

# Word on Health

Consumer Health Information Based on Research from the National Institutes of Health



US Department of Health and Human Services ♦ National Institutes of Health

## Inside Word

### 1 Palliative Care

Palliative care aims to improve the quality of life for patients near the end of their lives. It involves not only medications to relieve pain, but also a team approach to provide comfort and support that involves family, friends and health care providers.

### 4 Preventing College-Age Alcohol Abuse

Young adults going off to college can expect to be exposed to many new experiences. Unfortunately, one of them may be heavy drinking. Alcohol abuse is now a widespread problem on the nation's college campuses.

### 6 Different Trials, Different Results

Have you ever thought that something was supposed to be good for your health, but then suddenly heard it was bad for you? How in the world can medical studies come to such different conclusions about the same thing?

### 7 Facts About Weight Cycling

Weight cycling is the repeated loss and regain of body weight. Some research links weight cycling with certain health risks.

### 9 Expanded NIH Health Information Web Site

The expanded site now offers links to a wider range of NIH's valuable resources, features colorful images to highlight an intriguing range of useful features, and gives readers the chance to test their health knowledge.

### 10 Research Capsules:

- *Imagination Can Help You Remember Your Medicine*
- *Preventing Infections in the Home*
- *Images of the Maturing Brain*

### 12 New and Notable

## Palliative Care

### Improving Quality of Life on the Way to Death

It was the summer of her fourteenth year and an impressionable one at that. Her beloved grandfather was dying of bladder cancer. Distressed at the ineffectual way her family dealt with his illness and subsequent death, the young teen painfully learned how the effects of an incurable disease can bounce back and forth among family members and the patient. Dr. Ann Berger learned lessons that summer that propelled her through her subsequent training as a nurse, through medical school, and into her current position as the head of the pain and palliative care section at NIH's Warren Grant Magnuson Clinical Center.

Dr. Berger has a unique rapport with her patients, a sentiment reflected in her office, which displays a variety of floppy straw hats and a tea cart loaded with cups and saucers. The hats and tea cart are used when the patient or family members need their spirits lifted. Inspired by her colleague, Dr. Joann Lynn, a geriatrician, Dr. Berger steadfastly believes, "the end of life is really about living with a disease that is going to kill you—about 'good' living on the way to death."

A recent study conducted at the University of Pittsburgh shows that people are beginning to value a good death as much as they do a long life. "People care a great deal about the quality of the death experience," the study concluded. "On average, interviewees would have been willing to trade seven months of healthy life to ensure a better quality of care in the final month of life."

### The Need for Palliative Care

Palliative care aims to improve the quality of life for patients near the end of their lives. It involves not only medications to relieve pain, but also a team approach to provide comfort and support that involves family, friends and health care providers.

Dr. Berger and other advocates say that palliative care needs to expand beyond its traditional focus on terminally ill cancer patients. Those with a wide range

Continued on page 2



Visit us online at  
<http://www.nih.gov/news/WordonHealth/>



**Continued from page 1**

of debilitating or life-threatening chronic illnesses such as diabetes, emphysema, multiple sclerosis and cardiovascular disease can also benefit from palliative care. For example, people with advanced heart disease can experience such severe shortness of breath they cannot walk to their next-door neighbor's house. They may become as severely depressed as a terminally ill patient, and thus may require this type of individualized treatment.

"Palliative care begins," Dr. Berger says, "at diagnosis, and should be administered throughout the course of the disease." Results of an epidemiological study led by Dr. June Lunney of NIH's National Institute of Nursing Research (NINR) echoes Dr. Berger's beliefs. "Because of the different ways people die, palliative care should start earlier for those who need it, and should involve health and social services that are adjusted to fit the anticipated pattern of death," Dr. Lunney reported.

NINR and another NIH component, the National

Institute on Aging (NIA), examined four "major pathways to death." The pathways range from people who died suddenly to those lingering, expected deaths associated with frailty in old age. The study concluded that palliative care should have a more extensive and far-reaching focus. Further, because of the different ways that people die, it should be flexible enough to accommodate those who need it earlier and adjusted to fit the anticipated patterns of decline.

Palliative care for Alzheimer's patients, for example, can help both those with advanced Alzheimer's disease and their families. This disease is marked by a progressive irreversible loss of mental ability, personality changes, and subsequent physical decline. If there is any merciful point in the progression of this disease, it is when the patient begins to forget what he or she has forgotten, and no longer has insight into his or her behavior. As the patient journeys through the various stages of illness, family members also experience a series of losses. While some families are able to tackle the issues that arise from terminal disease, others

**Continued on page 3**

**The Word on NIH**

The National Institutes of Health (NIH) is one of the world's premier biomedical research organizations. A government agency within the U.S. Department of Health and Human Services, NIH is composed of 27 Institutes and Centers, each with its own research focus.

NIH supports and conducts medical research to understand how the human body works and to gain insight into diseases and disorders. NIH translates research results into medical interventions and distributes current medical information to patients, health care providers and the general public.

NIH provides leadership and financial support to researchers in every state and throughout the world, investing billions of dollars in scientific research each year. About 10% of NIH's budget supports over 2,000 research projects in its own laboratories. Most of its budget, however, is awarded through almost 50,000 competitive grants and contracts to researchers at over 2,800 hospitals, universities, medical schools, and other research institutions.

NIH's own scientists, and scientists working with support from NIH grants and contracts, have made countless medical advances in the last century. More than 100 of these scientists have received Nobel Prizes in recognition of their achievements.

