The Facts . . .

⇒ There are an estimated 0.6 to 3.6 falls per nursing home resident each year.

⇒ WHICH MEANS: 1600 falls per 1000 NH beds per year.

⇒ Approximately 12% (1-36%) of NH falls result in serious injury.

⇒ Approximately 4% (1-10%) of NH falls result in fracture.

⇒ 1800 fatal falls occur in US nursing homes each year.

Resident falls in nursing homes continue to be a serious problem. It is estimated that 50 percent of nursing home residents will fall each year.

To prevent falls, it is important to understand the 3 W’s of Fall Prevention:

WHERE

• Falls commonly occur in residents’ rooms.

• 12 percent of falls occur while the resident is exiting bed or in the bathroom.

WHO

• Residents older than 75 years.

• Newly admitted residents with a previous fall within the last year.

• Residents with moderate to severe dementia.

• Residents with gait instability, poor balance and multiple physical disabilities.

• Residents who are unable to carry out more than two basic activities of daily living.

WHEN

• Occur between the hours of 6 pm and 6 am.

• Occur when staff/resident ratio is low.

INFO-CONNECT

Fall Prevention

Nursing Home Falls: The 3 W’s of Fall Prevention

Causes of Falls in Nursing Homes

⇒ Gait/balance disorder, weakness 26%

⇒ Dizziness/vertigo 25%

⇒ Environment 16%

⇒ Confusion 10%

⇒ Other 12%

⇒ Arthritis ⇒ Falling from bed

⇒ Pain ⇒ Acute illness

⇒ Alcohol ⇒ Drugs

⇒ Epilepsy

To Learn More:


Risk Factors

In order to decrease falls in nursing homes, it is crucial to understand the potential risk factors. These risk factors normally fall into the following two broad categories:

- **Extrinsic Risk Factors**
- **Intrinsic Risk Factors**

Although many falls can be linked to a primary cause, the most successful interventions take into account the multifactorial nature of falls.

**MOST FALLS ARE CAUSED BY A COMBINATION OF EXTRINSIC AND INTRINSIC FACTORS.**

**Extrinsic Risk Factors**

⇒ Physical or functional disorders related to the environment

<table>
<thead>
<tr>
<th>Factor</th>
<th>Modification (or Intervention)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slippery or wet floors or bathroom surfaces</td>
<td>Carpeting, nonskid flooring, bed side commode</td>
</tr>
<tr>
<td>Insufficient or glaring light</td>
<td>Increased lighting, night lights</td>
</tr>
<tr>
<td>Low lying obstructions</td>
<td>Clear paths</td>
</tr>
<tr>
<td>Improper bed and chair height</td>
<td>Lowered beds, raised chairs and toilet seats</td>
</tr>
<tr>
<td>Unlocked bed or wheelchair</td>
<td>Individual seating, bed stabilizers</td>
</tr>
<tr>
<td>Improper use of a walking aid</td>
<td>Physical therapy assessment</td>
</tr>
<tr>
<td>Improper dress or ill-fitting shoes</td>
<td>Occupational therapy assessment</td>
</tr>
<tr>
<td>Restraints</td>
<td>Restraint reduction program</td>
</tr>
</tbody>
</table>
**Intrinsic Risk Factors**

