

“Coach, My Neck Hurts!”

Care of the Spinal Injured Football Player

Becky Anhold, VATL, ATC, EMT-E,

EMS Education Coordinator

Fort Defiance High School

Bridgewater Volunteer Rescue Squad

Mt. Solon Vol. Fire and Rescue





So, what is an ATC?

Certified Athletic Trainers

- *Board certified by the NATA*
- *Licensed by VA Board of Medicine*
- *Specialize in:*
 - Injury prevention
 - Treatment
 - Recognition
 - Rehabilitation
 - Evaluation
 - Mass chaos!
- *Work under the direction of a team physician*



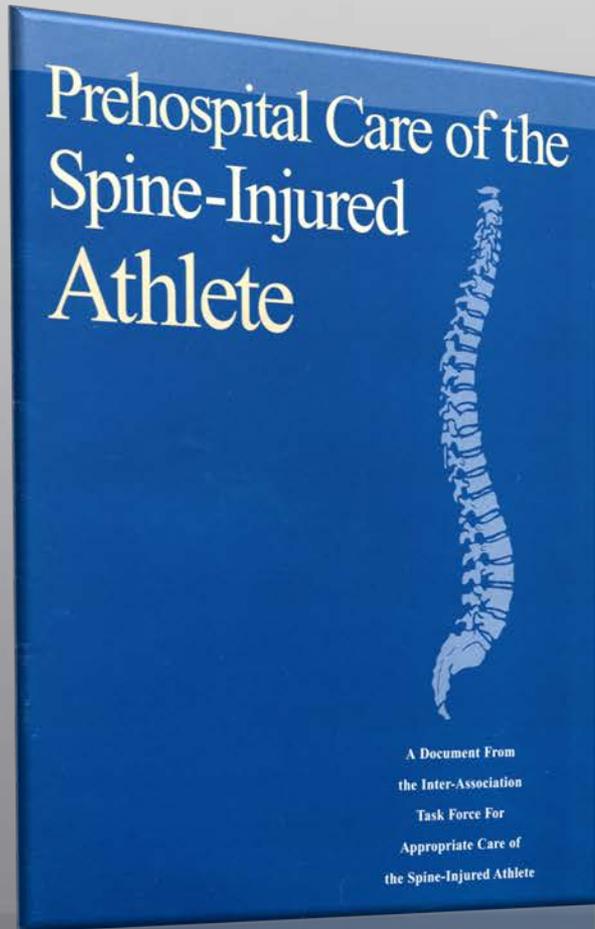
Why are we here?

- ***How do we BEST manage a CSI football player***
 - 12,000 new cases of spinal cord injuries occur each year
 - approx 7.6% sports-related
 - CSI – severe ones rare in athletes, most common involve sprains & peripheral nerve injuries.
- ***1977-2005 Nationally***
 - 256 CSI in football – Rec. league ➔ Pro.
 - 211/256 – high school
- ***Ok, so.....***



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- *Is this out of date?*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*

