

INTERNATIONAL TRAUMA LIFE SUPPORT

LONG BACKBOARD USE FOR SPINAL MOTION RESTRICTION OF THE TRAUMA PATIENT

The guidelines and references contained in this document are current as of the date of publication and in no way replace physician medical oversight.

Roy Alson, MD, Ph.D, FACEP, FAAEM and Darby Copeland, Ed.D, RN, NRP

INTRODUCTION

The purpose of this document is to update International Trauma Life Support (ITLS) instructors and providers of the position of ITLS in regard to the use of Spinal Motion Restriction (SMR) and the role of the long spine board and other rigid devices in providing SMR.

The seventh edition of the ITLS Provider manual reflected widely accepted beliefs that injured patients should have SMR until an injury can be ruled out. Clinical studies have demonstrated that prolonged time on a long spine board can be detrimental to the patient and can potentially impair respiratory effort, increase the risk of aspiration, or result in pressure sores.

BACKGROUND

Traditionally, the pre-hospital management of trauma patients has included the use of a long spine board to provide SMR. All trauma patients are evaluated in the same manner using the ITLS Primary Survey, which includes a brief neurological assessment. Studies by Theodore et al¹ and Rozzelle et al² suggest that not all trauma patients must be treated with spinal immobilization. In addition, the National Association of EMS Physicians (NAEMSP) and the American College of Surgeons (ACS)³ indicate that the benefit of long spine board is largely unproven and the utilization of long spine boards during transport should be judicious so that the potential benefits outweigh the risks.⁴ Based on the current literature, the Faculty of Pre-hospital Care of the Royal College of Surgeons of Edinburgh consensus group in the United Kingdom also published two consensus statements^{5,6} related to SMR which are in alignment with the above.



Improving Trauma Care Worldwide

CONSIDERATIONS

Appropriately applied SMR should be considered for patients who fit the following criteria:

- Spinal deformity, pain, or tenderness
- Blunt trauma and altered level of consciousness
- High energy mechanism of injury with drug or alcohol intoxication
- Focal neurologic complaint

Also, SMR should be applied to patients who cannot be adequately assessed clinically for the presence of such injuries.

PROCEDURE

The long spine board is an extrication device, whose purpose is to allow transfer of a patient to a transport stretcher. The use of a long spine board is not appropriate or required to achieve SMR. Patients who are placed on a long spine board or other rigid device should be removed as quickly as possible.

SMR should be applied appropriately to those patients who may have sustained or are at high risk for spinal injuries and cannot be adequately assessed clinically for the presence of such injuries. Where indicated, maintenance of in-line spinal alignment when moving the patient and appropriately securing them to the transport stretcher remain critical components of spinal motion restriction.

Furthermore, patients whose cervical spine has been cleared by a physician or advanced practice clinician or who do not meet SMR requirements and are being transferred between facilities for additional care, do not need to be placed on a long spine board for transfer.

MEDICAL OVERSIGHT

Medical oversight should revise pre-hospital EMS protocols in regard to SMR and use of long spine boards, to include extrication events. Protocols for SMR and the use of a long spine board should be modified to include when SMR is appropriate. Implementation of this protocol should be monitored and supervised through a quality assurance program.



Improving Trauma Care Worldwide

CONCLUSION

It is the position of ITLS that the use of the long spine board and other rigid devices are designed to move a patient to a transport stretcher. Pre-hospital providers must maintain competency in the use of these devices. Prolonged time on a long spine board and/or prolonged time on scene applying these devices can be detrimental or result in a poor patient outcome. In order to minimize these negative occurrences, patients should be removed from the long spine board as soon as it is safe and practical to do so. Pre-hospital providers should use due diligence to minimize spinal motion among at-risk patients.

The ITLS Editorial Board is developing tools to assist instructors with facilitating the change in SMR.

REFERENCES

1. Theodore N et al, Pre-hospital Cervical Spinal Immobilization after Trauma, Neurosurgery 72:22 – 34, 2013.
2. Rozzelle C et al, Management of Pediatric Cervical Spine and Spinal Cord Injuries, Neurosurgery 72: 205 – 226, 2013.
3. National Association of EMS Physicians and American College of Surgeons Committee on Trauma, EMS Spinal Precautions And The Use Of The Long Backboard, Prehospital Emergency Care 2013;17:392 – 393
4. Hauswald M et al Out of hospital spinal immobilization: its effects on neurologic injury. Acad Emerg Med 1998;5, 214-19.
5. Moss R et al, Minimal patient handling: a faculty of prehospital care consensus statement Emerg Med J Vol 30 No 12: 1065-1066, 2013.
6. Conner D et al, Pre-hospital spinal immobilization: an initial consensus statement Emerg Med J Vol 30 No 12: 1067-1069, 2013



Improving Trauma Care Worldwide

Current Thinking

Spinal Motion Restriction of the Trauma Patient

International Trauma Life Support

The guidelines and references contained in this document are current as of the date of publication and in no way replace physician medical oversight.

Abstract

This is the official current thinking of International Trauma Life Support (ITLS) regarding pre-hospital use of Spinal Motion Restriction (SMR) and the use of the long spine board and other rigid motion restriction devices.