**The NIH  
Word on Health**

National Institutes of Health  
Office of Communications  
& Public Liaison  
Building 31, Room 5B38  
Bethesda, MD 20892

EDITOR

**Harrison Wein**

weinh@od.nih.gov  
Phone: 301-435-7489

To receive an email alert when new issues are posted, send an email to [LISTSERV@LIST.NIH.GOV](mailto:LISTSERV@LIST.NIH.GOV) with the words "SUBSCRIBE NIHWORDONHEALTH-L" in the message body.

You do not need permission from the National Institutes of Health to use material from *The NIH Word on Health* in your publication. It is not copyrighted.

However, if you use anything, please fax clips to 301-496-0019 or send them to the above address.

Electronic versions of stories and graphics are available from the Editor, Harrison Wein.

**NIH's Institutes and Centers**

- National Cancer Institute
- National Eye Institute
- National Heart, Lung, and Blood Institute
- National Human Genome Research Institute
- National Institute on Aging
- National Institute on Alcohol Abuse and Alcoholism
- National Institute of Allergy and Infectious Diseases
- National Institute of Arthritis and Musculoskeletal and Skin Diseases
- National Institute of Biomedical Imaging and Bioengineering
- National Institute of Child Health and Human Development
- National Institute on Deafness and Other Communication Disorders
- National Institute of Dental and Craniofacial Research
- National Institute of Diabetes and Digestive and Kidney Diseases
- National Institute on Drug Abuse
- National Institute of Environmental Health Sciences
- National Institute of General Medical Sciences
- National Institute of Mental Health
- National Institute of Neurological Disorders and Stroke
- National Institute of Nursing Research
- National Library of Medicine
- National Center for Complementary and Alternative Medicine
- National Center on Minority Health and Health Disparities
- National Center for Research Resources
- Center for Information Technology
- Center for Scientific Review
- John E. Fogarty International Center
- Warren G. Magnuson Clinical Center

Continued from previous page

cannot even think about what will happen to their loved one.

## The Future of Care

NIH, primarily through NINR, is currently supporting a broad portfolio of research into improving palliative care. For example, researchers are developing and testing models of palliative care to clarify when it should begin and how it should be structured. Other studies are looking at management of both the physical and psychological aspects of symptoms at the end of life. Researchers are trying to understand the importance and use of spirituality and other psychological influences to enhance quality of life at the end of life. Yet another research focus is to gain a better understanding of family support and the bereavement process.

At NIH's own medical center, while the doctor and patient are intensely immersed in curative medicine, they also recognize and respect the need for palliative care and acknowledge that although the physician's goal is curing disease, they must relieve and comfort always. ♦

—*Marcia Doniger*

## Hospice Programs

Hospice care helps terminally ill patients and their families get through the hard times. Hospice care focuses on caring, not curing, and stresses quality of life: peace, comfort, and dignity. Patients' families are an important focus of hospice care, and these programs are designed to provide them with the assistance and support they need as well. You can find hospice programs in freestanding hospice centers, hospitals, nursing homes and other long-term care facilities.

For information about hospice care from NIH's National Cancer Institute, visit [http://cis.nci.nih.gov/fact/8\\_6.htm](http://cis.nci.nih.gov/fact/8_6.htm) or call the Cancer Information Service:

Toll-free: 1-800-4-CANCER (1-800-422-6237)

TTY (for deaf and hard of hearing callers): 1-800-332-8615

For links to more information about hospice care from both NIH and outside organizations, visit the Hospice Care web page from the National Library of Medicine's MedLinePlus at <http://www.nlm.nih.gov/medlineplus/hospicecare.html>.

A Word to the Wise...

## Advanced Medical Directives

It's hard to face losing a loved one, especially during the long, steady decline of a disease like Alzheimer's. But, says Dr. Judith Salerno, deputy director of NIA, "If we start planning for illness before it occurs, we will take some stigma away from how we choose to live with the disease."

Many people complete an advance medical directive to state their wishes for end-of-life care, in case they become unable to make these decisions themselves. With this document, an individual can designate someone to take appropriate actions and make decisions, and guide family members in the event that they must choose, for example, whether or not to withdraw life support in a hopeless situation.

Dr. Virginia Tilden, in a study funded by NIH's National Institute of Nursing Research at the Oregon Health Sciences University, found that end-of-life decisions are especially difficult and stressful for family members in the absence of guidance from the patient. Having an advance directive in place helps family members and other caregivers lower their level of stress and achieve a sense of acceptance and calm from "doing the right thing."

Patients in the early stages of Alzheimer's disease or facing a terminal illness should consider placing an advance directive in their records while they can still think and communicate clearly. However, only about 50% of Alzheimer's disease patients have an advance directive. Without one, the healthcare team must often intervene to help family members arrive at a consensus, preserve the patient's dignity and quality of life, and begin the healing for those left behind. By providing a way for patients to express their wishes, advance directives can ease the stress and anxiety surrounding the sensitive decisions of end-of-life care.

For more information on advance directives from NIH's National Cancer Institute, visit [http://cis.nci.nih.gov/fact/8\\_12.htm](http://cis.nci.nih.gov/fact/8_12.htm) or call the Cancer Information Service:

Toll-free: 1-800-4-CANCER (1-800-422-6237)

TTY (for deaf and hard of hearing callers): 1-800-332-8615

# Preventing College-Age Alcohol Abuse

Young adults going off to college can expect to be exposed to many new experiences. Unfortunately, one of them may be heavy drinking. Alcohol abuse is now a widespread problem on the nation's college campuses. In the short run, it puts students at risk for car accidents, date rape, and academic, medical, and legal problems. In the long run, it may establish a pattern of drinking that can lead to alcoholism and serious health problems.

