



# Harvard Health Letter

VOLUME 30 • NUMBER 11 | SEPTEMBER 2005

## The quickie workout

*Some fitness plans promise great results with brief workouts. But can you take these shortcuts to good health?*

Perhaps you've seen one of these fitness guides at your local bookstore. Maybe a Curves franchise has opened in your area. The claim is that a few minutes of exercise a day will shape you up or slim you down.

But most studies show that you need much more exercise than that to prevent disease and weight gain. According to the federal government's new guidelines, it takes an hour of moderately intense activity on most days to prevent unhealthy pounds from accumulating, and even more exercise to maintain weight loss. The guidelines recommend combining aerobic activity (which raises the heart rate and boosts cardiovascular health) with stretching exercises (which provide flexibility) and strength training (which makes muscles stronger).

So where does this leave the brief or "no-sweat" workouts?

### Four popular programs

The quick fitness plans vary widely in tone and in the time, equipment, and types of exercises they require. Some are based in fitness centers; others are available only in books. Center-based programs have some obvious advantages. They provide exercise machines that target specific muscle groups, and they help to make exercise social instead of solitary. Here are two examples:

**Curves** ([www.curvesinternational.com](http://www.curvesinternational.com)), 90 minutes per week. This company has more than 9,000 centers worldwide. For women only, it features a 30-minute, three-days-a-week mix of aerobic activity, strength training, and flexibility exercises. The style is friendly and accessible. Membership costs \$29 per month (often more in metropolitan areas), plus a \$149 signup fee (usually discounted by 50%–60%). There's also an "at-home" version: Gary Heavin and Carol Colman's book, *Curves* (2003).

**The Blitz** ([www.timetoblitz.com](http://www.timetoblitz.com)), 60 minutes per week. The Blitz offers a 20-minute, thrice-weekly routine of strength training with boxing and martial arts techniques. Men are clearly the target, although some centers offer a "military-style Hardcore Fitness Boot Camp" that is also open to women. Membership costs \$30 per month, plus a \$124 signup fee (usually steeply discounted).

And here are two books:

**Quick Fit: The Complete 15-Minute No-Sweat Workout**, 105 minutes per week. The author, Richard Bradley III, has headed the fitness center at the U.S. Department of Transportation for 25 years, and he introduced his quick workout there in 1998. In essence, *Quick Fit* is a mini version of the recommendations in the federal guidelines. The workout includes aerobic activity (a brisk 10-minute walk) and strength training (a 4-minute routine), with stretching exercises (1 minute) to cool down.

**8 Minutes in the Morning for Extra-Easy Weight Loss**, 48 minutes per week. The author, Jorge Cruise, has written a best-selling series of weight-loss and fitness books. He also has a Web site that claims to have three million subscribers. His ultra-short workout requires just eight minutes of strength training, six days a week. Cruise guarantees that you'll lose two pounds a week. He uses a wide range of motivational techniques, and the book is larded with anecdotes, testimonials, and before-and-after photos. Some readers may be in-

## INSIDE

### We kid thee not

They do much more than just filter blood: Your kidneys are master regulators of blood pressure, hormone levels, and other important functions. And kidney disease is a growing problem. . . . . 4

### A-musing the mind

Art and music may have a special effect on people with dementia. . . . . 6

### In brief

The hazards of hiking; depression and respiratory illness; chewing aspirin . . . 7

### By the way, doctor

Seasonal changes in blood pressure; colon polyps . . . 8

## Then... and now

*The Harvard Health Letter celebrates its 30th birthday this November. For the next few months, we'll be using this space to look back at the changes in medicine over the past three decades as reflected in our pages.*

Colds and flu were the subjects of the lead article of our third-ever issue in January 1976. Alas, the cure for the common cold has proved to be elusive. As for the flu, today's antiviral medicines (Relenza, Tamiflu) aren't cures, but they can limit the duration of the illness if you take them early enough. Then and now, an annual flu shot is the best way to defeat flu. We complained about the overuse of antibiotics 30 years ago. It's a message that bears repeating: Colds and flu are caused by viruses so antibiotics, which kill bacteria, are pointless, unless there's secondary bacterial infection. Vitamin C and colds? We were dubious three decades ago, we're dubious now. Research has shown that large doses don't prevent colds and have only a minor effect on duration and severity.





## WHO WE ARE

**Editor in Chief** Anthony L. Komaroff, M.D.  
**Editor** Peter Wehrwein  
 peter\_wehrwein@hms.harvard.edu  
**Writer** James Sellman  
**Design Editor** Heather Foley  
**Production Coordinators** Mary Allen, Nicole Wall  
**Medical Illustrators** Harriet Greenfield, M.A., Scott Leighton  
**Copy Editor** James Sellman

## Editorial Board

Board members are associated with Harvard Medical School and affiliated institutions. They review all published articles.