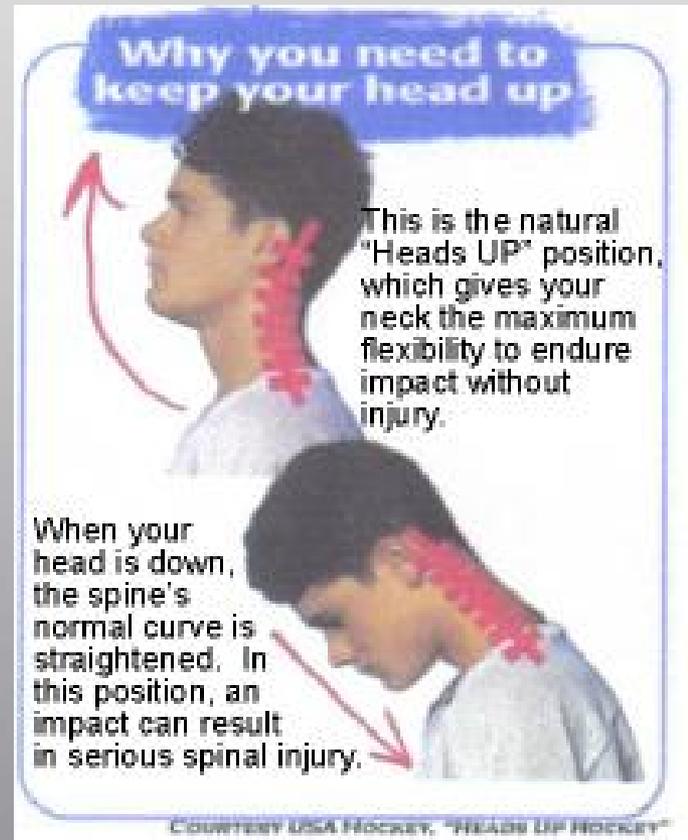
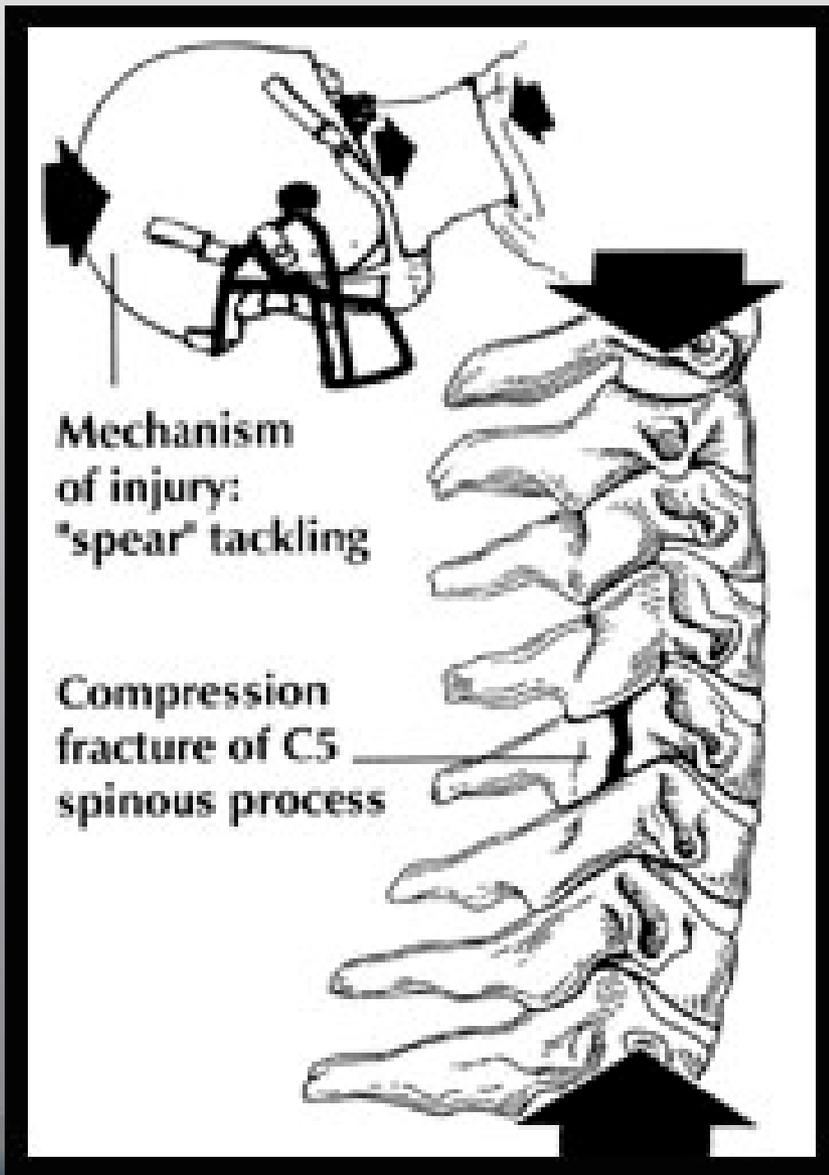


The MOI for Football CSI

Axial Loading –

- ***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.





Protect that Noggin!

Football helmets just aren't the same as other helmets

- *designed to fit snug to protect the head from repetitive collisions*



Mechanisms



- [kevin everett brutal helmet to helmet hit youtube.avi](#)



Mechanisms



- [Eric LeGrand injury](#)



Ouch, my neck hurts!

Don't forget the basics please....

- *Scene Size-up*
- *Cervical Spine Immobilization*
- *Primary Assessment*
 - LOC, ABC's
- *CSEMS Selective Spinal Immobilization protocol*



Ouch, my neck hurts!

