



Harvard Women's Health Watch

What to do about social anxiety disorder

The holidays are coming, with lots of convivial occasions—fun for most, but distressing if you suffer from social phobia.

It's not unusual to feel nervous about meeting new people or attending parties. But if you're so anxious that you dread or avoid such situations, you may have social anxiety disorder, also called social phobia. People with the disorder feel inordinately uneasy and self-conscious in everyday social situations. The source is an unreasonable fear of doing or saying something embarrassing and being negatively judged by others.

If you have social phobia, you might be terrified by just the thought of proposing a toast, or even making small talk. Even if you

make yourself attend gatherings, you may feel miserable before, during, and afterward—worrying for days about people's opinion of you. Avoiding these get-togethers is not the answer, of course; it can result in misunderstandings and other personal problems.

Social phobia received little attention until data from the National Comorbidity Survey published about a decade ago showed that the disorder is widespread, often disabling, often associated with problems such as alcohol abuse, and usually untreated. Since then, studies have shown that certain medications and certain types of psychotherapy can help. Meanwhile, scientists have been investigating the roots of the disorder, as a step to discovering new therapies.

Do you have social phobia?

If you answer yes to three or more of the following questions—and medications, substance abuse, a medical condition, or another emotional disorder isn't the cause of your symptoms—you may have social phobia. If so, talk with a clinician or therapist about your concerns.

- Do you fear being in certain situations—for example, performing or socializing with people you don't know well—because you're afraid you'll do or say something embarrassing?
- In these situations, do you experience symptoms of anxiety, such as palpitations, sweating, diarrhea, confusion, or (in severe cases) panic?
- Do you believe that your fear of these situations is unreasonable or excessive?
- Do you avoid social or performance situations whenever possible?
- When you can't avoid them, do you endure them with intense distress?
- Does the problem seriously interfere with your daily routine, work, or social life, or do you feel distressed about having the problem?

Adapted from the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*.

What does social phobia look like?

There are two types of social phobia. Specific social anxiety (also called performance anxiety) arises in limited situations. It's a problem mainly for people whose work (for example, acting, music, or lecturing) requires them to perform in public. Far more prevalent and disabling is generalized social anxiety. People with this disorder fear common social situations, such as eating or ordering food in public; asking questions or seeking help; meeting new people; speaking to strangers; and even using public facilities, such as restrooms. They may lose out on job opportunities because they're afraid of interviews; they may forgo training and education because they fear being called on in class.

Symptoms include a racing heart, dry mouth, shaky voice, blushing, trembling, sweating, and nausea. In specific social anxiety, fear that people will notice these symptoms may impair performance, leading to a downward spiral in which worsening

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Social anxiety disorder continued

performance reinforces worsening anticipatory anxiety. Generalized social anxiety can produce a similar downward spiral: others feel ill at ease when they sense a person's discomfort, and it's natural to interpret that discomfort as rejection that justifies further social withdrawal.

Who gets social anxiety disorder?

About 12% of U.S. adults—up to two-thirds of them women—will experience social phobia at some point in their lives, and 7% have it at any given time. Social phobia is the third most prevalent psychiatric disorder, behind substance abuse and depression, and the most common anxiety disorder (which includes panic disorder, obsessive-compulsive disorder, generalized anxiety, situational anxiety, and others).

Social phobia typically starts in adolescence, sometimes emerging in someone who's been shy or socially inhibited since early childhood. Other times, chronic social fears develop after a particularly stressful or humiliating episode. Symptoms can come and go depending on circumstances; for example, they may disappear during a marriage but re-emerge after the loss of a spouse.

It's not clear why some individuals are vulnerable to the disorder. Psychological experiments show that certain children are biologically vulnerable. As early as 4 months old, they show a tendency to cry and shrink back from new situations and people. When strangers approach, their

hearts beat faster and their pupils dilate—signs of a stress response.

These responses persist into adulthood, according to a study in which positron emission tomography (PET) scans were performed on young adults. When they looked at the faces of strangers, participants who were classified as behaviorally inhibited at age 2 showed much greater activity in the amygdala (a center of fear conditioning). In those judged to be extroverted as young children, the amygdala remained relatively quiet. Chronic fearfulness is also associated with irregularities in the activity of the neurotransmitters dopamine and serotonin—and with high levels of corticotropin-releasing factor, a key element in the stress response.

