

1-08
HELMET/EQUIPMENT
REMOVAL

First Responder
EMT
AEMT
Paramedic

"It is now recommended that any restrictive athletic equipment be removed prior to immobilization and EMS transport." [NATA 2015]

Rationale:

- Allow access to the patient for full evaluation and treatment, especially with airway emergencies or needing access to the chest (i.e. CPR/AED).
- Allows for the best/most appropriate application of spinal motion restriction (SMR) per protocol [1-06].
- Individuals with the most expertise with the equipment (i.e. certified athletic trainers [ATC] are generally at the scene of the event, not in the ambulance or at the hospital.
- The equipment is generally expensive and difficult to replace if lost or destroyed during removal.
- Multiple organizations recommended against long spine boards and similar devices, and attempting SMR with athletic equipment on is difficult.

Equipment removal may be deferred if:

- There are not an adequate number (4 or more) of appropriately trained personnel (including EMS, athletic trainers, or coaches) with experience with the sport-specific equipment removal.
- Objective neurologic findings consistent with spinal cord injury (i.e. *bilateral* arm weakness/numbness).
- Any situation where delayed/prolonged transport times would be detrimental to the patient receiving definitive therapy (e.g. cardiac arrest).

Caution: In situations where airway or breathing problems are present or may develop, the best course of action is to always remove the equipment before transport to best access the patient for potential interventions, regardless of neurologic status.

Stabilize/Restrict Movement of the Cervical Spine.

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Note! As per Spinal Immobilization Guideline [1-06]: If a patient/player is neurologically intact and able to cooperate, they may both self-extricate to the cot (or sideline), and may sit or stand and assist with removal of their own equipment.

Restrict gross motion/stabilize the spine:



The **first** provider should position themselves at the head of the patient:

- Immobilize the cervical spine by placing both palms on the ear holes (outside of the helmet).

NOTE: if a Certified Athletic Trainer (ATC) is present, they are trained in spinal assessment, protection and immobilization. Also, they are more highly trained than anyone on the removal of athletic equipment.

Prepare the helmet for removal:

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- First, remove the facemask
- Second, remove or release the chinstrap

Release the Facemask Clips:



- While the first provider maintains c-spine, a second provider starts from the head down, preparing the helmet and shoulder pads for removal.
- The **second** provider should then loosen/release the clips attaching the facemask to the helmet:
 - Use a manual (or preferably electric) screwdriver, if available.
 - Newer helmets may use various types of quick-release clips (see below).
 - Once the (usually) four clips have been released, the facemask should fall off.

Attachment Types



Option 1: Standard Screw Clip

An electric screwdriver is preferred due to less torquing on the player's helmet/neck.

Note: Most ATC's will care an electric screwdriver, or one can often be found in an equipment box on the sideline.



Option 2: Quick-Release Clip (Riddell®, pictured above)

Several "quick-release" clips are on the market to facilitate rapid removal of the facemask.

- Riddell® uses a central button that must be depressed.
- Shutt® has a half-turn spring loaded screw.
- Most can be released using a screwdriver, multi-tool or even a ballpoint pen.



Option 3: CUT the plastic clip

In the past, the fastest way to remove the facemask was to cut the plastic clip over the metal bar of the facemask.

This can be accomplished with a "Trainer's angel" or similar type device or Heavy pruning shears. **Trauma shears generally will NOT cut these.**

Next, Remove or Release the Chin Strap:

Most helmets: release 4 snaps
Riddell Speedflex® (release 2, see below)



- Most often, this is 4 quick snaps.
- Riddell has a Speedflex™ chin strap (see left) that looks like a big zip tie. For this:
 - Cut the black tip off as close as possible to the black plastic stop (see left).
 - **Note:** Please do not cut the chin strap *except* at this distal point.
 - Then, depress the silver tab which allows the strap to be reversed.

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Prepare the shoulder pads for removal:

- First, expose the pads (cut or remove the jersey)
- Second, cut the front binding & release the side straps

Expose the pads:

- Modern jerseys are generally tight-fitting and will require cutting.
 - CUT: This should be done in a "T"-pattern (see right), similarly to other clothing.
 - Note: If the jersey is loose, you may try and bunch it up over the shoulder pads.



