

NUTRITION ACTION

HEALTH LETTER™

10 MYTHS THAT WON'T QUIT

BY BONNIE LIEBMAN

Old myths die hard. And when it comes to diet and health, the misconceptions are endless. Even if you steer clear of claims on herbs and supplements, the “conventional wisdom” isn’t always wise.

Some myths have been around for decades (“vitamin C prevents colds”). Others are relatively new (“drink green tea to ward off cancer”).

Some of the most persistent myths are generated by the food industry. That’s why many people believe that salt doesn’t raise blood pressure, chocolate is good for you, eggs are harmless, and pork is “the other white meat.”

Here are 10 myths that we can’t seem to shake.

Continued on page 3.



Illustration: Loel Barr.



10 MYTHS THAT WON'T QUIT

Myth^s may be the wrong word.

It's not that these beliefs are dead wrong. More often, they're promising theories that are backed by too little evidence. Or they're outdated ideas that have crumpled under the weight of recent research.

In this issue, we clarify the evidence on 10 assumptions that people rarely question.



Soy foods prevent breast cancer.

Most women will do whatever they can to reduce the risk of breast cancer. Maybe that's why they're so willing to believe that the plant estrogens (phytoestrogens) in soy can keep the disease at bay. Yet so far, the evidence is weak.

Researchers in the Netherlands recently reviewed 13 studies—largely from China and Japan—that looked at soy and the risk of breast cancer.¹

“Overall, results do not show protective effects, with the exception maybe for women who consume phytoestrogens at adolescence or at very high doses,” concludes Petra Peeters of the University Medical Center in Utrecht.

What's more, if you exclude studies that asked women who already have breast cancer what they used to eat, that leaves only four studies that asked healthy women about soy and then waited to see who got cancer, she adds. “And none of them found statistically significant breast cancer reductions.”

The bottom line: it's still too early to say whether soy—or other phytoestrogens—might protect the breast.

What else might soy do?

■ **Prostate cancer.** Soy's impact on the risk of prostate cancer is still muddy, in part because most Americans eat too little soy for studies to detect any lower risk. However, researchers have tested soy's impact on PSA (prostate-specific antigen) levels, with mixed results.

In a recent study, soy grits (about two ounces a day) lowered PSA by 13 percent in eight men with prostate cancer.² In studies on healthy men, though, PSA didn't budge.³ And experts are now questioning whether small changes in PSA levels matter.

■ **Hot flashes.** So far, well-designed studies have found that soy (or plant estrogens from supplements like red clover) has little impact on hot flashes and other symptoms of menopause.

Researchers at the University of Minnesota recently examined 20 trials on menopause and soy foods, beverages, powders, or extracts. Nearly all came up empty.⁴

“The available evidence suggests that phytoestrogens available as soy foods, soy extracts, and red clover extracts do not improve hot flushes or other menopausal symptoms,” conclude Minnesota's Erin Krebs and colleagues.

The bottom line: soy foods do seem to lower cholesterol, so they may help protect your heart. But whether they do more is a question mark.



Olive is the healthiest oil.

Fish oil is probably the healthiest, but you can't pour it on your salad or cook with it. Olive is cer-

tainly *one* of the good oils. Whether it's the best is unclear.

“The data suggest that any oil that's high in unsaturated fats—whether it's polyunsaturated or monounsaturated—is associated with a decreased risk of cardiovascular disease,” says Alice Lichtenstein of the U.S. Department of Agriculture Jean Mayer Human Nutrition Research Center on Aging at Tufts University in Boston.

“Canola is probably better than olive oil because it's lower in saturated fat,” Lichtenstein explains. What's more, canola has more polyunsaturated fat than olive oil, “and polys lower LDL [‘bad’ cholesterol] more than monos.”

So why not stick with soy and canola? Both have more of a polyunsaturated fat called alpha-linolenic acid (ALA) than olive. ALA is an omega-3 fat that may help lower the risk of heart disease.

But if preliminary studies hold up, ALA may also raise (slightly) the risk of



prostate cancer. Right now that's a big if.

"I don't think the data is strong enough for recommendations," says Lichtenstein.

And there are other ways to cut back on ALA. "Red meat and dairy fat are also sources of ALA, and they have been more consistently related to higher prostate cancer risk," says Ed Giovannucci of the Harvard School of Public Health.

Our advice: at home, switch off between canola and olive.

Since roughly 80 percent of the oil used in the U.S. is soy, odds are you already get plenty from salad dressings, mayonnaise, and restaurant foods. You wouldn't want olive oil in your blueberry muffin recipe anyway.



Vitamin C prevents colds.