In a recent brain imaging study sponsored by the National Institute of Mental Health, the brains of people with generalized social phobia—but not those without the disorder—showed increased activity in the amygdala as well as in brain regions involved in self-awareness when they read negatively critical comments about themselves (*Archives of General Psychiatry*, October 2008). The results suggest that people with social phobia may have a different self-image, which could be a factor in their fear of being judged negatively by others.

What to do

Certain types of psychotherapy and several medications can be helpful in treating and managing social phobia.

What if you're just plain worried?

Not everyone who suffers from frequent worry has an anxiety disorder. If you don't have an anxiety disorder but think you worry too much, here are some things that might help. These strategies may also benefit people with social phobia or other anxiety disorders and can be used in addition to medications and psychotherapy:

Relaxation techniques. You may be able to divert and refocus your attention with music or recorded relaxation exercises, mindfulness meditation, deep breathing, or visualization. For some exercises you can try on your own, visit www.health.harvard.edu/womenextra.

Regular exercise. Studies have found that exercise improves mood and modestly decreases anxiety symptoms. How it helps isn't exactly

known, but researchers believe several factors are involved. Aerobic activity increases endorphins, natural body chemicals that reduce pain and improve mood. And exercising with a friend promotes social interaction as well. The kind of exercise is less important than its frequency. Aim for at least 30 minutes of moderate activity on all or most days.

Biofeedback. Biofeedback helps you become aware of your body's stress responses and allows you to control them using relaxation and cognitive techniques. You can learn to do this with the help of a clinician experienced in biofeedback. She or he measures heartbeat and other functions and feeds them back to you in the form of sound or light.

Medications commonly used for social phobia

| Drug class | Generic name (brand name) | Common side effects |
|--|--|--|
| Selective serotonin reuptake inhibitors (SSRIs) | citalopram (Celexa), escitalopram (Lexapro), fluoxetine (Prozac), fluvoxamine (Luvox), paroxetine (Paxil)*, sertraline (Zoloft)* | Nausea, diarrhea, headache, agitation, sexual problems, dry mouth, insomnia, vivid dreams, emotional flattening, discontinuation symptoms such as dizziness, agitation, or irritability. |
| Dual reuptake inhibitors (acting on both serotonin and norepinephrine) | duloxetine (Cymbalta), venlafaxine (Effexor) | |
| Benzodiazepines | alprazolam (Xanax), clonazepam (Klonopin), diazepam (Valium), lorazepam (Ativan), oxazepam (Serax) | Unsteadiness, drowsiness, cognitive impairment, dizziness, headache. Can be addictive. Should be avoided by people with a history of substance abuse. |
| Azapirone derivative | bupirone (BuSpar) | Chest pain, dizziness, headache, nausea, drowsiness. |
| Beta-adrenergic blocker | propranolol (Inderal) ⁺ | Dizziness, fatigue, lowered blood pressure. Should be avoided in people with asthma. |
| * FDA-approved specifically for social anxiety. ⁺ Taken for performance anxiety to suppress the physical symptoms of anxiety. | | |

Psychotherapy. Cognitive behavioral therapy (CBT) is the most widely studied psychological intervention for the treatment of social phobia. It aims to correct ingrained patterns of negative thinking and the behaviors it causes. As the name suggests, CBT has two parts. The cognitive therapy helps change habitual thoughts (“People will think what I say is stupid”) that prevent you from overcoming your fears. The behavioral element involves working to face those fears directly in anxiety-provoking situations.

The therapist typically begins by asking you to record your thoughts and level of anxiety in various situations. Then, you and the therapist discuss these thoughts, evaluate how realistic they are, and work together to substitute more productive thought patterns. The behavioral component involves a strategy called exposure, or desensitization, in which you face your fears—sometimes through role-play, sometimes by imagining and describing the situations that make you anxious. Your therapist may also ask you to put yourself in a real-life situation (like a party) that sparks your worst fears, to let you practice recognizing negative thoughts and exchanging them for more realistic ones. With repeated exposure, you may eventually become desensitized to these fear-provoking situations. A related behavioral strategy teaches you coping skills for such situations. If parties are your worst nightmare, for example, you may work on conversational skills. CBT may also include learning relaxation techniques, such as deep breathing.

