

# Preventing Falls

How to stay on your feet—inside the home and out.

BY GINA SHAW

If you were asked to list the five most dangerous objects in your home, you'd probably start with the stove or meat cleaver. But would you think of bath mat?

“One of the most common trip hazards in the home are area rugs,” says Lisa Shulman, M.D., professor of neurology and Eugenia Brin Professor of Parkinson's Disease and Movement Disorders at the University of Maryland School of Medicine in Baltimore. The bathroom is especially dangerous, with its many hard and slippery surfaces. Add a decorative bath mat without non-skid backing, and you've got a recipe for a life-threatening spill.

Falls are one of the biggest safety hazards for older Americans (65 and older) and people living with neurologic conditions, killing more than 18,000 older adults each year, according to the Centers for Disease Control and Prevention (CDC). Twenty percent to 30 percent of older people who fall suffer moderate to severe injuries, such as hip fractures and head traumas.

“All too often, people who suffer a fall like that never get back to the level of functioning they had before,” says David J. Thurman, M.D., M.P.H., neurologist and medical epidemiologist with the Epilepsy Program in the Division of Adult and Community Health at the National Center for Chronic Disease Prevention and Health Promotion at the CDC. Dr. Thurman is also an author of guidelines on recognizing fall risk for the American Academy of Neurology (AAN). (For the latest AAN guidelines on assessing risk of falls, go to <http://bit.ly/gtQQya>.)

“Unfortunately, falls can lead to a series of problems and to physical decline,” Dr. Thurman says. “Once someone has had a fall, even if they don't have a serious injury,



they can be troubled by a fear of future falls. This may lead them to become less active, limiting their life and, paradoxically, raising their risk of falling again because they become weaker and less physically fit.”

## WHY WE FALL

Our balance depends on three main sensory areas: the vestibular system, the proprioceptive system, and the visual system (see box above). “With age, and with certain neurologic conditions, one or more of these areas can become compromised,” says Dr. Thurman. “People can often compensate when one of them is damaged. But when two or more are impaired, people can be at a greatly increased risk of falling.”

One common condition that can increase risk of falling is peripheral neuropathy (PN), a disorder of the motor, sensory, and autonomic nerves connecting the spi-

nal cord to the muscles, skin, and internal organs. Some of the causes of PN include diabetes, autoimmune disorders, trauma, and nutritional deficiencies. Peripheral neuropathy usually affects the feet and legs first, then the hands. Common symptoms include numbness and decreased sensitivity to touch; muscle weakness; impaired proprioception; and sometimes tingling and pricking sensations or burning pain. These symptoms—especially numbness—can make it difficult to perceive changes in the type of surface you're walking on.

“Fall risk is also increased by other neurologic problems, such as the loss of postural reflexes that occurs in Parkinson's disease,” explains Dr. Shulman. “These are the motor reflexes that enable you to prevent a fall when you stumble. People with neurologic problems may also have severe changes in posture—stooping or tilted—

## Why We Fall

Our balance depends on three main sensory areas:

**THE VESTIBULAR SYSTEM**, which responds to signals from the inner ear regarding the position of the head and movement.

**THE PROPRIOCEPTIVE SYSTEM**, which responds to signals not just from the inner ear but from all the muscles and joints to determine where the body is positioned in space.

**THE VISUAL SYSTEM**, which allows us to process visual detail.

The good news is that many falls are preventable.

that can increase fall risk, and cognitive problems that can result in loss of insight and judgment.”

“An important component of maintaining good balance is strength and coordination in the lower extremities,” says Dr. Thurman. “This frequently declines as we get older. As a result, our ability to react quickly to a change in posture is diminished.”

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### STRIKING A BALANCE

Most neurologists can refer people for physical/occupational therapy to help improve fitness and minimize fall risk.

“First, we evaluate the person’s current level of balance and their fall risk,” explains Ali Kanji, D.P.T., owner of Baltimore Orthopaedics and Rehabilitation. One commonly used test, the Berg Balance Scale, requires the person to perform a series of tasks, such as sitting unsupported, standing on one leg, stool stepping, and retrieving objects from the floor. The person is given a score between 0 and 4 for each task. A perfect score is 56; a score below 48 means the person is at a moderate risk for falls. As the score declines further, the fall risk grows.

“Then, we look at the person’s balance throughout their daily activities in order to identify areas of deficit. Finally, we focus the treatment in those areas,” says Kanji. “For example, for gait problems, we do exercises that might have the person work on standing with feet together and then staggered, and with eyes open and closed.”

The physical therapists will also challenge people to complete obstacle courses that mimic the routines of their daily lives.

Besides specific physical therapy, says Dr. Shulman, people at high risk of falls can often benefit from regular exercise and strengthening programs. “Walking in a safe environment is often beneficial, if there are

no serious underlying neurologic impairments,” she says. “Another excellent choice is tai chi. Research has shown that it can improve balance and reduce

the risk of falls.” (See “Mindful of Pain,” at <http://bit.ly/dLurWo>.)

### HOME SAFE HOME

You may still love the décor you’ve had for the last 10 or 20 years, but it may no longer be safe—especially if you’re a fan of area rugs, knick-knacks, and occasional tables. (Victorian-style clutter, beware.)

Occupational therapists from a program like Kanji’s can come to your home and help you go room by room to identify and eliminate fall hazards. Often, such a “home safety audit” is covered by insurance.

Wherever you are, you’ll be a lot less likely to fall if you aren’t distracted, Dr. Shulman says.

“There is an increased risk of falls when individuals are multitasking,” she says. “Walking is a combination motor and cognitive act. Your fall risk increases when you’re doing more than one thing at a time, even when the other thing is *thinking*—like trying to find your gate at an airport. Sometimes we can’t avoid these dual tasks, but don’t add to them. Sit down before you take out your cell phone. Don’t keep walking when you’re pulling out your travel documents.”

Falls aren’t an inevitable fact of life—but they are an undeniable risk. If you take that risk seriously and seek professional advice, you’re more likely to stay on your feet. NN

## HOW TO MAKE YOUR HOME SAFER

### Bedrooms

- ▶ Clear a path from the bed to the bathroom—remove items such as shoes and lamp cords.
- ▶ Illuminate your path to the bathroom with a nightlight.

### Bathrooms

- ▶ Make sure that your bathroom floor mat has a slip-free backing or get rid of it. “Although they soak up water, they pose the biggest risk for falls,” says Kanji. If you take out the bathmat, make sure that the bathroom floor is dried after bathing.
- ▶ Add a non-skid mat or grab bars in the bath.

### Living Room

- ▶ Clear the space of throw rugs and small “decorative” pieces of furniture.
- ▶ “Have at least one armchair with arms that help you lever yourself to a standing position,” Kanji says.

### Kitchen

- ▶ Rearrange the supplies in your cabinet so that everything you need regularly is within reach.

### Stairs

- ▶ Install solid railings.
- ▶ Make sure stair treads have a non-slip surface and remove trip hazards.

### Flooring

- ▶ If it’s time to replace flooring, avoid slick and highly polished materials.
- ▶ Keep floors clean, but make sure they’re thoroughly dried after mopping, and skip waxing.

### In-Between Places

- ▶ Take a look at the thresholds between rooms, Dr. Shulman advises. “Is there a change in the height of the floor between the living room and the dining room? Ask an occupational therapist to suggest options, like a small ramp, that will make transitions less dangerous.”