

Cervical spine injury diagnosis

A missed [cervical spine](#) (CS) injury can have devastating consequences. When CS injuries cannot be ruled out clinically using the [National Emergency X-Radiography Utilization Study](#) low-risk criteria because of either a neurologic deficit or pain, the optimal imaging modality for CS clearance remains controversial.

Evaluation

The initial evaluation of patients for cervical spine injury involves a detailed physical examination with careful evaluation of the criteria to determine whether radiographic evaluation of the cervical spine is necessary.

Radiographic evaluation

Once screening the cervical spine with radiography has been determined necessary, plain radiography has traditionally been the initial screening test for patients at risk of cervical spine injury.

Realization that standard cervical spine radiography fails to identify all patients with cervical spine injuries has resulted in the use of additional radiographic studies including supine oblique views, flexion-extension radiographs, or computed tomography (CT) scanning.

Cervical spine computed tomography

[Cervical spine computed tomography](#).

Magnetic resonance imaging

For Resnick et al., magnetic resonance imaging does not provide any additional clinically relevant information ¹⁾.

The neurosurgical evaluation and management of athletes after cervical spine injury with T2 hyperintensity on MRI is challenging. Although the presence of T2 hyperintensity is evidence of spinal cord trauma, the long-term prognostic value on an athlete's career and return-to-play (RTP) recommendations of this finding are poorly understood.

Much of the literature on cervical cord T2 hyperintensity relates to degenerative spine conditions. For example, several studies have examined the evolution of intramedullary T2 hyperintensity after ventral decompressive surgery for [cervical spondylotic myelopathy](#) (CSM) ^{2) 3)}.

¹⁾

Resnick S, Inaba K, Karamanos E, Pham M, Byerly S, Talving P, Reddy S, Linnebur M, Demetriades D. Clinical Relevance of Magnetic Resonance Imaging in Cervical Spine Clearance: A Prospective Study. JAMA Surg. 2014 Jul 30. doi: 10.1001/jamasurg.2014.867. [Epub ahead of print] PubMed PMID:

25076462.

²⁾

Sarkar S, Turel MK, Jacob KS, Chacko AG. The evolution of T2-weighted intramedullary signal changes following ventral decompressive surgery for cervical spondylotic myelopathy. J Neurosurg Spine. 2014;21(4):538-546.

³⁾

Vedantam A, Rajshekhar V. Change in morphology of intramedullary T2- weighted increased signal intensity after anterior decompressive surgery for cervical spondylotic myelopathy. Spine (Phila Pa 1976). 2014;39(18):1458-1462.

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