GROUND-LEVEL FALLS AS A LEADING CAUSE OF MAJOR TRAUMA IN OLDER PEOPLE

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Author Glory Kinsiedi-Matonga

BACKGROUND

Major trauma is conventionally associated with high-energy mechanisms such as road traffic collisions or falls from height.

However, **ground-level falls (GLFs)** — defined as unintentional descents to the ground from standing height or below — are an increasingly recognised cause of **serious injury and death in older adults.**[1,2]

Despite appearing to involve low-energy forces, GLFs frequently result in devastating injuries in elderly patients, driven by age-related physiological changes including **osteoporosis, frailty, and anticoagulant use**.[3,5]

With the UK's older population growing rapidly, and GLFs already representing a significant proportion of trauma centre admissions, understanding injury patterns, outcomes, and risk factors is critical for both preventive strategy and trauma service organisation.

RESULTS

GLFs account for a large and increasing proportion of **major trauma in older adults.**

A national US trauma database analysis of over one million geriatric patients **(2011–2015)** found that **39%** had sustained a fall as the mechanism of injury, with incidence rising proportionally with age.[6] Comparable trends are observed in UK trauma registries.

Common serious injuries resulting from GLFs include:

Traumatic brain injury (TBI) and intracranial haemorrhage

Thoracic injuries and intracranial haemorrhage were independently associated with ICU admission in one cohort study of GLF patients aged 65 and over.[7]

Cervical spine fractures

Often occurring at low energy in the presence of osteoporosis or pre-existing spinal degeneration.[3]

Hip fractures and rib fractures

Particularly in those on anticoagulant therapy, in whom haemorrhagic complications are compounded.[8]

Age-related factors that amplify injury severity include:

- Reduced bone mineral density (osteoporosis affects over 3 million people in the UK)
- Impaired protective reflexes
- Anticoagulant use
- Pre-existing cognitive impairment
- The presence of frailty, which is recognised as a stronger predictor of 12-month mortality than injury severity score alone.[4,5]

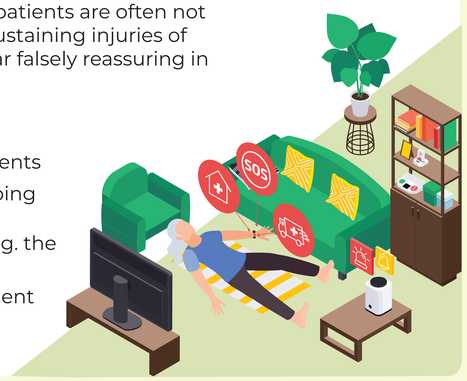
Clinical outcomes in older GLF patients are consistently worse than in younger trauma patients, with **higher in-hospital mortality, longer hospital stays**, and **greater rates of discharge** to residential or nursing care.[6]

A key concern is under-triage:

because the mechanism appears low-energy, GLF patients are often not fast-tracked into major trauma protocols, despite sustaining injuries of comparable severity.[2,8] Vital signs may also appear falsely reassuring in older adults, masking physiological deterioration.

Prevention evidence supports:

01 Comprehensive multidisciplinary falls assessments
02 Structured medication reviews with deprescribing of high-risk agents
03 Strength and balance training programmes (e.g. the OTAGO programme)
04 Home hazard modification; and the management of osteoporosis and visual impairment.[4,9]



METHODS

A literature review was conducted using **PubMed, MEDLINE, and Google Scholar.**

Search terms included:

- 'ground-level falls'
- 'older adult injury'
- 'low falls'
- 'frailty and trauma'
- 'geriatric trauma'
- 'fall prevention'

UK and international studies from the past 10–15 years were reviewed, focusing on **injury patterns, clinical outcomes, triage considerations,** and **evidence-based prevention strategies.**

CONCLUSION / SUMMARY

Ground-level falls are a **major and growing cause** of serious trauma in older adults, challenging traditional assumptions about injury mechanism and severity.

The interaction of **frailty, comorbidity, and osteoporosis** means that even a simple trip from standing height can result in life-threatening injury.

Trauma **triage systems must be adapted** to reflect the disproportionate risk carried by older patients following GLFs.

Simultaneously, investment in **evidence-based falls prevention** — delivered across primary, secondary, and community care — is essential to reduce the burden of this underappreciated cause of major trauma.

REFERENCES

01 Kennedy RL, Grant PT, Blackwell D. Low-impact falls: demands on a system of trauma management, prediction of outcome, and influence of comorbidities. J Trauma. 2001;51(4):717–24.
02 Velmahos GC, Jindal A, Chan LS, et al. 'Insignificant' mechanism of injury: not to be taken lightly. J Am Coll Surg. 2001;192(1):147–52.
03 Bhattacharya B, Maung A, Schuster K, Davis KA. The older they are the harder they fall: injury patterns and outcomes by age after ground level falls. Injury. 2016;47(9):1955–9.
04 Kehoe A, Smith JE, Edwards A, Yates D, Lecky F. The changing face of major trauma in the UK. Emerg Med J. 2015;32(12):911–5.
05 Boltz MM, Podany AB, Hollenbeak CS, Armen SB. Injuries and outcomes associated with traumatic falls in the elderly population on oral anticoagulant therapy. Injury. 2015;46(9):1765–71.
06 Elkbuli A, Narvel RI, Spano PJ, et al. Trends in geriatric ground-level falls: report from the National Trauma Data Bank. J Surg Res. 2021;268:132–9.
07 Khalil M, Claridge M, Hall NR, et al. Injuries and outcomes of ground-level falls among older patients: a retrospective cohort study. West J Emerg Med. 2025;26(2).
08 Caterino JM, Valasek T, Werman HA. Identification of an age cutoff for increased mortality in patients with elderly trauma. Am J Emerg Med. 2010;28(2):151–8.
09 Royal College of Nursing. Falls prevention in older people. Available at: www.rcn.org.uk/clinical-topics/Older-people/Falls [Accessed April 2026].
10 Tinetti ME, Baker DI, McAvay G, et al. A multifactorial intervention to reduce the risk of falling among elderly people living in the community. N Engl J Med. 1994;331(13):821–7.