



Immobilizzazione spinale: tra passato, presente e futuro

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Nel 1966...





THE JOURNAL OF TRAUMA
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Vol. 6, No. 3
Printed in U.S.A.

VEHICLE ACCIDENTS: IMMEDIATE CARE TO BACK INJURIES

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From the USAF Medical Service School (ATC), Gunter Air Force Base, Alabama

“My back hurts!” This complaint by a victim at an accident scene to a physician good samaritan presents a challenging problem. We may be confident of the proper management of back injuries we see in the emergency room, but our training and experience have not related to the immediate care of back injuries as we encounter them at the accident site. Our first aid and immediate care manuals have detailed advice about transporting such cases face up or face down on a board or firm support. The general advice is to neither flex nor twist the victim. Applying this advice to the active supervision of moving a patient from the interior of a wrecked vehicle to a litter is another matter. Our objectives are clear. We desire to immobilize the spine of a victim within the vehicle with a minimum amount of movement of the patient. We desire to “splint them where they lie”. The problem, however, is the restricted space and the unusual positions in which the victims may be found. *How do you move a victim from the vehicle with a minimum of additional trauma?*



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L'immobilizzazione protegge veramente il rachide?

Out-of-hospital Spinal Immobilization: Its Effect on Neurologic Injury

Mark Hauswald, MD, Gracie Ong, MBBS, Dan Tandberg, MD, Zaliha Omar, MBBS

■ ABSTRACT

Objective: To examine the effect of emergency immobilization on neurologic outcome in patients with blunt traumatic spinal injuries.

Methods: A 5-year retrospective chart review was carried out at 2 university hospitals. All patients with acute blunt traumatic spinal or spinal cord injuries transported directly from the injury site to the hospital were entered. None of the 120 patients seen at the University of Malaya had spinal immobilization during transport, whereas all 334 patients seen at the University of New Mexico did. The 2 hospitals were comparable in physician training and clinical resources. Neurologic injuries were assigned to 2 categories, disabling or not disabling, by 2 physicians acting independently and blinded to the hospital of origin. Data were analyzed using multivariate logistic regression, with hospital location, patient age, gender, anatomic level of injury, and injury mechanism serving as explanatory variables.

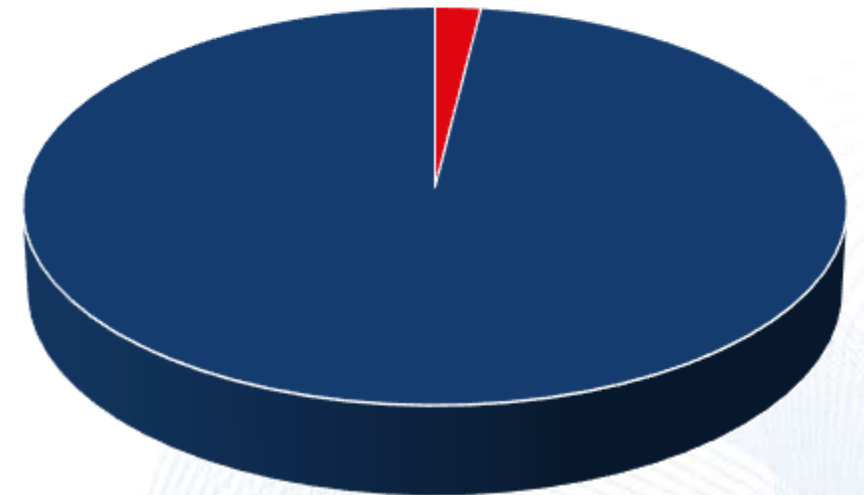
Results: There was less neurologic disability in the unimmobilized Malaysian patients (OR 2.03; 95% CI 1.03–3.99; $p = 0.04$). This corresponds to a <2% chance that immobilization has any beneficial effect. Results were similar when the analysis was limited to patients with cervical injuries (OR 1.52; 95% CI 0.64–3.62; $p = 0.34$).

Conclusion: Out-of-hospital immobilization has little or no effect on neurologic outcome in patients with blunt spinal injuries.

Key words: injury; trauma; morbidity; spine; immobilization; back board; emergency medical services; spinal cord.

Acad. Emerg. Med. 1998; 5:214–219.

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L'immobilizzazione protegge veramente il rachide?

Spine Immobilization in Penetrating Trauma: More Harm Than Good?

