



Why We All SHOULD FOLLOW the New Spinal Immobilization Guidelines

Or... “Terry, Terry,
Come to the Light!!!”



A diver in a yellow and black wetsuit is underwater, looking at a large, spotted fish. The large fish is surrounded by a massive school of smaller, silver fish. A yellow thought bubble is above the diver's head.

Terry, what
are
you
thinking?

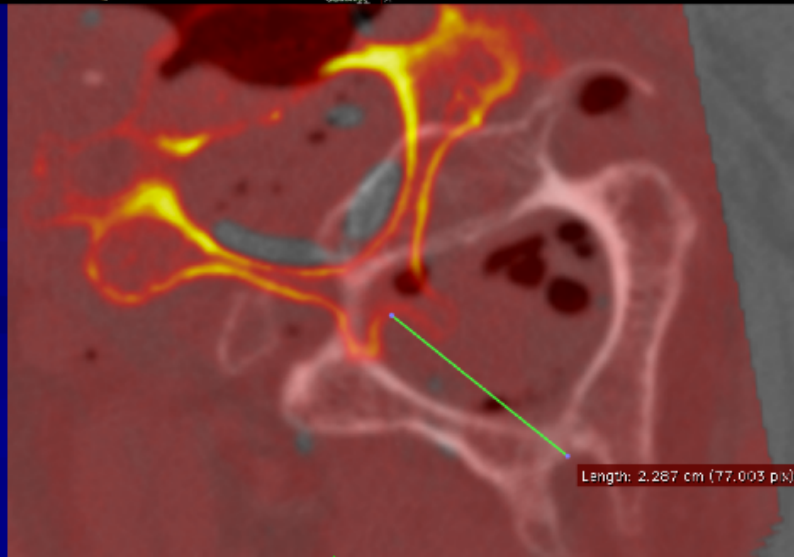
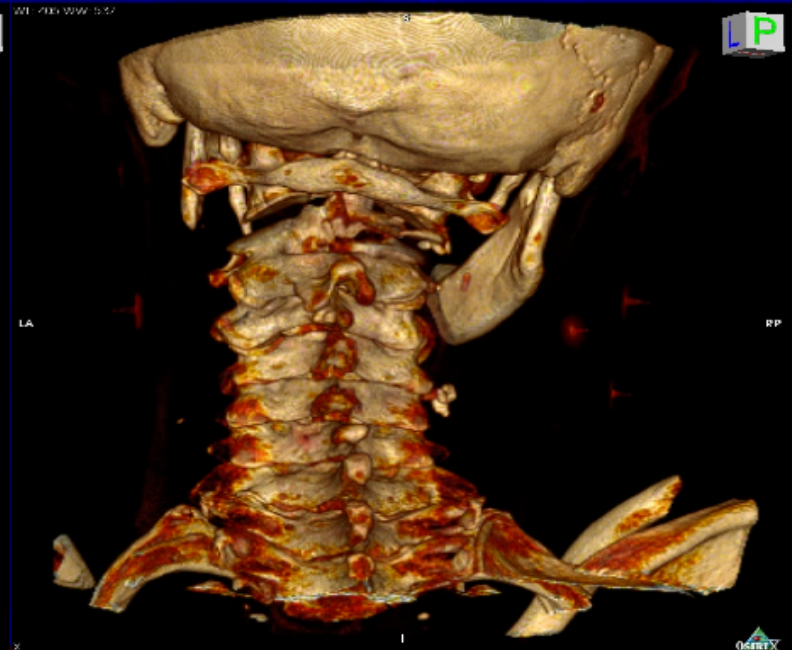
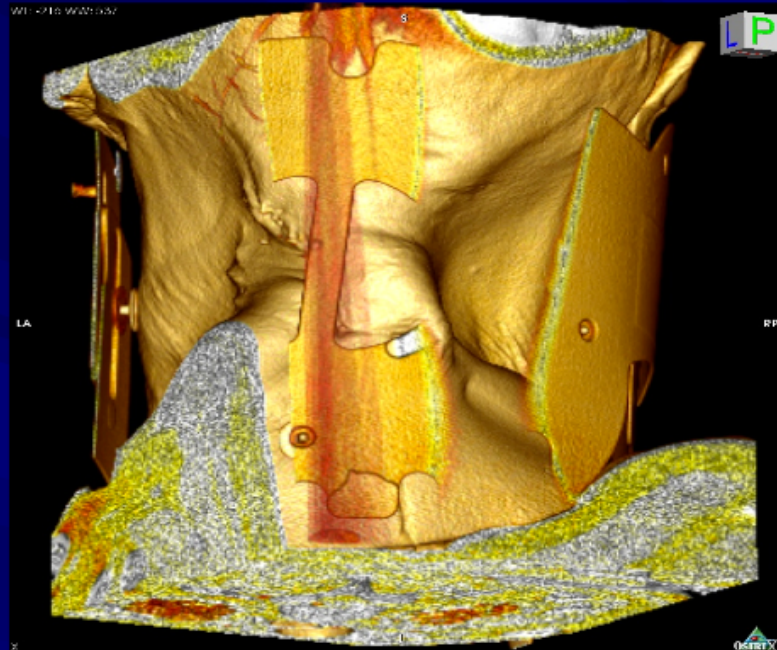