Studies show that four out of five college students drink alcohol. Two out of five report binge drinking (defined as five or more drinks for men and four or more for women in one sitting). One in five students reports three or more binge episodes in the prior two weeks.

"For many students drinking is seen as a rite of passage, as part of having fun, of lowering social inhibitions," says Dr. Vivian Faden, acting associate director of the Division of Epidemiology and Prevention

Research at NIH's National Institute on Alcohol Abuse and Alcoholism (NIAAA). "Other kids may self-medicate with alcohol to reduce stress or cope with depression."

Whether a student drinks heavily depends on a host of factors, including a family

history of alcohol abuse, the student's experience with drinking in high school, and psychological problems such as depression and anxiety.

## Problems with College Drinking

"People are not aware of the size of the problems that occur with college drinking," says Dr. Mark Goldman, associate director of NIAAA. "They hear about an unfortunate accident, but they think of it as something that happens rarely. The point is, it doesn't happen rarely."

An extensive three-year investigation by the Task Force on College Drinking, commissioned by the NIAAA, produced the 2002 landmark report *A Call to Action: Changing the Culture of Drinking at U.S. Colleges*. The report estimated that 1,400 college students between the ages of 18 and 24 die each year from alcohol use, either because of drinking and driving

or from the toxic effects of alcohol itself. Over 70,000 students are the victims of alcohol-related sexual assault or date rape. Another 500,000 are unintentionally injured in alcohol-related incidents, and 600,000 are assaulted by another student who has been drinking.

"If one puts these numbers together and keeps in mind that there are roughly eight million college students in the United States at any one time," says Dr. Goldman, "this means that a large percentage of students is suffering the ill effects of college-age drinking."

There are still more consequences to college student alcohol abuse. Students who binge drink are more likely to have unprotected sex, and 100,000 reported having been too intoxicated to know if they even consented to sex. Not surprisingly, drinking also affects academics, contributing to students missing classes, doing poorly on exams and papers, and receiving low grades.

Continued on page 5

## How Do You Know if You Drink Too Much?

If you are drinking too much alcohol, you can improve your life and health by cutting down. But how do you know if you drink too much? Read these questions and answer "yes" or "no":

- Do you drink alone when you feel angry or sad?
- Does your drinking ever make you late for work?
- Does your drinking worry your family?
- Do you ever drink after telling yourself you won't?
- Do you ever forget what you did while you were drinking?
- Do you get headaches or have a hang-over after you have been drinking?

If you answered "yes" to any of these questions, you may have a drinking problem. Check with your doctor to be sure. Your doctor will be able to tell you whether you should cut down or abstain. If you are alcoholic or have other medical problems, you should not just cut down on your drinking—you should stop drinking completely. Your doctor will advise you about what is right for you. For more information, visit <http://www.collegedrinkingprevention.gov/facts/cutdrinking.aspx>.

**"People are not aware of the size of the problems that occur with college drinking."**

Continued from previous page

Alcohol abuse among students also leads to property damage on campus and in surrounding communities. In addition, drinking affects non-drinking students, as noisy parties disrupt their study time, make it hard to sleep in dorms, and force them to deal with intoxicated students.

### Prevention on Campus

Researchers have found that the most important step in stopping alcohol abuse is changing the culture of college drinking. More and more colleges and universities are dealing with college-age drinking through prevention education and counseling services. Strategies that have proven the most effective include addressing students' alcohol-related attitudes and behaviors. This can involve challenging student beliefs about the likely effects of alcohol (that it will loosen inhibitions, for example) and their often-erroneous perception that their peers drink more than they do.

Giving students nonjudgmental advice about their drinking has also helped. NIAAA research shows that college students who get even one counseling session offering feedback on their drinking habits will reduce their alcohol consumption.

**“Researchers have found that the most important step in stopping alcohol abuse is changing the culture of college drinking.”**

### What Parents Can Do

Parents should get involved while their children are still looking at colleges, according to Dr. Faden. “When parents visit colleges, it’s important to ask questions about alcohol policies and the campus culture,” she says. Dr. Goldman adds, “I know of schools that have changed their drinking policies [due to the influence of parents], and as a result have upgraded their student body.”

Dr. Goldman advises that “parents should not accept the idea that this is a college student rite of passage, but rather that this is a serious issue and pressure needs to be put on the schools to pay attention to this.” Parents can also help by encouraging their sons and daughters to take responsibility to make healthy choices with their lives, and by staying involved in their children’s lives even when they’re away at college. Says Dr. Faden, “It’s important for parents to talk to their kids, and often.”◆

—Richard Currey

A Word to the Wise...

## Staying Involved When Your Child Goes to College

Make sure to ask about school alcohol policies when you are looking at potential colleges with your child. A list of many college alcohol policies can be found at [www.collegedrinkingprevention.gov/policies](http://www.collegedrinkingprevention.gov/policies).

Once your child begins college, pay special attention to his or her experiences and activities during the crucial first six weeks on campus. Many students initiate heavy drinking during these early days of college, and excessive alcohol consumption can interfere with their successful adaptation to campus life. About one-third of first-year students fail to enroll for their second year. Some things you can do:

- Find out if there is a program during orientation that educates students about campus policies related to alcohol use. If there is one, attend with your son or daughter, or at least be familiar with the name of the person who is responsible for campus counseling programs.
- Inquire about and make certain you understand the college’s “parental notification” policy.
- Call your son or daughter frequently during the first six weeks of college.
- Inquire about their roommates, the roommates’ behavior, and how disagreements are settled or disruptive behavior dealt with.
- Make sure that your son or daughter understands the penalties for underage drinking, public drunkenness, using a fake ID, driving under the influence, assault, and other alcohol-related offenses.
- Make certain that they understand how alcohol use can lead to date rape, violence, and academic failure.

