Hip fracture

Regaining mobility

The fear of fracturing a hipbone looms large for many older adults — and with a fair amount of justification. Each year, more than 300,000 hip fractures occur in the United States among those 65 and older. It’s estimated that up to 20 percent of older adults who sustain a hip fracture die within a year of the injury. Others may experience a loss of mobility and independence.

However, the prognosis isn’t always so dire. This is especially true the better your health is and the more mobile you are at the time of the fracture. The surgical procedures used to fix most hip fractures are usually very effective. Early rehabilitation is important, and for most people, the goal is to be on their feet — with help — within a day of surgery. Substantial recovery is common. And during the recovery process, it’s important to take steps to prevent another hip fracture in the future.

Hips and slips

The hip is the largest ball-and-socket joint in the body and has great strength and stability. The “socket” of the joint is part of the pelvis, and the “ball” of the joint is the top end of the upper leg bone (femur).

Older adults are at risk of hip fractures for two main reasons:

- With age, bone can gradually become weaker due to the bone-thinning
process of osteoporosis. Women are especially susceptible to accelerated bone thinning after menopause, which is the main reason why about 60 to 75 percent of hip fractures occur in women.

- Balance, agility and strength often decline with age, making falls more likely. Medical issues such as arthritis, pain, vision problems and dizziness also can be factors.

In older adults, hip fracture is typically the result of mild trauma, such as a fall from a simple standing position. In more-extreme cases when the bone is very weak, fractures can occur with more ordinary stress on the bone such as a misstep off a stair, a twisting motion while standing or even by walking.

Most older adults who fracture a hip experience severe pain in the hip or groin area and may not be
able to move their leg, let alone put weight on the leg. Stiffness, swelling and bruising around the hip area may develop. The injured leg may also be shorter than the uninjured leg and turn outward due to the unbalanced pull of muscles.

Rarely, a hip fracture — particularly a nontraumatic stress-type fracture — causes only vague pain in areas such as the buttocks, knees, thighs, groin area or back, and you’re still able to walk.

Surgical considerations

Emergency care is required for hip fracture. It’s usually best to call for emergency medical care and wait for paramedics to move you safely. An initial evaluation in the emergency room usually involves a physical exam, X-ray imaging and efforts to control pain.

Surgery is almost always the best hip-fracture treatment, and it’s typically better if the surgery is done within 24 hours of your fall. Still, your surgeon needs to take time to evaluate your overall health to determine what steps need to be taken to maximize health and safety during surgery. Blood tests, heart tests and other medical tests may be part of this process. Internal bleeding or other factors may require preparations for blood transfusions before or during surgery.

A primary goal of surgical hip fracture repair is to get you back on your feet — with the help of a therapist and supportive equipment — within 24 hours of surgery. Early movement helps reduce the length of your hospital stay and reduces complications, such as blood clots and bedsores.

Hospital stays after hip surgery usually last less than a week. Depending on your condition and the situation at your home — such as how much help your family can provide — you may be able to go straight home. However, most people with a repaired hip fracture go from the hospital to an extended care facility for one to several weeks of rehabilitation.

With rehabilitation, you may get close to your pre-fracture level of mobility and independence within three to six months.

Fracture prevention

The following tips can help you prevent a hip fracture:

■ Medication for bone-thinning — Several prescription drugs can help prevent bone loss or even increase bone density over time, lowering the risk of a second fracture. The most commonly used are bisphosphonates such as alendronate (Fosamax), ibandronate (Boniva), risedronate (Actonel, Atelvia) and zoledronic acid (Reclast, Zometa).

■ Adequate calcium and vitamin D — The Institute of Medicine recommends 1,000 milligrams (mg) of calcium for men 51 to 70, and 1,200 mg for women 51 and older and men 71 and older. The institute recommends adults up to age 70 get 600 international units (IU) of vitamin D daily and that adults age 71 and older get 800 IU a day.

■ Exercise — Weight-bearing exercises, such as walking and strength training, help build bone density. Also, balance-training exercises make falls less likely.

■ Trip-proof your home — Remove throw rugs and place electrical cords along walls. Add grab bars where needed and make sure stair railings are sturdy. Try to improve lighting in dim areas.

■ Address other factors — An annual eye exam can help keep your vision acute so that you can avoid tripping hazards. Ask your doctor or pharmacist to review your medications to reduce side effects that may cause dizziness or drowsiness. Don’t smoke and avoid excessive alcohol consumption, as both are bad for bone health.

