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Nutrition Action HEALTH LETTER™

CENTER FOR SCIENCE IN THE PUBLIC INTEREST

KEEP IT SUPPLE

You're only as old as your arteries

By David Schardt

"We've known for well over a hundred years that the large arteries, primarily the aorta and the carotid arteries, stiffen as we get older," says Douglas Seals, a professor of integrative physiology at the University of Colorado at Boulder.

"What we're discovering is that this arterial stiffening is a big reason why some of us develop hypertension, heart disease, and strokes."

But not everyone's arteries stiffen at the same rate.

"You would be surprised by how much variation there is, especially as people get older," Seals notes. "While some 80 year olds have the stiffest arteries, others have arteries that are no different from the average 20 year old's."

Here's what scientists are learning about what can slow down, or even prevent, the aging of our arteries.

Continued on page 3.

Illustration of an artery.

MEMO FROM MFJ

The Price of Delay

Mice, maggots, and eight-foot-tall manure piles. That's what inspectors found in the hen houses that caused the recent *Salmonella* outbreak.

The huge epidemic, which probably sickened tens of thousands of people, had begun in April. By August, two Iowa egg producers had recalled more than half a billion eggs, though most of them had already been eaten.

Here's the kicker: it could have been avoided if the government had acted sooner.

Last July I applauded the Food and Drug Administration for finally, after a decade of delay, requiring the egg industry to clean up its chicken coops and get rid of *Salmonella* once and for all. Little did I or anyone else know that the rules came just a few months too late.

ABC News reports on one of the safety violations at an Iowa egg farm linked to the *Salmonella* outbreak.

"When infected eggs still make it from the farm to the table, we know we have more work to do," said President Clinton in 1999. "That's why today I am taking new action on food safety to cut in half, over the next five years, the number of *Salmonella* cases attributed to eggs. And our goal is to eliminate these cases entirely by 2010…"

But between 1999 and 2009, the egg-safety rule languished due to turf battles between the FDA and the U.S. Department of Agriculture, and due to complete neglect during the Bush years. At long last, in July 2009, the Obama Administration finalized the rule, giving egg producers a year to clean up their act.

But it was too late. By the July 2010 deadline, eggs from the filthy hen houses were already sickening thousands of Americans.

Did we learn a lesson? I hope so, because also languishing for a decade has been legislation to improve the safety of not just eggs, but all foods that the FDA regulates. (The USDA regulates meat and poultry, as well as processed eggs.) Has Congress forgotten the victims who died or suffered paralysis or kidney damage because they ate spinach or cookie dough contaminated with *E. coli* or peanut butter, tomatoes, or Serrano peppers that harbored *Salmonella*?

The House passed a strong bill a year ago. The Senate has not, even though the food industry supports it. The legislation's goal: to get industry to *prevent* contamination, rather than playing catch-up after outbreaks strike. The bill also would require more inspections and give the FDA new tools to track and recall contaminated foods. (It's hard to believe, but the FDA can't order companies to recall foods.)

The House bill is excellent, but deficit hawks in the Senate said that it's too expensive, so they cut inspections from once a year to once every three years. Well, the bill was cheaper before the industry got the House to slice—from $2,000 to $500—a new yearly industry registration fee to fund inspections. Now the Senate bill has no fee at all, and critics complain that it would cost taxpayers too much.

As of early September, the Senate hadn't yet taken up the legislation. Senators need to stop talking and start voting. Then the House and Senate need to agree on a final version that contains the strongest provisions from both bills, including more frequent inspections and stronger penalties for mice, maggots, and other violations.

You can help! Call your senators (202-224-3121) and urge them to pass a new FDA Food Safety Modernization Act before they adjourn in October...and before the next outbreak.

Mike Jacobson

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ABC News.

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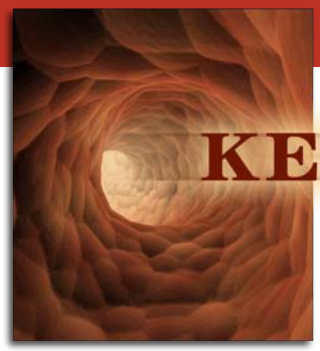


KEEP IT *SUPPLE*

You're only as old as your arteries

Each time your heart contracts, it pumps blood into the aorta, the largest artery in the body. The aorta's walls stretch to accommodate the surge, converting it into a steadier stream that flows up toward your neck. There some blood is carried by the carotid arteries to your head and brain, and the rest flows down to the rest of your body.

"You can liken your arteries when you're young to springs," says Michael Widlansky, an assistant professor of cardiovascular medicine at the Medical College of Wisconsin in Milwaukee. "The vessels are compliant. They open readily so blood can push through them pretty easily and there's not a lot of resistance to the flow."

As we get older, though, the springs start to stiffen and our arteries start to lose their ability to expand when they need to. And that can mean an increased risk of high blood pressure, heart attack, stroke, and cognitive decline.

The good news: you can slow down how fast your arteries age.

How Arteries Age

As we age, the aorta, carotids, and other large arteries that keep oxygen-rich blood flowing through our body lose some of their capacity to widen or narrow. They become less compliant.

"With aging, arterial compliance declines and arterial stiffness increases," notes Kevin Davy, a professor in the Department of Human Nutrition, Foods and Exercise at Virginia Tech University in Blacksburg.

Arteries are most supple at about age 30 and then start stiffening.[1] What makes arteries less accommodating as people age?

■ **Rigid walls.** "The two main structural proteins in the large artery walls are collagen and elastin," explains the University of Colorado's Douglas Seals.

Collagen provides the scaffolding that holds the arteries together, and elastin gives the blood vessels the elasticity that they need to manage the flow of blood.

"As people get older, collagen becomes more abundant in artery walls," says Seals. And, over time, strands of collagen tend to bind ("cross link") with other collagen strands. Both combine to make the large arteries more rigid.

And if there is extra glucose (blood sugar) sloshing around, cross-linking speeds up as the glucose binds to the collagen to form advanced glycation endproducts, or AGEs. (See "Extending Life," *Nutrition Action*, Mar. 2009, p. 7.)

Meanwhile, as the years go by, the elastin proteins stretch out and eventually start to rupture. That makes the arteries lose even more flexibility.

■ **Damaged linings.** It's not just the walls of your arteries that make them stiffer as you age. It's also the lining.

"The endothelium is the inner lining of cells in all of the arteries in your body," says Joseph Vita, a professor of medicine and senior staff cardiologist at the Boston University School of Medicine.

"It regulates where blood flows and how much blood flows to the organs as needed, and it maintains the blood in a fluid state so that it doesn't clot."

Endothelial cells produce nitric oxide, a gas that relaxes and dilates blood vessels. An impaired lining produces less nitric oxide, which leads to less flexible arteries. "This decline in endothelial function contributes to the stiffness," says Davy.

What causes the decline?

Age, for starters. And all of the other risk factors that are known to lead to coronary heart disease also have been shown to hinder endothelial function.

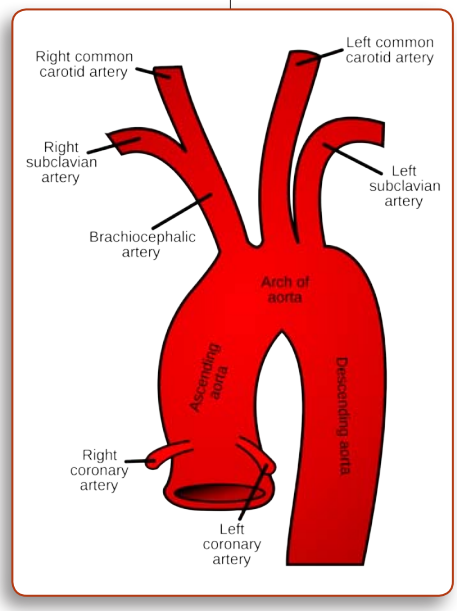
"This is true no matter whether it's high blood pressure, cigarette smoking, diabetes, high cholesterol, being overweight, or not doing enough exercise," says Vita.

If your endothelium is abnormal, he notes, "it means that the cumulative load of risk factors and lifestyle has led to damage to your arteries, and you may be at risk of going on to develop heart disease or heart failure or a heart attack or stroke."

When an impaired artery lining produces less nitric oxide, it sets in motion a vicious cycle.

Nitric oxide not only relaxes and dilates blood vessels, but also prevents platelets and white blood cells from sticking to blood vessel walls. So less nitric oxide leads to more plaque buildup in artery walls, which means that the lining produces even less nitric oxide, which leads to more plaque buildup in artery walls...

"The endothelium is a barometer of the health of your blood vessels," says Vita, "because it's one of the first things to go wrong on the path to atherosclerosis, which is the underlying cause of heart attack and the most common form of stroke."



A healthy aorta stretches to smooth out the surge of blood that enters it when the heart beats. Arteries stiffen as they age.

