



Harvard Women's Health Watch

VOLUME 15 • NUMBER 3 | NOVEMBER 2007

Keeping portions in proportion

Increased portion sizes have paralleled the rise in overweight and obesity in the United States. It's time to get a fix on how much we're serving ourselves.

Most of us worry about our weight, and personal appearance is not the only reason for concern. Excess body fat has profound metabolic consequences, putting us at risk for heart disease, diabetes, stroke, cancer, and possibly depression. Nonetheless, the prevalence of obesity—a body mass index (BMI) of 30 or more—continues to rise in this country. Today, 33% of American adults are obese, compared with 15% in the late 1970s. More than 60% of women are overweight or obese.

A number of individual variables—genetic, biological, and psychological—influence susceptibility to obesity. But they don't fully account for America's expanding waistline. Our genes haven't changed in the past two or three decades. And although most of us get less exercise than we need, it's unclear whether we're much more sedentary than our parents were. What *has* changed is how we eat...and how much we eat.

The bottom line is that we gain weight when we take in more calories than we expend. And Americans have been eating more and more. The average person consumed 300 more calories per day in 2000 than in 1985. Without a commensurate increase in physical activity, that means an added two to three pounds per month.

But why are we eating so many more calories? Experts blame increased availability of food, more eating outside the home, greater reliance on high-calorie prepackaged and fast foods, and especially larger portions. Other aspects of modern life—for example, the tendency to drive cars instead of walking and to replace active leisure pursuits with sedentary ones like television, DVD viewing, and time on the computer—prevent us from burning off these excess calories. In this “obesogenic” environment, portion control is an important strategy, along with adequate exercise, in the fight against overweight and obesity.

The Diet Plate and Diet Bowl

Invented by a frustrated dieter, the calibrated Diet Plate and Diet Bowl are designed to limit portion sizes and calorie intake while providing balanced nutrition. In a randomized trial, obese dieters who used the special tableware had better luck losing weight than those given usual care. (For more information, visit www.thedietplate.com or call 800-665-7652.)



Photo courtesy of Manrex, Ltd.

Eating out, eating more

Proportionally, Americans today are spending almost twice as much on eating out as they did in the 1970s. In 1970, 27% of our total food budget was spent on meals taken outside the home; by 2006, that proportion had risen to 46%. Fast-food sales soared in the 1980s and 1990s, briefly overtaking full-service restaurant sales 10 years ago. To compete, grocery stores have expanded their convenience food sections.

Meanwhile, portion sizes in restaurant meals, take-out foods, and snacks have increased, sometimes by more than 100%. For example, a typical movie-theatre soda, once about 7 ounces, can now be “supersized” to 32 or 42 ounces. A typical bagel, once 2 to 3 ounces, now weighs 4 to 7 ounces and may

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

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

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

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 (ISSN 1070-910X) Proceeds support the research efforts
 of Harvard Medical School.

Harvard Health Publications
 10 Shattuck St., 2nd Floor, Boston, MA 02115

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Portion control *continued*

contain the caloric equivalent of five or six slices of bread. Portion sizes of prepackaged and convenience foods have also expanded. (You can compare today's portions with those of 20 years ago at the National Heart, Lung, and Blood Institute's "Portion Distortion" Web site, <http://hp2010.nhlbi.nih.gov/portion>.) And practically everywhere we go—whether we're shopping, traveling, attending a sports event, or seeing a movie—high-calorie foods (especially chips, baked goods, and soft drinks) are far more available than healthier, lower-calorie fare like salads and whole fruits.

Portions and food intake

Each of us is responsible for how much we eat, but research suggests that cultural and social norms can make it hard to choose appropriate portion sizes. Also, it's easy to confuse a portion with a serving as indicated, for example, on a package. A serving is a specific quantity of food designated on the basis of nutritional need. A portion—the amount you actually get on your plate, in the package, or at the counter—is often much bigger.