**Cardiology** Thomas H. Lee, M.D.  
**Dental Medicine** R. Bruce Donoff, D.M.D., M.D.  
**Dermatology** Kenneth Arndt, M.D.  
**Emergency Medicine** John Tobias Nagurney, M.D.  
**Gastroenterology** Stephen E. Goldfinger, M.D.  
**Genetics** Susan P. Pauker, M.D.  
**Gerontology** Kenneth L. Minaker, M.D.  
**Internal Medicine** Nancy Keating, M.D., M.P.H.  
 Stuart Mushlin, M.D.  
**Neurology** Dennis Selkoe, M.D.  
 Edward Wolpaw, M.D.  
**Nutrition** Bruce Bistrian, M.D., Ph.D.  
 Walter C. Willett, M.D., Dr.P.H.  
**Oncology** Robert J. Mayer, M.D.  
**Ophthalmology** B. Thomas Hutchinson, M.D.  
**Orthopedics** Donald T. Reilly, M.D., Ph.D.  
**Otolaryngology** Jo Shapiro, M.D.  
**Preventive Medicine** JoAnn E. Manson, M.D., Dr.P.H.  
**Psychiatry** Michael C. Miller, M.D.  
**Surgery** Richard Hodin, M.D.  
**Urology** Jerome P. Richie, M.D.  
**Women's Health** Soheyla Gharib, M.D.

## HOW TO REACH US

### Customer Service

**Call** 877-649-9457 (toll free)  
**E-mail** harvardHL@strategicfulfillment.com  
**Online** www.health.harvard.edu/subinfo  
**Letters** Harvard Health Letter  
 P.O. Box 9308  
 Big Sandy, TX 75755-9308

**Subscriptions** \$32 per year (U.S.)

**Bulk Subscriptions** Consumer Health Publishing Group  
 One Atlantic St.  
 Stamford, CT 06901  
 888-456-1222 x106 (toll free)  
 203-975-8854 x106  
 ddewitt@chpg.net

**Corporate Sales/Licensing** Consumer Health Publishing Group  
 One Atlantic St.  
 Stamford, CT 06901  
 jrmitchell@staywell.com

### Editorial Correspondence

**E-mail** health\_letter@hms.harvard.edu  
**Letters** Harvard Health Letter  
 10 Shattuck St., Suite 612  
 Boston, MA 02115

### Permissions

**Call** Copyright Clearance Center, Inc.  
 978-646-2600  
**Online** www.copyright.com

Published monthly by Harvard Health Publications,  
 a division of Harvard Medical School

**Editor in Chief** Anthony L. Komaroff, M.D.  
**Publishing Director** Edward Coburn

© 2005 President and Fellows of Harvard College. (ISSN 1052-1577)  
 Proceeds support research efforts of Harvard Medical School.

Harvard Health Publications  
 10 Shattuck St., Suite 612, Boston, MA 02115

PUBLICATIONS MAIL AGREEMENT NO. 40906010  
 RETURN UNDELIVERABLE CANADIAN ADDRESSES TO:  
 CIRCULATION DEPT., 1415 JANETTE AVE., WINDSOR, ON N8X 1Z1  
 E-mail: ddewitt@chpg.net

## Quickie workouts continued from page 1

spired. Other may find it too much of a come-on and too good to be true.

## Fit to be measured

Quickie workouts promise to improve your fitness, but aren't particularly clear in defining what that means. "The key question is: What's the definition of 'fit'?" notes Dr. I-Min Lee, a Harvard Medical School faculty member and leading researcher on the relationship between physical activity and health. "Any exercise will get you fitter than you were before"—as long as it gives you a higher workload than you're used to.

And it's hard to compare the quickie workouts' vaguely defined fitness goals against the research findings. Most research has examined the effect of physical activity on specific outcomes, such as heart disease, stroke risk, or weight loss. Moreover, researchers don't generally measure physical activity in terms of the expenditure of calories. The scientific literature more often employs "metabolic equivalents" (METs), which are multiples of an individual's metabolic rate while seated and resting. Using METs rather than calories allows for simpler comparisons among individuals of different weights.

## Exercise-lite: Feels good, less fulfilling

Still, current research casts some doubt on the value of "no-sweat" workouts. In 2000, for example, Dr. Lee and her colleagues concluded that mortality was unaffected by light physical activity (less than 4 METs). Moderate activity (at least 4, but less than 6 METs) appeared somewhat beneficial, and vigorous activity (6 METs or more) "clearly predicted lower mortality rates."