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Photo: © Sebastian Kaulitzki/fotolia.com.

The Consequences

Scientists are learning that stiffening arteries can often be detected—at least in research laboratories—long before any symptoms of disease appear, and that can predict who will develop cardiovascular disease.

"Clearly, many people of middle and advanced age whom we once thought of as healthy actually aren't," says Edward Lakatta, director of the cardiac function section at the National Institute on Aging in Baltimore.

"It is becoming more apparent that changes in the aging circulatory system, even among those who don't have outward symptoms, precede a higher risk of developing cardiovascular diseases," he adds.

"The greater these changes, the greater is the risk for getting these diseases."

Among them:

■ **High blood pressure.** "If your arteries are stiff, that means your heart has to work harder to pump the blood out," Vita explains.

"It's part of the process that leads to heart failure, particularly in patients with high blood pressure."

Nine out of ten people will develop high blood pressure if they live long enough, says Lakatta. "Most of this is systolic hypertension that's directly due to arterial stiffening."

(Systolic pressure—the maximum pressure on the arteries when the heart contracts and pushes blood out—is the top number in a blood pressure reading.)

"Systolic high blood pressure was once thought to be a benign event," notes Douglas Seals. "And some primary care physicians didn't even treat it."

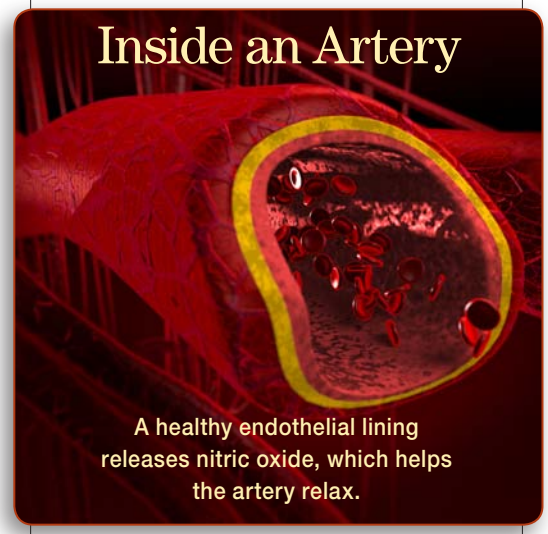
Not any more.

"It's now recognized that increased systolic blood pressure with age is really the blood pressure change that's linked most tightly to premature death in adults over 50," says Seals. "Informed physicians know that it needs to be controlled in middle-aged and older adults."

When arteries are stiff, "blood pumped from the heart moves so quickly through them to the extremities that the pulse wave that is generated bounces back to the heart while the heart is still contracting," Seals explains. That adds to the systolic pressure.

"We showed in the Baltimore Longitudinal Study of Aging that by using measurements of arterial stiffness you could predict the development of hypertension," says Lakatta.

He and his colleagues followed a group of 306 men and women who entered the study with normal blood pressure (roughly 115 over 75). A third of the people developed hypertension over the next 12 years. What most distinguished them from the two-thirds who didn't become hypertensive, says Lakatta, was that they had stiffer arteries when they entered the study.[2]



A healthy endothelial lining releases nitric oxide, which helps the artery relax.

■ **Heart attacks & strokes.** "Arterial stiffness is as powerful a predictor of future cardiovascular disease risk in older adults as LDL cholesterol or any of the major conventional risk factors," says Seals.

A recent meta-analysis pooled the results of 17 international studies that tracked nearly 16,000 healthy men and women for an average of eight years. Those who entered the studies with the stiffest arteries, but without signs of heart disease, were twice as likely to later die from a heart attack or stroke as those who entered the studies with the most supple arteries.[3]

■ **Cognitive decline.** If your arteries can't expand and contract easily, they can't shield your smaller blood vessels from the regular high-pressure bursts of blood that the heart puts out. And that may damage your brain, a recent study suggests.

People who entered the Baltimore Longitudinal Study of Aging cognitively intact but with stiffer arteries were more likely to show declines in verbal learning skills and memory over the next decade than those who started out with less-stiff arteries.[4]

How Can You Tell?

How do you know whether your arteries are stiffening and if your artery walls are in poor shape? You don't. It's not something that can be measured at the doctor's office (though that may change in the not too distant future). Getting direct measurements from artery walls is even a challenge for researchers.

"You certainly can't go in and sample the arterial wall in a study of people," notes Douglas Seals. "It's been done at autopsy, and you can measure some things in the blood that are thought to play an important influence, but it's not the same as having direct access."

So researchers have to rely on indirect measurements.

For arterial stiffness, a patient lies down while electrodes are placed on the skin along two arteries. A device records how fast it takes for a pulse to travel between two points (pulse wave velocity). The greater the velocity, the stiffer the artery. (Since stiff arteries can't expand well, they pinch the blood flow and send it shooting through at a faster speed.)

Endothelial function is typically measured with something called flow-mediated dilation, which uses ultrasound to see how wide an artery opens after being deprived of blood with a cuff that is tightened on the arm.

If people have impaired endothelial function, their arteries won't widen as much during the test.

What You Can Do

"We are finding that the lifestyle factors that cause arterial stiffening and endothelial dysfunction are the same ones that can help slow them down or even prevent them," says Seals.

AEROBIC EXERCISE

"Regular aerobic exercise may have the greatest effect on arterial stiffness," says Seals. "If you compare older adults who do regular aerobic exercise with older adults who don't, you see that the exercisers have more-compliant arteries and less stiffening."

"We were the first to show this in 1993 in the Baltimore Longitudinal Study of Aging," adds the National Institute on Aging's Edward Lakatta. "We compared a group of senior male athletes who started running in middle life with men of a similar age who were sedentary."

Using pulse wave velocity, Lakatta and his colleagues found that arterial stiffness in the exercisers—the youngest was 54 years old—was significantly less than arterial stiffness in the sedentary men. In fact, the arteries of the older exercisers were no stiffer than the arteries of sedentary men aged 20 to 44.[5]

A few years later, Seals and his colleagues found the same was true for women.[6] Arteries got stiffer with age in sedentary women, but not in women who were physically active (they exercised an average of six hours a week and competed in running races).

Why does exercise matter?

"Part of what happens during exercise is that as the physical force of blood accelerates through the arteries it causes the endothelial cells to release nitric oxide," Lakatta explains. "That has beneficial effects on the wall that are anti-stiffness, not only then but over the long haul, too."

Can exercise reverse stiffening if you've been sedentary?

Men who begin exercising after being physically inactive can quickly see benefits. "Studies in older males who have stiff large arteries show that daily walking can lead to a 25 percent improvement in arterial stiffening within three months," says Seals.

"It doesn't make your arteries completely young again, but it helps," adds Bo Fernhall, a professor of kinesiology at the University of Illinois at Urbana-Champaign. "However, it's not something that you do and then it stays fixed forever if you stop. So you need to keep doing it."

Exercise can also help improve endothelial function in sedentary men.

In a study by Seals and his colleagues, 13 middle-aged and older overweight, sedentary men gradually increased their walking to about 40 minutes a day, five to six days a week. After three months, the men's endothelial function improved by about 30 percent—comparable to that of men their own age who ran regularly.[7]

"It's important to note," says Seals, "that this was achieved with moderate-intensity walking that can be safely performed by most if not all sedentary, healthy older men."

Women may not be as fortunate. "Regular aerobic exercise in the form of brisk walking does not seem to improve endothelial function in postmenopausal women," says Seals.

In a study by Seals and his colleagues published last summer, endothelial function improved by roughly 50 percent in 11 men who walked briskly for about 50 minutes a day, six days a week, for eight weeks. But it didn't change in 15 healthy women aged 55 to 79 who did the same amount of walking.[8]

"That was unexpected," says Seals. But even if his findings are borne out by future studies, he notes, "exercise has so many positive health benefits that these results obviously should not influence exercise recommendations."

What about strength training? Lifting weights can actually *increase* arterial stiffening. "Nobody knows why," says Seals. "It may be due to the increased blood pressure that occurs temporarily."

Seals recommends combining strength training with aerobic exercise.

"We want all older adults to do resistance exercise because of its profound effects on muscle preservation. But it's important to keep an aerobic component in addition to strength training to maintain arterial flexibility."

Adding aerobics to resistance training works. In a 2006 Japanese study, for example, the arterial compliance of young men who did resistance training for four months declined by 20 percent, while the arterial compliance of those who combined aerobics with resistance training didn't change.[9]

DIET

What you eat can also improve arterial compliance.

■ **Sodium.** "The component of the diet with the most evidence right now for slowing arterial stiffening is sodium," says Seals. "Sodium restriction has a very powerful effect on the arteries."

If you cut the typical sodium intake of U.S. adults roughly in half, he adds, "you see very quickly—within a week—a 25 to 30 percent improvement in the stiffness of the arteries."