A close-up photograph of a person wearing a black, textured balaclava. Only one eye is visible through a slit in the fabric. The eye is light-colored and looking slightly to the right. The background is a solid blue color.

Let's look
at the facts!

The Reality of the situation

- Over 14,000 new SC injuries annually
- About a third die during the accident
- Expenses in the first year approach \$500K
- Lifetime? The sky's the limit...



What is this Long Spine Board
thing about anyway?



Where did it come from?

Some History

- 1966 Col. L. Kossuth – 1st LSB description
 - “Purpose is to MOVE a victim from vehicle w/ “minimum of additional trauma” and “due regard to maximum gentleness”
- 1967 Farrington – “Death in a Ditch”, ACS
 - “The most frequently mishandled injuries, made worse by hasty and rough movement... are FXs of the spine and femur”

Why to avoid the LSB?

- They CAUSE pain!!
 - A 1989 study of 170 trauma patients showed nearly a fourth had CS pain ON the board but not OFF!!
 - A 1993 study of 21 healthy volunteers showed 100% had diffuse pain within a half hour!

Why to avoid the LSB?

- They CAUSE injuries!!
 - A 1988 study out of Charity Hospital found a direct association between time on the board and pressure sores in SCI patients
 - A 1995 study in Indiana actually measured the pressure: >32 mmHg = capillary collapse and ischemia
 - 149mmHg at sacrum! 59 mmHg Occiput and heels!

Why to avoid the LSB?

- They cause respiratory deterioration!!
 - A 1987 study showed post-LSB-strapping degraded pulmonary functions
 - A 1999 study showed a 15% respiratory restriction in adults
 - A 1991 study in pediatrics: ↓ FVC

Why to avoid the LSB?

- A 1998 New Mexico study found that there was a two-fold greater likelihood to have neuro disability at D/C if a LBB was used in SCI patients

Why to avoid the LSB?

- Journal of Trauma: Injury, Infection, and Critical care. Vol 68, #1, Jan 2010
 - Looked at NTDB for penetrating trauma
 - More likely to die w/ EMS LSB: 14.7% v 7.2%
 - OR 2.06, 95% CI 1.35 – 3.13
 - NNT 1032 but NNH 66!!

W

B?

- They re
 - Head c
 - Straps
 - Mover
 - Secure



well

all of them

ANGER!!!!

Where did it begin?

The first recommendations from the American Academy of Orthopedic Surgeons (AAOS) primarily included the use of symptoms and physical findings of potential spinal injury as indication for immobilization.

AAOS, 1971, pp 111-115.

Where did it begin?

As it became clear that early emergency department (ED) evaluation of potential spinal injuries was not accurate or complete, the prehospital practice shifted to immobilization of essentially all patients with any potential for spinal injury.

Bohlman. J Bone Joint Surg. 1979

Where did it begin?

Mechanism of injury has persisted as the primary indication for spinal immobilization in nearly all U.S. EMS systems.

Domeier et al for NAEMSP 1999

What does science say?

Without symptoms and physical findings associated with spinal injury, no significant spinal injury exists, in appropriate patients.

Domeier et al for NAEMSP 1999

Immobilization Concept Literature

Spinal immobilisation for trauma patients (Review)

Kwan I, Bunn F, Roberts I, on behalf of the WHO Pre-Hospital Trauma Care Steering Committee



THE COCHRANE
COLLABORATION®

2001

Authors' conclusions

We did not find any evidence that spinal immobilisation improves survival. The effect of spinal immobilisation on mortality, neurological injury, spinal stability and adverse effects in trauma patients remains uncertain. Spinal immobilisation is a major cause of preventable death in trauma patients, and spinal immobilisation, particularly of the cervical spine, can contribute to airway compromise, the possibility that immobilisation may increase mortality and morbidity cannot be excluded. Large prospective studies

What does science say?