Adapted from the NIAAA brochure *What Parents Need to Know About College Drinking*.

NIAAA’s brochure *What Parents Need to Know About College Drinking* can be found at <http://www.collegedrinkingprevention.gov/reports/Parents/default.aspx>. NIAAA’s Web site on college drinking at [www.collegedrinkingprevention.gov](http://www.collegedrinkingprevention.gov) also has a number of other resources about preventing alcohol abuse.

# Different Trials, Different Results

## How to Explain Them?

News reports about medical studies can get confusing. Have you ever thought that something was supposed to be good for your health, but then suddenly heard it was bad for you? How in the world can medical studies come to such different conclusions about the same thing?

Dr. Julie Buring, an epidemiologist at Brigham and Women's Hospital in Boston, recently gave some insight when she spoke at a cancer research symposium at the National Institutes of Health. Her keynote address explained why there are often discrepancies between the two major types of medical studies you often hear about, observational studies and randomized trials.

To understand why these two types of research studies can come up with different answers, you first need to understand what they are. In observational studies, researchers simply observe people, grouping them according to whether or not they have chosen to take a particular drug, live a particular lifestyle, or have been exposed to something of interest. The researchers then compare these groups of people to see their subsequent risk of disease.

In contrast, exposures in intervention studies are controlled by investigators, who assign people to two or more study groups and then control what treatment or exposure to something of interest each group receives.

The best-known type of intervention study is the randomized clinical trial, considered to be the gold standard of clinical research studies. (See the side box for more details.)

Dr. Buring gave some examples that have been widely reported in the news to illustrate how observational studies and randomized clinical trials can have different outcomes. One example involves the discovery of a surprising relationship between beta-carotene and heightened lung cancer risk.

"In animal laboratory studies," she explained, "beta-carotene could block the carcinogenic process and inhibit specific tumor growth." There was also, she said, a large body of evidence associating the consumption of fruits and vegetables with a lower risk of cancer. Many researchers believed that these pieces of evidence, taken together, showed that beta-carotene helped people ward off cancer.

But in randomized clinical trials, beta-carotene showed no benefit in preventing cancer and actually increased the risk of lung cancer among heavy smokers.

There are many possible explanations for this discrepancy, Dr. Buring said. People may have made an incorrect leap to one specific factor. It could have been something besides beta-carotene, or there might have been other nutrients in the diet that worked with beta-carotene to prevent cancer.

"Many people prefer taking a pill to changing their diet," Dr. Buring said. But those consuming high levels of beta-carotene in the observational studies had also been eating lots of fruits and vegetables, and were likely unique in other ways – eating more fiber, exer-

**Continued on page 7**

### A Word to the Wise...

## Different Types of Research Studies

To better understand news reports of medical findings, you need to learn about the different types of studies. Each has its own strengths and weaknesses. Which type of study researchers will use depends on many factors.

**Case Control Study**—A type of *observational study*. Researchers identify a group with a particular disease or condition, then look at another group without the condition for comparison to figure out what differences between the two groups might be causing the disease.

**Cohort Study**—Another type of *observational study*. Researchers select participants based on their exposure status (to a particular pollutant, for example) and then try to find a similar group of people who haven't been exposed. They compare the two groups to see whether the factor in question is causing any health problems.

**Intervention Study**—In intervention studies, researchers decide who gets a particular treatment or exposure to something. The best-known type of intervention study, the *randomized clinical trial*, is considered the gold standard of clinical research studies. In randomized clinical trials, people are assigned to two or more study groups by chance (randomly). One of the groups, the control group, receives a preparation such as a pill that looks just like the treatment or drug being tested, but actually does nothing (called a placebo). Comparing treatment groups to control groups is the best way to see if a treatment is really effective.

**Continued from previous page**

cising more, and perhaps differing in other habits researchers haven't even thought of.

Maybe the clinical trial simply lasted for too short a time to see an effect, Dr. Buring offered as another explanation. Or it might have been that the actual blood levels of beta-carotene in the clinical trial patients differed significantly from those in the observational studies.

As for the smokers, researchers have since been able to explain why their risk of lung cancer increased. It turns out that, when combined with changes inside the body brought about by smoking, high doses of beta-carotene actually create harmful compounds.

Dr. Buring also recounted the recent findings from the Women's Health Initiative studies on hormone replacement therapy (HRT). Many doctors had been giving their patients HRT based on their own observations, she explained, and some thought it was actually unethical to conduct a randomized trial, which would require denying the benefits of these hormones to control groups.

But it turned out that randomized clinical trials had to be stopped early because the risks of using HRT for extended periods outweighed their benefits.

There were many possible reasons for these unexpected results. One likely explanation is that women taking HRT in the observational studies may have been living healthier lifestyles and seeing their doctors more often.

This explanation highlights an inherent limitation in observational studies, Dr. Buring said: "People who select one way to live also select others." Unforeseen or "confounding factors" in an observational study can lead to a clinical trial that returns unexpected results.

### Asking Different Questions

Many people get frustrated with these discrepancies, Dr. Buring acknowledged, particularly when the media hypes contradictory conclusions. But she argued that these discrepancies aren't necessarily a sign of bad studies. "Discrepancies may mean the system is working," she said. "This is exactly why we do trials. Apparent discrepancies are not necessarily contradictory or wrong; they may be looking at different questions."

So why do observational studies at all, if randomized clinical trials are the best way to answer a question? "Sometimes, an observational study is the only feasible or ethical approach," Dr. Buring explained. For instance, researchers cannot ethically expose people to a suspected carcinogen to find out whether or not they develop cancer.