Health tips

Posture perk up

If you feel tired when you’re on your feet, take a moment to consider your posture. Standing in a stooped or slouched manner makes muscles and ligaments work harder to keep you balanced. That extra effort can lead to fatigue, back pain and other problems. Here are some simple head-to-foot adjustments to set your posture straight:

■ Hold your chest high — As you do this, avoid rounding your shoulders forward by keeping them back and relaxed. Ideally, your head should be level — not tilted forward, backward or sideways. The top of your head should reach toward the ceiling. From a side view, these upper body adjustments position your ears so that they’re aligned over your shoulders and your shoulders are in line over your hips.

■ Engage your core muscles — Do so by keeping your abdominal muscles tight and your buttocks tucked in. The core muscles of your trunk help stabilize the rest of your body and also help support your spine.

■ Keep your knees straight and relaxed — Knees that aren’t locked or rigid allow your weight to be balanced over the middle of your feet. Keep your feet parallel and a little less than shoulder-width apart.
Stem cell transplant

Replacing bone marrow

Bone marrow is the source of all the cells in your blood. When healthy, certain marrow cells — called stem cells — produce a perpetual supply of oxygen-carrying (red) blood cells, immune (white) blood cells and clot-forming platelets.

But many diseases of the bone marrow can affect its function and consequently, your health. Diseases related to unhealthy bone marrow include various forms of leukemia, multiple myeloma, cancers of the lymph system (lymphoma), autoimmune diseases and certain inherited disorders.

If initial treatments for these diseases have been unsuccessful, especially for cancers, a stem cell transplant may be considered. With this, diseased bone marrow cells are weakened or destroyed with chemotherapy. Next, healthy bone marrow stem cells, from yourself or someone else, are infused into your body through a vein. The stem cells find their way to your bones to bolster or replenish your stem cell supply.

This process can be demanding on the body — especially for older adults. But continued improvements in the ability to administer milder stem cell transplants mean they’re routinely being done in adults in their 60s and 70s — and may even be a consideration for some healthier adults in their 80s.

The setup

Healthy stem cells for transplantation most often come from one of two sources:

- Allogeneic transplants use stem cells from a related or unrelated donor.
- Autologous transplants use

Link between vitamin D levels and depression studied

Researchers are trying to determine whether there’s a connection between lower levels of vitamin D and how prone some older adults are to depression.

Some studies point to an association between insufficient vitamin D levels and depression, and some don’t. In addition, the Institute of Medicine lipoprotein (HDL) cholesterol, the “good” cholesterol, was lower — and levels of inflammation were higher — in people who sat more. Other research suggests that too much sitting can increase the risk of metabolic diseases, such as type 2 diabetes.

Mayo Clinic experts say that this study, while not conclusive, adds further evidence to the idea that too much sitting may be an independent risk factor for cardiovascular disease. If you can find ways to stay off your seat and on your feet — even while you’re watching TV — it appears that your health will benefit.

Even if you exercise, too much sitting is bad for your heart

Getting 30 minutes of moderate to vigorous exercise each day is a great way to enhance your health. But according to a recent study, it’s not enough to offset the negative health impact caused by sitting and watching TV for several hours a day.

The study, published in the Jan. 18, 2011, issue of the Journal of the American College of Cardiology, involved 4,512 adults. Participants were asked to estimate the amount of time they spent sitting and watching TV or using a computer. They were also asked about exercise habits and other factors related to health.

People who sat in front of a screen for four or more hours a day — even if they exercised up to 40 minutes a day — were 48 percent more likely to die during the study than were those who spent less than two hours a day sitting in front of a screen.

In addition, some type of heart event, such as a heart attack, was more than twice as likely in those who spent two or more hours sitting in front of a screen, as compared with those who spent less than two hours sitting in front of a screen.

The study didn’t establish the mechanisms behind the worse health outcomes. However, sitting burns only a very small amount of calories — even standing and moving around sluggishly uses about 2.5 times more energy than does sitting. In addition, the study found that high-density lipoprotein (HDL) cholesterol, the “good” cholesterol, was lower — and levels of inflammation were higher — in people who sat more. Other research suggests that too much sitting can increase the risk of metabolic diseases, such as type 2 diabetes.

Mayo Clinic experts say that this study, while not conclusive, adds further evidence to the idea that too much sitting may be an independent risk factor for cardiovascular disease. If you can find ways to stay off your seat and on your feet — even while you’re watching TV — it appears that your health will benefit.