For example, researchers slashed the sodium intake of 12 men and women in their 60s who had systolic hypertension (they averaged 148 over 84) from 3,100 milligrams a day to 1,300 mg. Carotid artery compliance increased by 27 percent after one week and by 46 percent after two weeks. It remained at that level for the rest of the month-long study.[10]

"We think that with both aerobic exercise and sodium restriction, we're probably affecting the chemicals that control the smooth muscle cells in the middle part of the artery wall," says Seals. Those are the cells that help arteries open or contract as needed.

> > > > >

ONE MEAL'S DAMAGE

If a meal that's high in saturated fat can impair your arteries within hours, imagine the havoc that the fattiest restaurant meals can cause.

After our June 2009 "Xtreme Eating" article highlighted some of the nation's highest-calorie restaurant dishes, ABC News decided to see for itself what the meals did to people's arteries.

The network sent Yunji de Nies, a young reporter (at left), and Jon Garcia, her producer, to Robert Vogel's lab at the University of Maryland Medical Center in Baltimore, where they had their blood vessels tested both before and after eating some of the restaurant dishes we featured.

The two intrepid journalists each ate a three-course lunch: a deep-fried macaroni and cheese appetizer from The Cheesecake Factory, an Applebee's bacon cheeseburger wrapped in a quesadilla, and a giant cookie smothered in ice cream from Uno Chicago Grill. The toll: an astounding 6,190 calories and 187 grams of saturated fat.

Two hours later, lab tests showed the beating their arteries were taking. The producer's blood was discolored with fat, and the young healthy reporter's endothelial function was impaired enough that you could actually hear the difference as sensors picked up her narrowed arteries' struggle to keep blood flowing.

"One meal can affect the health of your arteries," Vogel told the journalists.

To view the ABC News segment, go to: blogs.abcnews.com/theworldnewser/2009/07/what-exactly-does-a-6190-calorie-lunch-do-to-your-body.html.

ABC News.

■ **Saturated fat.** In 1997 Robert Vogel, a professor of medicine at the University of Maryland School of Medicine, and his colleagues fed 20 hospital employees one of two breakfasts on separate days to see what effect, if any, the meals had on their endothelial function.

One breakfast consisted of an Egg McMuffin, a Sausage McMuffin, two hash brown patties, and a non-caffeinated drink from McDonald's. The other, which contained the same number of calories, consisted of Kellogg's Frosted Flakes, skim milk, and orange juice. The fast-food meal contained 14 grams of saturated fat, while the cereal breakfast had no fat.

Endothelial function started dropping quickly after the fatty breakfast. Within three hours, it was only half of what it had been before the meal. Function remained unimpaired in the participants who ate the no-fat breakfast.[11]

"A few hours after a high-fat meal, your artery looks just like the arteries of a person who has heart disease," says Janet Wallace, a professor of kinesiology in the School of Health, Physical Education, and Recreation at Indiana University in Bloomington.

The hours after a meal are called the "postprandial" period. Given how often we eat, most of us spend all of our waking hours—and some of our time sleeping—in a postprandial state.

"The postprandial period is a critical time because you can be setting the environment for the artery to start or continue the atherosclerotic process that leads to heart disease," says Wallace.

All fatty meals are not equal, though.

"Saturated fat and trans fat are the worst for arteries, whereas polyunsaturated fats and monounsaturated fats like those found in olive oil seem to be less damaging or possibly even healthful," says Boston University's Joseph Vita.

The damage appears after one meal, and it's still evident after many meals.

In one study, 40 middle-aged overweight Australian men and women ate four diets with different fat compositions, each for three weeks.

The diets were high in polyunsaturated fat (with added walnuts and a high-poly margarine), monounsaturated fat (with added canola oil and almonds), sugars (with added jam, marmalade, and grapes), or saturated fat (with added butter).

At the end of each diet period, the participants' endothelial function was measured following an overnight fast.

After the volunteers ate the high-saturated-fat diet for three weeks, their endothelial function was 50 percent lower than after they ate the diets high in polyunsaturated fat, monounsaturated fat, or sugars.[12]

■ **Vegetables.** "The first large, well-designed study to show that eating more fruits and vegetables improves endothelial function was published last year," says Michael Widlansky of the Medical College of Wisconsin.

Researchers in the United Kingdom randomly assigned 117 men and women with hypertension (their blood pressure averaged 143 over 83) to include either one, three, or six servings of fruits and vegetables a day in their normal diet for eight weeks.[13]

Serving sizes were modest: a piece of fruit, half a grapefruit, five ounces of fruit juice, three tablespoons of vegetables.

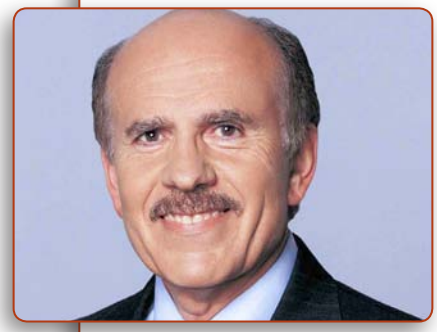
After the two months, those who were told to eat the most fruits and vegetables had the best endothelial function. In fact, function improved by 6 percent for each daily serving of a vegetable or fruit they ate.

Was the improvement due to something in the fruits and vegetables (like potassium)? Or did arteries improve because the more produce the participants ate, the less sodium and saturated fat they tended to consume? It's not clear.

Either way, the researchers concluded that "Just eating one extra portion a day" of fruits and vegetables "has potential benefits."

■ **Potassium.** In the one randomized controlled trial that has been done, 42 men and women with mild-high blood

BYPASS IN A PILL?



Maybe you've seen Louis Ignarro in a Hugh Downs-hosted infomercial on TV or in ads on the Internet, boasting that he has "discovered a 'miracle molecule' that could make bypass surgery, angioplasty and blood pressure drugs obsolete."

The molecule? The amino acid arginine.

The endothelial cells that line the inside of blood vessels convert arginine into nitric oxide. And nitric oxide helps open up arteries and prevents platelets from clotting.

Ignarro, a professor of pharmacology at the UCLA School of Medicine who shared a 1998 Nobel Prize for the discovery of nitric oxide's role in keeping arteries healthy, believes that if people consumed more arginine (which he did not discover, by the way), their blood vessels would make more nitric oxide. That, he contends, would mean that fewer people would get heart disease or high blood pressure.

Arginine is found naturally in most protein foods. Americans typically get 3 to 6 grams a day from their diets. That's not enough, says Ignarro, who recommends an additional 4 to 6 grams a day from pills. (Ignarro teamed up with Herbalife to develop an arginine-containing supplement called Niteworks. He sits on the multi-level marketing firm's Nutrition Advisory Board.)

Others aren't convinced that arginine is miraculous.

"Arginine supplements do not do anything for healthy people with good endothelial function," says Kevin Heffernan of the Molecular Cardiology Research Institute at Tufts Medical Center.

And arginine supplements may not help—and in fact may harm—people with impaired arteries.

When researchers at the Boston University School of Medicine gave 9 grams a day of arginine pills to 28 patients with coronary artery disease for four days, endothelial function didn't improve. It was no better than in patients who got placebo pills.[1]

In another study, 9 grams of arginine every day for six months didn't improve endothelial function or arterial stiffening in 153 men and women who had suffered a heart attack.[2] But six of the arginine takers died during the trial or shortly afterward, while none of the placebo takers did, according to the researchers at the Johns Hopkins Medical Institutions in Baltimore.

"The long-term safety and efficacy of arginine remains ill-examined," says Heffernan. "Arginine cannot be recommended as a general vascular panacea for all aging persons at this time."

[1] *Vasc. Med. 14*: 239, 2009.
[2] *JAMA 295*: 58, 2006.

pressure who consumed potassium supplements (2,500 milligrams) every day for four weeks had improved endothelial function and arterial compliance, compared with when they took placebo capsules.[14]

The best source of potassium: fruits and vegetables.

■ **Fish oil.** "The omega-3 fats in fish oil can improve endothelial function," says Kevin Heffernan of the Molecular Cardiology Research Institute at Tufts Medical Center in Boston. "Clinicians treat heart patients with prescription omega-3s to lower their triglycerides, but this also has the effect of boosting arterial compliance."

For example, 24 middle-aged Australian men and women with high cholesterol levels (an average of 255) were given daily capsules containing 3,000 milligrams of DHA or 3,000 mg of EPA. After seven weeks, their arterial compliance improved by 27 percent with DHA and by 36 percent with EPA, compared with 14 similar people who were given placebo capsules.[15]

(You'd have to eat seven ounces of salmon to get 3,000 mg of DHA, and 15 ounces to get 3,000 mg of EPA.)

Fish oil pills have also improved endothelial function in people with Type 2 diabetes, peripheral artery disease, lupus, and chronic heart failure.

WEIGHT

When people gain weight, their arteries become stiffer.