Dr. Buring concluded that "Neither a reliance on randomized clinical trials nor observational studies is appropriate." Both are needed to answer a medical question.

So if you find yourself wondering how seriously to take the latest research report, ask yourself what kind of study it was. Is this really the final word on the topic, or do researchers need to explore the topic further? Those "contradictory" research results, once you put them in perspective, may suddenly not be as baffling as they seemed. ♦

—Harrison Wein, Ph.D.

For more information on understanding news reports on medical risks, see *Understanding Risk* from the April 2004 issue of *The NIH Word on Health* at <http://www.nih.gov/news/WordonHealth/apr2004/risk.htm>.

You can also view or order a free copy of the National Institute on Aging publication *Understanding Risk: What Do Those Headlines Really Mean?* at <http://www.niapublications.org/engagepages/risk.asp>. Or, call 1-800-222-2225 (TTY: 1-800-222-4225).

## Facts About Weight Cycling

Weight cycling is the repeated loss and regain of body weight. When weight cycling is the result of dieting, it is often called "yo-yo" dieting. A weight cycle can range from small weight losses and gains—five to ten pounds per cycle—to large changes of 50 pounds or more per cycle.

Some research links weight cycling with certain health risks. To avoid potential risks, most experts recommend that obese adults adopt healthy eating and regular physical activity habits to achieve and maintain a healthier weight for life. Non-obese adults should try to maintain their weight through healthy eating and regular physical activity.

Here are some common questions and answers about weight cycling from NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK):

### **If I regain lost weight, won't losing it again be even harder?**

A person who repeatedly loses and gains weight should not have more trouble trying to reach and maintain a healthy weight than a person attempting to lose weight for the first time. Most studies show that weight cycling does not affect your metabolic rate—the rate at which your body burns fuel (food) for energy. Based on these findings, weight cycling should not affect the success of future weight-loss efforts. Metabolism does, however, slow down as a person ages. In addition,

**Continued on page 8**

**Continued from previous page**

older people are often less physically active than when they were younger. Regardless of your age, making regular physical activity and healthy eating habits a part of your life will aid weight loss and improve health overall.

**Will weight cycling leave me with more fat and less muscle than if I had not dieted at all?**

Weight cycling has not been proven to increase the amount of fat tissue in people who lose and regain weight. Researchers have found that after a weight cycle, those who return to their original weights have the same amount of fat and lean tissue (muscle) as they did prior to weight cycling.

Some people are concerned that weight cycling can put more fat around their abdominal (stomach) area. People who tend to carry excess fat in the stomach area (apple-shaped), instead of in the hips, thighs, and buttocks (pear-shaped), are more likely to develop type 2 diabetes, heart disease, and high blood pressure. Studies have not found, however, that after a weight cycle, people have more fat around their stomachs than they did before weight cycling.

**Is weight cycling harmful to my health?**

Some studies suggest that weight cycling may increase the risk for certain health problems. These include high blood pressure, high cholesterol, and gallbladder disease. For adults who are not obese and do not have weight-related health problems, experts recommend maintaining a stable weight to avoid any potential health risks associated with weight cycling. Obese adults, however, should continue to try to achieve modest weight loss to improve overall health and reduce the risk of developing obesity-related diseases.

Losing and regaining weight may have a negative psychological effect if you let yourself become discouraged or depressed. Weight cycling should not be a reason to “feel like a failure.” Instead it is a reason to refocus on making long-term changes in your diet and level of physical activity to help you keep off the pounds you lose.

**Is staying overweight healthier than weight cycling?**

It is not known for certain whether weight cycling causes health problems. The diseases associated with being obese, however, are well known. These include:

- High blood pressure
- Heart disease
- Stroke
- Type 2 diabetes
- Certain types of cancer
- Arthritis
- Gallbladder disease

Not every adult who is overweight or obese has the

same risk for disease. Whether you are a man or woman, the amount and location of your fat, and your family history of disease all play a role in determining your disease risk. Experts agree, however, that even a modest weight loss of 10 percent of body weight over a period of six months or more can improve the health of an adult who is overweight or obese.

**Conclusions**

Further research on the effects of weight cycling is needed. In the meantime, if you are obese or are overweight and suffer from weight-related health problems, try to improve your health by achieving a modest weight loss. Although weight cycling may have some effect on disease risk, the serious health problems resulting from obesity are clear. If you need to lose weight, you should be ready to commit to lifelong changes in your eating and physical activity behaviors. If you are not obese or overweight with weight-related health problems, maintain your weight. Focus on adopting healthful eating habits and enjoying regular physical activity to manage weight and promote health for life. ♦

NIDDK's Weight-control Information Network (WIN) provides up-to-date, science-based health information on weight control, obesity, physical activity, and related nutritional issues. For more information, visit [www.niddk.nih.gov/health/nutrit/nutrit.htm](http://www.niddk.nih.gov/health/nutrit/nutrit.htm) or contact:

Weight-control Information Network  
1 WIN WAY  
Bethesda, MD 20892-3665  
Phone: 202-828-1025  
Toll-free: 1-877-946-4627  
FAX: 202-828-1028  
Email: [win@info.niddk.nih.gov](mailto:win@info.niddk.nih.gov)

NIH's National Heart, Lung, and Blood Institute (NHLBI) also has weight control resources, including a guide to controlling your weight and an online Body Mass Index (BMI) calculator to help you estimate your body fat level, at [http://www.nhlbi.nih.gov/health/public/heart/obesity/lose\\_wt/index.htm](http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/index.htm), or contact:

NHLBI Health Information Center  
P.O. Box 30105  
Bethesda, MD 20824-0105  
Phone: 301-592-8573  
TTY: 240-629-3255  
Fax: 301-592-8563  
Email: [nhlbiinfo@nhlbi.nih.gov](mailto:nhlbiinfo@nhlbi.nih.gov) (Please include a valid return e-mail address in the body of the message.)