In recent years, researchers have looked into how portions affect calorie intake. Here is some of what they've learned:

We tend to treat a portion of food as equivalent to a nutritional serving, taking cues from our surroundings in judging the appropriate size. In one study, University of Pennsylvania scientists left a large bowl of M&Ms at the front desk of an apartment building for 10 days with a sign encouraging people to help themselves, using the scoop supplied. On some days, the scoop held one-quarter cup, on others, 1 tablespoon. Passersby consistently took just one scoop, even though they were taking twice as much on some days as they did on others. This suggests we might be satisfied with smaller portions if only bigger ones weren't so easily available.

We've changed our view of which portion sizes are normal. In 2004, replicating a study first conducted in 1984, Rutgers Uni-

versity researchers asked college students to serve themselves typical portions of breakfast, lunch, and dinner foods from a buffet table. The students chose amounts that were not only bigger than the serving sizes on current nutritional labeling but also as much as 30% to 40% larger than those selected 20 years earlier.

Portion size can affect the amount we eat. In a Cornell University experiment, moviegoers who were served popcorn in containers holding a little over 8 cups ate 45% more than those served in containers holding half that amount. Even when the popcorn was two weeks old and recognizably stale, those using the large containers consumed 34% more. In a different study, Pennsylvania State University researchers ma-

nipulated the portions of baked ziti served as a main course at a restaurant. They used the regular portion on some days and one that was 50% larger on others. The price of the meal remained the same. Diners who were served the larger portion ate 43% more baked-ziti calories, as well as more of the accompaniments (a roll and butter and a stuffed tomato), yet surveys showed that all the customers thought their portions were equally appropriate.

Standard servings are generally much smaller than those dished out in restaurants or even at home. For example, according to the Food Guide Pyramid, a serving of pasta or rice is one-half cup—which doesn't look like much on a plate that can hold four to six servings. The Nutrition Facts label on packaged foods lists the number of servings in the container and the calories per serving. But we don't always read labels and may end up eating two or three servings' worth without being aware of it.

What to do

Whether you eat out, prepare your own meals, or catch food on the run, portion control is essential to limiting your calorie intake. Here are some tips for keeping portions in proportion:

Selected resources

MyPyramid.gov
 United States Department
 of Agriculture
 888-779-7264 (toll free)
www.mypyramid.gov

Nutrition Topics
 Centers for Disease Control
 and Prevention
 800-311-3435 (toll free)
www.cdc.gov/nccdphp/dnpa/nutrition

The Portion Teller: Smartsize Your Way to Permanent Weight Loss, by Lisa Young,
 Morgan Road Books, 2005.

Train your eye. Measure out servings of the foods you commonly eat so you know what a single serving looks like. (For some examples, see the chart on this page.) Developing an eye for serving sizes can be particularly helpful when dining out or attending social events, where portions may be too large or the food unlimited.

Change your tableware. Use a smaller bowl or a mug for cereal and a smaller plate at dinner; the amount of food will look more plentiful. Instead of using a fork, try chopsticks. They can make you eat more slowly, so that your stomach has a chance to register satiety and signal the brain that it's full.

Recently, researchers at the University of Calgary in Canada tested specially designed portion control dishware in 130 obese patients with type 2 diabetes. Subjects were given attractive plates and bowls that were marked off in sections by food group and decorated with serving-sized food icons (see “The Diet Plate and Diet Bowl,” page 1). The women’s diet plate provided a 650-calorie meal. After six months, the dishware users had lost more weight and required less diabetes medication than a control group given usual care.

Eat a wide variety of whole foods. Although experts don’t know the full story yet, they speculate that there are healthful synergistic effects among the many nutrients in a balanced diet. So eat a good mix of unprocessed foods—including whole grains, fruits, and vegetables (including legumes). Whole grains contain more vitamins, minerals, and fiber than refined grains. Fiber slows digestion and makes you feel full longer. The high water and fiber content of whole fruits and vegetables makes them a filling choice as well. Vegetables, fruits, and whole grains should take up at least two-thirds of your dinner plate.

Control portions at home. To discourage second helpings, serve food in the kitchen and take it to the table on plates. Try to eat at regular intervals throughout the day; if you wait until you’re hungry, you’re more likely to snack on the wrong kinds of food or overindulge at the next meal. Don’t eat out of bags or boxes; put the correct amount in a bowl or cup or on a plate. Keep healthy snacks on hand in amounts of 100 calories or less—a banana or apple; one cup of blueberries, raspberries, or grapes; or raw vegetables with tomato salsa. If you crave an occasional sweet, cut up a candy bar and keep the pieces in the freezer; have only one “serving” at a time and let it slowly melt in your mouth.