There have been no reported cases of spinal cord injury developing during appropriate normal patient handling of trauma patients who did not have a cord injury incurred at the time of the trauma.

Domeier et al for NAEMSP 1999

What does science say?

Prospective prehospital studies have also been reported that support the use of clinical findings as indicators of the need for prehospital spinal immobilization.

Domeier, Swor, et al. Prehospital clinical findings associated with spinal injury. PEC. 1997;6:643-6.

What does science say?

“Spine immobilization is indicated in prehospital trauma patients who sustain an injury with a mechanism having the potential for causing spinal injury and who have at least one of these clinical criteria:”

Domeier et al for NAEMSP 1999

What does science say?

“Additional research to validate clearance protocols in practice, in pediatric patients, and across various levels of EMS training for patients of all ages should be conducted.”

Domeier et al for NAEMSP 1999

2013

POSITION STATEMENT

EMS SPINAL PRECAUTIONS AND THE USE OF THE LONG BACKBOARD

National Association of EMS Physicians and American College
of Surgeons Committee on Trauma

So, what's new??!?

- In 2013, NAEMSP and the ACS-COT released their joint position statement
 - “EMS Spinal Precautions and the Use of the Long Backboard”
- Suggests judicious use of backboards so that the benefits outweigh the risks

What did NAEMSP and ACS say?

1. Altered mental status
2. Evidence of intoxication
3. A distracting painful injury (e.g., long-bone extremity fracture)
4. Spinal Pain or Tenderness to Palpation

Domeier et al for NAEMSP 1999

What should happen?

“Patients without a mechanism of injury with the potential for causing spinal injury or those patients without one of the above clinical findings may safely have spinal immobilization omitted.

These patients should be evaluated at an appropriate ED and should be transported in a position of comfort.”

Domeier et al for NAEMSP 1999

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- Patients for whom immobilization on a backboard is not necessary include those with all of the following:
 - Normal level of consciousness (Glasgow Coma Score [GCS] 15)
 - No spine tenderness or anatomic abnormality
 - No neurologic findings or complaints
 - No distracting injury
 - No intoxication
- Patients with penetrating trauma to the head, neck, or torso and no evidence of spinal injury should not be immobilized on a backboard.
- Spinal precautions can be maintained by application of a rigid cervical collar and securing the patient firmly to the EMS stretcher, and may be most appropriate for:
 - Patients who are found to be ambulatory at the scene
 - Patients who must be transported for a protracted time, particularly prior to interfacility transfer
 - Patients for whom a backboard is not otherwise indicated

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- Whether or not a backboard is used, attention to spinal precautions among at-risk patients is paramount. These include application of a cervical collar, adequate security to a stretcher, minimal movement/transfers, and maintenance of in-line stabilization during any necessary movement/transfers.

What did NAEMSP and ACS say?

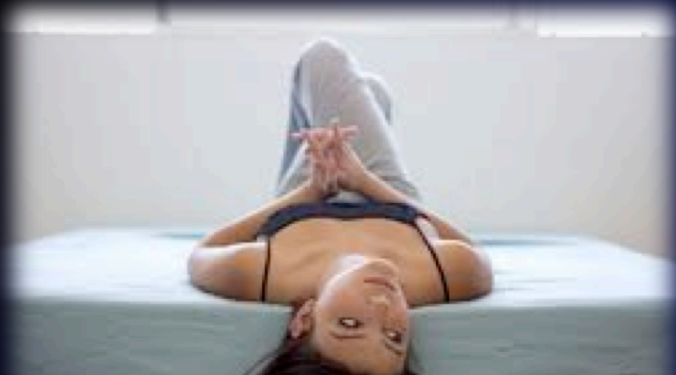
- Education of field EMS personnel should include evaluation of the risk of spinal injury in the context of options to provide spinal precautions.
- Protocols or plans to promote judicious use of long backboards during prehospital care should engage as many stakeholders in the trauma/EMS system as possible.
- Patients should be removed from backboards as soon as practical in an emergency department.

What did NAEMSP and ACS say?