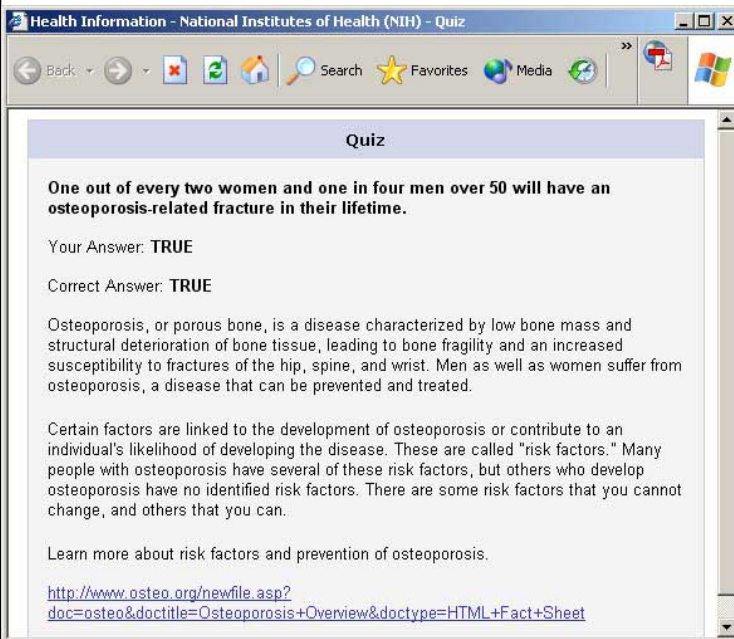


# NIH Launches Expanded Health Information Web Site

The National Institutes of Health is pleased to announce the launch of an expanded health information Web site, available at: <http://health.nih.gov/>. The site now offers links to a wider range of NIH's valuable resources, features colorful images to highlight an intriguing range of useful features, and gives readers the chance to test their health knowledge. Visitors can still access the popular *A to Z* listing of health topics, browse topics by body location/systems, or use the main *Search* box. Favorite health databases, such as Clinical Trials, MEDLINEplus, and PubMed, remain one click away.

"NIH is the nation's medical research agency, and has long been considered a highly trusted source of health information," said Dennis Rodrigues, NIH web site manager. "As more than half of American adults use the Web to access health information, we are pleased to be able to expand our services and provide 'one-stop shopping' for valuable information from across the more than two dozen institutes and centers that comprise NIH."

The Web site includes three colorful new feature sections. *Healthy Lifestyles* highlights links to popular topics such as seasonal health concerns, nutrition and weight loss. *Research In Action* links users to cutting-edge scientific information on topics such as stem cells and genetics, and provides readers with an opportunity to meet scientists ranging from high school students to Nobel laureates. *Now Online* emphasizes interactive features and Web exhibits such as the Portion Distortion quiz, the Household Products Database, and the Milk Matters campaign. The new "Take a Quiz" box challenges viewers to



test their knowledge with a series of continually rotating true/false questions on hot topics such as diabetes, osteoporosis, cancer prevention, and heart disease.

The newly expanded NIH health information Web site has information geared for the whole family, including kids, teens, parents, and seniors. Educators, clinicians, and researchers will continue to find the site a valuable resource of tools and guidelines. ♦



# Research Capsules

## Imagine Taking Your Medicine

A healthy dose of “imagination” helps older people remember to take medications and follow other medical advice, according to a new study supported by NIH’s National Institute on Aging (NIA). Dr. Linda Liu of the University of Michigan and Dr. Denise Park of the University of Illinois at Urbana-Champaign found that older adults who spent a few minutes picturing how they would test their blood sugar were 50 percent more likely to actually do these tests on a regular basis than those who used other memory techniques.

“The best medical care in the world isn’t much good if a patient can’t or won’t follow through,” says Dr. Jeffrey Elias of the NIA’s Behavioral and Social Research Program. “Creative approaches such as this one need to be explored further if we are to solve difficult medication adherence problems. The genius of this method is that it requires less conscious effort than other memory methods. So, it can be easily learned and applied.”

For the study, Dr. Liu and Dr. Park taught 31 non-diabetic volunteers to do home blood glucose tests. The researchers chose people who didn’t have diabetes in order to simulate the learning conditions faced by someone who is newly diagnosed with a disease. In addition, because the blood glucose monitors recorded time- and date-stamps each time a test was conducted, it allowed the researchers to collect very accurate data. The participants, ages 60 to 81, were randomly assigned to one of three groups and told to monitor their blood sugar levels four specific times daily. They were not allowed to use timers, alarms or other devices.

Those in the “imagination” intervention group spent one three-minute session visualizing exactly what they would be doing and where they would be the next day when they were scheduled to test their blood sugar levels. Those in the “rehearsal” group repeatedly recited aloud the instructions for testing their blood. Finally, those in the “deliberation” group were asked to write a list of pros and cons for testing blood sugar.

Over the next three weeks, participants in the “imagination” group remembered to test their blood sugar at the right times of the day 76 percent of the time, compared to an average of 46 percent in the other two groups. They were also far less likely to go an entire day without testing than those in the other two groups. Although the effects observed in this study were large, NIA scientists note, further studies will be needed to confirm the findings.