Control portions while eating out. Go to restaurants that offer plenty of à la carte options; avoid buffets and salad bars. Instead of a dinner, order a low-fat appetizer and a large salad with dressing on the side. Ask to substitute fruits, vegetables, or a salad for French fries. Arrange with a dinner companion to split an entrée, or eat only half of the portion and take the rest home. At a cocktail party, instead of constantly grazing, allot yourself a few items, put them on a small plate, and don’t take any more.

Borrow from mindfulness practices. Mindfulness means giving your full attention to the present. Try to bring all your senses to the experience of eating, including your surroundings. Take time to savor the texture, flavor, and aroma of your food. After taking a bite, put down your fork and chew slowly. These steps can help slow your eating and give your brain a chance to receive the message that your stomach is full. And when it gets that message, stop eating. ♥

Food groups, servings per day, and examples of serving sizes

Food groups and servings per day*	Examples of one serving	Serving size looks like
Grains 3–6 1-ounce equivalents	1 slice whole-grain bread ½ cup cooked cereal, rice, pasta 1 small muffin 1 small pancake ½ English muffin ¼ bagel	1 compact disc case 1 rounded handful 1 large egg 1 compact disc ½ hockey puck ¼ hockey puck
Vegetables 4–5 half-cups or half-cup equivalents	1 cup raw leafy greens ½ cup (cooked or raw) chopped, non-leafy vegetables ½ cup vegetable juice small baked potato	2 cupped hands 1 rounded handful 1 computer mouse
Fruits 3–4 half-cups or half-cup equivalents	½ cup (sliced or diced) fresh, frozen, or canned fruit ½ cup (4 oz.) 100% fruit juice 1 small banana, orange, peach ¼ cup dried fruit	1 rounded handful 1 baseball 1 golf ball
Dairy 3 cups or 3 1-cup equivalents	1½ oz. hard cheese 2 oz. processed cheese 1 cup low-fat milk 8 oz. yogurt	4 dice 6 dice
Meats and beans 5 1-ounce equivalents	3 oz. portion fish = 3 servings 3 oz. meat/poultry = 3 servings ¼ cup cooked dried beans ½ oz. nuts or seeds 1 tablespoon peanut butter	a checkbook a deck of cards 1 golf ball 1 walnut in shell ½ walnut in shell
Fats and oils 5 teaspoons	1 teaspoon butter or margarine 1 tablespoon oil = 3 servings	tip of thumb about ½ shot glass

Sources: Food Guide Pyramid, USDA; American Heart Association

*Amounts given are for women who get less than 30 minutes per day of physical activity, according to the Food Guide Pyramid. To find out what’s right for you, go to www.mypyramid.gov.

Preventing stroke

You can do it—if you know your risks and take steps to reduce them.

Stroke is the sudden interruption of oxygen to part of the brain—whether caused by the blockage of an artery supplying the brain (ischemic stroke) or bleeding in the brain from a ruptured blood vessel (hemorrhagic stroke). More than three million American women have had a stroke. It's the third most common cause of death in the United States, claiming the lives of nearly 100,000 women per year. It's also the nation's leading cause of long-term disability, robbing many survivors of their independence and causing dementia in up to 25% of them.

Like most other chronic conditions, stroke is caused by a combination of factors. Some are beyond our control. For example, stroke risk increases with age and is higher among African Americans. Blood vessel malformations and weaknesses, clotting disorders, and migraine headaches also increase the risk. So do a family history of stroke, a prior stroke, transient ischemic attack (TIA), and a heart attack or other heart condition (such as atrial fibrillation). But some of the most important risk factors—high blood pressure, high cholesterol, obesity, diabetes, smoking, and lack of exercise—are things we *can* do something about.

If you've had a stroke, you can cut your odds of having another by taking necessary medication as well as by changing your diet and other health habits. If you've never had a stroke, you can greatly reduce your risk of ever having one

by leading a healthy lifestyle and having regular checkups to detect conditions that could lead to stroke, and then taking steps to control those conditions.