Elliott R. Haut, MD, Brian T. Kalish, BA, EMT-B, David T. Efron, MD, Kent A. Stevens, MD, MPH, Alicia N. Kieninger, MD, Edward and David C. Chang, MBA, MPH, PhD

Results: In total, 45,284 penetrating trauma patients whom underwent spine immobilization. Overall mortality was 8.1%. Unadjusted mortality was twice as high in spine-immobilized patients (14.7% vs. 7.2%, $p < 0.001$). The odds ratio of death for spine-immobilized patients was 2.06 (95% CI: 1.35–3.13) compared with nonimmobilized patients. This analysis showed consistent trends in all populations.

Only 30 (0.01%) patients had incomplete spinal cord injury and underwent operative spine fixation. The number needed to treat with spine immobilization to potentially benefit one patient was 1,032. The number needed to harm with immobilization to potentially contribute to one death was 66.

Conclusions: Prehospital spine immobilization is associated with higher mortality in penetrating trauma and should not be routinely used in every patient with penetrating trauma.

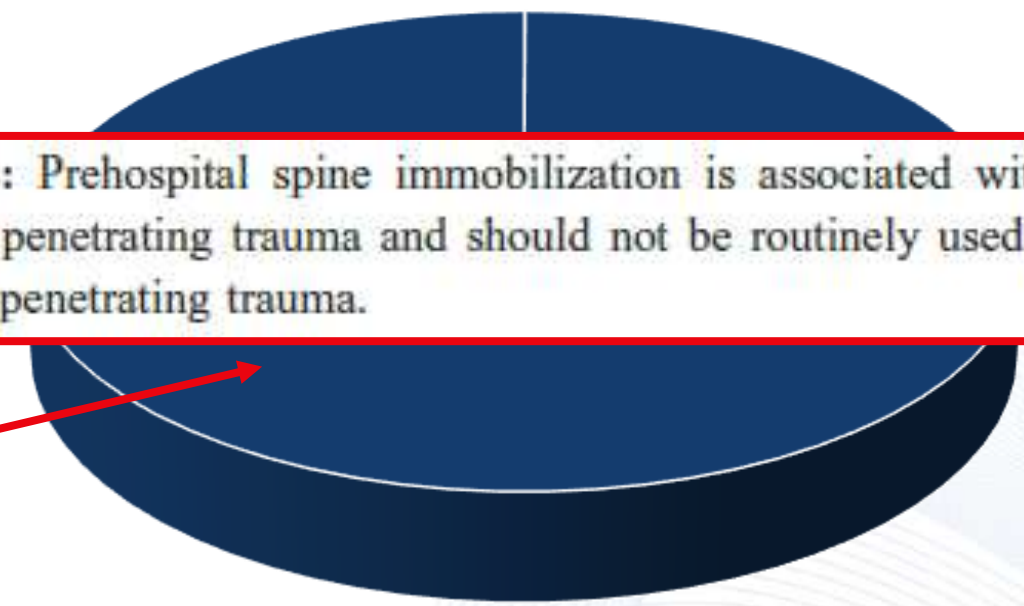
Key Words: Penetrating trauma, Trauma, Gunshot wound, Stab wound, Prehospital care, Spine immobilization.

(*J Trauma*. 2010;68: 115–121)

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Effetti immobilizzazione

Numerous studies were published in recent years which reveal further possible hazardous effects of spinal stabilisation, including pain **1** [6, 9–12], the development of pressure **2** ulcers [9, 11–13], elevated intracranial **3** pressure [11], prolonged intrahospital **4** length of stay [14], an increased number of radiological **5** examinations [15–17], an increased difficulty **6** of clinical examination [6], prolonged prehospital **7** on-scene time [11, 12], difficulty in intubation **8** [18] and a risk of spinal fracture **9** and displacement in elderly patients [19].

1. Dolore
2. Ulcere da pressione
3. ↑ PIC
4. ↑ Degenza ospedaliera
5. ↑ RX
6. ↑ Difficoltà esame clinico
7. ↑ Tempi sulla scena
8. ↑ Difficoltà intubazione
9. ↑ Fratture spinali instabili negli anziani

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Spinal Motion Restriction



American College of
Emergency Physicians®
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**POLICY
STATEMENT**

Approved February 2018

Spinal Motion Restriction in the Trauma Patient

Originally approved February
2018, replacing the following
revoked policy statement

A joint policy statement of the American College of Emergency Physicians,
the American College of Surgeons Committee on Trauma, and
the National Association of EMS Physicians





