



“These Aren’t Harley Davidson Helmets You’re Dealing With!”

Care of the Spinal Injured Football Player

An Evidence Based Approach

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So, what is an ATC?

Certified Athletic Trainers

🏈 *Board certified by the NATA-BOC*

🏈 *Licensed by VA Board of Medicine*

🏈 *Specialize in:*

- Injury prevention
- Recognition
- Evaluation
- Treatment
- Rehabilitation
- Mass chaos!



Why are we here?

National Center for Catastrophic Sport Injury Research

University of North Carolina at Chapel Hill

🏈 *2014 – 6 Direct fatalities in Football nation-wide*

- 5 were High School players
- 83% - due to head/brain injury
- 17% - due to cervical spine injury

🏈 *2005-2014*

- 30 fatalities due to head/brain injuries
- 6 fatalities due to cervical spine injury

🏈 *Ok, so.....*





Three weeks, three communities, three high school football player deaths

Josh Barnett, USA TODAY Sports 4:48 p.m. EDT September 27, 2015



(Photo: Jimmy Touchet, Special for USA TODAY Sports)

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On the same day that the high school football community in New Jersey was mourning the death of Warren Hills Regional quarterback Evan Murray, [Bartlesville, Okla.](#), was celebrating the life of Ben Hamm.

The funeral for Hamm, 16, was held Saturday morning. Hamm, a junior from Bartlesville's Wesleyan Christian School, died Sept. 19 from injuries he suffered in game eight days earlier.

The death of Murray and Hamm follow the death of Franklin Parrish ([Winnsboro, La.](#)) player Tyrell Cameron in a Sept. 4 game in Louisiana. Late Friday night, Franklin Parish beat [Richwood](#) in overtime, its first victory since Cameron's death.

According to the National Center for Catastrophic Sports Injury Research at the [University of North Carolina](#), five high school players died last season of causes directly related to football such as head and spine injuries. Seven more high school players died from indirect causes such as heatstroke.

"This put a lot of things in perspective," Franklin Parish coach Barry Sebren told USA TODAY High School Sports on Sunday. "You have to try to learn from those moments and take the opportunity to recognize that this thing it's serious. Some things you thought were serious before are not really. These situations help you understand what's important and what's not important."



NOW & ALWAYS
JOHNSTON & MURPHY.

Why are we here?

It's not just about c-spine injuries...

 *Head Injuries*

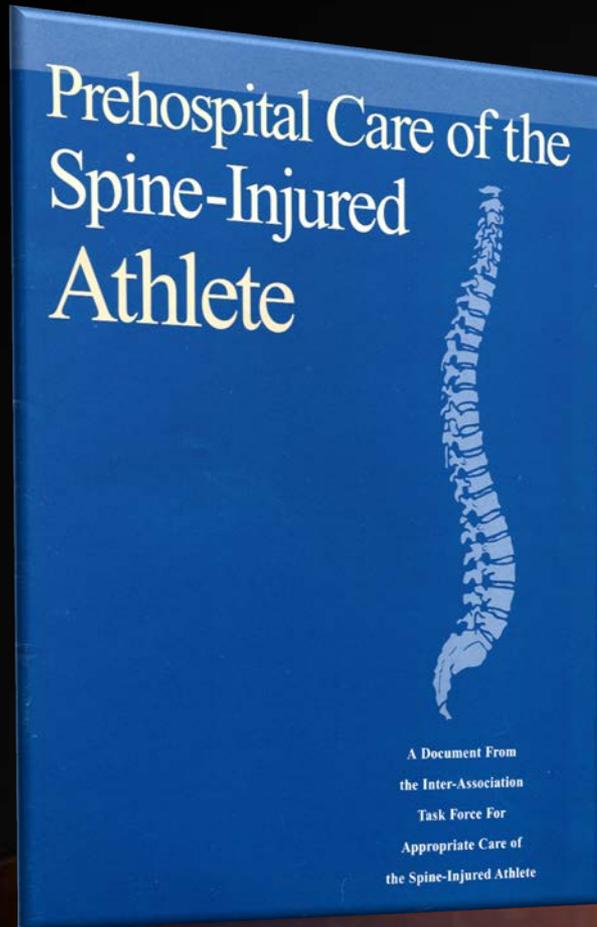
 *Heat Stroke*

 *Sudden Cardiac Death*



Recommended practices

1998



- 🏈 *Inter-Association Task Force for Spine Injured Athlete established*
- 🏈 *2001 – Published “Pre-Hospital Care of the Spine Injured Athlete”*
- 🏈 *Is this out of date?*



Recommended practices

Do we need to backboard?