A therapist-guided variation of exposure therapy, called exposure and response prevention, aims to not only desensitize you to the feared situation but also prevent you from reacting with the usual avoidance behaviors.

To find a qualified therapist in your area, contact the Anxiety Disorders Association of America, www.adaa.org, 240-485-1001. Information about support groups and other resources is available on the Web site of the Social Phobia/Social Anxiety Association, www.socialphobia.org.

Medications. As research uncovers the roots of anxiety in brain chemistry, anti-anxiety medications (see table) have become increasingly important, usually in combination with CBT. Typically, the first choice is a selective serotonin reuptake inhibitor (SSRI), often with a benzodiazepine tranquilizer added to quell symptoms for the four to six weeks until the SSRI kicks in. Some dual (norepinephrine and serotonin) reuptake inhibitor antidepressants—including venlafaxine (Effexor) and duloxetine (Cymbalta)—are also effective. For people who have a lot of physical symptoms, such as heart pounding, a beta blocker may be prescribed.

Scientists continue to study new therapies and combinations of therapies. For example, some clinical trials are testing the effectiveness of the antibiotic D-cycloserine in conjunction with CBT. The drug, normally used in higher doses to treat tuberculosis, is thought to interact with brain receptors involved in the fear response. (To find out more about clinical trials, visit www.clinicaltrials.gov.)

During the holidays, try to avoid isolation, which only serves to reinforce social anxiety. But it's okay to be selective. If small family or religious events are the least threatening, stick with those. And be careful with alcohol—there are serious pitfalls in using it to ease your worries or boost your courage. Consider volunteering to help out in a food pantry or soup kitchen; it can do a world of good for others and may do the same for you. Leave time for relaxation. Eat a balanced diet, avoid caffeine, and exercise regularly, which can also help with managing weight and stress at holiday time. Finally, keep in mind that social phobia is likely to get worse if it's not treated. If social fears are preventing you from fully participating in your life, seek therapeutic help. Yes, it may mean making an appointment with someone you've never met before. If necessary, enlist the help of a trusted friend or relative to take that step. Making this effort is a gift you can give yourself. ♥

Treating osteoporotic fractures of the spine

Several options, from pills to procedures, can help ease pain and shore up bone.

More than 1.5 million osteoporosis-related fractures occur each year in the United States, and nearly half of them are in the vertebrae, the bones of the spinal column. Vertebral fractures are twice as common as hip fractures; about 25% of postmenopausal women have had at least one. Unlike hip fractures, which almost always result from a fall, vertebral fractures usually involve little or no trauma. Vertebrae weakened by osteoporosis cannot withstand normal strain and pressure, so they may succumb to simple movement—bending over, turning quickly, or lifting a window sash.

About two-thirds of vertebral fractures have no symptoms and may go undiagnosed until they're found on an x-ray taken for some other reason. A single fracture may seem of little consequence, but having had one has long-term implications, including a higher risk of new fractures. In a study published last year in *The Journal of the American Medical Association*, researchers for the Study of Osteoporotic Fractures found that women with a history of vertebral fracture had a fourfold greater risk of experiencing a new one during the 15-year follow-up. They also had a higher risk for other broken bones, especially hip fractures.

The cumulative effect of multiple fractures can be devastating. Chronic pain, disability, and difficulty engaging in normal activities of daily life can lead to isolation, problems with relationships, and emotional difficulties—including depression, which develops in 40% of people with vertebral fractures. Vertebral fractures also raise the risk of premature death, though not to the degree that hip fractures do.

As the population ages, the rate of osteoporotic fractures in general is expected to rise. Fortunately, we have more ways to manage these fractures than we had even 10 years ago, including procedures that relieve pain, shore up damaged vertebrae, and reduce disability.