"I consider weight gain and obesity a form of accelerated aging, at least with regard to the blood vessels," says Kevin Davy of Virginia Tech University. "That's because obesity is an exaggeration of the changes that occur with aging."

Davy and his colleagues fed 14 young men with healthy weights a liquid meal replacement that supplied them with an extra 1,000 calories a day. During the 6½ weeks it took for the men to gain an average of 11 pounds, their arterial stiffness increased by 14 percent.[16]

Although a similar study hasn't been done in middle-aged or older people, "I don't think there's any reason to think the results would be different," says Davy.

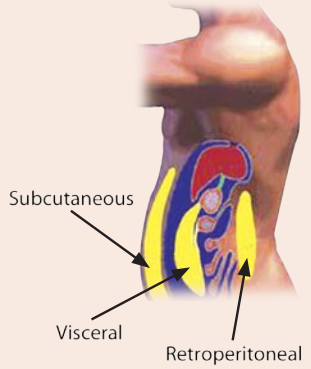
"There have been some observational studies of subjects with a large range of ages that suggest that weight gain is associated with increases in pulse wave velocity."

And losing weight improves arterial compliance.

"We helped 25 overweight or obese middle-aged and older men and women lose an average of 16 pounds—about 5 to 10 percent of their body weight—in 12 weeks by cutting calories," says Davy. The people didn't increase their exercise, which let Davy and his colleagues measure the effect of just losing weight.

Arteries became significantly less stiff, he says. "The kind of change we saw in this study was equivalent to a 15-year reversal in arterial aging."

Not All Fat is Equal



People who have more visceral fat, which lies deep within the abdomen, are more likely to have stiffer arteries.

The *kind* of fat you shed may be as important as the amount.

When Davy had healthy young men gain weight, "the increase in arterial stiffening was more closely associated with increases in the men's visceral fat than it was with the total weight they gained."

(*Visceral*, or intra-abdominal, fat is the kind deep within the abdomen that's packed between the liver, kidneys, and other organs. *Subcutaneous* fat sits closer to the skin.)

And among the nearly 2,500 70- to 79-year-old participants in the Health, Aging, and Body Composition Study, those with more abdominal visceral fat had stiffer arteries than those with less. And it didn't matter whether they were normal weight, overweight, or obese.[17]

How can you get rid of excess abdominal visceral fat? The same way you get rid of *any* fat: cut calories and start moving.

What's Next?

Ten years from now, don't be surprised if testing for endothelial function and arterial stiffness is as routine as cholesterol screening.

"We're moving into an era when it will be imperative to find out what your blood vessels are like before clinical disease sets in so that, if necessary, appropriate measures can be taken to keep your cardiovascular system as healthy as possible," says the National Institute on Aging's Edward Lakatta.

The machines to do that testing are available, though they're expensive and the cost of the tests isn't covered by most insurance policies. But even if you could be tested in your doctor's office, it might be a bit premature, at least for endothelial function.

"The biggest missing piece in the picture is that we don't have proof yet that an intervention to specifically improve your endothelial function will also reduce your cardiovascular risk," says Michael Widlansky.

Getting more exercise and cutting salt, saturated fat, and excess weight protect your artery linings *and* your heart. But drugs may not do both.

"Estrogen and COX-2 inhibitors like Vioxx improve endothelial function, for example," says Widlansky, "but they're not necessarily protective of cardiovascular health."

THE BOTTOM LINE

If your arteries are stiff and their lining is impaired, you could be setting the stage for cardiovascular disease and cognitive decline.

To make your arteries more supple:

- get regular aerobic exercise,
- cut back on sodium and saturated fat,
- eat a diet that's packed with fruits and vegetables,
- eat two servings of seafood a week, and
- exercise and watch calories to lose or avoid gaining excess visceral belly fat.

[1] *Angiology 61*: 37, 2010.
[2] *J. Am. Coll. Cardiol. 51*: 1377, 2008.
[3] *J. Am. Coll. Cardiol. 55*: 1318, 2010.
[4] *Hypertension 51*: 99, 2008.
[5] *Circulation 88 (4 Pt 1)*: 1456, 1993.
[6] *Arterioscler. Thromb. Vasc. Biol. 18*: 127, 1998.
[7] *Circulation 102*: 1351, 2000.
[8] *Clin. Sci. (Lond.)* July 19, 2010. [Epub ahead of print]
[9] *J. Hypertens. 24*: 1753, 2006.
[10] *Hypertension 44*: 35, 2004.
[11] *JAMA 278*: 1682, 1997.
[12] *Arterioscler. Thromb. Vasc. Biol. 25*: 1274, 2005.
[13] *Circulation 119*: 2153, 2009.
[14] *Hypertension 55*: 681, 2010.
[15] *Am. J. Clin. Nutr. 76*: 326, 2002.
[16] *Hypertension 51*: 1519, 2008.
[17] *Hypertension 38*: 429, 2001.

Illustration: National Heart, Lung, and Blood Institute.

Coffee & Gout

Women who drink coffee, whether decaf or regular, have a lower risk of gout, a painful condition in which uric acid crystals accumulate in joints.

Scientists tracked more than 89,000 women for 26 years. The risk of gout was 22 percent lower in those who drank one to three cups a day of any (decaf or regular) coffee than in those who drank no coffee. And the risk was 57 percent lower in women who drank at least four cups a day. An earlier study in men had similar findings. Tea wasn't linked to gout risk.

What to do: One or two studies aren't reason enough to start drinking coffee if you don't like it. But keep in mind that coffee drinkers may have a lower risk of diabetes, and people who drink regular (not decaf) coffee may have a lower risk of Parkinson's disease.

However, too much caffeine may cause insomnia and the jitters. And women who are trying to become—or who are already—pregnant should minimize caffeine.

Am. J. Clin. Nutr. doi: 10.3945/ajcn.2010.29565.

Go Whole

As if lowering the risk of heart disease, diabetes, and constipation weren't enough, a new study suggests that whole grains may also lower blood pressure.

Researchers randomly assigned roughly 200 middle-aged overweight men and women to eat 3 servings a day of either refined or whole grains for 3 months. (Some whole-grain eaters got 3 servings of bread and cereals made of whole wheat, while others got 1 serving of whole wheat plus 2 servings of whole oats.)

Systolic blood pressure (the higher number) fell by 6 points more in both groups of whole-grain eaters than in the refined-grain eaters. Nationwide, that drop could lead to at least a 15 percent decline in heart disease and at least a 25 percent reduction in stroke, say the authors.

What to do: Replace refined grains with whole grains as often as possible.

Am. J. Clin. Nutr. doi: 10.3945/ajcn.2010.29417.

Vitamin D & Diabetes

People with higher blood levels of vitamin D had a lower risk of Type 2 diabetes in the largest study to look at the link.

Researchers compared levels of vitamin D in blood samples taken in 1990 from roughly 1,200 participants in the Nurses' Health Study, half of whom were later diagnosed with diabetes and half of whom were not.

Women with the highest vitamin D blood levels (they averaged 33 ng/mL) were half as likely to get diabetes as those with the lowest levels (they averaged 14 ng/mL).

What to do: Scientists won't know if vitamin D lowers the risk of diabetes until large-scale trials comparing the vitamin to a placebo are done. In the meantime, it's worth taking 800 to 1,000 IU a day of vitamin D if you're over 60 and 400 IU a day if you're younger.

Diabetes Care 33: 2021, 2010.

Pick Your Protein

Replacing just one serving of red meat a day with poultry, fish, or nuts may lower your risk of heart disease.

Researchers tracked more than 84,000 women aged 30 to 55 in the Nurses' Health Study. After 26 years, those who consumed more red meat and high-fat dairy had a higher risk of heart disease, while those who ate more fish, poultry, and nuts had a lower risk.

The researchers calculated that women could lower their heart disease risk by 30 percent if they replaced one serving a day of red meat with nuts, by 24 percent if they replaced red meat with fish, by 19 percent if they replaced red meat with poultry, and by 13 percent if they replaced red meat with a low-fat dairy food.

What to do: Eat more fish, poultry, nuts, and low-fat dairy instead of red meat.

Circulation 122: 876, 2010.

Alcohol & the Breast

Alcohol raises the risk of some breast cancers and not others, says a new study.

Scientists looked at nearly 3,000 women who were diagnosed with invasive breast cancer during the five-year study. Those who consumed 1 to 7 drinks a week were 50 percent more likely to develop cancer in the milk-producing lobules of the breast than non-drinkers. And those who drank at least 14 alcoholic beverages a week were twice as likely to be diagnosed with lobular breast cancer than non-drinkers.

However, drinkers were no more likely than non-drinkers to be diagnosed with cancer in the breast's milk ducts. About 70 percent of all breast cancers are ductal, while only 10 to 15 percent are lobular.

Drinkers were also more likely to have breast tumors that are sensitive to estrogen than tumors that are not.