 *Current research shows...*

- increased scene time
- delay of delivery to definitive care
- problematic airway management
- increased patient pain or dyspnea
- and unnecessary radiographic testing.



Recommended practices

Assess the patient before making a decision about immobilization.

- 🏈 *Historically emphasis has been placed on*
 - what happened to the vehicle (MVC's)
 - best guess on how far someone may have fallen
- 🏈 *What actually happened to the person?*



Recommended practices

It's not the fall that causes the injury

- *The sudden STOP causes the injury*
- *The more sudden the stop, the more likely an injury results, especially if the kinetic energy gets transferred to the head & neck*



Cervical Spine Injuries

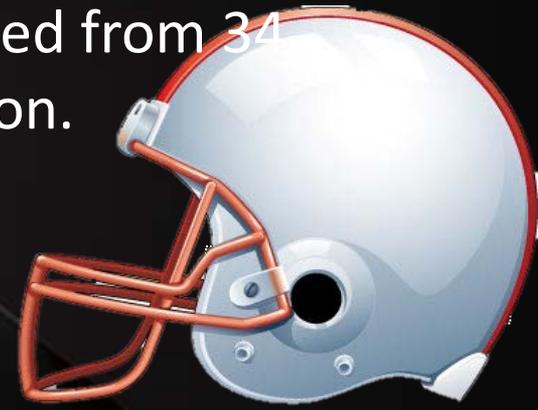
Axial Loading – most common mechanism

Head down contact (Spearing)

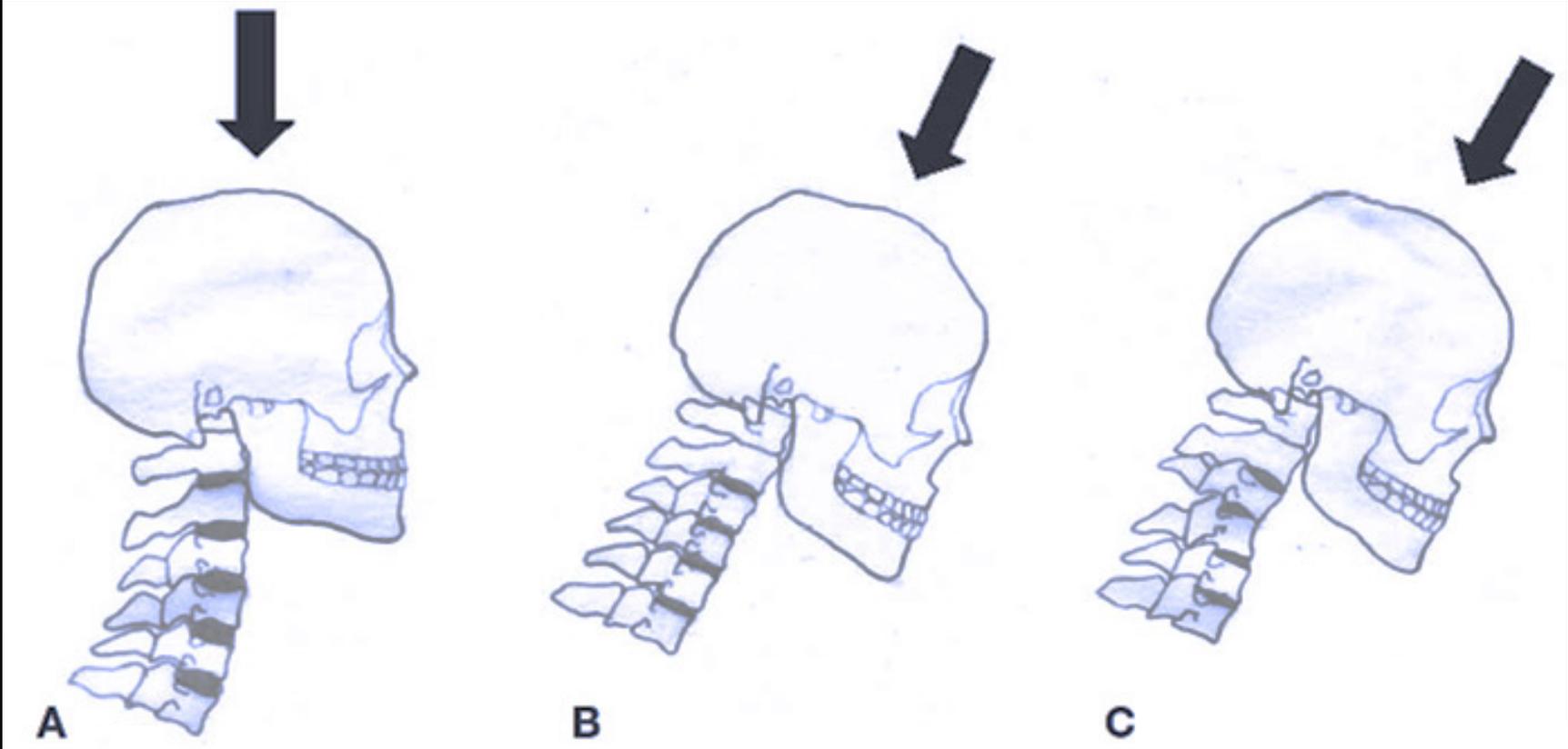
- neck in 30° flexion
- straightens the cervical spine