Consequences of vertebral fractures

A vertebra isn't broken in the usual sense of the word. It doesn't snap like a twig, or like a broken leg or arm. Instead, it collapses, the way a paper cup is crushed when you step on it. The common term for this kind of break is compression fracture.

The resulting pain may be sharp or dull, and it may be felt at the site of the fracture or farther away in the sides or the abdomen. In many cases, there's little or no pain, and the chief sign is gradual loss of height or stooped posture. The amount of height loss and deformity depends on the number, location, and severity of the fractures.

Most people with vertebral fractures have one or two, commonly in the thoracic (mid-back) and sometimes in the lumbar (low back) region. One or two fractures are likely to produce a slight loss of height, but multiple fractures can contribute to a rounding of the back known as dorsal kyphosis, or dowager's hump. Caused by a number of factors, including degenerative changes in joints, disks, and bones, kyphosis can profoundly affect appearance, mobility, and health. The spine becomes progressively more misaligned. The upper body is pitched forward and rounded. The space between the ribs and pelvis closes; the chest wall is cramped; and the abdominal organs get scrunched, causing the abdomen to bulge forward. In very severe cases, breathing may be difficult, and digestion impaired.

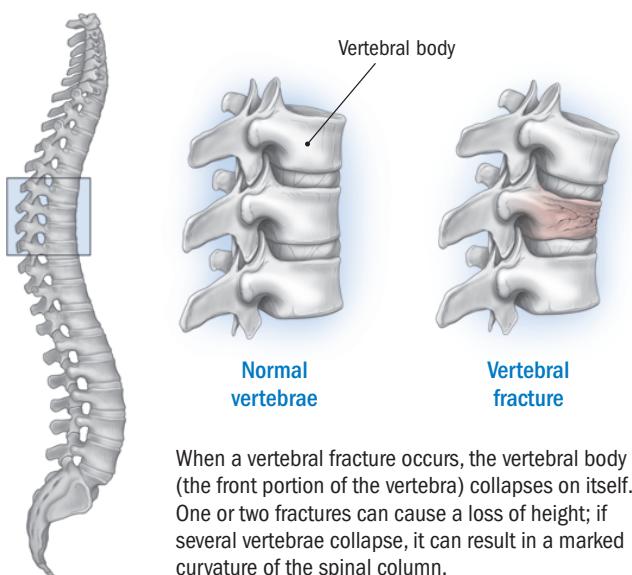
Cumulative compression fractures can cause almost as much physical and functional disability as hip fractures. Pain can become chronic as back muscles work harder to accommodate changes in the spine. A cane or walker may be needed, and riding in a car for more than a few minutes may become unbearable.

What to do about vertebral fractures

An x-ray of the spine can confirm the diagnosis. Vertebral compression fractures in postmenopausal women are usually caused by osteoporosis, but occasionally they result from trauma, infection, or a cancerous tumor.

Treatment for painful fractures starts with over-the-counter analgesics such as acetaminophen (Tylenol), aspirin, or ibuprofen (Advil or Motrin). Severe pain may require short-term bed rest and stronger drugs, starting with low doses of opiates, such as oxycodone (OxyContin), often combined with acetaminophen. Prolonged bed rest should be avoided, as it can contribute to bone loss and other health problems.

Anatomy of a vertebral fracture



Ice or heat packs applied to the affected area of the spine may also help.

A back brace is usually recommended to help manage pain and stabilize the spine as it heals. The brace is designed to hold the spine straighter than usual, relieving pressure on the damaged vertebrae and reducing the chance of further collapse. Healing can take up to three months. The brace shouldn't be used longer than that because it can weaken trunk muscles. Patients are usually encouraged to get gentle exercise, such as swimming or walking, as soon as they can tolerate movement. Eventually, they should add trunk muscle strengthening to their routine.

Patients should be evaluated for osteoporosis with bone mineral density testing, and osteoporosis should be treated with standard osteoporosis drugs, such as the bisphosphonates alendronate (Fosamax), risedronate (Actonel), and ibandronate (Boniva). Bisphosphonates can help with acute pain, but their main benefit is improved bone mineral density. Long-term, they can reduce the rate of new vertebral fractures by as much as 50%. Injectable bisphosphonates—zoledronic acid (Reclast, Zometa) and injectable Boniva—are an alternative for women who can't take the oral form. Another bone drug, calcitonin (Miacalcin, Fortical), is less effective in improving bone mineral density but can provide some pain relief, although it's not a substitute for analgesics. The bone-building drug teriparatide (Forteo), given by injection, increases bone mineral density and lowers vertebral fracture risk.