“Getting older people to remember to take their medications and conduct self-monitoring tests is a huge issue,” Dr. Park says. “Although many strategies have

been tried, none appears to be as potent or as simple as using one’s own imagination. This study shows it’s a powerful and incredibly inexpensive technique with potentially lasting effects.”

Using this technique, you might, for example, imagine taking your pills right after you drink your morning glass of orange juice. The next day at breakfast, taking a sip of orange juice will “automatically” cue you to take your medication.

“It’s not an explicit thought,” Dr. Park explains. “It’s not as if you think, ‘Ah, ha! I remember to take my pills now.’ It’s more that the orange juice provides an unconscious prompt to, ‘Take your meds, take your meds.’” ♦

—Doug Dollemore

Source: *Psychology and Aging* 19,2:318–325

For information and advice about following a medication regimen, see *The NIH Word on Health* story *Taking Your Medicine* at <http://www.nih.gov/news/WordonHealth/apr2001/story01.htm>.

## Preventing Infections in the Home

Doing laundry using hot water and bleach may prevent infections in the home, while drinking only bottled water may promote infections, according to research funded by NIH’s National Institute of Nursing Research (NINR) that looked at ways to predict infectious disease symptoms in inner city households.

Dr. Elaine Larson, associate dean for research at the School of Nursing at Columbia University, who led the study, said, “What is important is to identify which choices and habits actually help prevent disease, and which may either make no difference or actually promote disease.”

The investigators closely monitored 238 households with almost 1,200 members in an inner city community in northern Manhattan composed mostly of Hispanics living primarily in large apartment buildings. The research team consisted of three bilingual physicians and a trained community worker. Each household received a weekly phone call, a monthly visit, and extensive home interviews every quarter during the 48-week study. A Home Hygiene Assessment Form designed by the team included questions about food preparation, sharing towels and toothbrushes and beliefs about germs. Also covered were questions about the incidence and type of infections experienced by household members. Responses ranged from fever and skin boils to diarrhea, vomiting and sore throats.

Using hot water for white laundry was found to reduce disease risk by about 30 percent. Bleach was also protective; those who reported using bleach at the beginning of the study had about one-fourth the infection rate of those who did not. Previous studies

Continued on page 11

**Continued from previous page**

have shown that washing machines can be contaminated after use and transfer microbes to subsequent loads of laundry. Most washing machines are set at temperatures between 78-140 degrees Fahrenheit. This study found that a setting between 178-194 degrees Fahrenheit helps reduce the risk of infections (temperatures that high may not be appropriate for some clothing, however).

The researchers also found that drinking only bottled water was associated with a two-fold risk of infection. They noted that further studies need to look at whether the water was contaminated or whether the cause was more than one person drinking from the same bottle. The results of a body of studies of bottled water by other investigators — there are more than 600 brands — have been contradictory.

Interestingly, the research team found no difference in disease risk between products with and without antimicrobial ingredients, so antimicrobial products may have no protective effect.

Dr. Patricia A. Grady, director of NINR, commented, “We need to know more about our routine household hygiene and cleaning assumptions in order to be accurate in preventing infections. This is a key area for further research.”◆

—Lanny Newman

Source: *Nursing Research* 53, 3

For more information, read *You Can Prevent Catching or Passing on Germs* from NIH’s National Institute of Allergy and Infectious Diseases (NIAID) at <http://www.niaid.nih.gov/publications/microbes.htm#g>. This is part of the comprehensive booklet *MICROBES in Sickness and in Health*, which is online at <http://www.niaid.nih.gov/publications/microbes.htm>. You can also call 301-496-5717, or write to: NIAID Office of Communications & Public Liaison  
6610 Rockledge Drive, MSC 6612  
Bethesda, MD 20892-6612

## Images of the Maturing Brain

The brain’s center of reasoning and problem-solving is among the last to mature, a new study graphically reveals. A decade-long magnetic resonance imaging (MRI) study of normal brain development in people from ages four to 21 shows that the “higher-order” brain centers don’t fully develop until young adulthood.

Researchers long believed that a spurt of overproduction of gray matter — the working tissue of the brain’s cortex — during the first 18 months of life was followed by a steady decline as unused brain circuitry was discarded. Then, in the late 1990s, NIMH’s Dr. Jay Giedd, a co-author of the current study, and his colleagues discovered a second wave of overproduction of gray matter just prior to puberty, followed by a

second bout of “use-it-or-lose-it” pruning during the teen years.

In the new study, researchers at NIH’s National Institute of Mental Health (NIMH) and the University of California Los Angeles (UCLA) scanned 13 healthy children and teens every two years for 10 years. After lining the scans up with each other using an intricate set of brain anatomical landmarks, they visualized the ebb and flow of gray matter in maps that, together, form a 3-D time-lapse movie that compresses 15 years of human brain maturation into seconds.

The new movie shows gray matter diminishing in a back-to-front wave, likely reflecting the pruning of connections between brain cells that have remained unused during the teen years. The first areas of the brain to mature are those with the most basic functions, such as processing the senses and movement. Areas involved in spatial orientation and language follow. Areas with more advanced functions — integrating information from the senses, reasoning and other “executive” functions — mature last. This sequence of maturation also roughly parallels the evolution of the mammalian brain, the researchers suggest.

Dr. Judith Rapoport, one of the NIMH researchers, said, “To interpret brain changes we were seeing in neurodevelopmental disorders like schizophrenia, we needed a better picture of how the brain normally develops.”

