 320 |
| Sweet & Sour Pork | 390 | 3 | 10 | 460 |
| Orange Chicken | 420 | 4 | 15 | 620 |
| SweetFire Chicken Breast | 440 | 4 | 17 | 370 |
| Beijing Beef | 690 | 8 | 26 | 890 |
| Sides | | | | |
| Mixed Veggies | 70 | 0 | 4 | 530 |
| Steamed Rice | 380 | 0 | 7 | 0 |
| Chow Mein | 500 | 4 | 18 | 980 |
| Fried Rice | 530 | 3 | 12 | 820 |
| Extras | | | | |
| Fortune Cookie (1) | 30 | 0 | 1 | 10 |

>>>>



Never heard of Freshii? How about Chop't, Salad Creations, or Sweetgreen?

Salad chains may look just like other grab-and-go food outlets. In fact, they're among the few places where you can get real food—that is, food that looks pretty much as it did when it grew in the ground.

But even at a salad chain, you have to be on your toes.

ORDERING SALAD

- 1. Go deep for greens.** Any greens are good greens, but darker greens like spinach beat romaine or iceberg.
- 2. Pick a good protein.** Egg whites, egg slices, grilled tofu, albacore tuna, and edamame have less sodium (200 milligrams or less) than chicken and salmon (roughly 250 to 550 mg). However, you get far more protein in the chicken and fish (15 to 20 grams) than in the egg, tofu, and edamame (5 grams).
- 3. Cut the cheese.** It adds 100 calories and a third of a day's saturated fat (6 grams) plus at least 200 mg of sodium. (Feta and blue cheese add 450 mg.) Do you need it?
- 4. Pour on veggies and fresh fruit.** Nutrient-dense (often unlimited) toppings—like broccoli, carrots, chickpeas, black beans, edamame, roasted peppers, blueberries, mango, and strawberries—are a bargain at 10 to 40 calories each.
- 5. Go easy on nuts and dried fruit.** Expect about 100 calories from each dried fruit topping (like cranberries) and 200 for each nuts or sunflower seeds topping. Avocado also adds 100 calories.
- 6. Hold the crispy wontons and croutons.** They're oily refined flour. Also hold the salty Kalamata olives and bacon.
- 7. Get half the dressing.** Freshii offers a half serving (2 Tbs.) of dressing, which saves 50 to 100 calories and 150 to 250 mg of sodium. Your best bets: the Balsamic Vinaigrette, Cucumber Dill, and EVOO (extra-virgin olive oil) & Aged Balsamic Vinegar have next to no sodium. The not-too-memorable Cucumber Dill has fewer calories (20 in a full serving) than the tastier Balsamic Vinaigrette (110) or the EVOO & Aged Balsamic Vinegar (130).
- 8. Consider pre-fab salads.** Most chains offer standard salads like Asian, Caesar, and Cobb, as well as some of their own creations. Cobb is one of the worst (thanks to its bacon and cheese). At Freshii, the Wild Pacific Salad (with salmon) is the best. Remember to drop any toppings (like cheese, bacon, or croutons) you can do without.
- 9. Reconsider a wrap, burrito, bowl, or panini.** Why bury your veggies in a layer of white flour (the Honey Wheat Tortilla) or rice? At Freshii, the Buffalo Chicken Salad has 330 calories, while the Buffalo Chicken Wrap has 570 (with Low Fat Ranch Dressing on each). That's partly because the wraps start with a 330-calorie tortilla...and end with 500 to 800 calories in total.

That said, if you're choosing between a wrap and a sandwich, the wrap rules. Freshii's Tuna Garden Wrap is stuffed with shrubbery, and its Vegan Wrap is surprisingly delish.