"Risk factors really matter, and many of the strongest ones can be modified. There's a lot you can do to help prevent stroke," says Dr. Tobias Kurth, assistant professor of medicine at Brigham and Women's Hospital and Harvard Medical School. Last year, Dr. Kurth co-authored a study of lifestyle and stroke risk in women published in the *Archives of Internal Medicine* (July 10, 2006). Monitoring nearly 38,000 participants in the Women's Health Study for 10 years, he and his colleagues found that women with the greatest number of healthy habits were 71% less likely to have an ischemic stroke—the most common type—than those with the fewest. The women least likely to suffer a stroke were those who had a body mass index (BMI) of less than 22, had never smoked, exercised four or more times per week, had four to 10 alcoholic drinks per week, and ate a diet high in fiber, folic acid, and omega-3 fatty acids but low in saturated fat, trans fat, and refined carbohydrates.

The established causes don't account for all strokes. Clinicians suspect there are additional risk factors that haven't been identified. But there are many steps you can take to protect yourself based on the known risk factors.

What's in a healthy diet?

The emphasis these days is on establishing a healthy eating pattern over time, rather than simply counting calories or demonizing particular foods. A diet with cardiovascular benefits is low in saturated fat, avoids trans fat, and includes the following:

- Three to six servings per day of grains, at least half of them whole grains (for example, brown rice, bulgur, 100% whole-wheat bread, and whole-grain cereal) rather than refined grains such as white bread, white rice, and pasta made with refined flour.
- Five servings or more per day of fruits and vegetables. Whole fruits (as opposed to juice) and dark green and orange vegetables tend to be high in fiber, nutrients, and antioxidants.
- Four servings per week of nuts, seeds, and legumes (dried beans and peas). You may also use these foods as a substitute for meats and poultry.
- At least two servings per week of fish, especially those rich in omega-3 fatty acids, such as salmon and mackerel. If you don't like fish, try plant-based sources of omega-3 fats, such as soybeans, tofu, walnuts, and ground flaxseeds.
- Small amounts of healthy fats, such as those found in olive and canola oils (monounsaturated fat) and corn, sunflower, and other vegetable oils (polyunsaturated fat).

Control your blood pressure

High blood pressure damages the inner walls of blood vessels, setting in motion a cascade of problems (scarring, plaque buildup, and blood-vessel narrowing) that can culminate in stroke. Simply keeping your blood pressure under control reduces your stroke risk by 30% to 40%. Normal blood pressure is less than 120/80 millimeters of mercury (mm Hg). High blood pressure is 140/90 mm Hg or higher (130/80 or higher in people who have diabetes).

What to do. Have your blood pressure checked every two years if it's normal and at least yearly if it's elevated. Reduce your blood pressure through lifestyle changes (including regular exercise, reduced salt intake, and a healthy diet) and, if necessary, through medication—diuretics, angiotensin-converting enzyme (ACE) inhibitors, angiotensin-receptor blockers, beta blockers, or alpha blockers. Losing weight—even a few pounds—also helps bring down blood pressure.

Lower your cholesterol

Earlier this year, researchers using data from the Women's Health Study reported that abnormal blood lipids as much as doubled the risk of ischemic stroke in apparently healthy women (*Neurology*, Feb. 20, 2007). This study is one of the first to show a clear link between cholesterol levels and stroke in women with no other cardiovascular conditions. The study also provides support for findings from clinical

trials showing that cholesterol-lowering statins reduce the risk of stroke. The American Heart Association recommends that healthy women keep total cholesterol below 200 milligrams per deciliter (mg/dL); HDL cholesterol above 50 mg/dL; LDL cholesterol below 100 mg/dL; and triglycerides below 150 mg/dL.

What to do. Have your cholesterol levels checked every five years using a fasting lipoprotein profile. Healthy eating (see “What’s in a healthy diet?”) is important, and so is regular exercise, which helps control your weight—another risk factor for stroke.