Spinal Motion Restriction



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Indications for SMR following blunt trauma include:

- i. Acutely altered level of consciousness (eg, GCS < 15, evidence of intoxication)
- ii. Midline neck or back pain and/or tenderness
- iii. Focal neurologic signs and /or symptoms (eg, numbness or motor weakness)
- iv. Anatomic deformity of the spine
- v. Distracting circumstances or injury (eg, long bone fracture, degloving or crush injuries, large burns, emotional distress, communication barrier, etc.) or any similar injury that impairs the patient's ability to contribute to a reliable examination



Algoritmi immobilizzazione

Maschmann et al. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*
(2019) 27:77
<https://doi.org/10.1186/s13049-019-0655-x>

Scandinavian Journal of Trauma,
Resuscitation and Emergency Medicine

GUIDELINE

Open Access



New clinical guidelines on the spinal stabilisation of adult trauma patients – consensus and evidence based

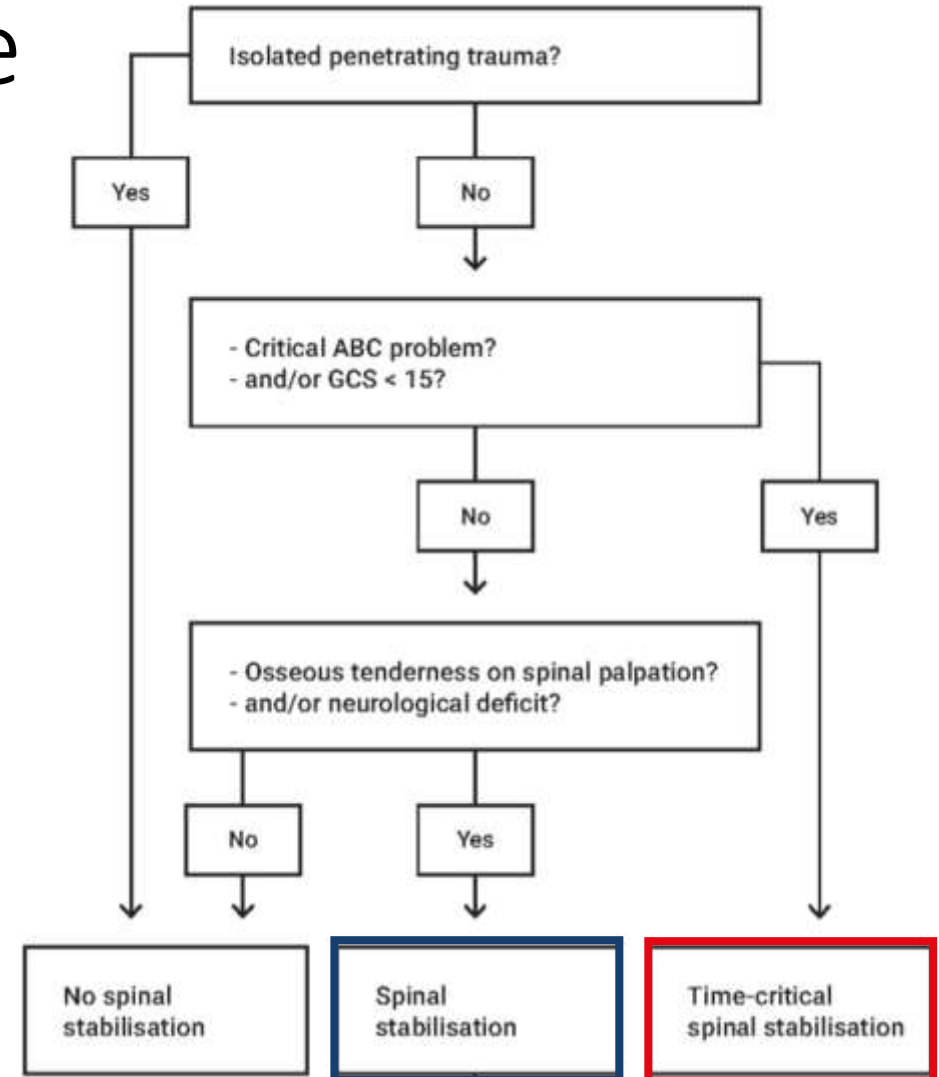
Christian Maschmann^{1,2,3*}, Elisabeth Jeppesen^{4,5}, Monika Afzali Rubin^{6,7} and Charlotte Barfod³