Burritos are worse, thanks to rice and, at Freshii, 6 tablespoons of dressing. Granted, Freshii's burritos look positively slender (700 to 900 calories) next to Chipotle's or Qdoba's (1,000 to 1,300 calories). But don't kid yourself; you're eating mostly flour and rice, not veggies. Freshii does offer brown rice (bravo!), but we'd swap the rice for spinach or Freshii Mix (mixed greens), which the chain will let you do.

| Salads (with a full serving—4 Tbs.—of dressing) | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|--|----------|-------------------|-------------|-------------|
| Wild Pacific | 180 | 1 | 26 | 660 |
| with Cucumber Dill Dressing | 200 | 1 | 27 | 670 |
| Asian Chop | 340 | 0 | 23 | 450 |
| with Asian Sesame Dressing | 460 | 1 | 24 | 740 |
| Chicken Caesar | 270 | 7 | 25 | 680 |
| with Caesar Dressing | 520 | 9 | 26 | 840 |
| Freshii Cobb | 430 | 12 | 31 | 1,040 |
| with Honey Dijon Dressing | 610 | 16 | 31 | 1,490 |

| Bowls, Burritos, & Wraps | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|-------------------------------------|----------|-------------------|-------------|-------------|
| Chicken Teriyaki Bowl | 390 | 0 | 23 | 610 |
| with 4 Tbs. Warm Teriyaki Sauce | 450 | 0 | 26 | 2,370 |
| Tuna Garden Wrap | 520 | 6 | 28 | 970 |
| with 2 Tbs. Cucumber Dill Dressing | 530 | 6 | 28 | 980 |
| Asian Noodle Bowl | 540 | 0 | 25 | 340 |
| with 4 Tbs. Warm Peanut Sauce | 670 | 2 | 27 | 750 |
| Chicken Club Wrap | 610 | 8 | 36 | 1,120 |
| with 2 Tbs. Honey Dijon Dressing | 700 | 10 | 36 | 1,340 |
| Vegetable Burrito* | 610 | 7 | 20 | 540 |
| with 6 Tbs. EVOO & Aged Balsamic* | 800 | 10 | 20 | 540 |

BUILD YOUR OWN

| Greens (5 cups) | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|---|----------|-------------------|-------------|-------------|
| Freshii Mix, Romaine, or Spinach ¹ | 40 | 0 | 3 | 40 |

| Protein (1 serving) | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|---|----------|-------------------|-------------|-------------|
| Egg Whites | 10 | 0 | 3 | 40 |
| Grilled Tofu | 50 | 0 | 5 | 0 |
| Albacore Tuna | 60 | 0 | 15 | 170 |
| All Natural Chicken | 60 | 0 | 12 | 270 |
| Buffalo Chicken | 60 | 0 | 14 | 520 |
| BBQ Chicken or Cajun Chicken ¹ | 70 | 0 | 14 | 370 |
| Teriyaki Chicken | 70 | 0 | 15 | 580 |
| Egg Slices | 70 | 2 | 6 | 60 |
| Grilled Salmon | 110 | 1 | 21 | 530 |
| Smoked Bacon | 110 | 3 | 10 | 320 |
| Grilled Steak | 140 | 5 | 8 | 360 |

| Cheese (1 oz.) | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|--|----------|-------------------|-------------|-------------|
| Blue or Feta ¹ | 100 | 6 | 6 | 440 |
| Goat*, Jack & Cheddar, or Shaved Parmesan ¹ | 120 | 6 | 8 | 210 |

| Toppings (1 serving) | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|--|----------|-------------------|-------------|-------------|
| Fresh Fruit, Vegetables, or Beans ¹ | 10 | 0 | 0 | 20 |
| Edamame | 40 | 0 | 4 | 0 |
| Kalamata Olives | 50 | 1 | 0 | 520 |
| House Croutons | 60 | 1 | 2 | 150 |
| Sundried Tomatoes | 70 | 0 | 3 | 0 |
| Dried Cranberries | 90 | 0 | 0 | 0 |
| Avocado | 90 | 1 | 1 | 0 |
| Chopped Almonds | 170 | 1 | 7 | 0 |
| Crispy Wontons | 180 | 0 | 3 | 60 |
| Sunflower Seeds | 180 | 2 | 7 | 0 |
| Walnuts | 210 | 2* | 5 | 0 |

| Dressings (a full serving—4 Tbs.—unless noted) | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|---|----------|-------------------|-------------|-------------|
| Aged Balsamic Vinegar | 10 | 0 | 0 | 0 |
| Cucumber Dill | 20 | 0 | 1 | 10 |
| Spicy Lemongrass | 30 | 0 | 0 | 220 |
| Warm Teriyaki | 60 | 0 | 3 | 1,770 |
| Low Fat Ranch | 100 | 1 | 0 | 520 |
| Balsamic Vinaigrette | 110 | 1 | 0 | 50 |
| EVOO (extra-virgin olive oil) (1 Tbs.) | 120 | 2 | 0 | 0 |
| Poppyseed | 130 | 0 | 0 | 200 |
| Asian Sesame | 130 | 1 | 1 | 290 |
| Warm Peanut | 130 | 1 | 2 | 410 |
| Blue Cheese or Honey Dijon ¹ | 200 | 4 | 1 | 460 |
| Caesar | 250 | 2 | 1 | 170 |

¹Average. * Estimate.