Medications are an option if (a) you haven’t reached your target cholesterol and triglyceride levels after three months of lifestyle change; or (b) your LDL cholesterol is 190 mg/dL or higher; or (c) you have one or more of the following risk factors: heart disease, prior stroke, diabetes, high triglycerides, or low HDL cholesterol. Several medications, including statins, niacin, and fibrates, can reduce LDL and triglyceride levels and raise HDL.

In people who’ve had an ischemic stroke or TIA, statins have been shown to reduce the risk of stroke even beyond their cholesterol-lowering effect, so stroke patients often leave the hospital with a prescription for a statin. According to a study published in the journal *Stroke* (online, Aug. 30, 2007), patients who stopped taking statins within the first month or two after discharge increased their risk of dying in the first year after a stroke.

For guidelines on treating unfavorable cholesterol levels, visit www.nhlbi.nih.gov/guidelines/cholesterol.

Avoid tobacco smoke

Smoking can more than double your chances of having a stroke. It also boosts blood pressure, lowers beneficial HDL cholesterol, damages the protective lining of the blood vessels, and makes blood more prone to clotting—all risk factors for stroke. Even if you don’t smoke yourself, exposure to other people’s tobacco smoke can increase your risk.

What to do. Stop smoking, and don’t inhale others’ smoke. In the Nurses’ Health Study, women who stopped smoking lowered their risk of stroke by 25% within one to two years; after five or more years, their risk was about the same as someone who had never smoked. Experts recommend a three-pronged approach to quitting: Wear a nicotine patch or chew nicotine gum to help suppress the urge to smoke; join a support group or seek counseling; and learn techniques that can steer you away from thoughts of smoking or the activities that trigger it. (For a free online smoking cessation program that encompasses these recommendations, visit www.ffsonline.org.)

Exercise

Even modest amounts of exercise can help protect against stroke. In the Nurses’ Health Study, women who walked briskly at least one hour per week were less likely to have

Should you take aspirin to prevent stroke?

If you’ve had an ischemic stroke or heart attack, a daily low-dose aspirin can lower your risk of a second one. But the evidence for aspirin use in healthy women is mixed. In 2005, the Women’s Health Study tested a low dose of aspirin taken every other day in healthy women ages 45 and older. Overall, women taking aspirin reduced their risk for ischemic stroke (the most common type) by 24% and their risk for a TIA by 22%; on the other hand, hemorrhagic stroke risk rose by 24%. For women ages 65 and over, the cardiovascular benefits of aspirin were considerably higher: 34% fewer heart attacks and 30% fewer ischemic strokes.

In healthy women under age 65, the risks of regular aspirin use (bruising, gastrointestinal bleeding, and increased chance of hemorrhagic stroke) may outweigh its modest benefits. But healthy women ages 65 or over and younger women with a strong family history of cardiovascular disease should discuss aspirin therapy (an 81-mg baby aspirin daily) with their clinician.

a stroke than women who didn’t exercise at all; the faster the pace, the lower the risk. Physical activity helps control weight, makes blood less likely to clot, lowers blood pressure, and increases HDL levels.

What to do. Get at least 30 minutes of moderate-intensity physical activity on most days. If you exercise longer or more vigorously, you’ll get even greater health benefits. Examples of moderate-intensity exercise are brisk walking (three to four miles per hour), bicycling at five to nine miles per hour, and swimming. If you’ve had a stroke, exercise can help you recover as well as reduce your risk for another cardiovascular event. Aim for 20 to 60 minutes of continuous or accumulated exercise three to seven days a week. If you have a stroke-related disability, work with a physical therapist to design a program tailored to your situation.

Maintain a healthy weight

According to findings from the Women’s Health Study, obese women—those with a BMI of 30 or higher—are 50% more likely to have a stroke than those with a body weight in the healthy range (a BMI under 25). But current weight isn’t the only concern: Gaining weight also matters. In the Nurses’ Health Study, women who added 22 to 24 pounds as adults were 70% more likely to have an ischemic stroke, compared with women whose weight remained stable.