For current recommendations, see page 3. If you’re concerned about getting enough D in your diet, talk with your doctor.
stem cells from your own marrow. To gather them, you’re first treated to decrease the number of cancer cells in your marrow and blood. Then healthy stem cells are harvested from your blood and frozen for a future infusion.

A third type, syngeneic transplants, uses stem cells from an identical twin.

The transplant procedure begins when chemotherapy and possibly radiation are used in a process known as conditioning to:
- Destroy or weaken cancer cells
- Destroy or weaken diseased bone marrow cells

After this, healthy stem cells are infused into your body. The stem cells migrate to your bone marrow cavities and begin creating new bone marrow, blood cells and platelets. The weeks or months after the transplant involve careful medical monitoring and interventions to prevent or treat infections, manage side effects, and keep your blood cell counts up until the transplanted cells can manage on their own. The recovery process varies widely from person to person and depends on many factors.

**Varying intensity**

Often, the best stem cell transplant options for older adults are those that minimize demands on the body. A reduced-intensity allogeneic transplant does just that. It involves less than a full dose of chemotherapy followed by the stem cell transplant. The chemotherapy kills some cancer cells and temporarily weakens the recipient’s immune system so donor stem cells aren’t rejected by the recipient’s immune system and can migrate into the bone marrow.

The risky part of a reduced-intensity transplant is the period of time in which the recipient and donor stem cells adjust to each other. Graft-versus-host disease (GVHD) is a potential complication of this process. This is like organ rejection in reverse. The immune system created by the transplanted stem cells (graft) begins to regard cells throughout the body of the transplant recipient (host) as foreign invaders. Signs and symptoms of GVHD include skin rash, digestive problems, and diminished liver, tear duct and salivary gland function. Immune-suppressing drugs are required for a time after a reduced-intensity transplant to keep GVHD in check. Generally, having a reduced-intensity transplant means staying near a medical center for two or more months so that you have quick access to supportive medical care to manage GVHD. Generally, having a reduced-intensity transplant means staying near a medical center for two or more months so that you have quick access to supportive medical care to manage GVHD. The beneficial aspect of GVHD is that the immune cells produced by the donor stem cells are often able to destroy any remaining cancer cells within the recipient’s body.

The process of receiving an autologous transplant is initially hard on the body. The conditioning phase involves a full dose of chemotherapy and possibly radiation to destroy cancer cells and your bone marrow. However, the later phases of the procedure are milder. That’s because you’re infused with your own, pre-harvested stem cells and won’t have the risks of GVHD. If you’re receiving an autologous transplant, you’ll likely need to stay near a medical center for two to three weeks while your blood cell counts recover. After that, you can usually continue your recovery at home.

A standard allogeneic transplant with a full dose of chemotherapy is the most physically demanding. This involves destroying your bone marrow and cancer with chemotherapy and possibly radiation. It also requires dealing with the potential for GVHD. Standard allogeneic transplants are usually considered too risky if you’re older than 60.

**Risks and benefits**

A stem cell transplant can prolong life, because it can cure some diseases and put others into remission. Many older adults do well after receiving one.

However, stem cell transplants can be physically draining and complications — particularly with allogeneic transplants — can be serious and may lead to death. It’s important to thoroughly discuss these risks with your doctor. It’s also important to consider your quality of life against the backdrop of a potentially arduous procedure requiring dedication and commitment.
Sleep deprivation

Not a normal part of aging

You can’t remember the last time you slept through the night without needing to go to the bathroom, or waking due to the pain of arthritis in your hip. Does getting older mean that you won’t sleep as well?

Although sleep patterns change somewhat as you age, that doesn’t mean you have to live with restless nights and the persistent feeling of lacking enough sleep. The underlying causes are usually treatable.

Under the hood

Many brain activities contribute to sleep and wakefulness. Chemicals in your brain called neurotransmitters help control whether you’re awake or asleep. Some of these chemicals help keep certain parts of your brain active while others encourage sleep.

Other forces, such as the amount of light you’re exposed to and the medications you take, also influence your sleep patterns. Diet also can be a factor — for instance, caffeine and alcohol can have a significant effect.

Generally, sleeping seven to eight hours a night is considered optimal. Some adults need less. But if you’re getting too little sleep for any reason, you’re amassing a sleep debt.

Regularly sleeping less than five hours a night is associated with poor physical health, although there’s debate whether poor health causes lost sleep or lost sleep results in poor health.