Sarku



Your best bet: the Shrimp Teriyaki. Ask for extra vegetables instead of steamed rice.

With more than 200 locations in 37 states, Sarku is the largest Japanese “quick service” chain in the country.

Like most Asian menus, Sarku’s has a distinct advantage: vegetables other than lettuce, tomato, and cucumber. And there’s no cheese or cream to boost the saturated fat. The major drawbacks: white rice (which you can skip) and salt (which you can’t).

ORDERING JAPANESE

1. Get Shrimp or Chicken Teriyaki (with an extra side of vegetables

instead of rice). Whether you go with chicken, shrimp, or beef, you also get about 1½ cups of vegetables and at least 1½ cups of steamed white rice. (We got 3 cups of rice at one location.) Bottom line: 500 to 650 calories and no more than 4 grams of saturated fat.

You can lose around 150 calories if you eat just half the rice (hint, hint). Better yet, skip it entirely and ask for an extra side of veggies (which costs \$1 at some locations). When it comes to sodium, the best you can do is to go with shrimp (820 milligrams) instead of beef (1,050 mg) or chicken (1,430 mg).

2. Get veggies and rice. The (meat-free) Vegetarian D’Lite has 1½ cups of vegetables and at least 1½ cups of white rice. That cuts the calories (to 360) and the sodium (to 500 mg). Unfortunately, the dish is low in protein (9 grams). The Vegetarian Soba (Noodle) substitutes oil-soaked egg noodles (not traditional buckwheat noodles) for the rice, which bumps up the protein (to 19 grams) but also the calories (to 710) and the sodium

(to 1,010 mg). If you get it, try it with half the noodles.

3. Skip the Tempura. The battered and deep-fried Chicken or Shrimp delivers about 1,000 calories and 1,000 mg of sodium.

4. Steer clear of fried rice. It’s white rice with extra sodium (1,000 mg) and calories (330).

5. Don’t add more sodium. Every ladle of teriyaki sauce has 470 mg.

D’Lite Meals

| | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|-------------------------------|----------|-------------------|-------------|-------------|
| Vegetarian D’Lite (with rice) | 360 | 0 | 9 | 500 |
| Vegetarian Soba (Noodle) | 710 | 2 | 19 | 1,010 |

Teriyaki Combos (with steamed rice and mixed vegetables)

| | | | | |
|---------------------------|-----|---|----|-------|
| Shrimp Teriyaki | 500 | 1 | 32 | 820 |
| Beef Teriyaki | 570 | 4 | 33 | 1,050 |
| Beef & Shrimp Teriyaki | 630 | 4 | 44 | 1,140 |
| Chicken Teriyaki | 640 | 3 | 39 | 1,430 |
| Chicken & Shrimp Teriyaki | 700 | 4 | 50 | 1,520 |

Tempura Meals (with steamed rice)

| | | | | |
|------------------------|-----|---|----|-----|
| Rice & Shrimp Tempura | 540 | 3 | 13 | 190 |
| Rice & Chicken Tempura | 970 | 9 | 23 | 460 |

Tempura Combos (with steamed rice and mixed vegetables)

| | | | | |
|--------------------------|-------|----|----|-------|
| Chicken & Shrimp Tempura | 980 | 8 | 26 | 930 |
| Chicken Tempura | 1,270 | 12 | 33 | 1,110 |

Sides & Sauces

| | | | | |
|--------------------------------------|-----|----|----|-------|
| Teriyaki Sauce (3 Tbs.) | 45 | 0 | 1 | 470 |
| Mixed Vegetables | 90 | NA | NA | NA |
| Maki Roll (Japanese Spring Roll) (1) | 140 | 2 | 1 | 210 |
| Steamed Rice (1½ cups) | 290 | 0 | 5 | 10 |
| Fried Rice (1½ cups) | 330 | 1 | 7 | 1,010 |

NA Number not available.