Studies of walking also indicate that benefits are greatest when the pace is brisk. The threshold varies with age, gender, weight, and over-

all fitness, but generally speaking, 3–4 miles per hour qualifies.

Furthermore, most exercise guidelines now stress getting at least 30 minutes of physical activity a day, even if it's done in 10–15 minute spurts. Taking the stairs instead of the elevator, walking further to your car; they can count toward the 30-minute total.

Yet some research suggests that if you exercise hard enough maybe you can get away with doing it less often. For example, a 2004 study of "weekend warriors" by Dr. Lee and others found that engaging in physical activity just once or twice a week lowered mortality rates if the energy expended totaled

1,000 calories or more. But this relationship only held true

for men with no major risk factors; for subjects with one or more risk factors for premature death, there was no reduction in mortality. And it's not easy to burn that many calories; you need to play singles tennis for almost 2 hours or walk at a brisk pace for 2½.



## Muscles aren't everything

Some quickie workouts focus on strength training, skimping on aerobic activity and stretching to save time. Aerobic exercise, which raises your heart rate and improves cardiovascular health, has proven long-term payoffs. It's the most studied form of exercise, and the evidence of its benefits is overwhelming. A workout routine that doesn't include aerobic exercise is sorely lacking. And though some studies have raised questions about the value of stretching before exercise, stretching almost certainly helps us stay limber, especially as we get older.

On the other hand, a 2002 study by Dr. Mihaela Tanasescu and other Harvard researchers found that strength training may be as effective as aerobic exercise in reducing the risk for heart disease. And Dr. Lee

## A quick comparison of brief workout programs and the current U.S. guidelines

	Program	Time commitment	Workout description	Required equipment
<b>U.S. guidelines</b>	Dietary Guidelines for Americans 2005 <a href="http://www.healthierus.gov/dietaryguidelines">www.healthierus.gov/dietaryguidelines</a>	To avoid weight gain: 60 min/day, most days of the week (240 min/week)	For health and maintaining body weight: At least moderate physical activity. For physical fitness: Cardiovascular conditioning, stretching exercises, and strength training.	None.
<b>Fitness center programs</b>	Curves <a href="http://www.curvesinternational.com">www.curvesinternational.com</a>	30 min/day, 3 days/week (90 min/week)	Combination of aerobic exercise, strength training, and stretching for flexibility.	The center: Strength training machines “designed specially for women.”  The book: An exercise resistance tube.
	The Blitz <a href="http://www.timetoblitz.com">www.timetoblitz.com</a>	20 min/day, 3 days/week (60 min/week)	Strenuous strength-training and cardiovascular program, using a heavy-bag boxing workout and martial arts techniques.	Strength-training machines; heavy bag for boxing workouts (available at the center).
<b>Book programs</b>	Richard R. Bradley III with Sarah Wernick, <i>Quick Fit</i> (2004)	15 min/day, 7 days/week (105 min/week)	Brisk walking, strength training, and stretching.	A set of dumbbells; a motorized treadmill (strongly recommended).
	Jorge Cruise, <i>8 Minutes in the Morning for Extra-Easy Weight Loss</i> (2004)	8 min/day, 6 days/week (48 min/week)	Strength training exercises.	None.
	JoAnn Manson, M.D. and Patricia Amend, M.A., <i>The 30-Minute Fitness Solution</i> (2001)	30 min/day, 7 days/week, plus 15–20 min strength training twice a week (240 min/week)	At least moderate physical activity (e.g., brisk walking), twice weekly strength training. Recommends brief morning and evening stretching sessions for flexibility.	A set of dumbbells.

notes that muscle mass is “metabolically more active” than other tissues, so strength training “makes some sense from a weight-loss perspective.”

### The shortcomings

Obviously the quickie workouts reviewed here are shortcuts. They don’t require the 30 minutes of exercise on most days recommended by government guidelines. The Curves plan comes closest, giving you the requisite 30 minutes three days a week.

Curves and Blitz provide adequate workout intensity and energy expenditure. The two center-based workouts also use the recommended combination of aerobic, strength, and flexibility training. Some may be especially attracted to—or put off by—the Blitz because of its macho appeal.

Cruise’s *8 Minutes in the Morning* has the least to offer. The workouts are

too short and not particularly intense. “Cardiovascular exercise (aerobics) and dieting are out,” Cruise pronounces, “and strength training is in.” Hogwash. And don’t believe his promise that you’ll “shed two pounds a week without any equipment or dieting!”

