## Ground-level fall

Ground-level falls are typically regarded as a minor mechanism of injury that do not necessitate trauma team activation; however, they represent a significant proportion of hospitalized trauma and can result in multisystem injury.

Clinically occult cervical spine injury is well described in blunt trauma, however, delay in identifying these injuries and clearing the Clinically occult cervical spine can result in morbidity. A study by Culhane et al. examines the ground level fall (GLF) population to analyze whether computed tomography (CT) alone can rule out unstable injury in this group with a lower force mechanism.

This is a single-center, retrospective cohort study. All GLF patients in the institutional trauma registry between 6/1/2012 through 12/31/2019 were included. These comprise all trauma patients evaluated in the emergency department with Injury Severity Score (ISS) > 0, including both activations and consults with both clinical and radiological spine evaluation. Patients who could not be cleared by National Emergency X-ray Utilization Study (NEXUS) criteria underwent CT. Patients with CT or clinical suspicion of cord or ligamentous injury underwent MRI. CT occult injuries were identified by MRI and clinical exam, with MRI identifying all unstable injuries.

Sixty-nine (2.0%) of patients had CS injury without acute CT abnormality. Of these, 11 (0.3%) required surgery and were considered unstable. All patients who required surgery had a neurologic deficit. The negative predictive value (NPV) of CT for unstable CS injury was 99.7%. The combination of acute CT findings and neurologic deficit ruled out unstable CS injury with 100% NPV.

In the GLF population, CT alone rules out unstable CS injury with high, but not perfect NPV. The combination of the absence of acute CT findings and acute neurologic deficits rules out unstable CS injury with 100% NPV<sup>1</sup>.

## 1)

Culhane J, Parr A, Mercier P. Accuracy of ct evaluation for cervical spine clearance in the ground level fall population - a retrospective cohort study. BMC Emerg Med. 2022 Jun 11;22(1):106. doi: 10.1186/s12873-022-00657-x. PMID: 35690715.

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