

HELMET REMOVAL FROM INJURED PATIENTS*

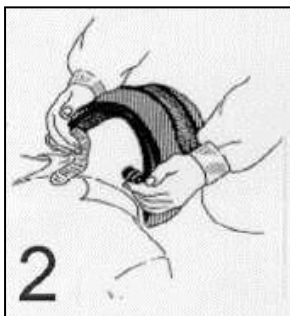


The varying sizes, shapes, and configurations of motorcycle and sports helmets necessitate some understanding of their proper removal. The rescuer who removes a helmet improperly may unintentionally aggravate cervical spine injuries.

The Committee on Trauma has concluded that physicians who treat the injured should be aware of helmet removal techniques. A gradual increase in the use of helmets is anticipated, because many organizations are urging voluntary wearing of helmets, and some states are reinstating laws requiring the wearing of helmets.



One rescuer maintains inline immobilization by placing their hands on each side of the helmet with the fingers on the victim's mandible. This position prevents slippage if the strap is loose.



A second rescuer cuts or loosens the strap at the D-rings.



The second rescuer places one hand on the mandible at an angle, the thumb on one side, the long and index fingers on the other. With their other hand, they apply pressure from the occipital region. This maneuver transfers the inline immobilization responsibility to the second



The rescuer at the top removes the helmet. Three Factors should be kept in mind:

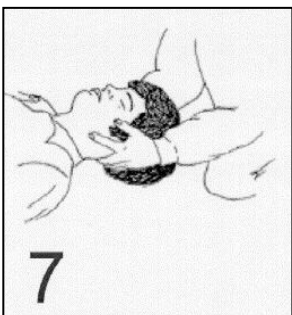
- ✓ If the helmet is egg shaped, it must be expanded laterally to clear the ears
- ✓ If the helmet provides full facial coverage, glasses must be removed first
- ✓ If the helmet provides full facial coverage, the nose may impede removal. To clear nose, the helmet must be tilted backward and raised over it.



Throughout the removal process, the second rescuer maintains inline immobilization from below to prevent unnecessary neck motion.



After the helmet has been removed, the rescuer at the top places their hands on either side of the victim's head with their palms over the patient's ears.



Maintain inline immobilization from above until a backboard is in place and a cervical immobilization device (collar) is applied.

SUMMARY: The helmet must be maneuvered over the nose and ears while the head and neck are held rigid.

- ✓ Inline immobilization is first applied from above.
- ✓ Inline immobilization is applied from below by a second rescuer with pressure on the jaw and occiput.
- ✓ The helmet is removed.
- ✓ Inline immobilization is reestablished from above.

SPECIAL CONSIDERATIONS REGARDING FOOTBALL HELMETS:

When to remove the helmet:

- ✓ The Inter-Association Task Force recommends that neither the football helmet nor the shoulder pads be removed before transportation.
- ✓ The Inter-Association Task Force recommends that only the facemask be removed, unless the rescuer is unable to access the airway by any other means or if the helmet does not adequately secure the head.
- ✓ By removing only the facemask and not the entire helmet, the spine will remain in a neutral position.

Guidelines for removal: The helmet should be removed on the field only under any of the following circumstances:

- ✓ If after a reasonable period of time, the facemask cannot be removed to gain access to the airway.
- ✓ If the design of the helmet and chin strap is such that even after removal of the facemask, the airway cannot be controlled or ventilation provided.
- ✓ If the helmet and chin straps do not hold the head securely, such that immobilization of the helmet does not also immobilize the head.
- ✓ If the helmet prevents immobilization for transport in an appropriate position.

How to remove the helmet:

- ✓ The Inter-Association Task Force recommends that the helmet be removed in a controlled environment after radiographs have been

obtained and only by qualified medical personnel with training in equipment removal.

- ✓ Helmet removal should never be attempted without thorough communication among all involved parties.
- ✓ One person should stabilize the head, neck, and helmet while another person cuts the chinstrap.
- ✓ Accessible internal helmet padding (cheek pads) should be removed, and air padding should be deflated before removal of the helmet, while a second assistant manually stabilizes the chin and back of the neck, in a cephalad direction, making sure to maintain the athlete's position.
- ✓ The pads are removed through the insertion of a tongue depressor or a similar stiff, flat-bladed object between the snaps and helmet shell to pry the cheek pads away from their snap attachment.
- ✓ The helmet should slide off the occiput with slight forward motion of the helmet.
- ✓ In the event that the helmet does not move, slight traction can be applied to the helmet which can then be gently maneuvered anteriorly and posteriorly, although the head/neck unit must not be allowed to be moved.
- ✓ The helmet should not be spread apart by the ear holes as this maneuver only serves to tighten the helmet on the forehead and occiput region.

When to remove the shoulder pads: Possible situations in which removal of shoulder pads would be necessary before transport to an emergency facility may include, but are not limited to, the following:

- ✓ The helmet is removed
- ✓ Multiple injuries require full access to shoulder area
- ✓ Ill-fitting shoulder pads caused the inability to maintain spinal immobilization

Studies have shown excess movement in the cervical spine when helmet or shoulder pads are removed alone, thus helmet and shoulder pads must be removed simultaneously to avoid cervical hyperextension and maintain in-line neutral stabilization.

Concerns regarding the removal of equipment include:

- ✓ The ability to maintain neutral spinal alignment
- ✓ The ability to secure rigid fixation of the athlete to the board
- ✓ A guarantee of access to the airway and to the chest for resuscitation efforts



The Inter-Association Task Force recommends that neither the football helmet nor the shoulder pads be removed before transportations. Furthermore, the simultaneous removal of the helmet and shoulder pads is best done in a controlled atmosphere.



How to remove the shoulder pads: The Inter-Association Task Force recommends that the shoulder pads be removed only in conjunction with the athlete's helmet and only when it is warranted. It is favorable to follow the following steps:

1. Cut the jersey and all other shirts from the neck to the waist and from the midline to the end of each arm sleeve.
2. Cut all of the straps used to secure the shoulder pads to the torso.
3. Cut all of the straps used to secure the shoulder pads to the arms.
4. Cut lace and straps over the sternum. A consistent manufactured characteristic of shoulder pads is the mechanism to attach the two halves of the shoulder pad unit on the anterior aspect. This lace or strap system allows for quick and efficient access to the anterior portion of the chest.
5. Cut and/or remove all accessories, e.g., neck rolls or collars, so they can be removed simultaneously with the shoulder pads. Release the shoulder pads allowing for full access to chest, face, neck, and arms. The posterior portion of the shoulder pads helps to maintain spinal alignment when the helmet and shoulder pads are in place.
6. A primary responder maintains cervical stabilization in a cephalad direction by placing his or her forearms on the athlete's chest while holding the maxilla and occiput.

7. With responders at each side of the athlete, their hands are placed directly against the skin in the thoracic region of the back.
8. Place additional support at strategic locations down the body as deemed appropriate, taking into consideration the size of the patient.
9. While the patient is lifted, the individual who was in charge of the head/shoulder stabilization should remove the helmet and immediately remove the shoulder pads by spreading apart the front panels and pulling them around the head.
10. Remove all shirts, jerseys, neck rolls, extenders, etc.
11. Lower the patient.



It is highly recommended that these procedures be practiced with all necessary rescue and medical personnel using the equipment commonly worn by the athletes.

Poorly maintained or modified equipment may hamper the safe removal process, which may lead to an increase in the severity of the initial injury, so be sure all equipment is properly maintained.



*As recommended by the American College of Surgeons Committee on Trauma, April 1997 and modified by recommendations from the Inter-Association Task Force of the National Association of Athletic Trainers.