1976 rule change made spearing illegal

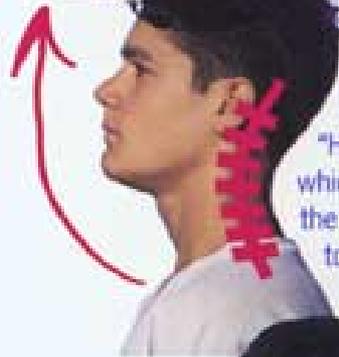
- With the adoption of this rule, the occurrence of cervical quadriplegia in football decreased from 34 cases in 1976 to only 5 in the 1984 season.



Axial loading



Why you need to keep your head up



This is the natural "Heads Up" position, which gives your neck the maximum flexibility to endure impact without injury.



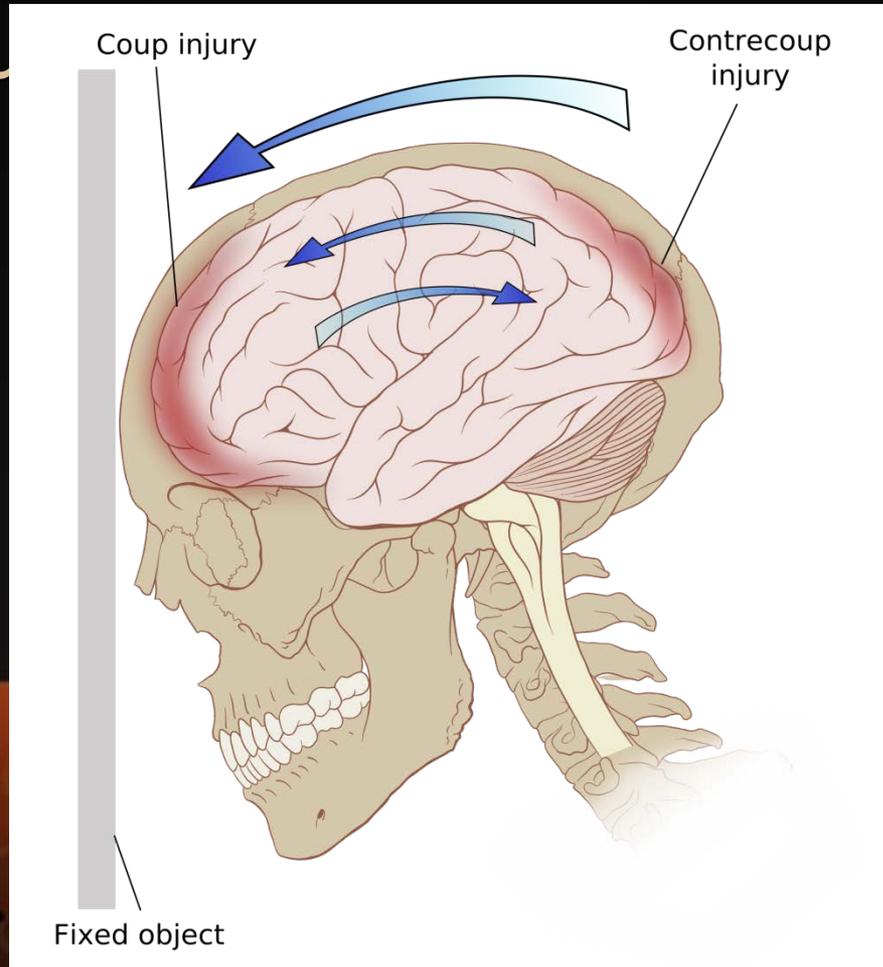
When your head is down, the spine's normal curve is straightened. In this position, an impact can result in serious spinal injury.