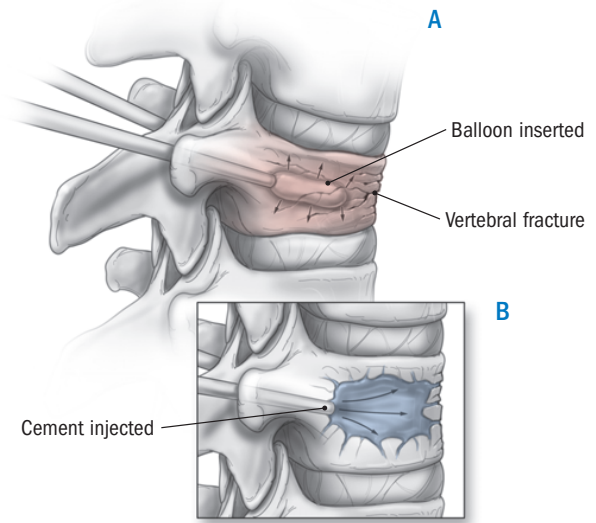
Procedures for treating vertebral fractures

Two minimally invasive procedures—vertebroplasty and kyphoplasty—involve the injection of a medical cement to stabilize compressed vertebrae. Introduced in the United States in the 1990s, they've become increasingly available for the treatment of fracture pain that doesn't respond to more conservative therapy. According to Dr. John Pan, a radiologist at Boston's Brigham and Women's Hospital, bracing and analgesics are usually tried first "to see if the fracture heals on its own. If it doesn't and the person continues to have pain—usually after four to six weeks—that's when the procedure is considered."

There are very few controlled studies comparing the long-term effectiveness and safety of vertebroplasty and kyphoplasty—with each other or with conservative treatment. It's not clear whether either procedure improves spine stability or prevents fractures in the long run. But the main reason for these procedures is pain, and as many as 85% to 90% of people who undergo them experience immediate relief. A review of 21 studies involving 1,309 patients, published last year in the journal *Pain Physician*, found that both techniques reduced pain by more than 50%.

No one knows exactly how these procedures do that. One theory is that the pain is largely an inflammatory response to the uneven distribution of mechanical forces caused

What is kyphoplasty?



Kyphoplasty is a two-step process. First, a tubelike device with a balloon at the end is inserted into each side of the collapsed vertebra (A). The balloons are then inflated, creating a cavity and restoring vertebral height. The balloon is withdrawn and cement is injected, filling the cavity (B).

by bone fragmentation. The cement is thought to help by restabilizing the vertebra, which reduces inflammation and thus pain. It's also possible that the cement destroys pain-conducting nerve endings in the vertebra.

Before either procedure, MRI is usually performed to determine if the patient is likely to benefit. A good candidate is one whose MRI shows the presence of bone edema, or fluid, which is associated with recent fracture. If bone edema is absent, that implies the fracture has healed and is not what's causing the pain. An MRI can also help ascertain whether a disk, the spinal cord, or other soft tissue is involved.

Both kyphoplasty and vertebroplasty are performed percutaneously (that is, through the skin), often as day surgery and under conscious sedation. If the fractures are numerous or severe, or the patient is older and in poor health—or cannot tolerate lying on his or her stomach—general anesthesia may be used. Sometimes an overnight hospital stay is necessary. Here's what's involved:

Vertebroplasty. Guided by computed tomography (CT) or fluoroscopy (real-time x-rays), a specially trained radiologist, neurologist, or orthopedic surgeon inserts a hollow needle through a small incision in the skin into the compressed portion of the vertebra. When the needle is in place, she or he injects a surgical cement (methyl methacrylate), which has the consistency of toothpaste. It's mixed with an agent that allows the physician to see its flow into the vertebra. The cement hardens within about 15 minutes. The patient is monitored for two to three hours in the recovery room before going home. ▶▶

Kyphoplasty. In this procedure, which is also image-guided and performed through tiny incisions in the back, inflatable balloons are inserted through tubes in both sides of the fractured vertebra (see illustration, page 5). The balloons are inflated, creating a cavity and restoring vertebral height. They are then deflated and withdrawn and the cavity is filled with cement. The procedure takes 30 to 60 minutes for each fracture and sometimes involves an overnight hospital stay.