Current Thinking

It is the position of International Trauma Life Support that:

1. Spinal motion restriction (SMR) is not indicated in every trauma patient.
2. The long spine board and other rigid devices are primarily extrication devices designed to move a patient to a transport stretcher. Having the patient remain on the board for prolonged periods can produce discomfort, pressure sores and respiratory compromise.
3. In order to minimize these negative occurrences, patients should be removed from the long spine board as soon as it is safe and practical to do so.
4. Maintenance of in-line spinal alignment when moving the patient and appropriately securing them to the transport stretcher remain important components of SMR.
5. SMR should be applied appropriately to those patients who have indicators that they may have sustained or are at high risk for spinal injuries, or who cannot be adequately assessed clinically for the presence of such injuries. Providers should apply the appropriate guideline in these situations and apply a rigid cervical collar and other rigid devices as clinically appropriate.
6. Spinal Motion Restriction onto a long board is not indicated in penetrating wounds of the torso, head or neck unless there is clinical evidence of a spinal injury.

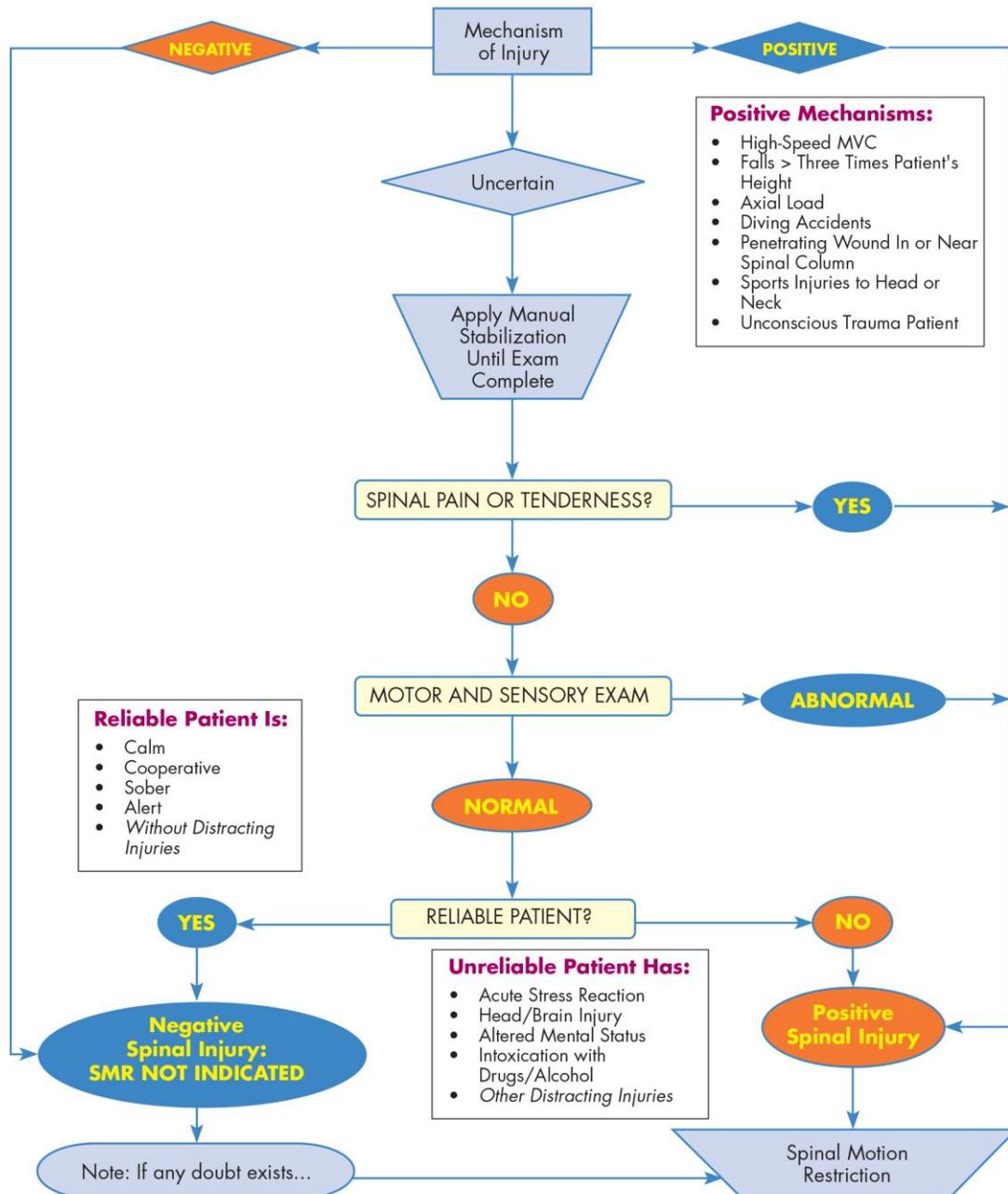


Improving Trauma Care Worldwide

Resource

From *International Trauma Life Support for Trauma Care Providers*, 7th Edition, Page 208:

Initial Assessment of Spinal Injury Clinical Criteria



Improving Trauma Care Worldwide