

Traumatic spinal cord injury treatment

Traumatic [spinal cord injury](#) (tSCI) is a life-changing and potentially overwhelming event. The sudden disruption of the spinal cord's integrity necessitates rapid [attention](#) at a specialized [medical center](#), and involves a multilateral [collaboration](#) between neurologists, spine surgeons, critical care physicians, and trauma specialists. Even with care under ideal conditions, many tSCI patients have a significant disability that persists for the rest of their lives. However, recently, we have seen a proliferation in clinical and translational trials that offer the promise that new treatments may be available soon ¹⁾.

Clinical management in the acute setting needs to occur in the intensive care unit in order to identify, prevent, and treat secondary insults from local ischemia, hypotension, hypoxia, and inflammation. Maintenance of adequate perfusion and oxygenation is quintessential and a mean arterial pressure >85-90 mm Hg should be kept for at least 1 week. A cervical collar and full spinal precautions (log-roll, flat, holding C-spine) should be maintained until the spinal column has been fully evaluated by a spine surgeon. In patients with SCI, there is a high incidence of other bodily injuries, and there should be a low threshold to assess for visceral, pelvic, and long bone injuries. Computed tomography of the spine is superior to plain films, as the former rarely misses fractures, though caution needs to be exerted as occipitocervical dislocation can still be missed. To reliably assess the spinal neural elements, soft tissues, and ligamentous structures, magnetic resonance imaging is indicated and should be obtained within 48-72 h from the time of injury. All patients should be graded daily using the American Spinal Injury Association classification, with the first prognostic score at 72 h postinjury. Patients with high cervical cord (C4 or higher) injury should be intubated immediately, and those with lower cord injuries should be evaluated on a case-by-case basis. However, in the acute setting, respiratory mechanics will be disrupted with any spinal cord lesion above T11. Steroids have become extremely controversial, and the professional societies for neurosurgery in the United States have given a level 1 statement against their use in all patients. Grant et al. therefore, do not advocate for them at this time. With every SCI, a spine surgeon must be consulted to discuss operative vs nonoperative management strategies. Indications for surgery include a partial or progressive neurologic deficit, instability of the spine not allowing for mobilization, correction of a deformity, and prevention of potential neurologic compromise. Measures to prevent pulmonary emboli from deep venous thromboembolisms are necessary: IVC filters are recommended in bedbound patients and low-molecular weight heparins are superior to unfractionated heparin. Robust prevention of pressure ulcers as well as nutritional support should be a mainstay of treatment. Lastly, it is important to note that neurologic recovery is a several-year process. The most recovery occurs in the first year following injury, and therefore aggressive rehabilitation is crucial ²⁾.

Medical treatment

[Traumatic spinal cord injury medical treatment.](#)

Surgery

Traumatic spinal cord injury surgery.

1)

Huang KT, Lu Y. Traumatic [Spinal Cord](#) Disorders: Current Topics and Future Directions. Semin Neurol. 2021 May 19. doi: 10.1055/s-0041-1725125. Epub ahead of print. PMID: 34010969.

2)

Grant RA, Quon JL, Abbed KM. Management of acute [traumatic spinal cord injury](#). Curr Treat Options Neurol. 2015 Feb;17(2):334. doi: 10.1007/s11940-014-0334-1. PMID: 25630995.

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