What are the risks?

In well-trained and experienced hands, vertebroplasty and kyphoplasty are generally quite safe. But anesthesia always creates risks, nerves can be damaged during needle placement, and any procedure that involves cutting into the skin raises the possibility of bleeding and infection.

Cement leaks can be a concern, but with real-time monitoring using CT or fluoroscopy, the physician can spot them early and stop the injection. The main worry is that cement might leak into places where it could cause serious problems. In the spinal canal, for example, it can press on the spinal cord, or if it gets into the bloodstream, it can cause clots that travel to the heart and lungs. But these complications are extremely rare in the treatment of osteoporosis-

related vertebral fractures. (Compression fractures resulting from tumors, infection, or trauma can be trickier and have a somewhat higher complication rate.)

Selecting the right patients helps avoid complications. For example, someone with a compression fracture greater than 70% of the height of the vertebral body isn't a good candidate for either procedure, says Dr. Pan, because there's too little room for the needle and cement, and leaking becomes more likely. Another red flag is a compression fracture on the spinal-canal side of the vertebra, where a cement leak could impinge on the spinal cord.

The long-term effects of cement in a vertebra are unknown; researchers are investigating the possibility that it increases the risk of fractures in adjacent vertebrae, possibly through a change in mechanical forces.

Some physicians think patients should undergo vertebroplasty or kyphoplasty as a first choice, instead of waiting four to six weeks to judge the effect of pain medications, bracing, and bed rest. But most believe that until we know more about the risks, benefits, and long-term effects of these procedures, trying conservative measures first seems prudent. Finally, if you are considering one of these techniques, be sure that the hospital has extensive experience with it—and top-flight imaging equipment. ♥

IN THE JOURNALS

Studies find a link between hot flashes and cardiovascular risk

It's little wonder that hot flashes have come to symbolize the downside of menopause. The sudden increases in body temperature that trigger flushing and night sweats can be disruptive and, in some cases, debilitating. In fact, recent evidence indicates that severe hot flashes may be more than a nuisance: they may be linked to increased risk for cardiovascular disease.

Since last year, three large-scale investigations have associated hot flashes with risk factors for heart disease and stroke. The studies and their findings are these:

- **The Women's Health Initiative (WHI).** In the *Journal of the American Medical Association* (April 4, 2007), WHI researchers reported the results of an analysis designed to determine whether the age at which women begin hormone therapy (HT) affects their heart disease risk. Researchers studied more than 27,000 postmenopausal women, ages 50 to 70, who were randomly assigned to take either HT or a placebo. They subdivided these women into three groups: those with no history of hot flashes, those with mild hot flashes, and those who had moderate to severe hot flashes. The investigators found that the increased risk of cardiovascular disease seen in women who were more than a decade out from menopause was largely limited to women who continued having moderate to severe hot flashes.

- **The Eindhoven Perimenopausal Osteoporosis Study.** This large prospective investigation was initiated in the city of Eindhoven, the Netherlands, in the mid-1990s to identify factors associated with low bone density during the menopausal transition. Data collected from Eindhoven residents born between 1938 and 1948 have since been used to study other health conditions that affect women in midlife. In *Hypertension* (June 2008), researchers analyzed information from 5,523 Eindhoven study participants who answered questions about the frequency and intensity of hot flashes and night sweats. About half of the women had no symptoms, while the other half reported flushing, night sweats, or both. The researchers found that as these symptoms increased in severity, so did blood cholesterol, high blood pressure, and body mass index.