What to do. Be physically active, and eat a healthy diet with no more calories than you expend. To get an idea of the number of calories needed to maintain your present weight, multiply your weight in pounds by 15. For example, a moderately active 130-pound woman requires 1,950 calories ($130 \times 15 = 1,950$). If you want to lose weight, cut your intake by 500 calories per day. If you don’t want to go that far, try eating 250 fewer calories per day and getting an additional 30 minutes of moderate-intensity exercise on most days. Don’t

allow your total intake to fall below 1,200 calories a day unless you're under the supervision of a clinician.

Control other risk factors

The impact of other risk factors may depend on your lifestyle and medical history.

Limit alcohol. Moderate alcohol consumption (no more than one drink per day for women) will probably lower your risk for ischemic stroke, but the same amount will increase your risk for hemorrhagic stroke (the less common but often more devastating type). Having more than two drinks a day increases the risk of both types.

Weigh the risks of hormone therapy. The Women's Health Initiative trial of estrogen-plus-progestin was halted in 2002 because of cardiovascular problems among women taking the hormone combination. Hormone therapy is now recommended only for short-term symptom relief and at the lowest effective dose. But we don't know yet whether lower doses are any safer. If you're considering hormone therapy to control hot flashes or other menopausal symptoms, discuss the risks and benefits with your clinician.

Treat atrial fibrillation. Atrial fibrillation is an abnor-

Should a narrowed carotid artery be treated?

The carotid arteries on either side of the neck channel blood to the brain. A stroke can occur when one of them is blocked, so surgery to remove an obstruction that narrows the artery reduces the risk of a recurrence. The procedure is called carotid endarterectomy. It may also be performed when ultrasound imaging indicates severe narrowing of a carotid artery and reduced blood flow to the brain, even in a person who has not had a stroke or TIA. This surgery carries serious risks, including the possibility of triggering a heart attack or stroke, so if you're advised to undergo the procedure, it's important to get a second opinion.

mal heart rhythm that can result in the formation of clots in the upper chambers (atria) of the heart. If a clot breaks free and lodges in an artery to the brain, it can cause an ischemic stroke. If you have atrial fibrillation, your clinician will probably prescribe either warfarin (Coumadin), an anticoagulant, or aspirin, which makes blood platelets less likely to form clots. Medications that prevent blood clotting can reduce the risk of ischemic stroke by 68% in people with this condition. ♥

IN BRIEF

Hypnosis before breast cancer surgery eases pain, cuts costs

Women who were hypnotized immediately before undergoing a breast biopsy or lumpectomy required less sedation and anesthesia during the procedure and experienced less pain, nausea, and emotional distress afterwards, according to a study reported in the Sept. 5, 2007, *Journal of the National Cancer Institute*. Hypnosis induces a state of deep relaxation and focused concentration. Exactly how it works to ease pain and anxiety isn't fully understood, but neuroscientists have shown that it changes activity in brain areas involved in pain perception and the response to pain.

The trial, led by researchers at Mount Sinai School of Medicine in New York, also found that compared with usual care, hypnosis resulted in less time in the procedure room and cut per-patient hospital costs by nearly 10%. An editorial accompanying the study suggests that the technique may be especially helpful for people about to undergo diagnostic cancer surgery, who are especially likely to experience anxiety that intensifies their pain.

The researchers randomly assigned 200 women scheduled for a breast biopsy or lumpectomy to a brief pre-surgical session of either supportive therapy or hypnosis. The hypnotic procedure included guided relaxation, the use of imagery, and symptom-focused suggestions. All the women were treated with anesthesia and pain medications during the procedures and given painkillers as needed afterward.

During surgery, the hypnotized women required 22%

less analgesia and 34% less sedation. After surgery, they reported 53% less pain intensity, 74% less nausea, 46% less fatigue, 47% less discomfort, and 74% less emotional upset. They also spent 11 fewer minutes in surgery, resulting in a cost savings of almost \$800 per patient.

The Mount Sinai research builds on work by interventional radiologist Dr. Elvira Lang, at Harvard Medical School. Dr. Lang has studied the use of hypnosis in patients undergoing minimally invasive but physically and emotionally stressful procedures, such as angioplasties, liver biopsies, and kidney drainage. She too has found that hypnosis trims procedure times and costs while reducing pain and anxiety and the resulting need for medications.