COURTESY USA HOCKEY, "HEADS UP HOCKEY"



Concussions

Do helmets really protect the brain from injury

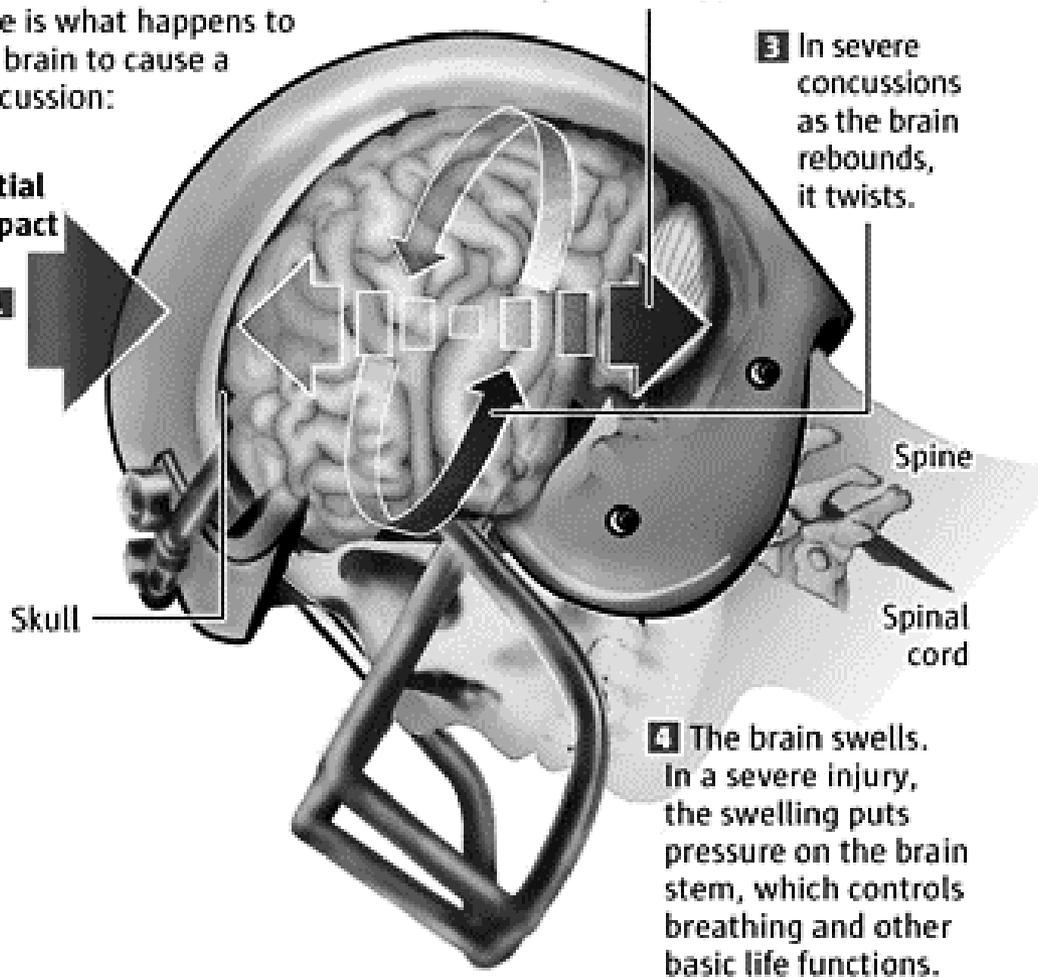


Anatomy of a concussion

Here is what happens to the brain to cause a concussion:

Initial Impact

1



2 The force from the impact causes the brain to strike the inner surface of the skull and rebound against the opposite side.

3 In severe concussions as the brain rebounds, it twists.

4 The brain swells. In a severe injury, the swelling puts pressure on the brain stem, which controls breathing and other basic life functions.