As you approach the athlete, ask yourself the following questions:

- *Is the head secure within the helmet?*
- *Does the design of the helmet allow for removing the facemask and gaining access to the airway?*
- *Are we able to transport the patient in an appropriate position?*



Ouch my neck hurts!

If the answer is "yes," to all 3 questions..

- *keep the helmet on the athlete.*

However...

- *if facemask removal consumes too much time, you may need to remove the helmet and shoulder pads to gain access to the airway.*



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

CSEMS Council C-spine Clearing Protocol



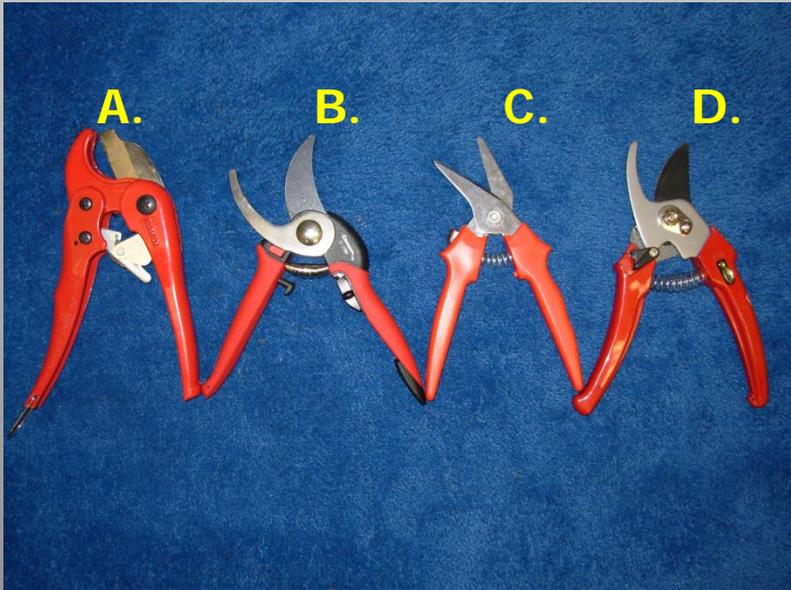
Ouch, my neck hurts!

Current accepted protocol is....

- *Leave the helmet in place if securely fitted to the head (leave the shoulder pads as well)*
- *Remove the face mask completely regardless of current respiratory status*



Face Mask Removal

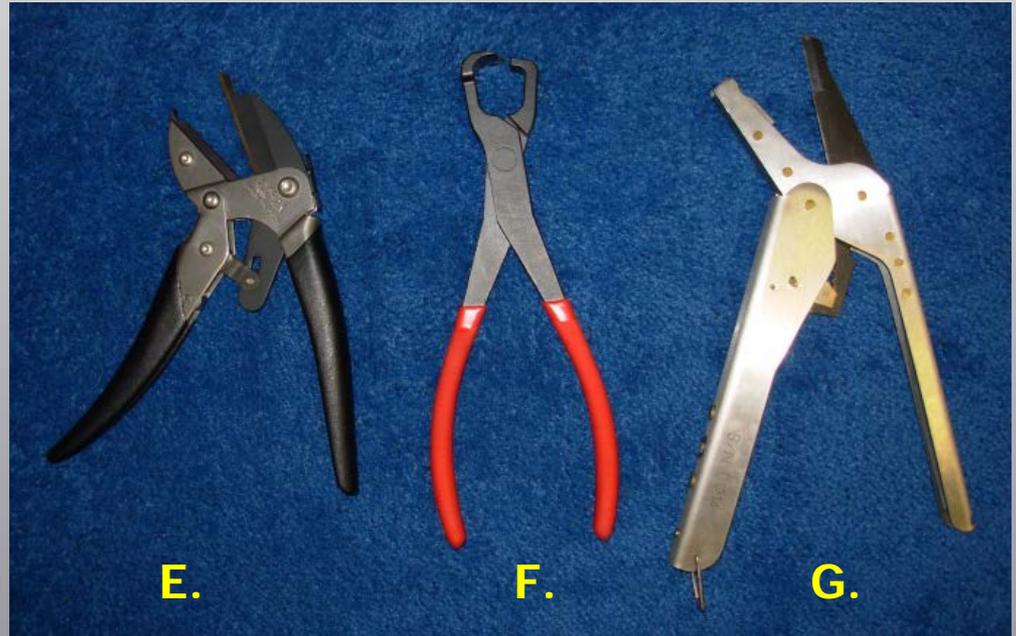


- *Various tools – suggest having a variety*
 - A. Modified PVC pipe cutters
 - B-D. Various Pruners



Face Mask Removal

- E. Florian Tool
- F. Trainer's Angel
- G. FM Extractor
- H. Screwdrivers



Face Mask Removal

C-spine stabilization is key!