Try a salad with black beans, cheese, and just one tablespoon of the Chipotle-Honey Vinaigrette.

“Foods that are unprocessed and fun-tampered with (like at Chipotle) are more filling and nutritious than the synthetic foods you might find at other restaurants,” says the chain’s Web site. Really?

Each vegetarian or chicken, pork, or beef burrito (with rice, beans, cheese, salsa, and sour cream) is loaded not just with half a day’s calories (about 950), but with a day’s saturated fat (18 grams) and more than a day’s sodium (around 2,000 milligrams). Meat and (fiber-rich) beans aside, it’s mostly white flour, white rice, and cheese.

ORDERING MEXICAN

1. Try a salad. Lettuce, black beans, cheese, and dressing keep the calories down to about 490 (640 with guacamole). If you add chicken, cut the cheese. Use 1 tablespoon of the Chipotle-Honey Vinaigrette (instead of 4) to save 200 calories and 500 mg of sodium.

2. If you must have a burrito, stick with chicken, black beans, and salsa. Better yet, ditch the 300-calorie white-flour tortilla (with its 670 mg of sodium) and get a burrito bowl instead.

3. Choose crispy corn rather than soft flour tacos to save 190 mg of sodium and 30 calories per shell. Can you get by with just two?

4. Skip the sour cream to lose 7 grams of saturated fat. Skipping the cheese cuts another 5 grams.

5. If you can’t handle the heat of the lowest-sodium salsa at Chipotle (Tomatillo-Green Chili, at 230 mg), try just half a serving of Fresh Tomato Salsa or Roasted Chili-Corn Salsa. 🌶️

Salads (with black beans, cheese, and romaine)

| | Calories | Saturated Fat (g) | Protein (g) | Sodium (mg) |
|--|----------|-------------------|-------------|-------------|
| Vegetarian (with guacamole) | 380 | 7 | 18 | 630 |
| with 4 Tbs. Chipotle-Honey Vinaigrette | 640 | 11 | 18 | 1,330 |
| Salad, except Vegetarian ¹ | 420 | 7 | 44 | 870 |
| with 4 Tbs. Chipotle-Honey Vinaigrette | 680 | 11 | 44 | 1,570 |

Tacos (3 tacos—with cheese, sour cream, romaine, and tomato salsa)

| | | | | |
|--|-----|----|----|-------|
| Crispy, except Vegetarian ¹ | 610 | 16 | 42 | 1,150 |
| Crispy Vegetarian (with black beans & guacamole) | 700 | 16 | 23 | 1,150 |
| Soft flour, except Vegetarian ¹ | 700 | 17 | 45 | 1,720 |
| Soft flour Vegetarian (with black beans & guacamole) | 790 | 17 | 26 | 1,720 |

Fajita Burritos (with rice, fajita vegetables, cheese, sour cream, and tomato salsa)

| | | | | |
|--|-----|----|----|-------|
| Vegetarian (with guacamole) | 830 | 18 | 23 | 1,860 |
| Fajita Burrito, except Vegetarian ¹ | 870 | 18 | 49 | 2,110 |

Bowls & Burritos (with rice, black beans, cheese, sour cream, and tomato salsa)

| | | | | |
|---|-----|----|----|-------|
| Bowl ¹ | 670 | 15 | 43 | 1,470 |
| Vegetarian Burrito (with guacamole) | 930 | 18 | 29 | 1,940 |
| Burrito, except Vegetarian ¹ | 970 | 18 | 55 | 2,190 |

Extras

| | | | | |
|---|-----|---|---|-----|
| Fajita Vegetables | 20 | 0 | 1 | 170 |
| Tomatillo-Green Chili Salsa | 20 | 0 | 1 | 230 |
| Fresh Tomato Salsa, Roasted Chili-Corn Salsa, or Tomatillo-Red Chili Salsa ¹ | 50 | 0 | 2 | 460 |
| Cheese | 100 | 5 | 8 | 180 |
| Black Beans | 120 | 0 | 7 | 250 |
| Pinto Beans | 120 | 0 | 7 | 330 |
| Sour Cream | 120 | 7 | 2 | 30 |
| Cilantro-Lime Rice | 130 | 1 | 2 | 150 |
| Guacamole | 150 | 2 | 2 | 190 |
| Chipotle-Honey Vinaigrette | 260 | 4 | 0 | 700 |
| Flour tortilla (for burritos) | 290 | 3 | 7 | 670 |
| Chips | 570 | 4 | 8 | 420 |

¹Average.