- **The Study of Women's Health Across the Nation (SWAN).** SWAN Heart—one component of this nationwide study of the physical changes that occur during perimenopause (the handful of years preceding menopause)—examined the relationship between hot flashes and early, undetected heart disease. In *Circulation* (October 2008), SWAN Heart investigators reported the results of a study involving 492 perimenopausal women who weren't taking hormone therapy. The women completed questionnaires assessing their menopausal symptoms and underwent

ultrasound tests of arterial function and CT scans of their hearts. The investigators found that, as a group, women with hot flashes had significantly greater calcification of their aortic valves—and their blood vessels were less able to dilate as blood flow increased. Both changes are early signs of cardiovascular disease.

These studies raise important questions: Are hot flashes a risk factor for heart disease or vice versa? What mechanisms

might connect the two? Will quelling hot flashes improve cardiovascular risk or perhaps even reverse early heart disease? Until the answers are in, the best advice for women with severe or persistent hot flashes is to consider reviewing their cardiovascular risk factors with their clinicians—and to pay special attention to lifestyle practices that reduce the risk of heart disease and stroke, including exercise, weight control, and not smoking. ♥

Alexander technique helps relieve chronic back pain

Low back pain is one of the most common physical complaints, affecting 80% of people at some time in their lives. Most back pain goes away on its own, but recurring or chronic back pain can disrupt daily activities and make it difficult or even impossible to hold a job. Many different nondrug strategies have been tried for the management of persistent back pain, but few have proven effective in the long run.

Now, a new study has found that chronic back pain sufferers can get some relief by practicing the Alexander technique—a rehabilitative discipline developed more than 100 years ago. Earlier studies had suggested benefits with the Alexander approach, but this is the first randomized trial to put it to the test. Results were published in the *British medical journal BMJ* (Aug. 23, 2008).

The idea behind the technique is that, over time, people develop bad postural and movement habits—for example, slouching while at the computer or tightening neck or shoulder muscles while playing a violin—that interfere with normal neuromuscular coordination. The result is tension and pain. Alexander teachers work one-on-one with students—often performers such as musicians or actors—to help them develop greater awareness of these potentially harmful habits and learn better ways to move and hold their bodies. Practitioners contend that repetition is needed to master the technique, so 20 or more sessions are usually recommended.

Researchers at the University of Southampton and the University of Bristol enrolled 579 adults with chronic back pain in a yearlong study comparing the effectiveness of massage, the Alexander technique, and clinician-prescribed exercise with normal medical care. Subjects were randomly divided into four groups: normal medical care, six massage sessions, six Alexander lessons, or 24 Alexander lessons. Half of each group was randomized to the exercise prescription.

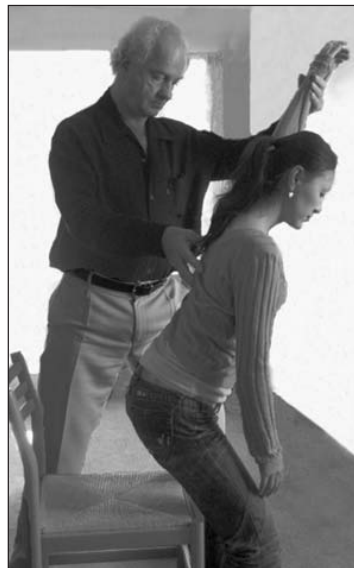
During the year of treatment, patients who received 24 Alexander technique lessons experienced only three days of back pain, compared with 21 days of pain for those receiving normal medical care and 14 days for those receiving

massage. Interestingly, those who received just six Alexander lessons, plus the exercise prescription, experienced 11 days of back pain over the course of the year, making this shorter course of Alexander treatment (plus exercise) more effective than either massage or normal medical care—and almost as effective as 24 Alexander lessons.

The Alexander technique was developed at the end of the 19th century by Frederick M. Alexander, an Australian actor looking to cure his recurrent voice loss. After doctors found no physiological explanation, Alexander observed a link between losing his voice and poor body mechanics. He was able to correct the problem through a set of strategies that became the central tenets of the Alexander method. In 1937, a group of 19 doctors wrote a letter to the *British Medical Journal* (now *BMJ*) in support of the technique, stating that they had observed “beneficial changes in use and

functioning” with the Alexander technique in their patients and in themselves. They encouraged researchers to evaluate the practice for possible inclusion in medical school curricula. Despite this long-ago endorsement, there has been no good study until now of the long-term benefits of the technique. Other studies suggest it can improve respiratory function, reduce anxiety, and lessen disability from Parkinson’s disease, but there’s too little scientific evidence to recommend it for these purposes.