By contrast, Bradley and Wernick’s *Quick Fit* is a good workout. The routine is compact and balanced. The question is whether 15 minutes of exercise really is enough. The book includes a chapter on extending the program for longer and more challenging workouts. And you could do it a couple of times a day instead of once. But if you take the book at its word and aim for “no-sweat” workouts, you probably won’t get much benefit. The equipment recommendations might be a turnoff, too. In addition to a required set of dumbbells, the book strongly suggests that you buy a motorized treadmill.

### Every little bit helps

Brief bouts of activity like the ones promoted by these centers and books may be worthwhile. James Hill, head of clinical nutrition research at the University of Colorado, argued in a 2003 *Science* article that Americans could avoid weight gain by burning just 100 more calories a day—an extra 15 (not 30) minutes of walking would do the trick. Hill used data from two national surveys to calculate Americans’ overall energy balance and derived the 100-calorie target from his results.

The bottom line? The quickie workout programs over-promise—what else is new? But any physical activity is better than none. If these programs help some people exercise, they’re serving a healthful as well as a commercial purpose. If you’re in the market, do some comparison shopping to find a program with a style and intensity level that suit you. ♥

# Now for the renal side of the story

*Prevention and early detection of kidney disease could save your life.*

**T**he kidneys get no respect. We talk of “lion hearts,” “leather lungs,” and even “iron stomachs,” but the kidneys go unheralded—that is, until they go wrong. The pair of bean-shaped organs go quietly about their complex business of cleansing the blood of waste products, dumping excess water, regulating hormone levels, adjusting blood pressure, and ordering new red blood cells. Only when their function is impaired do the kidneys attract real notice. Then suddenly they loom very large.

We need to pay closer attention to our kidneys. Experts say that 20 million Americans have some form of chronic kidney disease, including over 7 million with less than half the kidney function rate of a young adult. That’s considered “moderate” impairment. Severe impairment begins when the function level is less than 25% of the norm. When it falls below 10%–15%, end-stage renal disease—in other words, kidney failure—begins.

Diabetes is the primary diagnosis for nearly half of the people with kidney failure. High blood pressure is the underlying condition for another 30%. Although the number of new cases has increased each year for over two decades, the rate of increase has slowed. This is probably evidence that efforts to prevent the progression from chronic kidney disease to kidney failure are working. Currently, the only “cure” for kidney failure is a transplant. About 15,000 kidney transplants are performed each year in this country, but about 60,000 more Americans are on the waiting lists.

But the grim fact is that most chronic kidney disease patients die from a heart attack or some other cardiovascular “event” before their kidneys ever give out. To some extent, lack of treatment is to blame. A number of studies have shown that many kidney patients

don’t receive the heart medications or get the coronary procedures that would improve their chances of avoiding a dire cardiovascular event. Experts decry this “therapeutic nihilism” and are pushing doctors to treat kidney disease patients like they would other high-risk cardiovascular patients.

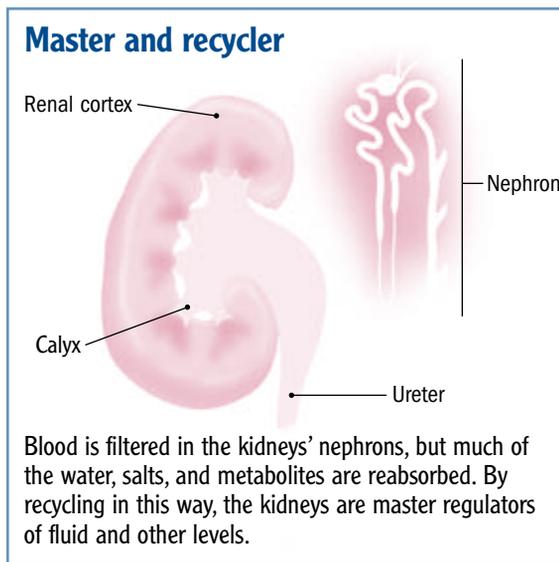
On the flip side, a number of studies suggest that kidney function tests might

tion rates against their answers to the question: “Have you ever been told by a doctor or health care professional that you had weak or failing kidneys (excluding kidney stones, bladder infections, or incontinence)?” Fewer than 10% of those whose function rates were already “moderately impaired” remembered any such warning. Only those whose lab tests revealed severely decreased function knew about chronic kidney disease.

