Facemask and Helmet Removal: A Guide for the Medical Professional
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It is important to have a clear and practiced plan for the management and removal of protective equipment. This document was created to be a guide on helmet and facemask removal procedures, for licensed medical professionals, during medical emergencies. It is not the purpose of this document to direct when a decision to remove the helmet or facemask should be initiated. Healthcare providers responsible for caring for the lacrosse athletes should be familiar with the emergency action plan (EAP) of the host site and work with the local EMS to provide care for the potentially spine and/or head injured athlete. This document will provide the necessary background to safely remove lacrosse facemask and helmets when necessary. These are guidelines only and are not intended as a standard of care and should not be interpreted as such. Individual treatment will depend on the specific facts and circumstances presented to the healthcare provider(s) managing care.

Emergency Care Procedures

Facemask Removal
Tools needed: Cordless Screwdriver, Pruning Shears, and Paramedic Shears

Steps in Removing Facemask:
1. Rescuer 1 maintains in-line stabilization superior to the patient’s head, making sure to allow for access to the lateral screws.
2. Rescuer 2, using a cordless screwdriver, removes top screw first, and then proceeds to remove screws from each side.
   a. Alternate technique* Rescuer 2 controls cervical stabilization through the collar or bilateral mastoid technique while the Rescuer 1 removes the screws
3. In situations where the chin guard needs to be cut to remove the facemask (e.g., Cascade R and Pro7) it should be performed at this point. *see description under special considerations
4. Rescuer 1 lifts the facemask away from the patient

Helmet Removal

Steps in removing helmet:
Helmet removal may follow facemask removal unless primary assessment dictates that emergency care be administered prior to facemask removal. The patient must be in a supine position with C-spine in neutral alignment. The shoulder pads should be prepped for access to the chest before removing the helmet; however shoulder pad removal may not be necessary in all cases, as some situations may not warrant chest exposure for chest compressions.

1. Rescuer 1 maintains in-line stabilization superior to the patient’s head
2. Rescuer 2, using Paramedic shears, cuts the jersey from neck to waist and sleeve to sleeve
3. Rescuer 2, using Paramedic shears, cuts the side straps of the shoulder pads
4. Rescuer 2, using Paramedic shears, cuts the mid-line of the shoulder pads
5. Rescuer 2, using Paramedic shears, cuts the four point chin strap
6. Rescuer 2 takes control of in-line stabilization from the front, either through a collar method or bilateral mastoid cupping while kneeling next to the patient, or standing over the patient
7. Rescuer 1 releases in-line stabilization
8. Rescuer 1 reaches behind the helmet to release the fitting mechanism at the base of the occiput (if needed in the Cascade helmet)
9. Rescuer 1 removes the helmet with slight forward tilt/rotation
10. Rescuer 1 resumes in-line stabilization superior to the patient’s head, maintaining neutral spinal alignment
11. A Spinal Motion Restriction device (i.e., cervical collar) is applied
12. A towel may be placed under the posterior head to promote neutral cervical alignment stabilization

Considerations: In an ideal situation, the helmet will be fit properly and all hardware will be easily removed. This may not be the case and the fit of the helmet must be considered in either the primary assessment or once the athlete is in the supine position where fit can be better visualized. One technique to assess fit is to see if the rescuer’s hands can easily fit inside the helmet past the ears with no restriction. In this scenario, consideration may be made to remove the helmet without facemask removal.

Unique Helmet Specific Considerations

Cascade R:
This helmet has 3 screws that need to be removed, a top screw and 1 on each side. The side projections off the chin guard, along with the area where the chin guard interlocks with the shell, are unique to this model and require practice with facemask removal and helmet removal to ensure that optimal spinal motion restriction is maintained. Facemask and helmet removal may be facilitated by cutting through the side projections running from the chin guard back to the side of the helmet with pruning shears. This will release the mask from the shell in most cases. If the sizing/locking mechanism on the posterior (occiput region) of the helmet is accessible, releasing it may allow for easier helmet removal.
**Cascade CPX R**
This helmet contains the same posterior mechanism as the Cascade R, but does not have side projections that require cutting to allow facemask removal.

**Cascade S**
This helmet is made with similar design features to the Cascade CPX R. Clinician simply needs to remove the top screw and 2 side screws for facemask removal.

**STX/SHUTT**
This helmet has 5 screws that need to be removed, 2 on each side and a top screw. Due to the tighter fit of the STX helmet, the facemask may need to be removed prior to helmet removal to limit movement of the head in an emergency situation. There is a posterior air bladder near the occiput, however in most cases this is difficult to access in supine patients and releasing air may not be necessary to remove the helmet.
Warrior Regulator
This helmet has 3 screws to remove. There are T-nuts wall on the inside of the side screws to reduce the incidence of t-nut spinning during screw removal. Cheek pads are attached via Velcro and are able to be removed if necessary. The sizing/locking mechanism on the posterior of the helmet is not accessible therefore the rescuer needs to be aware this may cause the helmet to be tighter on the occiput region.

Techniques for Spinal Movement Restriction

Trap Squeeze

Rescuer places hands on patient’s upper trapezius muscles, while squeezing head between the forearms to help decrease head and spinal movement.
Helmet Stabilization

Rescuer places hand on the side of the helmet with caution not to impede access to the side screws.

Techniques for Spinal Movement Restriction with Helmet Removal

Collar Method

This technique has the 2nd rescuer place one hand around the occiput and the other under the jaw, while positioned to the side of the patient. The first rescuer slides the helmet off using slight forward tilt/rotation. Consideration should be made with rescuer hand size and strength.

Bilateral Mastoid Cupping

Rescuer 2 places a hand around each mastoid process. They can position themselves to the side of the patient using their forearms against the chest as a counterforce. Rescuer can also be in a straddle position over the patient. The first rescuer slides the helmet off using slight forward tilt/rotation.

The above guidelines are based on the most current research and clinical expertise available at the time of the guideline production. However, as new research and information becomes available these guidelines may change based upon emerging research and equipment design. The above guidelines are for helmets and models listed above, this is not an all-inclusive list as helmets are constantly evolving. It is imperative that the medical provider is familiar with all models that they will be encountering, and are encouraged to discuss this with providing manufacture for the most current information.
Resources