Ever since Linus Pauling, people have rushed for a bottle of vitamin C at the first sniffle. And some take extra C all winter in hopes of keeping germs at bay.

Researchers recently looked carefully at 30 trials that tested the vitamin and colds. Their conclusion: taking high doses (up to 1,000 mg—or one gram—a day) for several winter months didn't ward off those pesky cold germs.⁵

However, vitamin C *did* appear to shorten colds slightly—by a little less than half a day per cold. On average, the vitamin reduced days of misery by about eight percent, but the results varied widely.

It doesn't hurt to try vitamin C—about 1,000 mg a day—once you feel that sore throat or reach for the tissues. Just don't expect miracles.



If your blood sugar, triglycerides, cholesterol, and blood pressure aren't high, don't worry.

Even before you hit "high," you hit trouble.

Your risk of a heart attack, stroke, or diabetes doesn't jump from low to high when your number crosses a sharp cutoff. It's gradual.

That's why experts keep ratcheting down what's "normal." For example:

■ **Blood sugar.** In April 2004, the National Institute of Diabetes & Digestive & Kidney Diseases (NIDDK) announced that 40 percent of U.S. adults have "pre-diabetes," which means their fasting blood sugar is between 100 and 125. (Over 125 is diabetes.) Using the old cutoff (110), only 20 percent of adults had pre-diabetes.

■ **Blood pressure.** In May 2003, the National Heart, Lung, and Blood Institute (NHLBI) declared that an estimated 22 million Americans have pre-hypertension—that is, blood pressure over 120 (systolic) or over 80 (diastolic). (Another 25 percent have hypertension, or high blood pressure, which starts at 140 over 90.)

■ **Triglycerides.** Triglycerides under 200 used to be "normal." Now normal ends at 150, and "borderline high" ranges from 150 to 200, says the NHLBI.

■ **HDL ("good") cholesterol.** The lower your HDL, the higher your risk of heart disease. "Low" used to be 35 or below. Now it's 40 or below (for men) and 50 or below (for women).

■ **LDL ("bad") cholesterol.** A "borderline high" LDL is 130 to 160. But 129 isn't ideal. So NHLBI now makes it clear that only LDLs under 100 are "optimal." An LDL between 100 and 129 is "above optimal."

Why do the numbers keep dropping (or rising for HDL)? Studies show that people in that gray area between "low" and "high" are at risk.

Take blood sugar. "Many people

with pre-diabetes go on to develop type 2 diabetes within 10 years," says the NIDDK. But not if they do something about it.

"Research has clearly shown that losing five to seven percent of body weight through diet and increased physical activity can prevent or delay pre-diabetes from progressing to type 2 diabetes," explains NIDDK director Allen Spiegel.

"The emphasis has shifted from treatment to prevention," says Tufts's Alice Lichtenstein. And most people can prevent illness with diet, exercise, or other lifestyle changes.

"We're trying to minimize disease progression without putting everyone on medication," she says.



People gain a lot of weight over the holidays.

Office parties, neighborhood gatherings, family celebrations—from Thanksgiving to New Year's Day, most Americans

are surrounded by luscious, tempting, irresistible food. So the conventional wisdom—that most of us start the new year about five pounds heavier—seems reasonable.

Reasonable but not necessarily true.

In 2000, researchers tracked 200 people from late September to early March, and, in some cases, into June.⁶ On average, they gained only about a pound during the holidays.

But that doesn't mean you can live it up from turkey to eggnog:

■ You might not lose what you gained.

In the study, most people lost little weight after the holidays, whether they tried to or not. And one pound is half of what the average person gains in a year. Those two pounds may not seem like much, but after 10 years, they could easily move you from trim to chubby.

■ **You may not be average.** Among the overweight or obese participants in the study, 14 percent gained more than five pounds. What's more, the partici-

pants may not be typical.

"The study followed employees of the National Institutes of Health, an upscale, professional, health-conscious bunch if ever there was one," notes Susan Roberts of the Human Nutrition Research Center on Aging at Tufts University.

"Weight gain is a likely consequence of overindulgence," she cautions. "It's always easier to overeat than to lose weight, because our bodies don't seem to count a few thousand extra calories, but start screaming hunger if we cut a few thousand."

Antioxidants prevent cancer and heart disease.



It sounded so convincing.

Damage caused by rene-gaged oxygen could trigger cancer, injure

arteries, hamper vision, and accelerate aging, said enthusiasts. And antioxidants—like beta-carotene and vitamins C and E—could neutralize the damage before it took hold.

But so far, the best studies—trials that randomly assigned people to take antioxidants or a placebo—have flopped:

■ **Cancer.** In two trials, high doses of beta-carotene *raised* the risk of lung cancer in smokers. In other studies, the antioxidant had no impact on skin, mouth, or throat cancer.