Prepare the Shoulder Pads:

First, release (i.e. CUT) the front/breastplate binding (see below right):

- Almost always, this will be a shoelace tied to bind the breast plate together. This is easily replaceable and should be CUT.
- Several other types of bindings are used and can be CUT if possible, as they almost always can be replaced with a shoelace.
- **Note:** If the binding cannot be cut, spinal stabilization can still be held from below by reaching up through the collar.



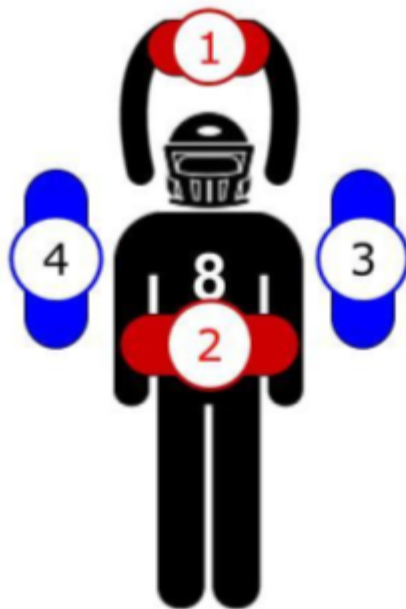
Then, release the side straps (see above left). DO NOT CUT THESE.

- They are usually a simple belt-type attachment.
- Older models utilize a "T-hook" or similar attachment.
- New models also utilize more modern clips that are straightforward and should be easily released.

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Use the Elevated Torso Technique to Remove the helmet and pads

Elevation Technique to Remove Helmet and Pads (REQUIRES FOUR PEOPLE)



- The **first (#1, see left)** provider continues to maintain control of the cervical spine from above.
- The **second (#2)** provider should then:
 - Straddle the player's torso,,
 - Reach up under/through the shoulder pads and take control of the cervical spine from below (similar to removing any helmet (i.e. motorcycle, baseball, etc.).
 - **This second provider now becomes the lead to direct patient movement.**
- Two other providers (or bystanders if needed, **#3 & #4**) then assist the second provider by gently lifting the player's torso a couple inches off the ground on the direction of #2.
 - Simply reach under the pads and place your hands between the pads and the shoulder blades.

- The **first** provider then:
 - Removes the helmet by pulling the cheek/ear portion outwards away from the ears and gently pulling or rocking the helmet off. (*Note: newer helmets do not have removable cheek pads and can be splayed open once the facemask is removed.*)
 - Removes the shoulder pads from the player.
 - Places a c-collar underneath the patient.
- The **second (lead)** provider then directs the player to be lowered back to the ground.



Example Video: <https://www.youtube.com/watch?v=hvxSSdvlos0&t=556s>

Immobilize Player as per Spinal Immobilization Guideline [1.06]

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Note!: If a patient/player is neurologically intact and able to cooperate, they may both self-extricate to the cot (or sideline), and may sit or stand and assist with removal of their own equipment.

Notes:

- If you are at a sporting event on standby, locate on-site medical personnel, introduce yourself and if time allows try and familiarize yourself with equipment, medical capabilities, ingress and egress routes, and other issues pertaining to scene safety and medical resources.
- With football players and other athletes with similar helmet/shoulder pad combinations:
 - It is preferable to remove **both** the shoulder pads and the helmet.
 - Never remove one or the other, either remove both or leave both.
- For sports or accidents (e.g. motorcycle/bike, baseball, etc.) where there is only a helmet involved, the helmet must always be removed.
- Other sports (e.g. lacrosse and hockey) have similar type helmets and pads.
 - If questions exist, always ask for assistance from certified athletic trainers, coaches, parents or other bystanders with knowledge of the sport-specific equipment and removal.

Other Pads and Braces:

There are a large variety of adjunctive padding and braces that may be encountered on an athlete.

- Pads attached to the shoulder pads.
 - Can be removed concurrently with the shoulder pads
- Pads or medical braces worn underneath the shoulder pads.
 - Are attached by straps (usually velcro) that can easily be undone.
- Again, please **DO NOT CUT** these as they are expensive and easily removable.
- Pads incorporated into undershirts or underpants are going to be difficult to remove and may be left on in most cases.