One problem may be that doctors depend too much on an older test of kidney function, says Dr. Thomas Hostetter, one of the study’s authors and the head of an education program at the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). The test measures the level of creatinine (pronounced cree-AT-i-nen), a normal muscle protein metabolite that isn’t harmful but serves as a marker of how fast the kidneys are running. The normal range for creatinine is 0.8 to 1.3 mg/dL, although that varies from lab to lab.

But normal can be misleading, says Dr. Hostetter, unless the numbers are plugged into a glomerular filtration rate (GFR) calculator, an equation that adjusts for a patient’s age, gender, and race. For the GFR, race is defined as African American or not, a reflection of alarming statistics that show African Americans progress to kidney failure four times faster than Americans of European descent. Knowing your GFR is your first step to kidney awareness, says Dr. Hostetter, who is promoting a free GFR calculator on the NIDDK’s National Kidney Disease Education Program Web site at [www.nkdep.nih.gov](http://www.nkdep.nih.gov). (To find the calculator, click through to the Health Professionals page of the Web site.) Many labs already perform the GFR calculation at no additional cost, although physicians must request it.

As you might expect, doctors also use urine tests to assess kidney func-



be a useful bellwether for heart attack patients, and perhaps for the general population. Renal blood vessels seem to be unusually sensitive to vascular problems, so declines in kidney function might be an early warning sign of cardiovascular woe. Moreover, “renal insufficiency,” as doctors call it, may accelerate cardiovascular disease because when your kidneys aren’t working right, levels of homocysteine and other substances that are hard on blood vessels and the heart tend to go up.

## Kidney function tests

Earlier this year, researchers at the National Institutes of Health, the Centers for Disease Control and Prevention, and the Johns Hopkins Bloomberg School of Public Health examined awareness of kidney disease among 4,101 adults by matching lab tests of their kidney func-

tion. Levels of a protein called albumin are often measured. Kidneys that aren't working properly can't separate albumin from normal waste products, so levels in the urine go up.

### A new test for older people

Even when the number is properly adjusted, creatinine levels may not be the best indicator of how well our kidneys are working, especially as we grow older, so doctors are looking for alternatives. One possibility is a protein in the blood called cystatin C, which is also filtered by the kidneys. Age, race, and other factors don't seem to affect cystatin C levels as much as they do the level of creatinine. A study comparing cystatin C with creatinine testing was published in the May 19, 2005, *New England Journal of Medicine*. The researchers measured both proteins in about 4,600 healthy people ages 65 and over, and then kept tabs on them for about seven years. The cystatin C level turned out to be a stronger predictor than creatinine of overall mortality, and also of cardiovas-

cular events. The FDA has approved a cystatin C test, but more research needs to be done before doctors know how to use it in day-to-day patient care.

### Clogged filter

Glomerulonephritis is inflammation of the glomeruli, the tufts of capillaries in the kidneys that filter the blood. It's the third leading cause of kidney failure in the United States.

Autoimmune disorders like lupus cause glomerulonephritis. Sometimes it develops after an infection (strep throat is the classic example). It's not the infection itself that does the damage, but particles in the blood left over from fighting it off. They get trapped in the sieve-like glomeruli, so the glomeruli get inflamed. The course of the disease can be baffling: Acute but short-lived, sudden and rapidly progressive, or stubbornly chronic.

Corticosteroids are sometimes prescribed. High blood pressure is often a by-product of glomerulonephritis, so patients often take blood pressure medications and stick to low-salt diets.

### What you can do

We tend to think of the kidneys as part of the urinary system, but they're also cardiovascular organs. High blood pressure can be the start of a vicious cycle because the hormones that regulate blood pressure are partly under the kidneys control. Blood continually pounding against the walls of the tiny blood vessels in the organs' filtering units (nephrons) upsets the balance of those hormones, so blood pressure goes up even more.

As for diabetes, it causes kidney trouble because high blood sugar is hard on blood vessels, and the lacy vessels in the kidneys seem to be especially vulnerable.

The good news is that we have some control over high blood pressure and diabetes. A good diet (eat those fruits and vegetables; avoid too much sodium) and exercise (why, of course!) reduce the chances of developing both conditions. Not putting on pounds helps, too. If all of this fails, many medications can help you keep high blood pressure and diabetes under control. And you'll be doing your kidneys a favor in the process. ♥

## Polycystic kidney disease

Polycystic kidney disease (PKD) has the dubious distinction of being the most common life-threatening genetic disorder in the world. It affects an estimated 600,000 Americans and 12.5 million people worldwide.

There are other cystic kidney disorders, but PKD's signature is the formation of large, fluid-filled pockets in epithelial tissue. The kidneys swell and may eventually shut down altogether. When they are autopsied, PKD kidneys look like they are filled with golf balls.