And when European researchers pooled the results of 14 studies on more than 170,000 people, they found that vitamins A, C, E, and beta-carotene—separately or together—failed to cut the risk of cancers of the colon, pancreas, stomach, or esophagus.⁷

"We could not find evidence that antioxidant supplements can prevent gastrointestinal cancers," the authors concluded.

■ **Heart disease.** "With vitamin E and heart disease, the evidence looked rosy a few years ago," says Meir Stampfer, chairman of the department of epidemiology at the Harvard School of Public Health.

Since then, researchers examined evidence from three trials testing beta-carotene supplements on 70,000 people and five trials testing vitamin E on 29,000 patients at high risk of cardiovascular disease.⁸

"The results of these trials have been disappointing and failed to confirm any protective effect of these vitamins for either cancer or for cardiovascular disease," wrote Robert Clarke of the Radcliffe Infirmary in Oxford, England.

That's not to say that all antioxidants are useless. "The door isn't closed," says Stampfer. For example, a large trial is still testing whether vitamin E and selenium can prevent prostate cancer.

The mistake, he explains, is to assume that if antioxidants work, it's *because* they're antioxidants.

"It's a myth that antioxidants are a meaningful category," says Stampfer. "Some, like vitamin C, are antioxidants in one setting and pro-oxidants in others. You have to look at the specifics."

If vitamin E and selenium protect the prostate, it may not be because they're antioxidants. "They may work through different pathways," says Stampfer. "To say that a food is rich in antioxidants is meaningless."



A high-fiber diet prevents colon cancer.

"The National Cancer Institute believes eating the right foods may reduce your risk of some kinds of cancer," said the All-Bran label in 1984. "That's why a healthy

diet includes high-fiber foods like bran cereals."

Within months, President Reagan underwent surgery for colon cancer. The media advised people to eat more fiber to lower their risk.

But the evidence wasn't as airtight as it sounded.

In 2000, two trials testing fiber-rich diets on precancerous colon polyps came up empty. One found no fewer polyps in roughly 1,000 people who ate a diet rich in fiber (33 grams a day) and fruits and vegetables (6½ servings a day) than in 1,000 people who ate their usual diet (with about 19 grams of fiber) for four years.⁹

A second trial found no fewer polyps in 700 people who ate 14 grams a day of wheat bran fiber than in nearly 600 people who ate only two grams a day of fiber for three years.¹⁰

It's always possible that the trials didn't last long enough, but many experts have thrown in the towel. "The theory is close to disproved," says Stampfer.

But don't throw out your All-Bran yet, he adds. "People should still eat fiber because we have strong evidence that it has other benefits."

Among them: "Fiber—especially grain fiber—has been consistently linked to a lower risk of cardiovascular disease," Stampfer explains. Researchers aren't sure how fiber may protect the heart, but the link shows up in study after study.¹¹

"And there's no question that fiber decreases the risk of constipation and diverticulitis," he adds. "They're not marquee diseases, but they make people uncomfortable and kill some."



Don't drink milk if you have a cold.

"Milk makes mucus," goes the conventional wisdom. Yet few studies

have tested milk's effect on cold

sufferers. (Okay, so it's not a life-or-death issue that's crying out for research funds.)

However, Australian researchers took up the challenge in 1990.¹² They infected 50 volunteers with a cold virus and asked them to keep track of how much milk or other dairy foods they consumed for 10 days. Meanwhile, all used tissues were weighed to measure



nasal secretions.

The results: mucus ranged from zero to one ounce a day, and milk ranged from zero to 11 glasses a day, but one had nothing to do with the other.

It's hard to know how to sort out the good and bad things you hear about dairy these days. Here's a brief rundown:

■ **Weight loss.** "Burn more fat, lose weight," promise the milk ads. "3 servings of dairy a day in a reduced-calorie diet supports weight loss."

In fact, the evidence comes largely from research by Michael Zemel, a University of Tennessee professor. His only published study in humans showed more weight loss in 11 people who had three servings of dairy a day.¹³

But Zemel has a stake in finding that dairy aids weight loss because he has a patent on the claim. (He's already licensed it to Yoplait, the American Dairy Association, and the National Dairy Council.)

Until other researchers get into the act, stay skeptical.

■ **Cancer.** It's not so much dairy, but calcium, that's under scrutiny. So far, it looks like too much calcium—more than 1,500 mg a day—may slightly raise the risk of prostate cancer.¹⁴ That's how much you'd get in a typical diet plus four servings of milk (or yogurt or cheese). However, other studies show that roughly 1,000 mg of calcium or at least one glass of milk a day may cut the risk of colon cancer.¹⁵

Where does that leave consumers? Women can simply go for the recommended levels (from food and supplements). That's 1,000 mg a day if you're 50 or younger, and 1,200 mg a day if you're over 50. Women have a higher risk of osteoporosis than men anyway.

