

6 Personal Risk Factors That Cause Falls



According to the Center for Disease Control, personal risk factors account for approximately 75 percent of the risk of falls and are related to acquired disabilities, age-related changes and current diseases. Eliminating, reducing or controlling these risk factors is a key to fall prevention and injury reduction.

The **first personal risk factor** is the normal **Aging Process**.

As we age, we undergo a number of physiological changes which affect how we function and respond to daily living. Overall, the changes in the later life span involve a general slowing down of all organ systems due to a gradual decline in cellular activity. It should be noted that individuals experience these changes differently - for some, the level of decline may be rapid and dramatic; for others, the changes are much less significant. The effects of these changes differ widely from person to person. Major changes associated with the normal Aging Process that can directly contribute to falls and fall related injuries include:

Cardiovascular Changes

The most significant overall change is reduced blood flow to the body, which typically becomes significant in our 60's and 70's. This results from a number of factors including normal atrophy of the heart. The reduced blood flow results in reduced stamina since less oxygen is being exchanged. Other consequences of these cardiovascular changes are hypertension with an increased risk of stroke, heart attack, and congestive heart failure.

Respiratory Changes

There is also a reduction in the efficiency of the respiratory system, resulting in decreased oxygen uptake and exchange. These changes are exacerbated if the individual smokes or lives in a polluted environment. The consequences of these changes can include decreased stamina with shortness of breath and fatigue, which in turn may impair one's ability to perform activities of daily living. Lack of oxygen can also increase anxiety. Fatigue and decreased stamina affect balance and gait and increases the likelihood of falls.

Changes in Musculature

A generalized atrophy of all muscles is normal in later years accompanied by a replacement of some muscle tissue by fat deposits. This results in loss of muscle tone and strength. Although everyone experiences these changes to some degree, regular physical exercise appears to temper the extent of these changes. Changes in musculature slows our reaction times to falls after the brain detects a fall is occurring.

Changes in Bones

Beginning at around age 35 in both men and women, calcium is lost and bones become less dense. This can result in osteoporosis and a reduction of weight bearing capacity, leading to the possibility of spontaneous fracture. The joints also undergo changes. In fact, arthritis, the degenerative inflammation of the joints, is the most common chronic condition in the elderly. These conditions can impair mobility, decrease the ability to performance of daily activities of living and increase the likelihood of injuries should a fall occur.

Changes in the Nervous System

After age 25, everyone loses nerve cells. Gradually over time, this results in a reduced efficiency of nerve transmission, affecting response time and coordination thereby slowing reaction time to the initial stages of a fall.

Changes in the Gastrointestinal System

As we age, we experience a reduction in the production of hydrochloric acid, digestive enzymes, and saliva, as well as a reduction in the total number of taste buds. Consequently, the breakdown and absorption of foods may also be impaired, resulting in vitamin deficiencies of B, C, D, and K vitamins or, in extreme cases, malnutrition. If left untreated, these deficiencies may result in weakness, mental confusion and reduced alertness. It is these debilitating conditions that increase the likelihood of falls.

Changes in the Endocrine System

The endocrine or metabolic system is responsible for changing food into energy. After age 25, everyone experiences approximately a 1% decrease per year in their metabolic rate. This overall slowing results in food being less well absorbed and utilized as well as a decrease in the overall metabolism of drugs. Consequences can include reduced stamina and reserves as well as greater susceptibility to drug toxicity.

All of the changes our body undergoes in the natural aging process have the ability to increase our susceptibility to falls as senior citizens. As we age the changes discussed above drastically increase our risk of fall related injuries. In fact the rate of hip fractures increases after age 50, doubling every five years as a result of the aging process.

The **second major personal risk factor** that contributes to falls among senior citizens and raises the risk of fall related injuries is **Lack of Activity**.

Centers for Disease Control and Prevention (CDC) data show that one in three adults older than 65 report no leisure time physical activity, and more than one in four adults age 50 to 64 report no leisure time activity.

The U.S. Surgeon General recommends moderate physical activity for 30 minutes a day on most days. According to research conducted by the CDC, healthy lifestyles are more influential than genetic factors in helping older people avoid the deterioration, illnesses and injuries traditionally associated with aging. People who are physically active, eat a healthy diet, do not use tobacco, and practice other healthy behaviors reduce their risk for chronic diseases and have half the rate of disability and fall related injuries of those who do not.

The **third major personal risk factor** of falls and fall related injuries is **Gender**.

While gender alone is not a predictor of fall risk, it is a key factor in fall related injuries. For example, two people of the same age, same outward physical condition and health can fall in the same place at the same time and one may get up unscathed while the other will suffer a severe fall related injury just because they are of a different gender.

Women have a greater risk of fall related injuries than men. Reduced levels of estrogen after female menopause can result in osteoporosis. Which directly affects bone density making bones brittle which increases the likelihood that a simple fall could result in a fracture.