In older adults, this amount of sleep is associated with a more than 50 percent increased risk of falls. Getting less than seven hours of sleep on a regular basis may cut into your ability to concentrate, make decisions and remember things — and the problem is cumulative. Adding to that, ongoing sleep deprivation may actually interfere with your ability to recognize how tired you are.

But simply focusing your attention on getting a certain amount of sleep isn’t helpful. Sleep difficulties can often be traced to treatable health issues. Talk to your care provider if you think your sleep problems are related to other medical conditions. If you have a chronic condition — such as arthritis, kidney disease, Parkinson’s disease or depression — it’s particularly important to pay attention to sleep.

Sleep interrupted

Some of the factors that could cause sleep difficulties include:

- **Sleep disorders** — Sleep-related leg cramps, obstructive sleep apnea, periodic leg and arm movements, and restless legs syndrome can jeopardize sleep. A Mayo Clinic study of aging adults found that more than half of the 892 participants had signs of at least one sleep disorder other than insomnia.

- **Pain** — Conditions that cause chronic pain, including heartburn, arthritis, back pain, cancer pain and headaches, can take a toll on sleep. In turn, poor sleep can increase the perception of pain intensity. Difficulties such as falling asleep or frequent nighttime awakenings often are related to poor pain control.

- **Nighttime urination (nocturia)** — Trips to the bathroom are a common reason older adults wake at night. This also poses an increased risk of nighttime falls.

- **Illness** — Coughing, shortness of breath, chronic pain and even itching can disrupt your sleep. Mental health conditions, such as depression, often are associated with sleep difficulties.

- **Medications** — Drugs that disrupt sleep range from nonprescription decongestants to commonly prescribed drugs such as bronchodilators, some antidepressants and corticosteroids. Other medications such as beta blockers, varenicline (Chantix), some antidepressants and narcotics can cause vivid dreams or nightmares, contributing to sleep difficulty. Some pain relievers contain caffeine.

- **Menopause** — Up to half of women in menopause report sleep difficulties. Hormone changes may be a factor and result in hot flashes, night sweats and disrupted sleep.

Yet another factor is sleep deprivation faced by family caregivers.

If need be, change it up

If you’re having sleep difficulties, consider whether a particular stress may be the cause. Once resolved, the sleep issue may settle back to normal.

But if you can’t identify a reason for ongoing sleep loss — talk with your doctor. Addressing its cause can make your nighttime sleep a more restful experience.
Mirror neurons

Specialized brain cells

Your sister warned you to take along plenty of tissues. Sure enough, you weren’t the only one crying as the movie ended.

Such is the power of empathy. Because you had experienced the same feelings, you knew how the fictional characters felt. You and others in that theater could feel their pain, even to the point of shedding tears.

What makes you recognize and relate to another person’s excitement or sorrow, or even understand someone’s intentions? Scientists say it may be specialized brain cells called mirror neurons.

Mapping the brain

Mirror neurons were identified by sheer accident nearly two decades ago. Researchers were studying brain activity in monkeys. Imagine their surprise when the same neuron activity fired up not only when the monkey reached for its own food, but also when it watched another monkey perform the same action.

In the years since, brain-imaging studies have demonstrated the presence and probable locations of neurons that make up a mirror neuron system in the human brain.

Mirror neurons become active not only when you perform an action, but also when you see someone else perform the same action. This allows you to adopt the other person’s point of view and interpret the person’s intentions.

For instance, if you’re a golfer and watch a golf tournament on TV, the moves you make during your swing or while you putt are played back by your mirror neurons as you watch someone else golfing. In a sense, your mirror neuron brain activity lets you be part of what you’re observing.

It also appears that the brain’s mirror system plays a significant role in the ability to empathize and socialize with others. That’s because you can observe and interpret facial expressions. So, if someone you encounter is happy, that emotion is readily communicated through the person’s facial expression. Studies of the human brain have found that the same regions of the brain become activated whether you’re the one smiling or you see someone else smiling.

Possible implications

Mirror neurons and their potential role in social interactions raise some questions about what life might be like if your mirror neuron system didn’t work properly.

One condition of particular interest is autism. People who have autism — a condition marked in part by difficulty with social interactions — may have a mirror neuron system that doesn’t function as it should. Studies have determined the less active the mirror neuron system is, the more severe are the symptoms of autism.

What can be done to counter a lack of mirror neuron activity in children with autism? One approach is imitative behavior therapy. Essentially, a therapist imitates the actions of the autistic child to encourage the child’s social engagement. Results of the therapy have been encouraging.