In a study published a few years ago, Rapoport and her colleagues discovered an exaggerated wave of gray matter loss in teens with early onset schizophrenia. These teens, who became psychotic prior to puberty, lost four times the normal amount of gray matter in their frontal lobes, suggesting that childhood onset schizophrenia may be an exaggeration of a normal process. By contrast, children with autism show an abnormal back-to-front wave of gray matter increases, rather than decreases, suggesting that autism may also involve an abnormal brain “pruning” process.◆

—Jules Asher

Source: *PNAS* 101,21:8174–8179

To see the time-lapse imaging movie, go to <http://www.nimh.nih.gov/press/prbrainmaturing.mpeg>.

For more information about the development of the teen brain, see <http://www.nimh.nih.gov/publicat/teenbrain.cfm> or contact:

National Institute of Mental Health (NIMH)  
Office of Communications  
6001 Executive Boulevard, Room 8184, MSC 9663  
Bethesda, MD 20892-9663  
301-443-4513 (local); 1-866-615-6464 (toll-free)  
301-443-8431 (TTY)  
Email: [nimhinfo@nih.gov](mailto:nimhinfo@nih.gov)

## New and Notable

The following new or revised NIH publications are available free to the public:

***Am I at Risk for Type 2 Diabetes? Taking Steps to Lower the Risk of Getting Diabetes.*** National Diabetes Information Clearinghouse, National Institute of Diabetes, Digestive, and Kidney Diseases, NIH Publication 04-4805, April 2004. View online at: <http://diabetes.niddk.nih.gov/dm/pubs/riskfortype2/index.htm>. Call 1-800-860-8747 or email [ndic@info.niddk.nih.gov](mailto:ndic@info.niddk.nih.gov).

***Arteriovenous Malformations and Other Vascular Lesions of the Central Nervous System.*** National Institute of Neurological Disorders and Stroke, NIH Publication 04-4854, April 2004. View online at: [http://www.ninds.nih.gov/health\\_and\\_medical/pubs/arteriovenous.htm](http://www.ninds.nih.gov/health_and_medical/pubs/arteriovenous.htm). Call 1-800-352-9424 or email [ninds@iqsolutions.com](mailto:ninds@iqsolutions.com).

***Cancer and the Environment—What You Need to Know, What You Can Do.*** National Cancer Institute/National Institute of Environmental Health Sciences, NIH Publication 03-2039, Sept. 2003. View online at: <http://www.cancer.gov/images/Documents/5d17e03e-b39f-4b40-a214-e9e9099c4220/Cancer%20and%20the%20Environment.pdf>. Call 1-800-422-6237 or email [cis@icic.nci.nih.gov](mailto:cis@icic.nci.nih.gov).

***Curiosity Creates Cures—The Value and Impact of Basic Research.*** National Institute of General Medical Sciences, NIH Publication 04-5493, Feb. 2004. View online at: [http://www.nigms.nih.gov/news/science\\_ed/curiosity.pdf](http://www.nigms.nih.gov/news/science_ed/curiosity.pdf). Call 301-496-7301.

***Dysphagia*** (fact sheet). National Institute on Deafness and Other Communication Disorders, NIH Publication 04-4307, Feb. 2004. View online at: <http://www.nidcd.nih.gov/health/voice/dysph.asp>. Call: 1-800-241-1044 or email [nidcdinfo@nidcd.nih.gov](mailto:nidcdinfo@nidcd.nih.gov).

***Lo Que Usted Necesita Saber Sobre El Cancer de Seno (What You Need to Know About Breast Cancer).*** National Cancer Institute, NIH Publication 04-1556S, January 2004. Call 1-800-422-6237 or email [cis@icic.nci.nih.gov](mailto:cis@icic.nci.nih.gov).

***Neurological Disorders—Voluntary Health Agencies and Other Patient Resources.*** National Institute of Neurological Disorders and Stroke, NIH Publication 04-3825, April 2004. Call 1-800-352-9424 or email [ninds@iqsolutions.com](mailto:ninds@iqsolutions.com).

***Noise-Induced Hearing Loss*** (fact sheet). National Institute on Deafness and Other Communication Disorder, NIH Publication 04-4233, Feb. 2004. View online at: <http://www.nidcd.nih.gov/health/hearing/noise.asp>. Call 1-800-241-1044 or email [nidcdinfo@nidcd.nih.gov](mailto:nidcdinfo@nidcd.nih.gov).

***Peripheral Neuropathy.*** National Institute of Neurological Disorders and Stroke, NIH Publication 04-4853, March 2004. Call 1-800-352-9424 or email [ninds@iqsolutions.com](mailto:ninds@iqsolutions.com).

***Stuttering.*** National Institute on Deafness and Other Communication Disorders, NIH Publication 04-4232, March 2004. View online at: <http://www.nidcd.nih.gov/health/voice/stutter.asp>. Call 1-800-241-1044 or email [ninds@iqsolutions.com](mailto:ninds@iqsolutions.com).

***What I Need to Know About Gestational Diabetes.*** National Institute of Diabetes, Digestive, and Kidney Diseases, NIH Publication 04-5129. View online at: <http://diabetes.niddk.nih.gov/dm/pubs/gestational.index.htm>. Call 1-800-860-8747 or email [ndic@info.niddk.nih.gov](mailto:ndic@info.niddk.nih.gov).


—Compiled by Jan Ehrman

### The NIH Word on Health

National Institutes of Health  
Office of Communications  
& Public Liaison  
Building 31, Room 5B38  
Bethesda, MD 20892

Visit us online at:

[www.nih.gov/news/WordonHealth](http://www.nih.gov/news/WordonHealth)

 Receive an email alert when new issues of *The NIH Word on Health* are posted online.

Just send an email to [LISTSERV@LIST.NIH.GOV](mailto:LISTSERV@LIST.NIH.GOV) with "SUBSCRIBE NIHWORDONHEALTH-L" in the message body.