Men, on the other hand, should try not to exceed the recommended levels. "We know of no benefits at intakes that exceed 1,500 milligrams a day," says Ed Giovannucci of the Harvard School of Public Health.

"So it may be advisable for men to not exceed about 1,000 milligrams of calcium a day." If that seems scary, remember that if calcium raises the risk of prostate cancer, it's not by much.



Hamburgers are safe to eat when the meat is no longer pink.

Chicken is safe when the pink is gone, the juices run clear, the leg moves easily in its socket, or the thigh reaches an inter-

nal temperature of 180°F (170°F for a breast). That's enough to kill *Salmonella* and *Campylobacter*, the usual poultry contaminants.

But ground beef is a different story. *E. coli* O157:H7 can survive even when the pink is gone and the juices are clear. And you don't want to mess around with O157:H7.

In some people, it can cause severe bloody diarrhea and stomach cramps. They're the lucky ones.

Roughly two to seven percent of infections—often those in the elderly and children under five—lead to hemolytic uremic syndrome. Red blood cells are destroyed, the kidneys fail, and even with intensive care, three to five percent die. (Antibiotics don't help and may even hurt.)

About a third of the survivors have abnormal kidney function many years later, and a few require long-term dialysis. Another eight percent have lifelong complications like high blood pressure, seizures, blindness, or paralysis, or lose part of their bowel.

How can you tell when your burger is done? Use a thermometer to make sure the internal temperature reaches 160°F. (Chain restaurants typically cook burgers enough to kill *E. coli*.)

Beyond burgers, make sure your milk, juice, or apple cider has been pasteurized. Pasteurizing heats beverages enough to kill the *E. coli*. If you're elderly, under age five, have a weak immune system, or simply want to play it safe, skip raw bean or alfalfa sprouts. You can wash other fruits and vegetables, but there's no way (yet) to make sure that sprouts are clean.



Being overweight is largely a threat to your heart and risk of diabetes.

Extra pounds can make your heart

pound when you exercise. Maybe that's why people remember that being overweight puts a strain on the heart. And many know that the risk of diabetes shoots up with weight gain.

But they tend to forget that obesity can wreak havoc elsewhere. For example, after tobacco smoking, obesity is the principal cause of cancer in the U.S.

"Being heavy or gaining weight as an adult increases the risk for a number of cancers," says Rachel Ballard-Barbash of the National Cancer Institute. "The list includes postmenopausal breast cancer, colorectal cancer, endometrial cancer, esophageal cancer, and kidney cancer."

And it's not just cancer.

"Many people aren't aware that obesity also increases the risk of stroke, hypertension, gastroesophageal reflux disease, gallstones, osteoarthritis, and venous thrombosis—that's when blood clots form in the legs and sometimes travel to the lungs," says JoAnn Manson of Harvard Medical School and Brigham and Women's Hospital in Boston.

What's more, some risks start to climb with just a small spare tire. "Even a weight gain of 15 to 20 pounds during adulthood increases the risk of diabetes, high blood pressure, and coronary heart disease," she adds.

On the flip side, losing 10 to 20 pounds can cut those risks. "If you're overweight, losing even five to 10 percent of your starting weight can significantly improve blood pressure, cholesterol levels, and blood sugar levels," says Manson. 🍌

¹ *Breast Cancer Res. Treat.* 77: 171, 2003.

² *Urology* 64: 510, 2004.

³ *Cancer Epidemiol. Biomarkers Prev.* 13: 644, 2004.

⁴ *Obstet. Gynecol.* 104: 824, 2004.

⁵ *Cochrane Database Syst. Rev.* 2: CD000980, 2000.

⁶ *New Eng. J. Med.* 342: 861, 2000.

⁷ *Lancet* 364: 1219, 2004.

⁸ *Cardiovasc. Drugs Ther.* 16: 411, 2002.

⁹ *New Eng. J. Med.* 342: 1149, 2000.

¹⁰ *New Eng. J. Med.* 342: 1156, 2000.

¹¹ *Arch. Intern. Med.* 164: 370, 2004.

¹² *Amer. Rev. Respir. Dis.* 141: 352, 1990.

¹³ *Obes. Res.* 12: 582, 2004.

¹⁴ *Cancer Epidemiol. Biomarkers Prev.* 12: 597, 2003.

¹⁵ *J. Nat. Cancer Inst.* 96: 1015, 2004.