Spinal stabilisation

Prehospital: positioning and transport on a vacuum mattress without use of a rigid cervical collar

Time-critical spinal stabilisation

Generally, only measures of spinal stabilisation, that do not delay any other necessary ABCDE-measures or transport to hospital





Algoritmi immobilizzazione

Kreinst et al. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine* (2016) 24:71
DOI 10.1186/s13049-016-0267-7

Scandinavian Journal of Trauma,
Resuscitation and Emergency Medicine

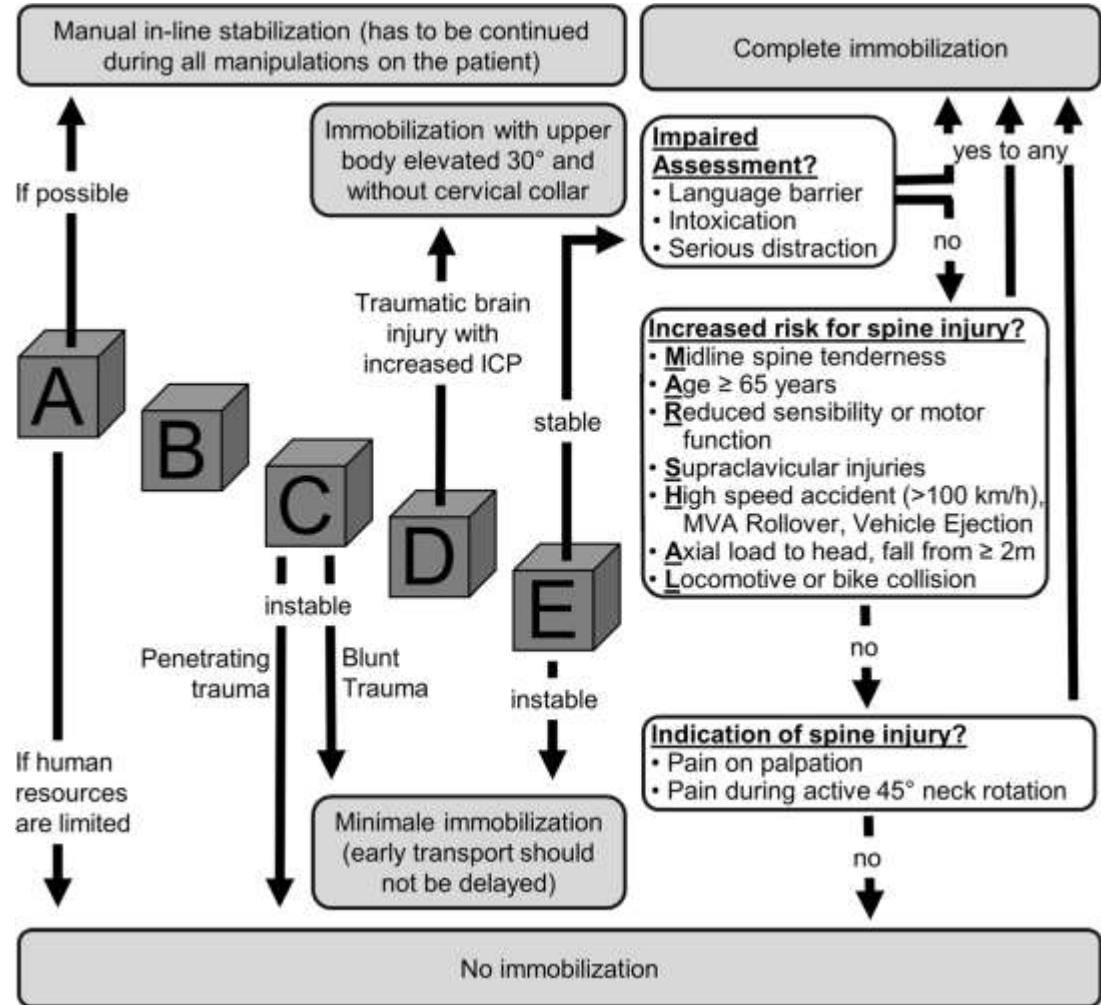
ORIGINAL RESEARCH

Open Access



Development of a new Emergency
Medicine Spinal Immobilization Protocol for
trauma patients and a test of applicability
by German emergency care providers

Michael Kreinst^{1,2}, Bernhard Gliwitzky², Svenja Schüler³, Paul A. Grützner¹ and Matthias Münzberg^{1,2*}







Riferimenti

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