⇒ Physical or functional disorders related to the individual

<table>
<thead>
<tr>
<th>Factor</th>
<th>Clue</th>
<th>Causes</th>
<th>Assessment</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impaired vision</td>
<td>Difficulty seeing in low light</td>
<td>Cataracts, Macular Degeneration</td>
<td>Acuity, visual fields, dark adaptation</td>
<td>Appropriate refraction, appropriate lighting</td>
</tr>
<tr>
<td>Impaired vestibular function</td>
<td>Vertigo (spinning sensation)</td>
<td>Drugs (furosemide, aminoglycosides), tumors, benign positional vertigo, Meniere's disease</td>
<td>Nystagmus, ENT exam</td>
<td>Avoid toxic drugs, balance exercises</td>
</tr>
<tr>
<td>Impaired proprioception</td>
<td>Balance worse in the dark or on uneven ground</td>
<td>Diabetes, vitamin B12 deficiency, cervical arthritis</td>
<td>Motor and sensory exam, vitamin B12 level, blood glucose</td>
<td>Treat disease, appropriate walking aids and footwear, balance exercises</td>
</tr>
<tr>
<td>Impaired cognition</td>
<td>Impaired judgment and problemsolving skills</td>
<td>Dementia, depression</td>
<td>Mini-mental state examination</td>
<td>Supervised environment</td>
</tr>
<tr>
<td>Weakness</td>
<td>Difficulty arising from a chair</td>
<td>Chronic arthritis, stroke, recent illness or hospitalization</td>
<td>Joint and muscle exam, strength testing, range of motion, foot exam</td>
<td>Medication, strengthening exercises, balance and gait training, adaptive devices, podiatric treatment</td>
</tr>
<tr>
<td>Lower extremity pain</td>
<td>Antalgic gait</td>
<td>Arthritis, foot disorder</td>
<td>Pain scale</td>
<td>Analgesia, assistive device</td>
</tr>
<tr>
<td>Postural hypotension</td>
<td>Light-headed with position change</td>
<td>Medications, Parkinson's disease, diabetes</td>
<td>Postural vital signs</td>
<td>Hydration, adjust medications, stockings, reconditioning exercise</td>
</tr>
<tr>
<td>Medications</td>
<td>More than 4 medications</td>
<td>Sedating medications, long-acting benzodiazepines, neuroleptics, vasodilators</td>
<td>Medication review</td>
<td>Reduce or eliminate medications when possible</td>
</tr>
</tbody>
</table>

**Fall Reduction Programs**

A fall reduction program consists of the following 3 steps:

- **Identification** of at-risk residents
- **Implementation** of fall intervention strategies
- **Evaluation** of success of strategies

**Identification**

All fall prevention programs should be directed at two categories of residents:

- Residents who have fallen. (A previous fall is a strong predictor of high fall risk.)
- Frail residents who have risk factors.

Two essential components of identifying residents are Clinical Evaluation and Screening Instruments.

**Clinical Evaluation**

It is important to identify fall risk factors that can be treated to reduce the likelihood of future falls.

The following steps are key:

- Fall History
- Physical Exam
- Functional Assessment

**Predicted 1-year risk of falling is 100% if all 3 of the following risk factors are present.**
Fall risk is directly related to the number of the following risk factors:
- Hip weakness
- Balance instability
- 4 or more prescription medications

### Screening Instruments
The following instruments have been validated for fall risk assessment:
- Tinnetti’s Balance and Gait Evaluation Index
- “Get Up and Go”

---

**Physical Restraints**

Physical restraints are often used to prevent falls, to prevent resistance to treatment and to manage uncontrollable behavior. However, restraints often increase a resident’s risk of injury. In addition, the prolonged use of restraints increase risks for:
- Death (strangulation, asphyxiation, etc.)
- Pressure ulcers
- Contractures
- Urinary incontinence
- Patient confusion
- Learned helplessness

### Reducing Restraints

To reduce restraints, the circumstances surrounding the unacceptable behaviors must be noted, not merely that the behavior occurred.

- **WHEN** does the behavior occur?
- **WHAT** specific actions, interactions and reactions comprise the behavior?
- **WHERE** does the behavior occur?
- **WHO** is present when the behavior occurs?
- **WHY** does the behavior occur?
- **HOW** do those present respond to the behavior?

---

### Implementation

After this information is gathered, specific interventions can be implemented.

Below are examples of three risk factors and potential interventions.

#### 1. Proximal Muscle Weakness
- Strengthening exercises
- High firm chairs
- Raised toilet seats

#### 2. Balance Problems
- Bright lights
- Night lights
- Appropriate walking aid

#### 3. Abnormal Gait
- Gait training
- Elimination of tripping hazards

A comprehensive fall management and safety program should be combined with the use of positioning or mobility-monitoring devices and rehabilitative therapy intervention.

---

**The goal of a fall intervention program is to lower a resident’s fall risk with minimal change to mobility or independence.**

### Benefits of Fall Intervention Program

- Environmental fall prevention programs which are targeted at high-risk residents result in a 25 percent annual decrease in falls.
- Fall prevention programs can minimize residents’ risks of falling without compromising mobility or functional independence.

For copies of these screening instruments (as well as other assessment tools for mobility, delirium and cognition), visit the Iowa GEC website: [http://www.healthcare.uiowa.edu/igec](http://www.healthcare.uiowa.edu/igec)