What to do: Consider limiting your alcohol consumption to curb your risk of breast cancer.

J. Natl. Cancer Inst. 102: 1, 2010.

The Latest Scams

BY BONNIE LIEBMAN

It's hard to keep up with the food industry. Just when you think you've seen it all, some marketing exec comes up with a new plan to boost profits. If that means fooling at least some of the public some of the time, well, that's business. Here are some recent tricks (and a few that have been around for a while).

Information compiled by Melissa Pryputniewicz.

Almond Non-Milk

There's a new milk in your dairy case. And it sounds perfect.

Silk Original Pure Almond milk has "60 calories per serving," is "rich in antioxidants," and is "lactose-free and soy-free," according to the label.

Silk's Web site gives almonds all the credit. "A serving of almonds provides an excellent source of vitamin E (a natural antioxidant), and a good source of protein and fiber. In fact, almonds are higher in protein and fiber than any other tree nut."

Maybe so, but a 1 oz. serving of almonds (about two dozen) has 6 grams of protein (and 165 calories). A cup of almond *milk* has just 1 gram—far less than the 8 to 9 grams of protein in a cup of cow's milk (or the 6 to 8 grams in a cup of soy milk). How come?

It turns out that almond milk doesn't have many almonds. Judging by the 2½ grams of fat in every serving, a cup of almond milk is made from about four nuts. The "milk" is mostly water and enough evaporated cane juice to supply about two teaspoons of added sugar per cup.

(That's for the Original. The 90-calorie Vanilla has about 4 teaspoons of sugar per cup and the 120-calorie Dark Chocolate has 5½ teaspoons.)

And Original and Vanilla Pure Almond are "rich in antioxidants" only because Silk adds vitamin E to them. The company also tosses in vitamins A and D, potassium, and calcium to make them equal to cow's milk.

Blue Diamond's Almond Breeze milks are similar to Silk's, except that the Breezes come in 40-calorie unsweetened versions. Both brands may appeal to vegans (who eat no dairy foods) or to people who are allergic to dairy.

If that's you, here's a tip: Odds are, you're better off with protein-rich soy milk.

Full of It

"You know that hunger you get between meals?" asks the box of Ritz Crackerfuls. "Crackerfuls provides the perfect snack break!"

It's presumably perfect because the crackers have "6 g of whole grain per serving," "3 g of fiber," and "140 calories." And they're "made with real cheese."

Impressive…unless you realize that the crackers are mostly white flour, and that more than two-thirds of their fiber comes from added "resistant corn maltodextrin."

(Resistant means that the maltodextrin resists digestion, which is why the Food and Drug Administration lets Ritz count it as "fiber." But there's no good evidence that resistant corn maltodextrin helps prevent heart disease, diabetes, or constipation, like the intact fiber in whole grains does.)

As for the "real cheese," it's mostly cream cheese plus cheddar cheese powder. A serving of Crackerfuls contains just 2 grams of protein and 4 percent of a day's calcium. A 1 oz. slice of cheddar has about 7 grams of protein and 20 percent of a day's calcium.

Crackerfuls are just a gussied up version of ordinary cheese-and-cracker sandwiches. A smidgen of cheese between two mostly white-flour crackers may hold you over until lunch.

But a "perfect snack break"? Only to Nabisco.

Photos: Stephen Schmidt.

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Cheeri-Nos

When you've got a good thing going, why stop?

That must be General Mills' attitude towards Cheerios. Ever since the Food and Drug Administration agreed that the soluble fiber in oats can lower LDL ("bad") cholesterol, ads and labels have made Cheerios sound like a statin drug.

Eating 3 grams a day of oats' soluble fiber (beta-glucan) can lower LDL by about 3 percent. But you'd have to eat three 1-cup servings of Cheerios every day to get that much. And that's *original* Cheerios, which comes in the familiar yellow box.

General Mills makes 10 other kinds of Cheerios, each with more sugar and less oat fiber than the original. The latest: Chocolate Cheerios. It's 33 percent added sugar (original Cheerios is less than 1 percent sugar). In fact, Chocolate Cheerios has more sugar and corn syrup than oats. Its main ingredient is whole-grain corn, not oats.

So how can the box say "May reduce the risk of heart disease"? Chocolate Cheerios qualifies for that claim because it (like most cereals) is low in fat. Berry Burst Cheerios, Cheerios Crunch, and Banana Nut Cheerios also make heart disease claims because they're low-fat, not oat-rich.

And that's not the only trick.

Banana Nut Cheerios, for example, has more salt than banana purée. And Yogurt Burst Cheerios has more sugar than "naturally yogurt flavored coating," which is made with more sugar and palm kernel oil than dried heat-treated yogurt. ("Heat treated" means that the bacteria that make it yogurt are dead.)

General Mills is betting that the Cheerios name will make any cereal sound healthy. Got *that* right.

Where's the Veggies?

"Every 8 fl oz glass of Mott's Medleys has 2 total fruit & veggie servings, the powerful antioxidant Vitamins C & E and the bone mineral magnesium," says the bottle of Mott's Medleys Tropical flavored fruit & carrot juice blend.

How does Mott's squeeze two servings of fruits and vegetables into one 8 oz. cup? Simple. The U.S. Department of Agriculture's MyPyramid food guide says that a serving of juice is just half a cup. So an 8 oz. glass of *any* juice is two servings. Voilà!

But Mott's manages to squeeze a serving of veggies in there, too, right? Not exactly. "Two total fruit & veggie servings" sounds like one fruit and one vegetable. But Mott's doesn't promise a full serving of veggies. And it doesn't deliver one, either.

Each glass has just 6 percent of a day's vitamin A. If the glass were half carrot juice, it would have 450 percent. So Mott's is selling mostly water plus nutrient-poor apple and grape juice fortified with vitamins C and E and magnesium.

"Tastes just like the fruit juice your family loves!" promises the label. That's because it *is* fruit juice.

Ocean Spray Fruit & Veggie 100% Juice, with "2 servings of fruits & vegetables" combined, also has more grape and apple than carrot or other juices. Judging by its vitamin A content, an 8 oz. glass has, at best, 1 oz. (2 Tbs.) of carrot juice.

Bottom line: You're better off eating fruits and vegetables than drinking them.

Noodles for Two?

"Annie Chun's Noodle Bowls are Instant Gourmet Food, perfect for lunch or a quick dinner at your fingertips!" says the company's Web site. "Keep these bowls in your desk or cupboard, then just heat and serve."

Serve yourself and a co-worker, that is.

Annie Chun's Noodle Bowls and Soup Bowls sure look like one serving. But the Nutrition Facts are for "½ bowl." Most people won't notice, of course. They'll just assume that the Nutrition Facts apply to the entire bowl. So when they eat a Pad Thai Noodle Bowl, for example, they'll get 460 calories (not 230) and 1,420 milligrams of sodium (not 710 mg).

Annie isn't the only trickster. KA-ME, Thai Kitchen, and A Taste of Thai also pretend that each package serves two. In contrast, Simply Asia owns up to the full package.

And it's not just Asian dishes. Campbell pretends that its regular, Chunky, and Healthy Request single-serve container microwaveable bowls serve two. So do Healthy Choice and Health Valley. Who are they kidding? Not *you* any more.

Photos: Stephen Schmidt.

Supersneaky

"Antioxidants & hearty whole grain texture," boasts the label on Kellogg's new Nutri-Grain Superfruit Fusion Cherry Pomegranate bars.

Judging by the size of the claim, most shoppers would assume that the cherries and pomegranate that are splattered all over the box are the source of the antioxidants. But the smaller print says otherwise…if you know the code.

Start with the name. They're not Superfruit Fusion bars, they're Superfruit Fusion *flavored* bars. And they're not Cherry Pomegranate bars, they're Cherry Pomegranate *naturally & artificially flavored* bars.

"Flavored" is code for "hardly any."

"We've taken traditional fruit and blended it with superfruit flavors," says the back of the box. Translation: the filling has more high-fructose corn syrup than cherry purée concentrate, and more natural and artificial flavors than pomegranate juice concentrate. (Pomegranate is hot because a few very preliminary studies suggest that it may lower the risk of heart disease and prostate cancer.)

Then there are the antioxidants. They're just the vitamins C and E that Kellogg adds along with a bunch of other vitamins.

Kashi TLC Soft-Baked Cereal Bars also offer just a smidgen of the fruit that's in the name. (Kellogg owns Kashi. Hmmm.) Whether it's Blackberry Graham, Ripe Strawberry, or Baked Apple, you're getting more pear juice concentrate, evaporated cane juice, and molasses or tapioca syrup than any fruit purée or powder.

Stay In for Restaurant Prices!

"The select ingredients and simple preparation of Restaurant Favorites allow you to easily prepare restaurant-inspired entrées any night of the week," explains the Romano's Macaroni Grill Restaurant Favorites box. "Stay In and Go All Out!"