Sources: Dr. Jay Rosenberg of Kaiser Permanente Medical Care Neurology; American Academy of Neurology; The Human Body

MARK NOWLIN / THE SEATTLE TIMES



Protect that Noggin!

Technology keeps trying to make helmets better!



Mechanisms



 Kevin Everette #85

- 2007



Ouch, my head and neck hurt!

Don't forget the basics please....

🏈 *Scene Size-up*

🏈 *Primary Assessment*

- LOC, ABC's

🏈 *Cervical Spine Stabilization as needed*

🏈 *Assess for possible head injury.*

🏈 *Selective Spinal Immobilization protocol?*

- Follow your region's protocols



Follow YOUR local protocols.

CSEMS Regional Protocols

Potential for unstable spinal injury

ASSESS ALL THREE CRITERIA:

1) Reliable patient?

A reliable patient is cooperative, sober and alert **WITHOUT**:

- Significant distracting injuries
- Language/communication barrier

AND

2) Normal spine exam?

- Palpate vertebral column thoroughly for pain or tenderness

AND

3) Normal motor/sensory exam?

- Wrist or finger extension (both hands)
- Plantarflexion (both feet)
- Dorsiflexion (both feet)
- Check gross sensation in all extremities
- Check for abnormal sensations to extremities (e.g. paresthesia)

**NO for one
or more criteria**

**YES for all
three criteria**

**IMMOBILIZE
Patient**

NO immobilization

NATA's Position

- 🏈 “When appropriate, protective equipment may be removed prior to transport.”
- 🏈 “...make the decision regarding equipment removal on site based on individual circumstances...”



APPROPRIATE CARE OF THE SPINE INJURED ATHLETE Updated from 1998 document

Update (as of 8/5/15): NATA has received input from our membership and other organizations regarding the recent release of the Executive Summary from the Task Force on the Appropriate Prehospital Management of the Spine-Injured Athlete. The Task Force believes that the positions taken foster a "best practices" approach for our patients now and in the future. While we support the many locations that have already begun training initiatives for equipment removal, the Task Force does appreciate that the implementation of the positions nationally will take time and dedication. We believe that the input merits altering the wording to allow for greater flexibility.

To that end, the Task Force core writing group has proposed revising Recommendation #4 from reading "...equipment should be removed prior to transport" to "when appropriate, protective equipment may be removed prior to transport." The Task Force recognizes the variations in state emergency medical system protocols nationally, the availability of qualified EMS systems and hospital emergency departments locally, the differences in personnel and resources at various venues and levels of competition, and the uniqueness inherent in each situation and with each patient. These, along with medical-legal liability issues, lead us to conclude that it is prudent to state that health care providers make the decision regarding equipment removal on site based on the individual circumstances of the case.

Once the "Appropriate Prehospital Management of the Spine-Injured Athlete" statement is completed, reviewed, and approved by the professional organizations represented at the task force meeting, educational materials will be developed by NATA and other groups to assist those health care providers whose education and professional training may not include various components of the recommendations outlined in the consensus statement.

A list of frequently asked questions is currently in development. You may contact Katie Scott, MS, ATC, LAT, at katies@nata.org with any additional questions.

Keep the spine in line!

Helmet & Shoulder pads REMOVED....

 *the helmet & shoulder pads elevate the trunk when supine*

- Should either be removed, spinal alignment must be maintained



Remove all equipment!



Equipment Removal

Quick release facemask clips

RipKord Shoulder Pad Removal
System Video.m4v



Immobilization of the athlete

Helmet & shoulder pads LEFT ON...

 *Remove the facemask to ensure airway access*

- Prepare immobilization equipment
- 6+ person lift to move athlete to board



Face Mask Removal



- 🏈 *If leaving equipment in place or if removal delayed...remove the facemask for airway access*
- 🏈 *Various tools – I suggest the following 2 tools.*
 - Modified PVC pipe cutters



Face Mask Removal

- A cordless screwdriver!



Face Mask Removal

C-spine stabilization is key!

- 🏈 *Cut/remove all 4 clips holding face mask in place*



6+ Person Lift Method



Summary

Practice, practice, practice!

- 🏈 *These skills are not easy to perform efficiently.*
- 🏈 *Practice improves efficiency*



Special thanks to...

- 🏈 *Bruce Rupert, Riddell, Inc. for providing helmets,*
brupert@riddellsales.com



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