

# Consequences of Falls in Older Patients



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## KEYWORDS

• Falls • Elderly • Pelvic fracture • Co-management

## HOSPITAL MEDICINE CLINICS CHECKLIST

1. Falls are the most common type of trauma in older patients who experience significant morbidity and mortality even from low-impact mechanisms, including falls from standing.
2. Hospitalists caring for older patients admitted for a fall must be aware of potential injuries, including ones that are not readily apparent on an initial evaluation.
3. Injuries in older patients may be unrecognized because of vulnerability to injury from minor mechanisms, susceptibility to less common injuries, distracting injuries, altered pain perception, and impaired cognition.
4. Pelvic fracture is a serious consequence of a mechanical fall in older patients owing to its high short and long-term morbidity and mortality.
5. The assessment and treatment of falls in older patients requires a collaborative approach among multiple services with expertise in geriatric care.

*What defines an older patient and how do the effects of aging and comorbidities create vulnerabilities for older patients who fall?*

The body of research on the subject of falls in older patients uses varying age cutoffs, generally between 65 and 70 years of age. As such, when authors refer to older patients, generally we are referring to patients older than 65 years of age. Because the term “elderly” can be interpreted as connoting frailty or cognitive or physical disability, we have avoided using it herein, although it is used frequently in the literature. Instead, we use the terms “older” or “geriatric” to reference only the chronologic age.

Older trauma patients should be considered a special cohort owing to decreased physiologic reserve, impaired immune function, alterations in pulmonary function,

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<b>Table 1</b> Physiologic changes owing to aging, comorbidities, and consequences for older trauma patients		
<b>System</b>	<b>Changes due to Aging or Comorbidity</b>	<b>Consequences</b>
<b>Cardiovascular</b>		
Aging	Decreased cardiac reserve	Impaired response to hemodynamic stress
Comorbidity	Blunted catecholamine response	Early hemorrhage and shock masked
	Congestive heart failure	Challenging resuscitation and fluid management
	Coronary artery disease	Demand ischemia, beta blockade increases mortality in trauma <sup>1</sup>
	Atrial fibrillation	Anticoagulation increases bleeding risk
<b>Neurologic</b>		
Aging	Decreased brain size	Delayed onset symptoms in subdural hematoma
	Stretching bridging veins	Risk for tearing with shear forces, increased risk bleeding
Comorbidity	Decreased brain auto-regulation	Risk for decreased brain perfusion
	Dementia	Impaired pain perception, reporting, missed injuries Risk for acute delirium
<b>Bone</b>		
Aging	Less able withstand mechanical forces in trauma	Increased risk fracture from low force trauma
Comorbidity	Osteoporosis	Synergistically increases fracture risk
<b>Pulmonary</b>		
Aging	Loss elasticity chest wall, lungs	Decreased mechanical compliance, risk for rib fractures
Comorbidity	Decreased diffusion capacity, VC, FEV, functional reserve	Increased baseline work of breathing
	COPD	Decreased respiratory reserve Increased risk respiratory complications
<b>Hepatic</b>		
Aging	Decreased hepatic function	Impaired clearance of some medications
Comorbidity	Cirrhosis	Significantly increased mortality in trauma
<b>Renal</b>		
Aging	Decreased renal function	Risk acute kidney injury, medication overdoses, fluid overload
	Decreased muscle mass	Obscures awareness of chronic or acute kidney disease
Comorbidity	Chronic kidney disease	Challenging medication and volume management

*Abbreviations:* COPD, chronic obstructive pulmonary disease; FEV, forced expiratory volume; VC, vital capacity.

*Modified from* Colwell C. Geriatric trauma: Initial evaluation and management. In: Post TW, editor. Waltham (MA): UpToDate. Accessed February 17, 2017.

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