What a great idea. Take the Creamy Basil Parmesan Chicken & Pasta. For roughly $5, you get a box of linguine pasta, creamy sauce, basil & cheese seasoning, sun-dried tomatoes, and grated Parmesan & Romano cheese blend. Together, they weigh half a pound, so you're paying $10 a pound for the dish.

Well, not the entire dish. You still have to buy a pound of raw boneless skinless chicken breasts, two tablespoons of butter, and ¾ cup of milk.

One more thing: the label says that a box contains five servings, which means that each person gets about 2½ ounces of cooked chicken and ½ cup of cooked pasta plus sauce. But odds are, most people will split the box among two. That means 750 calories (not 300, as the box claims), 1,250 milligrams of sodium (not 500 mg), and half a day's sat fat (not a quarter of a day's) for each diner. And those 750 calories are less than the 1,000 calories you'd get in a typical pasta dish at a restaurant.

General Mills (which also makes Hamburger Helper) offers five Romano's Macaroni Grill Restaurant Favorites. What a great deal…for the company.

Smart Corporate Bank Balance

"Tastes rich & creamy like 2% milk!" boasts the label on Smart Balance Fat Free Milk.

It's got "antioxidant vitamins C & E, 25% more calcium, and 25% more protein," says the large print. More than what? "Than whole milk," notes the smaller print.

Gosh, that sounds good. It must sound good enough that some people are willing to fork over $4.50 for a half gallon, even though ordinary milk is only about $2.50 per half gallon.

Well how does *this* sound? The extra vitamins C and E don't lower your risk of heart disease or anything else. In fact, in some studies, people who took more than 400 IU a day of vitamin E had a slightly higher risk of dying. (Smart Balance Fat Free has 50 IU per cup.)

Smart Balance does have extra non-fat milk solids, which gives each 8 oz. glass 35 percent of a day's calcium, marginally more than the 30 percent in ordinary milk. The extra milk solids also supply 10 grams of protein, slightly more than the 8 grams in most kinds of milk.

But many store brands of fat-free or low-fat milk also have extra milk solids. And they don't charge an extra $2 per half gallon.

The company that sells Smart Balance is smart, all right. All the way to the bank.

Photos: Stephen Schmidt.

A Recipe a Day...

BY KATE SHERWOOD

Fall is apple season. And that makes it apple-recipe season. Here are two main dishes, a side dish, and a salad that feature one of our favorite fruits.

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

Chicken with Cider Mustard Sauce

The tart, sweet sauce really peps up the chicken.

- **1½ lbs. boneless, skinless chicken breasts**
- **2 Tbs. safflower oil, divided**
- **3 shallots, minced**
- **2 honeycrisp or gala apples, peeled, cored, and diced**
- **1 cup apple cider**
- **3 Tbs. country Dijon mustard**
- **Freshly ground black pepper**

Put the chicken in a plastic freezer bag and pound to an even thickness of ½ inch. Heat 1 Tbs. of oil in a large skillet over medium heat. Sauté the chicken in two batches until browned, about 4 to 5 minutes per side. Transfer to a plate and cover with foil to keep warm.

In the same skillet, add the remaining 1 Tbs. of oil and sauté the shallots and half the diced apples for 3 minutes. Add the cider and boil until it is reduced by half, about 5 minutes. Remove from the heat and mix in the remaining apple and the mustard. Season generously with pepper. Pour the sauce over the chicken. Serves 4.

PER SERVING

Calories: 340	*Sodium: 360 mg*
Total Fat: 11 g	*Cholesterol: 95 mg*
Sat Fat: 1.5 g	*Carbohydrates: 25 g*
Protein: 35 g	*Fiber: 2 g*

Roasted Butternut Squash, Apples, & Onions

- **1 butternut squash, peeled and cubed**
- **2 honeycrisp or winesap apples, peeled, cored, and chopped**
- **1 onion, chopped**
- **6 sprigs thyme**
- **3 Tbs. extra-virgin olive oil**
- **½ tsp. kosher salt**

Pre-heat the oven to 450°F. In a large bowl, toss the squash, apples, onion, and thyme with the oil and salt. Spread into a large, shallow baking dish. Roast until tender and golden brown, about 35 minutes. Serves 6.

PER SERVING

Calories: 150	*Sodium: 170 mg*
Total Fat: 7 g	*Cholesterol: 0 mg*
Sat Fat: 1 g	*Carbohydrates: 23 g*
Protein: 2 g	*Fiber: 5 g*

Apple Hazelnut Salad with Gorgonzola Crisps

If you don't have time to make the dressing, you can use up to ½ cup of a good balsamic vinaigrette like Cindy's Kitchen.

- **¼ cup blanched hazelnuts**
- **2 Tbs. extra-virgin olive oil**
- **4 shallots, minced**
- **2 tsp. sugar**
- **3 Tbs. white balsamic vinegar**
- **⅛ tsp. kosher salt**
- **½ oz. Gorgonzola cheese, at room temperature**
- **4 thin rye crisp breads (like Finn Crisps)**
- **1 head butter or Bibb lettuce**
- **1 honeycrisp or Fuji apple, cored and thinly sliced**

Pre-heat the oven to 300°F and toast the hazelnuts until lightly browned, about 10 minutes. Allow to cool, then chop.

Make the dressing: Heat the oil in a medium pan and sauté the shallots until golden brown, about 5 minutes. Sprinkle in the sugar and stir to dissolve. Remove from the heat and whisk in the vinegar and salt. Set aside and allow to cool.

Spread a quarter of the Gorgonzola on each crisp bread. Arrange the lettuce on a platter and drizzle on the dressing. Garnish with the apple slices, crisp breads, and nuts. Serves 4.

PER SERVING

Calories: 210	*Sodium: 140 mg*
Total Fat: 13 g	*Cholesterol: 5 mg*
Sat Fat: 2 g	*Carbohydrates: 22 g*
Protein: 4 g	*Fiber: 3 g*

Tilapia with Granny Smith Remoulade

Tilapia is a mild-flavored, white-fleshed, sustainable fish. A remoulade is a French condiment similar to tartar sauce. In the picture below, the dish is served with Lundberg's Wild Blend rice and a simple tossed salad.

- **2 Tbs. country Dijon mustard**
- **¼ cup regular mayonnaise**
- **1 Tbs. fresh lemon juice**
- **1 Granny Smith apple, peeled, cored, and chopped**
- **1 stalk celery, chopped**
- **1 Tbs. capers**
- **2 Tbs. safflower oil**
- **1½ lbs. U.S. farmed tilapia filets**
- **½ cup whole wheat flour**

Make the remoulade: Put the mustard, mayonnaise, lemon juice, apple, celery, and capers into a food processor and pulse until the apple and celery are minced.

Heat the oil in a large, non-stick skillet over medium heat until shimmering. Pat the fish dry with a paper towel and dust with the flour. Sauté the fish in 2 or 3 batches until golden brown on both sides and cooked through, 2-3 minutes per side. Serve with the remoulade on the side. Serves 4.

PER SERVING

Calories: 400	*Sodium: 430 mg*
Total Fat: 21 g	*Cholesterol: 90 mg*
Sat Fat: 3 g	*Carbohydrates: 18 g*
Protein: 36 g	*Fiber: 3 g*

Tilapia with Granny Smith Remoulade

Photo: Stephen Schmidt.

THE KINDEST CUT

A 10-Step Guide to Meat & Poultry

BY JAYNE HURLEY & BONNIE LIEBMAN

How many calories in that cereal? How much sodium in that soup? For nearly two decades, Nutrition Facts labels have answered those questions…except in the one section of the supermarket where you might need them the most.

In the fresh meat and poultry case, you're pretty much on your own. Exceptions: Most ground meat and poultry has Nutrition Facts (along with deceptive lean claims). And a few companies put Nutrition Facts on brand-name meats or poultry voluntarily.

Late last year, the U.S. Department of Agriculture proposed a disappointing solution. Supermarkets would have to provide Nutrition Facts on all fresh meat and poultry, but not necessarily on labels, where shoppers need them. Instead, stores could put up a poster or offer a brochure, notebook, leaflet, or whatever. Thanks so much.

In fact, many stores already have those posters. But odds are, you haven't noticed them. In some cases they're above or on the sides of the meat case. And even if your vision were sharp enough to read the fine print, the cuts on the posters don't always match what the store is selling. So good luck with that.

If you'd like to urge the USDA to require Nutrition Facts on meat and poultry packages, mail the coupon on p. 14. In the meantime, here's a guide to the meat case.

The information for this article was compiled by Danielle Hazard and Melissa Pryputniewicz.

1 Check the serving size.

The U.S. Department of Agriculture says that a typical serving of steak, roasts, chops, and poultry parts is just 3 ounces. That's about the size of the patty in a McDonald's Quarter Pounder (which starts out as 4 ounces of raw meat).