Transplants are still the only cure. But in the last five years, researchers think they may have figured out what goes wrong in PKD and how, someday, it might be put right.

The suspect was the cilium, a small hair-like structure that protrudes from the surface of many kinds of cells. Cilia are biological propulsion devices. Waving cilia are the oars of one-celled organisms like paramecia. Cilia in the human bronchial linings keep airways clear. But cilia in human kidneys don't move and don't seem to do much of anything. At best, kidney cell cilia were considered leftover evolutionary baggage like the appendix.

Then in 2003, researchers found a new use for the "useless" cilia in epithelial kidney cells. They seem to act as "mechanosensory devices," protruding into the narrow kidney tubes and

sensing when to slam the brakes on cell growth.

The cilia connection was found by working backward from genetic studies of human families with PKD. That led to the identification of two PKD genes that produce polycystin proteins. But what these proteins actually did was a difficult question to answer in the hugely complex human genome, so researchers turned to animal models. The breakthrough came when PKD genes were identified in mice and fish. The PKD-like mutated genes produced defective cilia that, in effect, left the epithelial kidney cells without any brakes. The runaway cells kept on proliferating, piling up in the narrow tubes until they bloomed into massive cysts.

There's still a long way to go before this discovery results in useful medications. In the meantime, researchers are looking to answer basic questions about the progression of PKD and about variations within the same inheritance pattern. They are also looking for ways to treat PKD's most notorious symptom—hypertension. The HALT-PKD study is testing a drug "blockade" of the renin-angiotensin system that is the body's blood pressure control mechanism. Patients will be given ACE inhibitors, ARBs (angiotensin II receptor blockers), and disease management techniques in various combinations to see if PKD progression can be slowed or even stopped.

# The art of aging

*Mental activity and creative pursuits may help stave off dementia and keep the mind clear.*

**E**xercise the bod: We know that's good for our physical health. In recent years, experiments in animals have found that exercise may also improve mental abilities, and some human studies have come to the same conclusion.

But the surest way to exercise the brain, is to challenge it to think. Considerable research has explored the effects of creative and challenging activities on mental health, especially as we age.

Much of this research has focused on dementia, which usually involves loss of memory and "executive function"—the ability to plan, initiate, and manage. It has many causes, including alcoholism and low thyroid levels. But the main ones are strokes and, above all, Alzheimer's disease.

Researchers have long noted that high educational levels and mentally challenging occupations are associated with reduced risk for Alzheimer's, although sorting out cause and effect is difficult. Several years ago a study published in the *New England Journal of Medicine* reported that "cognitive activities"—such as board games, crossword puzzles, or playing a musical instrument—seemed to be more protective against dementia than physical activities like walking and swimming. Of the physical activities studied, only social (ballroom) dancing rivaled the more mindful pursuits.

## Music helps with memory

Music seems to break through the fog of dementia. Several studies have found that it helps control disruptive behavior (wandering, agitation, and so on) in dementia patients. In 2003, for example, a small study in Australia found that playing slow-tempo Baroque music (pieces by Bach, Handel, Vivaldi, and others) reduced such behavior by 40%. Music seems to help Alzheimer's patients retrieve long-term memories, which usually linger well after short-term memory is gone. And musical

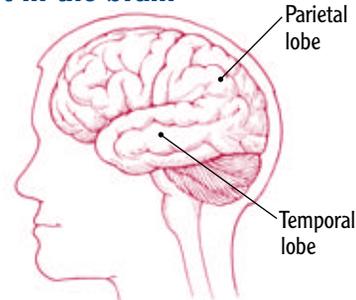
memory often appears to be spared in Alzheimer's disease. A number of case studies and anecdotal reports tell of late-stage patients who are no longer able to speak or remember family members' names but can still sing old songs, in tune and with all the lyrics. Researchers have found that participatory singing makes dementia patients more alert. The National Endowment for the Arts is funding research into whether participation in cultural programs like choral singing can improve the physical and mental health of older people.

## Bursts of creativity

Dementia often makes people passive, so they're even less inclined to draw, paint, or participate in other kinds of artistic activities. But sometimes the effect can be quite different. The most famous case is Willem de Kooning, the Abstract Expressionist painter who died in 1997 at age 92. De Kooning was a great success, despite notorious binge drinking. His dementia started in his 70s. In the beginning, de Kooning was amazingly productive, averaging nearly a painting a week over a period of four years. His art kept him alert and seemed to help him physically, too. One explanation: early Alzheimer's may not affect unconscious "procedural" memory that controls the thoughts and hand movements needed to paint or play a musical instrument.