Stroke recovery is another field that may benefit from what’s being discovered about the mirror neuron system. Studies involving people recovering from stroke have found that “action observation therapy” — which involves repeatedly observing a movement that’s been impaired by stroke — can help them relearn particular motions. Researchers noted this relearning coincided with reactivation of brain areas associated with the mirror neuron system.

But mirror neurons may have a dark side when it comes to addiction to smoking, alcohol or illegal substances. Researchers have looked at brain images generated while a smoker watched videos of someone else opening a pack of cigarettes or smoking. The smoker was also shown videos of someone opening a soda can or bottle of water and drinking it. Results showed higher mirror neuron activity with the smoking-related video. Smokers trying to stop may be battling more than nicotine addiction.

More to learn

Not everyone in the scientific community is in agreement over what mirror neurons do, or even if they actually exist. It’s not surprising that there’s disagreement over such a complex and evolving aspect of brain function.

Until 2010, an actual physical mirror neuron had yet to be identified. That changed when researchers ran a study of people who had treatment-resistant epilepsy.

As part of their potential surgical treatment, study participants had electrodes placed in their brains to identify where the focus of seizure activity was located. Each participant completed several directed tasks as researchers recorded cellular activity in the brain. Not only did the researchers measure activity of more than 1,100 separate neurons, but also they demonstrated that mirror neurons are located in more areas of the brain than previously thought.

Implications of the brain’s mirror neuron system include learning more about how speech and language skills are acquired, and the emotional processing that appears to play a part in the ability to have empathy for pain.
Second opinion

Q: Is it better to use a hard- or soft-bristled toothbrush for regular brushing?

A: The American Dental Association (ADA) recommends using a toothbrush with soft bristles. Brushing with hard bristles can actually wear away the hard outer coating (enamel) of the teeth, as well as damage your gums.

Brush your teeth at least twice a day with a soft-bristled brush, concentrating on brushing just two teeth at a time. This is because using long strokes across several teeth can damage gums as you go around your mouth.

Every three or four months — or sooner if the bristles become frayed — replace your toothbrush or brush head with a soft-bristled product that features the ADA’s Seal of Acceptance.

Q: A white spot in my lung showed up on a routine chest X-ray. I assumed it would be cancer, but my doctor says it may be something else. What else could it be?

A: A solitary white spot — generally referred to as a lung nodule — sometimes can be an early cancer, so it’s important to talk to your doctor to determine the best course of action.

Lung nodules are common and typically noncancerous (benign). Among the most common causes of noncancerous lung nodules are scars or markings from a prior fungal infection — such as histoplasmosis or coccidioidomycosis — bacterial infection, mycobacterial infection, such as tuberculosis, or a benign tumor called a hamartoma.

As in your situation, solitary lung nodules often are detected on an X-ray done for another reason, and appear as round, white shadows on an X-ray or computerized tomography (CT) scan. Lung nodules are common. If you have a CT scan of the chest, about half the time, one or more small nodules will be found. They appear white because they’re denser than the surrounding lung, which is full of air and appears dark. Generally, the smaller the nodule the less likely it may be cancerous (malignant).

Nodules that measure less than 5 millimeters (mm) — or about 1/5 of an inch — are extremely likely to be benign. Those measuring more than 20 mm, which is about 3/4 of an inch, have a greater than 50 percent likelihood of being cancerous.

Along with size, several additional factors are considered when a solitary lung nodule is discovered. For example, being 50 or older increases the probability that the nodule is cancerous. A history of smoking increases lung cancer risk. Asbestos exposure and a family history of lung cancer also are risk factors. Your doctor may compare your current X-ray or CT scan with a previous one to see if the nodule was present. If it was and there’s no change in size, shape or appearance, chances are high it’s noncancerous. Periodic imaging tests such as CT or other scans may be all that’s needed to monitor for any changes. If there’s no change after two years, follow-up is usually stopped.

Further testing may be recommended if the nodule is new or has changed in size, shape or appearance. Tests may include:

- CT scan if the nodule was first seen on a chest X-ray
- Positron emission tomography (PET) scan to see how active the nodule cells are — high cellular activity is an indicator of cancer or active inflammation
- Tissue sample (biopsy)

A nodule that grows over time is more likely to be malignant, though some benign nodules can grow. When a nodule is a lung cancer that hasn’t spread, it’s at a stage that can usually be cured with surgery.

Have a question or comment?
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