A 3 oz. serving may be what health authorities recommend, but *typical*? What planet is the USDA living on?

Even diets designed to lower bad cholesterol, like the DASH (Dietary Approaches to Stop Hypertension), use a more realistic 4 ounces of cooked meat. But if you want *real* realistic, look at typical servings at mid-priced restaurants. A chicken breast weighs 6 to 8 ounces cooked and steaks range from 8 to 16 ounces raw (6 to 12 ounces cooked).

So before you check the calories, saturated fat, or anything else, estimate *your* serving size. If you buy a pound of meat or poultry for every two people, that's 8 ounces of raw meat—or 6 ounces of cooked meat—per serving. If you divide the pound into three servings, it's 4 ounces of cooked meat per serving. That's the serving size we list in our chart on p. 15.

2 Pick an extra lean cut.

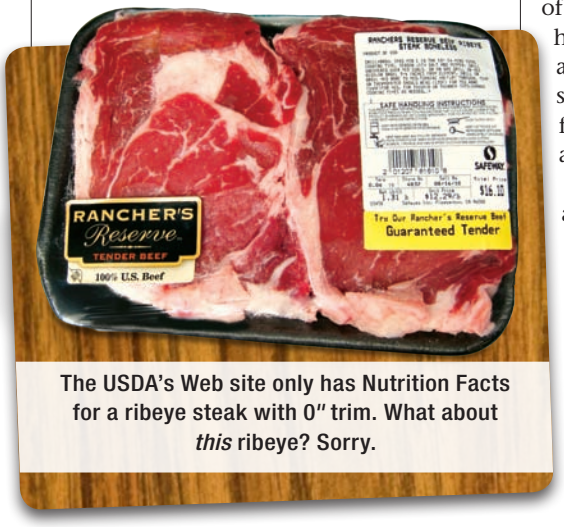
Ounce for ounce, chicken breast meat has less fat than drumstick meat, which has less fat than wing meat, which has less fat than thigh meat.

But the difference between low-fat and fatty matters more for red meat. Pick a fattier chicken piece like a skinless thigh and your 4 oz. cooked serving ends up with 3.5 grams of saturated fat. Pick a fatty beef cut like chuck blade roast with a ⅛" fat trim and you're up to 12.5 grams of sat fat.

And more fat means more calories. A 4 oz. cooked serving of prime rib has 410 calories. The same size serving of eye of round roast has only 240.

A "lean" cut of steak or roast can be no more than 10 percent fat, and an "extra lean" cut can be no more than 5 percent fat, according to the USDA. However, very few fresh meat packages carry those claims.

What's more, which cuts are "lean" or "extra lean" depends on how much they're trimmed. And the meat industry assumes that consumers are world-class trimmers.



The USDA's Web site only has Nutrition Facts for a ribeye steak with 0" trim. What about *this* ribeye? Sorry.

3 Trim and skin.

The beef industry likes to boast about its "29 Lean Cuts"—round steak, sirloin, and other cuts "that meet the government labeling guidelines for lean," according to beefitswhatsfordinner.com.

But the meats in the list have had all of their "visible fat trimmed." And about half have been so meticulously trimmed around the edges and elsewhere by scalpel-wielding technicians that even fatty cuts like T-bone, tenderloin roast, and brisket end up "lean."

The rest of the "29 Lean Cuts" have a 0" trim, which means that the technicians only removed every scrap of fat around the edges.

Since most consumers don't trim with a scalpel, a more reasonable trim is ⅛" fat. That's what you'll find for most meats in our chart. In most cases, meats with a ⅛" trim are the fattiest listed by the USDA, which gets its numbers from

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Photos: © robynmac/fotolia.com (top), Stephen Schmidt (bottom).

the meat industry.

In fact, for some popular cuts—like tri-tip, chuck eye steak, flank steak, flat iron steak, and ribeye steak—the USDA's Web site only has numbers for 0″ trim. One look at the ribeye on page 13 tells you how silly *that* is.

When it comes to pork, the USDA's Web site doesn't even say if its numbers apply to 0″ fat, ⅛″ fat, or any other trim. How convenient. (Our chart uses older USDA numbers for pork with a ⅛″ trim.)

Some good news: It doesn't matter if the fat is gone before you *cook*, as long as it's gone before you *eat*. So if you don't buy skinless poultry or ask the butcher to trim your meat, skin and trim at home.

4 Select "select."

Prime beef is the fattiest. Select is the leanest. Choice is in the middle.

If you want to save some saturated fat, calories, and money, look for select (when you can find it). Just keep in mind that, since select beef has less fat, you'll want to cook it either hot and fast (a quick sauté, for example) or low and slow (like a stew or pot roast, which keeps in the moisture).

5 Watch out for "80% lean" ground beef

Beware of ground beef labels. They list not just the "% fat," but the "% lean" as well. To most people, the word "lean" means low-fat. But ground beef that's "70% lean" is the fattiest ground beef allowed on the market. And even ground beef that's 80% or 85% lean is still fatty.

Who needs a label to say "80% lean/20% fat" (some labels call it 80/20), when it could just say "20% fat"?

The meat industry. According to a survey commissioned by the Center for Science in the Public Interest, publisher of *Nutrition Action*, consumers are more likely to think that ground beef is low in fat if it's labeled "80% lean/20% fat" than if it's just labeled "20% fat."

Why can't this ground beef simply say "20% fat"? Because the meat industry knows that "80% lean" sounds better.

That's why meat producers have fought for 20 years to keep the misleading "percent lean" claims. The industry doesn't mind putting Nutrition Facts on its packages, as long as it can keep fooling people.

6 Look for ground turkey or chicken breast.

If the label simply says "ground turkey" or "ground chicken," you may be getting meat plus skin. (The skin *is* part of the bird, after all.)

If you want no fatty skin (or thighs or wings or other parts), look for "ground turkey breast" or "ground chicken breast." Or check the Nutrition Facts. If a 4 oz. serving (raw) of your ground turkey or chicken has no more than 2 grams of saturated fat, you don't have to worry about whether it contains skin or fattier meat.

7 Avoid added water and salt.

It may look like fresh chicken, turkey, or pork with nothing added. But read the small print. If a chicken label says something like "seasoned with up to 15% chicken broth" or "enhanced with up to 15% solution," you're paying chicken prices for water.

What's more, you may end up with a load of salt. Five ounces of Perdue's Tender & Tasty line, for example, cooks down to 4 ounces and delivers anywhere from 290 to 410 milligrams of sodium. Other lines that "enhance" their fresh poultry include Tyson Trimmed & Ready, Empire Kosher, and Pilgrim's Pride EatWell StayHealthy.

Pork can be worse. Some hams and tenderloins are 30 percent salt-and-water. (See cspinet.org/pumpedup.)

8 Choose poultry or fish over red meat.

Last year, researchers at the National Cancer Institute reported the results of the NIH-AARP Diet and Health Study.[1]

Of some 500,000 participants, those who ate the most red meat (about 5 ounces a day) were 30 percent more likely to die—mostly of heart disease or cancer—over the next 10 years than those who ate the least red meat (about ⅔ ounce a day).

Those who ate the most white meat (poultry and fish) had a slightly *lower* risk of dying over a decade than those who ate the least. (The industry calls pork "the other white meat," but scientists lump pork in with beef, veal, and lamb.)

In other studies, red meat seemed to boost the risk of colon cancer (see June 2009, cover story). Researchers aren't sure why. Two possibilities: red meat's heme iron or the mutagens that form when red meat is overcooked may promote tumors.

9 Minimize mutagens.

Don't overcook your meat or poultry. The browner it is, the more likely that it contains heterocyclic amines (HCAs), which may raise the risk of cancer.

Grilling and barbecuing create the most HCAs, followed by broiling and pan-frying. Baking, roasting, and stir-frying create fewer HCAs, and wet cooking methods (braising, stewing, poaching) generally produce the least.

A few tricks can minimize the HCAs when you grill or barbecue. Marinate the meat or poultry, even for a few minutes. Grill it using indirect heat (push the coals to the sides and cook the meat in the center, or, if you use a gas grill, grill over an unlit element). And flip the food frequently to keep surface temperatures lower.

10 Think of the Earth.

It takes more water to produce beef and pork than any other foods, ac-

Photo: Melissa Pryputniewicz.

To: USDA Secretary Tom Vilsack — AgSec@usda.gov
1400 Independence Ave., S.W., Washington, DC 20250

From: _____

_____

_____

I support the position of the Center for Science in the Public Interest calling for mandatory Nutrition Facts labels on all fresh meat and poultry—using data for meat with at least ⅛″ trim—and for eliminating deceptive "% lean" claims on ground meat and poultry packages.

Track Meat

Best Bites (✔✔) have no more than 2 grams of saturated fat per serving (4 ounces cooked). We disqualified red meat, which may raise the risk of heart disease and cancer. Red meats are carefully trimmed (in most cases to 1/8″ fat). Because recent 1/8″ trim numbers were unavailable for pork, we used older numbers. Within each section, cuts are ranked from least to most saturated fat, then least to most calories.