The Center for Science in the Public Interest (CSPI), founded in 1971, is an independent nonprofit consumer health group. CSPI advocates honest food labeling and advertising and safer and more nutritious foods. CSPI's work is supported by *Nutrition Action Healthletter* subscribers and foundation grants. CSPI accepts no government or industry funding. *Nutrition Action Healthletter*, first published in 1974, accepts no advertising.

RIGHT STUFF

FOOD PORN

OH BABY!

“Superfood made super easy,” says the label of **Earthbound Farm Organic Mixed Baby Kales**. Got *that* right.

Kale's super-food credentials are indisputable. It's one of the dark leafy greens that make nutritionists weak in the knees. They can't help but swoon over kale's vitamins A, C, and K, its lutein, and its calcium, potassium, magnesium, iron, and fiber. And every half cup cooked (or 1 cup raw) has just 20 calories.

The only foods that even come close: spinach, collards, and some other sister greens.

If you live in the Mid-Atlantic or Northeast, check out **Olivia's Organics Baby Kale** (or **Baby Collards** or **Baby Swiss Chard**) **Cooking Greens**, which come in generous 11 oz. packages.

Do you shy away from greens for fear that they'll take too long to wash, de-stem, and cook? You'll need to come up with a new excuse. Both companies' greens are washed and ready to go into your next stir-fry, soup, or other dish.

And they're so tender that you can just toss a handful of uncooked baby kale (or collards or Swiss chard) in with your salad creations. Try avocado, red onion, and cherry tomatoes with fresh lime juice, olive oil, and salt. Or toasted pine nuts, golden raisins, and Parmesan with balsamic vinaigrette. Or edamame, carrot, avocado, and celery with sesame dressing.

Suddenly, kale is convenient.

Earthbound Farm: (800) 690-3200

Olivia's Organics: olivia@oliviasorganics.org

SUISIDES?

“Now you can get your favorite pizza with your favorite sides—all in one box,” gushes **DiGiorno** on its frozen-pizza boxes. Is that good news or what?

Take the **Four Cheese Pizza & Cheesy Breadsticks**. Just heat the breadsticks and pizza in the oven for 15 minutes, then “remove and enjoy breadsticks while the pizza cooks an additional 2 minutes.”

So you have two minutes to wolf down your breadsticks (white flour, water, cheese, etc.) with marinara sauce (mostly water and tomato paste) before digging into your pizza (white flour, water, cheese, tomato paste, etc.). Why munch on baby carrots and dip or salad or fresh fruit as an appetizer when you can load up on bread before your bread?

Let's say you eat half of the 22 oz. pizza. (That's more than the 4 oz. serving— $\frac{1}{8}$ of the pie—listed on the Nutrition Facts panel, but it's close to DiGiorno's individual-size 10 oz. pizzas.) You've downed 780 calories and 15 grams of saturated fat plus nearly 4 grams of

trans fat and 2,080 milligrams of sodium. Each of the eight breadsticks adds another 110 calories, $\frac{1}{2}$ grams of sat fat, $\frac{1}{2}$ gram of trans, and 350 mg of sodium. Urp.

The numbers don't drop for the **Pizza & Wyngz** (chicken fritters) or **Pizza & Cookies**.

“Make Friday night memorable!” urges the box. No problem. You'll have plenty of fat cells and stiff, clogged arteries as a souvenir.

DiGiorno (Nestlé): (800) 225-2270

dish OF THE MONTH

Can't Beet It Salad

Arrange $\frac{1}{2}$ lb. of sliced cooked beets on a platter. Top with $\frac{1}{2}$ thinly sliced small red onion, $\frac{1}{4}$ cup of crumbled feta cheese, and $\frac{1}{4}$ cup of sliced celery hearts. Drizzle with 2 Tbs. of extra-virgin olive oil and 2 tsp. of red wine vinegar.