Where appropriate:

***MAKE THE PATIENT
COMFORTABLE***



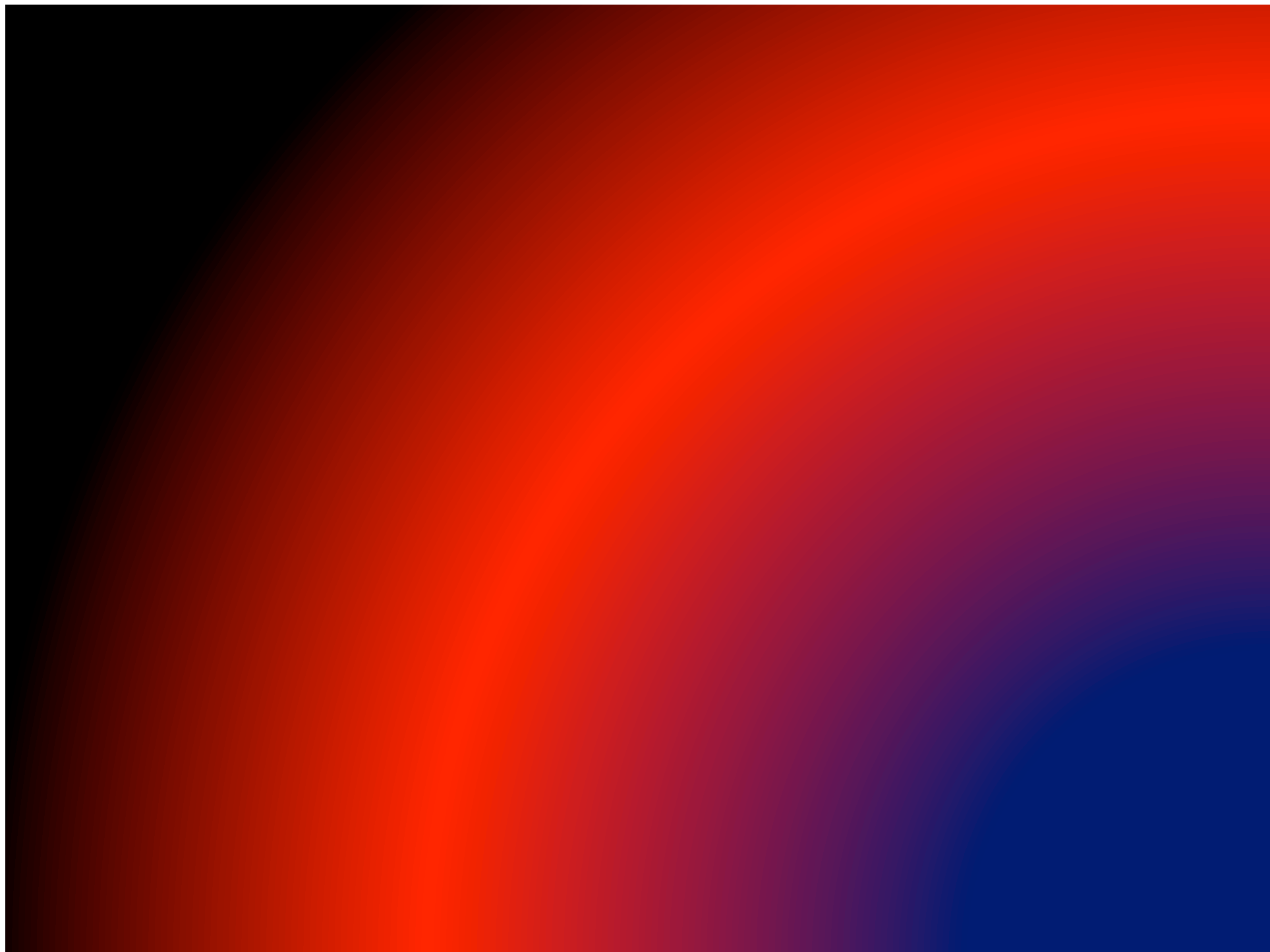


***A COMFORTABLE MATTRESS,
ONE THAT YOU WOULD
WANT TO LIE ON FOR AN HOUR!!!!***









Can you BELIEVE I'm almost done?





Issues in closing

We immobilize far too many people.

Training...training...training.

*Getting the word out to hospitals so
that they don't jack around with our
medics will be a challenge.*

*Anyone of them that objects:
Have them lie on a spine board for
an hour strapped down
(with a full bladder).*



*So, Terry....TERRY!!!! Don't
come crying to me you WEENIE!*



*Thank you so much
for your kind attention*



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