Poultry *(4 oz. cooked)*	Calories	Total Fat (g)	Saturated Fat (g)
✔✔ Perdue Fit & Easy Ground Chicken Breast[1]	110	1	0
✔✔ Perdue Fit & Easy Ground Turkey Breast[1]	150	2	0
✔✔ Turkey breast, no skin	190*	2*	0.5*
✔✔ Chicken breast, no skin	190	4	1
✔✔ Chicken drumstick, no skin	200	6	1.5
Perdue Lean Ground Turkey, 7% fat[1]	190	10	2.5
Chicken breast, with skin	220	9	2.5
Turkey breast, with skin	220	9	2.5
Turkey leg, no skin	220*	8*	2.5*
Chicken wing, no skin	230	9	2.5
Chicken thigh, no skin	240	12	3.5
Turkey leg, with skin	240	12	3.5
Chicken drumstick, with skin	250	13	3.5
Turkey wing, with skin	270	15	4
Perdue Ground Chicken[1]	230	15	5
Chicken thigh, with skin	280	18	5
Perdue Ground Turkey, 15% fat[1]	260	18	6
Chicken wing, with skin	330	22	6
Beef *(4 oz. cooked, 1/8″ trim unless noted)*			
Chuck eye steak, choice, 0″ trim	180	6	2
Top round (London broil), select	230	9	3.5
Flank steak, choice, 0″ trim	230	11	4.5
Bottom round (Rump roast), select	240	12	4.5
Eye of round roast, choice	240	11	4.5
Top round (London broil), choice	250	12	4.5
Ground beef, 10% fat	250	13	5
Tri-tip roast, choice, 0″ trim	250	14	5
Bottom round steak, select	270	13	5
Bottom round (Rump roast), choice	250	14	5.5
Round tip roast, choice	260	14	5.5
Bottom round steak, choice	290	14	5.5
Flat iron steak, choice, 0″ trim	260	15	6
Ground beef, 15% fat	280	18	6.5
Top sirloin steak, choice	290	18	7
Ribeye (Delmonico) steak, choice, 0″ trim	300	19	7.5
Ground beef, 20% fat	310	20	7.5
Filet mignon (Tenderloin steak), choice	310	20	8
Ground beef, 25% fat	320	21	8
New York strip steak, choice	320	21	8
Ground beef, 30% fat	310	21	8.5
T-bone steak, choice	320	23	9
Chuck arm pot roast, choice	350	23	9
Brisket (flat cut or first cut), choice	340	22	9.5
Porterhouse steak, choice	340	25	9.5
Tenderloin roast, choice	380	29	11.5
Chuck blade roast, choice	410	31	12.5
Prime rib, choice	410	33	13.5
Rib roast (large end), choice	430	36	14.5
Pork *(4 oz. cooked, 1/8″ trim unless noted)*			
Tenderloin, 0″ trim	200	7	2.5
Sirloin roast, boneless, 0″ trim	230	11	4
Top loin chop, boneless	260	13	4.5
Top loin roast, boneless	260	13	4.5
Loin chop, with bone	270	15	5.5
Pork chop (Loin rib chop), boneless	290	18	6.5
Shoulder blade steak	290	19	6.5
Pork chop (Loin rib chop), with bone	300	18	6.5
Ground pork	340	24	9
Country style ribs, with bone	370	29	10.5
Spareribs, no trim specified	450	34	12.5
Lamb *(4 oz. cooked, 1/8″ trim)*			
Shank, domestic	250	13	5
Loin chop, Australian	250	14	6.5
Leg, domestic	270	16	6.5
Shank, Australian	260	16	7
Leg, Australian	280	17	8
Shoulder blade chop, domestic	300	21	8.5
Loin chop, domestic	340	23	10
Shoulder arm chop, domestic	380	26	10.5
Rib roast, Australian	310	23	11
Shoulder arm chop, Australian	350	23	11
Shoulder blade chop, Australian	330	25	12
Rib roast, domestic	390	31	13
Veal *(4 oz. cooked, no trim specified)*			
Cutlet	180	5	2
Shoulder arm steak	210	9	4
Shoulder blade steak	210	10	4
Loin chop	250	14	6
Rib roast	260	16	6
For comparison *(4 oz. cooked)*			
✔✔ Flounder	130	2	0.5
✔✔ Wild Coho Salmon	160	5	1

✔✔ Best Bite. [1]Other companies' numbers are probably similar. * Estimate.

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

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

cording to a 2006 report from the United Nations called *Livestock's Long Shadow*.[2]

"In the United States, livestock are responsible for 55 percent of erosion, 37 percent of pesticides applied, 50 percent of the volume of antibiotics consumed and for 32 percent of the nitrogen load and 33 percent of the phosphorus load into freshwater resources," says the report.

What's more, livestock account for 18 percent of global greenhouse gas emissions—more than transportation. That's because cattle emit methane, a greenhouse gas that's 25 times more destructive than carbon dioxide.

Not a vegetarian? Would it kill you to eat like one every once in a while?

[1] *Arch. Intern. Med. 169*: 562, 2009.
[2] fao.org/docrep/010/a0701e/a0701e00.HTM.

About CSPI, publisher of Nutrition Action Healthletter

CENTER FOR Science IN THE Public Interest

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, safer and more nutritious foods, and pro-health alcohol policies. 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.

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RIGHT STUFF

BEST BISTRO

It's tough to find decent frozen dinners. Most are salt-heavy and whole-grain-poor. And their ingredient lists often look like a year's worth of leftovers from your 8th grade chemistry lab.

Not **Organic Bistro Whole Life Meals**. The line of eight dinners ranges from 65 to 430 milligrams of sodium...*and* you can pronounce the ingredients on the first try.

Take the delicious **Chicken Citron** (lemon chicken over spinach with herbed quinoa & sundried tomato edamame). It's mostly edamame (green soybeans), chicken, quinoa, water, spinach, carrots, and sundried tomatoes.

You get 35 grams of protein, 8 grams of fiber, 25 percent of a day's magnesium, 14 percent of a day's potassium, plus vitamins A and C, iron, and calcium, all for just 2½ grams of saturated fat and 430 mg of sodium. Not too shabby for a 450-calorie meal.

The **Savory Turkey** (turkey breast in rosemary mushroom sauce with green beans & lentil-quinoa pilaf), with just 240 mg of sodium, may be the closest you can get to Thanksgiving dinner in the freezer case. And the **Wild Salmon** (in rosemary orange glaze with cranberry pilaf & broccoli) has *no* salt added. (You could even add a pinch to the 65 mg that occurs naturally and still end up rock-bottom low.)

Only one variety—the **Alaskan Salmon Cake**—didn't pass our taste test.

You may have to visit a store like Whole Foods to find Organic Bistro. But organic veggies, whole grains, less salt, and real food packed in recycled paperboard may be worth the trip.

The Food Collective: (866) 328-8638

Photos: Stephen Schmidt (left), CSPI (right).

dish OF THE MONTH

The Best Bulgur

Toss 3 cups of cooked, cooled bulgur with 1 cup each of chopped cherry tomatoes, cucumber, and green pepper, ½ cup of crumbled feta cheese, and ¼ cup of diced red onion. Dress with 3 Tbs. of extra-virgin olive oil, 2 Tbs. of lemon juice, and black pepper.

FOOD PORN

FRY, BABY, FRY

"Parmesan-breaded lasagna pieces, fried and served over alfredo sauce, topped with parmesan cheese and marinara sauce." That's how **Olive Garden**'s menu describes its **Lasagna Fritta**.

That's right. Fried lasagna. And just in the nick of time.

Many patrons were probably getting bored with some of Olive Garden's other appetizers, like Fried Zucchini, Fried Mozzarella, and (fried) Calamari. The Cheesecake Factory fries macaroni and cheese. Hooters fries pickles. Surely, Olive Garden could find something else to fry.

Deep-fat frying is a sure thing. It turns an old standby into a NEW! menu item. And it has guaranteed taste appeal, even without extras like alfredo sauce. *Voilà*! A bestseller.

So what if a platter of Lasagna Fritta has 1,030 calories—more than any other appetizer on the menu except the Calamari (1,190 calories with the Parmesan-Peppercorn Sauce) or Chicken Alfredo Pizza (1,180 calories)? So what if the Lasagna has a day's worth of saturated fat (21 grams) and sodium (1,590 milligrams)?

Odds are, you'll split the appetizer with someone else. So you'll have *plenty* of room for the chain's complimentary breadsticks (150 calories a pop) and the 1,000+ calories in your entrée. After all, you can always build new fat cells to hold the excess. It's easy.

You can do it while you're driving home, watching TV, or checking your e-mail. Who says you can't multi-task?

Olive Garden: (800) 331-2729