Osteoporosis is described as an age related disorder that consists of decreased bone mass and increased susceptibility to fractures. Osteoporosis is most commonly seen in post-menopausal Caucasian women. Approximately 1.2 million fractures per year are attributed to osteoporosis. Of these fractures, about one-third are compression fractures of the spine. In addition women have two to three times as many hip fractures as men and a 20 percent chance of a hip fracture during their lifetime.

Osteoporosis is related to aging in that after the age of forty almost everyone starts to lose bone mass. This bone loss is particularly rapid in women. Some risk factors for osteoporosis include cigarette smoking, heavy alcohol consumption and chronic steroid use

The **fourth personal risk factor** is actually a group- called **Personal Habits**.

Things that we do or subject our body to each day can increase the likelihood of falls and fall related injuries and they are called **personal habits** such as eating, drinking, smoking, drug use, supplement use etc. Habits such as smoking and/or excessive alcohol intake decreases bone strength and greatly contribute to seriousness of fall related injuries. Cigarette smoking has been identified as a risk factor for osteoporosis Significant bone loss has been found in postmenopausal women and older men with prolonged smoking exposure.

The U.S. Department of Health and Human Services tells us there is no 'safe' level of alcohol use, and they remind us that the result of a single alcoholic drink is "relaxed inhibitions, impaired judgment, slowed reaction, and impaired motor coordination." One drink not only puts part of the brain cells temporarily out of order, but the brain is anesthetized long after the blood alcohol concentration (BAC) returns to normal. This is true whether an alcoholic drink is taken at a social function, with a meal, or when alone. Seniors are at special risk because one drink (sometimes even less) can result in a fall which may require hospitalization, or result in errors such as taking the wrong amount of medication.

Any use of alcohol may be viewed as a health risk in older individuals, whose use of prescription medication may result in adverse interactions. Approximately 90% of elderly persons are using some kind of medication, either prescription or over-the-counter. Because of the decrease in the percentage of body water content with age, small amounts of alcohol can result in high blood alcohol levels. Alcohol use also makes sleep difficulties worse, elevates blood pressure and has a detrimental effect on bone mineral metabolism.

The **fifth personal risk factor** group is the **heredity** and **genetic** indicator group.

Recent studies indicate that your family history and genetic make up provide future insights into your potential for disease and illnesses. In addition your family tree may also provide clues relating to your increased risk of falls and fall related injuries. **Heredity:** A family history of fractures may indicate a problem with calcium uptake and absorption. A naturally small frame with less bone mass to begin with can also accelerate the risk of falls. For example, Caucasians and Asians with small, slender body structures are at risk; so are people who have a family history of fractures later in life. In addition studies indicate that women over 5'8" tall or especially prone to falls and fall related fractures.

There are personal risk factors that may not be able to be reduced such as gender or heredity. However the **sixth personal risk factor** that is prevalent among seniors, **Poor Nutrition** can be eliminated as a risk factor to falls.

Poor Nutrition greatly contributes to falls and manifests itself in critical shortages of specific nutrients and vitamins in the diet. For example low calcium dietary intake, reduced calcium absorption thereby making bones brittle increasing the risk that a simple fall could result in a fracture. In addition poor diets low in Iron, calcium and vitamin D are factors in osteoporosis.

However eating more may not be enough. An estimated 30% of seniors lose their ability to make stomach acid, and this interferes with the absorption of some nutrients such as vitamin B12 and folic acid. Deficiencies in these nutrients, as well as vitamin B6, can cause neurological changes such as decline in alertness, loss of memory, and numbness of the extremities.

A problem that is prevalent among seniors with poor nutrition, which can be a direct contributor to falls is Anemia. It is the most common blood disorder in seniors, affecting about 15% of those over 65, and becomes more common with age. There are many causes of Anemia. Blood loss from an accident or operation, or from a bleeding ulcer or hemorrhoids, are the most obvious. Red blood cells can also be destroyed by toxins or diseases. There may also be a condition where the body may not be able to manufacture enough red blood cells because of poor nutrition.

In the elderly, this often occurs because the individual doesn't consume enough iron, vitamin C, vitamin B12, or folic acid, in his/her diet. In the elderly anemia may manifest as confusion, fainting spells, falls, chest pain or congestive heart failure.

PERSONS WITH THREE OR MORE PERSONAL RISK FACTORS HAVE ALMOST A 100 PERCENT CHANCE OF FALLING.

ResponseLink offers information for general educational and informational purposes only. This information is not intended as a substitute for advice, treatment, or recommendation from health care professionals. The information is not exhaustive and does not cover all fall related ailments, physical conditions, or their treatment. It is important to follow the advice of your doctor and other health care professionals regarding your individual health care needs.

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