For more information about the Alexander technique and links to instructors and support groups, visit the Web sites of Alexander Technique International, <http://ati-net.com> and the American Society for the Alexander Technique, <http://alexandertech.org>. ♥



During an Alexander technique session, the teacher guides the student through simple movements such as sitting, bending, and walking. The goal is to develop healthier ways to move and hold the body.



How long should I keep getting Pap tests?

Q Is there an age when a woman no longer needs a Pap smear?

A Most women are used to getting a Pap test every year or two as part of their routine health care. A Pap test, or Pap smear, examines cells from the cervix to screen for cervical cancer or abnormal cells that could progress to cancer if left untreated.

The success of cervical cancer screening is irrefutable. Once, cervical cancer was the No. 1 cause of cancer death for women in the United States. But today, it's fallen to 10th place, largely because of Pap testing. Since 1950, the rate of new cases and the number of deaths from the disease have dropped by more than 50%. Still, an estimated 11,070 cases of invasive cervical cancer will occur in the United States this year, and some 3,870 women will die because of it.

One reason Pap testing has been so effective is that invasive cancer develops from well-known and well-described changes in cervical cells. These changes progress very slowly—over years to decades—from low-grade to high-grade. This long, predictable period of transformation permits detection of cancer before it becomes invasive, when it can be treated and cured. Cervical cancer is largely a disease of sexually active women. Experts believe that most, if not all, cases are caused by infection with specific high-risk strains of the sexually transmitted human papillomavirus (HPV). That's why women aren't targeted for cervical cancer screening until three years after they've become sexually active.

Cervical cancer screening guidelines in this country are issued by three major organizations: the U.S. Preventive Services Task Force (USPSTF), the American Cancer Society (ACS), and the American College of Obstetricians and Gynecologists (ACOG). All three groups agree that a woman should have her first Pap smear about three years after first having sexual relations or at age 21, whichever comes first. After that, the guidelines differ slightly in their recommendations for Pap test frequency. There's also disagreement about the upper age limit for routine Pap tests.

The USPSTF recommends that Pap testing be discontinued at age 65. The ACS advocates stopping at age 70 if a woman has had three consecutive normal Pap tests over the previous 10 years.

And ACOG recommends that women talk to their clinicians about when to stop Pap testing, since there's so little evidence to guide this decision. All agree that women who've had a total hysterectomy (including removal of the cervix) for a non-cancerous condition may stop getting Pap tests.

There are no published studies about the effectiveness of routine Pap testing after age 65, but there are a few points that physicians take into consideration. An average woman's risk of having precancerous changes on her Pap smear is greatest during her 20s and 30s and begins to decline about age 40. High-grade lesions—those most likely to progress to cancer—are rare among women over 65 who've had normal Pap tests. And although the death rate due to cervical cancer increases with age, experts think that's largely due to cervical cancer in women who haven't been routinely screened in their younger years.

The decision to stop screening is up to you and your clinician. If you're at average or low risk (mostly a function of the number of sexual partners you've had) and have been getting routine Pap tests—and the last three have been normal—you can safely stop getting Pap smears after age 65 or 70. If you haven't been routinely screened before 65, you need a Pap test. Older women who've never been screened have the highest incidence of, and mortality from, invasive cervical cancer. Smoking is another risk factor. If you have become sexually active with a new partner (which increases your exposure to HPV infection), it's reasonable to continue Pap smears beyond age 65 and to have a discussion with your clinician about HPV testing. (For more about HPV testing, visit www.health.harvard.edu/womenextra.)

Some women find it hard to give up the routine of Pap testing, because it reassures them about their health. Talk to your clinician so you can agree on a screening schedule that makes you feel comfortable. Even if a Pap test is not done, many experts recommend a pelvic exam at regular intervals, although evidence about this is lacking.

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