Once the purview of watch-dangling charlatans, hypnosis has been taken much more seriously in recent decades. Besides pain and anxiety reduction, other uses include controlling unwanted behavior such as smoking or overeating and lessening the impact of disorders such as irritable bowel syndrome. Some clinicians are reluctant to use the technique because they don't fully understand how it works or discount it as hocus-pocus. But that's likely to change as evidence mounts that hypnosis is a safe and effective way to comfort patients and reduce health care costs.

For information about the medical uses of hypnosis and referrals to licensed practitioners, contact the American Society of Clinical Hypnosis on the Web at www.asch.net, by phone at 630-980-4740, or via e-mail: info@asch.net. ♥



Q My doctor prescribed a low-dose vaginal estrogen cream, applied twice a week, for atrophic vaginitis. I've heard this dose is so low that it carries no health risk. Do you agree?

A Vaginal estrogen is a very effective treatment for atrophic vaginitis, a condition that's common in postmenopausal women and results from a drop in estrogen levels. Estrogen loss can lead to thinning (atrophy) of the cells lining the vagina and urethra. As a result, women may develop vaginal dryness, itching, and pain with intercourse, as well as a high risk of urinary and vaginal infections.

Estrogens in any form—oral, transdermal, or vaginal—can help restore mucosal cells and alleviate atrophic vaginitis. But applying estrogen directly to the vagina has several advantages. The overall dose can be lower, and circulating blood levels of the hormone aren't raised significantly, so breast and endometrial tissues are less exposed. Circulating estrogen can stimulate the growth of ductal cells in the breast and endometrial cells in the uterus, increasing the risk of breast cancer and endometrial cancer.

In the United States, vaginal estrogen is available in a handful of low-dose preparations: two creams (Estrace Vaginal Cream and Premarin Vaginal Cream), a tablet (Vagifem), and an estrogen-infused vaginal ring (Estring). These preparations are taken daily in gradually increasing amounts until the therapeutic level is reached, and then twice weekly. When low-dose estrogen is applied vaginally, you generally don't need a progestin to offset its potentially carcinogenic effects on the endometrium.

So far, it looks as though low-dose vaginal estrogens are safe, at least in the short term. For example, they don't spur any significant growth of endometrial cells when used for up to a year. The estrogen ring and tablet don't boost blood levels of estrogen significantly.

Estrogen levels tend to vary more with creams because it's difficult to measure out a precise low dose using the applicator provided, which is designed for a higher standard dose (see "How to get a low estrogen dose using standard vaginal estrogen creams"). The most common side effect of low-dose vaginal estrogen is a clear or milky vaginal discharge.

There have been no studies of low-dose vaginal estrogen beyond one year. This is a problem because atrophic vaginitis is not a short-term symptom. It can persist indefinitely, long after hot flashes have abated. It's also very common: Roughly 50% of women have the condition within three years of menopause.

It's probably safe to continue taking low-dose vaginal estrogen twice a week. But after a year of treatment, talk to your clinician about whether your endometrial tissue should be evaluated. And if you develop any vaginal bleeding, contact your clinician immediately.

If you want to skip estrogen altogether, there are non-estrogen moisturizers and lubricants that can help reduce symptoms and ease discomfort during sexual intercourse. The long-acting moisturizer Replens, placed in the vagina up to three times per week, adheres to the vaginal surface, releases water, and produces a moist film over vaginal tissue. It's also been shown to restore vaginal pH. Water-soluble lubricants, such as Astroglide or K-Y Personal gels and liquids, can be helpful during intercourse.

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How to get a low estrogen dose using standard vaginal estrogen creams

The vaginal estrogen creams currently on the market in the United States are designed to deliver estrogen at doses higher than those recommended for the treatment of atrophic vaginitis—that is, 25 micrograms (mcg) of estradiol or 0.3 milligrams (mg) of conjugated estrogens. A standard dose of Estrace vaginal cream contains 100 mcg of estradiol, and a standard dose of Premarin vaginal cream provides 0.625 mg of conjugated estrogens. Doses this high are sufficient to raise the level of estrogen in the blood, possibly increasing the exposure of other

body tissues and spurring the growth of endometrial cells.

