

Technical Briefing Note

Subject	Date Issued	Revision
First Aid following Harness Suspension	6th November 2017	4

Background

For a number of years there has been concern about the possible onset of “Suspension Trauma” for persons suspended in a fall arrest harness after a fall.

This has resulted in a variety of views on the first aid treatment of persons suspected of being under the effect of suspension trauma.

Purpose

This Technical Briefing Note is designed to clarify the latest thinking and outline medical recommendations on first aid response for persons rescued from suspension after a fall. These recommendations are based on the Evidenced Based Review prepared by The Health and Safety Laboratory and The University of Birmingham (UK) for the Health & Safety Executive in the UK earlier in 2009.

Overview Comments

The report advises that, in the situation of a person falling into suspension and then becoming unconscious, the loss of consciousness - not due to any physical injury – will result from orthostasis (motionless vertical suspension). The term “trauma” is therefore incorrect and the medical term “syncope” should be used.

Syncope occurring with vertical suspension primarily results from the motionless state. Pre-syncope is the state preceding the onset of unconsciousness (syncope) and may produce symptoms such as light headedness, nausea, sensations of flushing, tingling or numbness of the arms or legs, visual disturbance or faintness.

The extensive evidence based review of all available medical literature **failed to find any documented case of pre-syncope occurring during the industrial use of fall protection equipment.** The only cases the researchers became aware of in their research were cases occurring during rescue training when subjects were deliberately suspended motionless.

The UK report also references a USA study conducted by the National Institute for Occupational safety and Health (NIOSH). This report indicated that “to ensure that no more than 5% of workers would experience symptoms (of suspension pre-syncope or syncope), rescue would have to occur in 7 minutes for a chest attachment point and 11 minutes for a back attachment point.”

The study also researched a harness accessory that allowed the legs to assume a bent knee posture when in suspension. The report advises that tests showed that the elevated leg, semi recumbent position was tolerated for a mean of 58 minutes – with all withdrawals from the tests being from discomfort rather than medical symptoms or signs.

The following are extracts from the report:-



Main Findings

There is little scientific published literature regarding the circumstances and consequences of harness suspension, and none that tests the effect of sitting a rescued casualty in the semi recumbent posture that some authors have suggested.

Main Recommendations

- No change should be made to the standard (UK) first aid guidance for the post rescue recovery of a semi conscious or unconscious person in a horizontal position, even if the subject of prior harness suspension.
- No change should be made to the standard (UK) guidance of ABC (Airway / Breathing / Circulation) management, even if the subject of prior harness suspension.
- A casualty who is experiencing pre-syncopal symptoms or who is unconscious while suspended in a harness should be rescued as soon as is safely possible.
- If the rescuer is unable to immediately release a conscious casualty from a suspended position, elevation of the legs by the casualty or rescuers where safely possible may prolong tolerance of suspension.
- First responders to persons in harness suspension should be able to recognise the symptoms of pre-syncope. These include light headedness, nausea, sensations of flushing, tingling or numbness of the arms or legs, anxiety, visual disturbance, or a feeling they are about to faint.

Other recommendations

- Fall arrest systems incorporating a harness should be the last measure since the means for recovery from a fall into suspension may exceed the time to pre-syncope, which may then be followed by syncope in a time period which is unpredictable.
- In head up suspension, elevation of the legs may prolong tolerance.

Additional References

- Australian Resuscitation Council Guideline 9.1.5

www.resus.org.au

- Evidenced - based review for the current guidance on first aid measures for suspension trauma

www.hse.gov.uk/research/rrpdf/rr/708.pdf

Additional Information

For any additional information, please refer to other Technical Briefing Notes on this website.

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