Frontotemporal dementia (FTD) is an uncommon condition characterized by personality changes, loss of language, and inappropriate social behavior (swearing, poor hygiene, hypersexuality). In the early stages of the disease, some FTD patients develop artistic skills that they never had before. Their paintings and drawings are realistic or surrealistic and full of detail. Some researchers theorize that damage to the logical, word-oriented left side of the brain somehow unleashes activity in the right side of the brain, which controls spatial thinking and perception.

## Art in the brain



Some research suggests that the right parietal lobe collects visual input and the right temporal lobe integrates those perceptions. The left parietal and temporal lobes may inhibit some types of artistic expression through attention to visual detail and labeling, respectively.

© Harriet Greenfield

## Make connections

Brain cells "think" by making connections to other brain cells. Each cell has a slender, electricity-conducting axon that branches out to make contact with the tentacle-like dendrites of its neighbors. Those contact points are called synapses. When communication between two brain cells is frequent and regular, the strength of the signal across synapses increases. Education and other forms of brain "exercise" may also increase the number of synapses. By giving you an abundance of strong synapses, mental activity may create a "cognitive reserve," so your thinking stays clear, even as you lose brain cells and synapses to a disease like Alzheimer's.

The usual advice for keeping your brain healthy is to exercise it—to "use it or lose it" like you would a muscle, so the strength and number of synaptic connections increase. It's sound advice, based on what we know about the brain. But the example of de Kooning and others suggests we can "lose it" plenty and still be creative and enjoy the arts, especially music. More art and music in our lives might help us make the most of the brain cells we do have, instead of mourning ones we no longer have. ♥

## Hiking: Not just a walk in the park

**E**specially in the Northeast, this is a great time of year to go hiking. The bugs aren't as bad as they were in midsummer. The weather is cooler. Soon there'll be fall foliage.

But some of us who hit the trail end up in trouble. Last year, University of Pennsylvania researchers published a study of search-and-rescue operations by the New Hampshire Fish and Game Department. About 40% of rescued people had been injured (most of the rest had gotten lost). As you might expect, fractures were the most common type of injury. Proper footwear and a walking stick or trekking poles (they're like ski poles, but for hikers) will help you stay on your feet, while sparing you some knee aches and pains.



Long-distance Appalachian Trail backpackers (average length of hike, 139 days!) were the subject of an *American Journal of Medicine* study several years ago. In this hardy group, diarrhea was the most common illness. That's a useful reminder that even the clearest mountain brook or pond may be teeming with giardia or cryptosporidium parasites. Blame abundant wildlife or careless backpackers, not indus-

trial pollution. Those microorganisms are in the soil and get into the water via animal as well as human feces.

Iodine tablets kill giardia, but not cryptosporidium. Chlorine kills neither. For a short hike, just carry your own water. And if you have time, boiling your drinking water is the safest choice. Many backpackers use portable water filters that strain out giardia and larger microorganisms, but smaller ones like cryptosporidium and viruses can slip through. Portable water purifiers (versus filters) clean water more thoroughly, but they're more complicated and expensive. Carrying your own bottled water is a good idea. And if you drink mountain water, boil it and let it cool before you drink it.

We've posted links to Web sites with hiking safety information at [www.health.harvard.edu/healthextra](http://www.health.harvard.edu/healthextra).

Sometimes safety tips have the unintended effect of making an activity seem more hazardous than it really is. So let's not ruin a good thing here with worry. By relying on a modicum of common sense, the vast majority of hikers get home safe and sound.

## Get help for those COPD blues

**R**esearchers at the Michael E. DeBakey Veterans Affairs Medical Center in Houston used hospital records to find 1,334 people who had been diagnosed with some type of breathing problem, including bronchitis, asthma, chronic obstructive pulmonary disease (COPD), and several others. By asking just five questions over the phone, they preliminarily identified 80% (1,067) of the group as anxious, depressed, or both. Further testing showed that as brief as those interviews were, they were 80% accurate.

A study-within-the-study of 204 people with COPD found that about two-thirds were troubled by anxiety or depression, yet only about a third of them were getting help for these problems.

Previous studies on this subject have generally involved patients being seen in clinics or doctors' offices. The Texas investigators say their study, published in the April 2005 issue of the journal *Chest*, paints a fuller picture because it isn't limited to those who are actively seeking care. More important, it shows that a simple screening for depression and anxiety is practical.

It's well documented that respiratory illness is associated with depression and anxiety. It's not clear if this is because of a direct, physiological impact on the brain. But we do know that breathing difficulties produce the sort of limitations and loss of control in daily life that are commonly associated with these mental health problems.