You can still use one of these creams to deliver a low dose of estrogen, but you'll need to take less than the amount indicated on the applicator sold with the creams. Use only as much as you need to be comfortable. This can range from one-half to as little as one-eighth of an applicator of estrogen cream inserted into the vagina daily for the first two to three weeks, then twice a week thereafter. Even with this regimen, it's difficult to determine how much estrogen is absorbed into the bloodstream.



Q I take Fosamax with vitamin D and a multivitamin that contains vitamin D. Now I see my calcium tablets also have vitamin D in them. Am I in danger of getting too much of this vitamin?

A This is a complicated issue, because there's some disagreement over the optimal daily intake for this vitamin. There's no question that vitamin D is essential for healthy bones. It promotes the absorption of calcium and phosphorus from the intestines—a fundamental step in bone growth and repair. Adequate vitamin D is especially important for women who have osteoporosis or are at risk for it. Studies also suggest that vitamin D bolsters the immune system and in sufficient doses helps prevent certain forms of cancer. In September, researchers reported finding a link between vitamin D supplementation and reduced mortality (see “Lower death rate in vitamin-D takers”).

Lower death rate in vitamin-D takers

Vitamin D appears to lower the risk of death, according to an analysis of previously published studies in the Sept. 10, 2007, issue of the *Archives of Internal Medicine*. Researchers in France and Italy analyzed the results from 18 randomized trials involving 57,311 mostly elderly subjects taking daily vitamin D in doses ranging from 300 to 2,000 IU (average dose was 528 IU). After a follow-up of 5.7 years, individuals taking vitamin D had a 7% reduced risk of death from all causes, compared with those who did not.

Because the sun's UVB (ultraviolet B) rays trigger vitamin D synthesis in the skin, sun exposure is an important source of vitamin D. Natural food sources—mostly fatty fish, cod liver oil, and egg yolks—are limited. For this reason, vitamin D is added to milk and some breakfast cereals and included in multivitamins. What's manufactured in the skin or consumed in food or supplements is converted in the liver and kidney to vitamin D's active form (1,25 dihydroxyvitamin D).

In recent years, research has suggested that some women are not getting sufficient vitamin D. There are several possible reasons for this. Women living above 40 degrees north latitude (at the latitude of New York, for example) usually can't make enough vitamin D from sunlight in the winter. Also, vitamin D is fat-soluble, so its absorption is reduced by disorders that impair the small intestine's absorption of fats—including Crohn's disease, celiac disease, and cystic fibrosis. Moreover, as we get older, our skin, intestines, and kidneys are less efficient at making, absorbing, and converting vitamin D. Elderly adults tend to get less vitamin D in their diets and spend less time outdoors exposed to sunlight.

The current recommended daily intake of vitamin D for women ages 51 to 70 is 400 International Units (IU); for women over 70, it's 600 IU. But many experts think that postmenopausal women should get at least 800 to 1,000 IU of vitamin D (along with 1,200 to 1,500 milligrams of calcium) per day to reduce their risk of developing osteoporosis. The Tolerable Upper Intake Level (UL)—the highest intake regarded as clearly safe—is 2,000 IU per day.

Excessive vitamin D (vitamin D toxicity) can result in nausea, poor appetite, constipation, weakness, weight loss, and excess calcium in the blood leading to heart rhythm disturbances. You're unlikely to get too much vitamin D from the sun or from your diet, unless you're eating large quantities of cod liver oil. (Cod liver oil is not a good choice for increasing vitamin D intake because it's high in retinol. Too much retinol increases the risk of hip fracture.) So check the labels on your Fosamax, calcium tablets, and multivitamins. Add up your intake from these supplemental sources, and make sure the total is less than 2,000 IU per day. (Higher doses may be prescribed for women who have been diagnosed with vitamin D deficiency.)

Some recent research has found a link between high blood levels of vitamin D and a reduced risk for several kinds of cancers, including cancers of the breast, colon, and ovary. But to achieve the blood levels associated with decreased risk in these studies, you would need to take several times the current recommended daily amount and possibly more than the UL. In the absence of randomized controlled trials, it's best to keep your supplemental intake of vitamin D within the recommended levels (or the amount advised by your clinician).

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