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



Immobilization of the athlete

Once face mask is removed

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



6+ Person Lift Method



Should we take the equip off?

When to remove Helmet and pads

- *Removed if*
 - helmet does not hold the head securely
 - design of the helmet & chin strap prevents adequate airway control
 - face mask cannot be removed in a reasonable amt. of time
 - helmet prevents adequate immobilization
 - CPR or access to thorax region needed

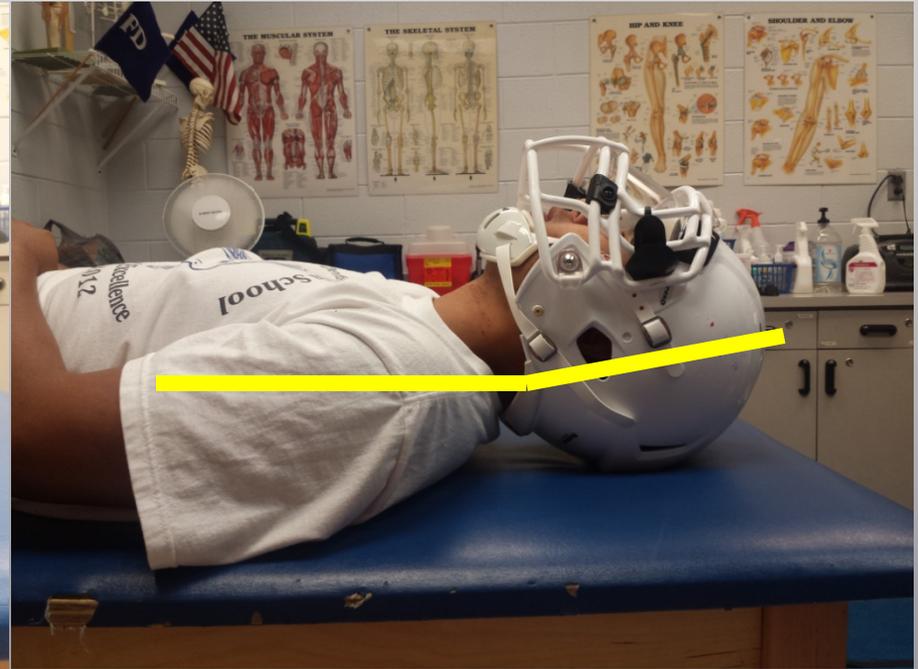


Keep the spine in line!

- *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](#)

[Quick Release facemask clips #2](#)

[RipKord Shoulder Pad Removal System
Video.m4v](#)



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*



References

- Central Shenandoah EMS Council. (2014) *Prehospital Standard Patient Treatment Protocols*. Staunton, VA: Central Shenandoah EMS Council
- Bledsoe, Bryan E. (2013) *“The Evidence Against Backboards”*. (online) available: <http://www.emsworld.com/article/10964204/prehospital-spinal-immobilization>
- Hardy, Richard, et.al. (2009) *“Treat Athletic C-Spine Injuries In and On the Field”* (online) available: <http://www.jems.com/article/patient-care/treat-athletic-c-spine-injuries>
- Heck, Jonathan F., et.al. (2004) *“National Athletic Trainers’ Association Position Statement: Head Down Contact and Spearing in Tackle Football”*. Journal of Athletic Training. 2004;39(1) available at www.journalofathletictraining.org.
- Morrissey, Jim. (2013) *“Research Suggests Time for Change in Prehospital Spinal Immobilization”* (online) available: <http://www.jems.com/article/patient-care/research-suggests-time-change-prehospital>
- Zahir, Usman and Steven Ludwig. (2010) *“Sports Related Cervical Spine Injuries: On-field Assessment and Management”* Seminars in Spine Surgery. 22:173-180