Doctors should ask patients with respiratory problems about their mental health. And if you have COPD or some other chronic respiratory illness, and you're feeling low or anxious or both, talk to your doctor about getting some help.

## Chew on this

**I**f you think you're having a heart attack, you're supposed to take an aspirin right away. A dose of 325 milligrams will do. Aspirin keeps platelets from clumping. And that should help keep the blood clot (or clots) in your coronary arteries—which is what triggers the heart attack—from getting any bigger and further depriving your heart of the blood it needs.

Time is of the essence, and chewing the aspirin tablet will get the anti-sticky-platelet action going faster. Needless to say, you shouldn't take coated aspirin, which is designed to bypass the stomach and be absorbed in the intestine.

But the advice to "chew then swallow" only applies in emergencies. A report published last year in the *Journal of the American Dental Association* described the consequences of routine aspirin chewing for two patients with jaw problems (temporomandibular pain) and overly sensitive teeth. They chewed four to eight aspirins a day for two years, seriously damaging the enamel and dentin of their teeth. Obviously these were extreme cases, but the lesson learned is that regularly chewing aspirin is bad for your teeth.





**Seasonal swings in blood pressure**

**Q** My systolic blood pressure is 40 points higher in winter than in the summer (160–180 versus 120–140 mm Hg). Do the seasons affect blood pressure?

**A** I'll admit you've got me puzzled. Here are the possibilities I've come up with: Two are pretty obvious and straightforward, one's a little far out.

First, seasonal weight gain. During the winter, especially around the holidays, people tend to eat more and exercise less than they should. The resulting weight gain causes blood pressure to rise.

Second, salt consumption. Too much salt in your diet also raises blood pressure. So, if you're more likely—come wintertime—to be hanging around the house and raiding the refrigerator and kitchen cabinets for salty foods, that could perhaps explain the seasonal increase.

Now for the far-out idea. When a person is outside in very cold weather, the small arteries tend to clamp down, causing blood pressure to go up.

The experts I talked to said that this effect would disappear soon after you went back indoors.

When I looked for research on the effects of cold temperatures on blood pressure, I found remarkably few studies—on humans. But there have been many done with mice and rats, and they show a substantial and sustained increase in blood pressure from cold temperatures. Research published earlier this year identified two genes with a profound effect on cold-induced high blood pressure in mice. Humans have those genes too, so it's theoretically possible that a variant of those genes is what makes your blood pressure particularly likely to go up in cold weather.

Perhaps the scientists studying the effect of cold temperatures on blood pressure in mice would be interested in studying you. If you're interested, write us a letter or an e-mail, and we can give you their contact information.

I have one piece of practical advice: Be careful about vigorous exercise in cold weather. It could put an unusual strain on your heart.

**Polyps that come back**

**Q** Should I worry if new colon polyps appear near where previous ones have been removed?

**A** The simple answer is, "It depends." The large intestine is a large tube, and a polyp is a growth out from the inside wall of that tube into the hollow center. Polyps are common: More than half of people over age 60 have them. Some polyps never cause any symptoms. Others cause symptoms, such as bleeding, but never turn cancerous. But adenomatous (pronounced ad-eh-NO-ma-tus) polyps can turn into cancer if not identified and removed. Adenomatous comes from adenoma, the medical term for any tumor that grows from the epithelium, a layer of glandular cells that line the inside of an organ.

Some rare genetic conditions, such as familial ad-

enomatous polyposis and Gardner's syndrome, cause polyps that nearly always turn into cancer. Even in the absence of these rare conditions, if one of your parents or siblings has had an adenomatous polyp, your risk of having one is elevated fourfold. And if you've had an adenomatous polyp diagnosed and removed, you're at greater risk of developing more of them. They can occur near the old polyp or anywhere in the colon.

I don't think you should worry, but you should be monitored closely. If your first polyp was an adenomatous polyp and a new one has developed close to where the old one was, the new one also should be removed—and your entire colon should be carefully examined for other polyps. In fact, you should have a colonoscopy every 5–10 years.

**Polyp**

Most polyps in the colon have a stalked, mushroom-like shape. Many are benign, and some go away on their own. It may take five years for a polyp to become cancerous.



© Harriet Greenfield

**Send us a question**

**Letters** | By the Way, Doctor  
Harvard Health Letter  
10 Shattuck St., Suite 612  
Boston, MA 02115

**E-mail** | health\_letter@hms.harvard.edu  
(please write "By the way, doctor" in the subject line)

*Because of the volume of mail we receive, we can't answer every letter. Nor can we provide personal medical advice.*