



# ANZCOR Guideline 9.1.5 – First Aid Management of Harness Suspension Trauma

## Summary

### Who does this guideline apply to?

This guideline applies to adults, adolescents and children

### Who is the audience for this guideline?

This guideline is for use by bystanders, first aiders and first aid training providers

### Recommendations

The Australian and New Zealand Committee on Resuscitation (ANZCOR) makes the following recommendations:

1. Send for an ambulance [Good Practice Statement]
2. Rescue the person and place in a lying position as soon as it is safe to do so [Good Practice Statement]

### Abbreviations

Abbreviation	Meaning/Phrase
ANZCOR	Australian and New Zealand Committee on Resuscitation

## 1 Introduction

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Suspension trauma, or orthostatic shock, has been reported to affect people who are suspended within a body harness for a prolonged period of time (more than 10 min).<sup>1,2,3</sup> It may result in loss of consciousness or death. This is thought to occur as a result of low blood pressure due to blood pooling in the legs combined with an increase in the activity of a part of the nervous system that slows the heart (vagal tone).<sup>3</sup>

## 2 Recognition

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The signs and symptoms of suspension trauma are the same as shock. Harness suspension trauma should be considered where the person has been suspended by a harness, and are exhibiting any of the following:<sup>4</sup>

- feeling faint or dizzy
- breathlessness
- sweating
- looking pale
- nausea
- low blood pressure
- loss of responsiveness

## 3 Management

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- Call for an ambulance.
- If safe to do so, free the person from the harness.
- If not responding, manage as per ANZCOR Basic Life Support flow chart [Refer to ANZCOR Guideline 8]
- Rest the responding person in a position of comfort, ideally lying down, and provide reassurance.
- Loosen or remove harness.
- Administer oxygen if available.
- Look for and manage any associated injuries, particularly for those who may have fallen or been electrocuted.
- Monitor level of response and breathing at frequent intervals.

**Some agencies have previously recommended that those with suspension trauma are maintained in a sitting position and avoid lying flat for 30 minutes<sup>5</sup>. This review has found no evidence to support this practice and it may be harmful.**

## References

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1. Turner N.L., Wassell J.T., Whisler R., Zwiener J. Suspension tolerance in a full-body safety harness, and a prototype harness accessory. [Evaluation Studies. Journal Article] Journal of Occupational & Environmental Hygiene. 5(4):227-31, 2008.
2. Lee C., Porter K.M. Suspension trauma. [Journal Article. Review. Emergency Medicine Journal. 24(4):237-8, 2007.
3. Rauch S, Schenk K, Strapazzon G, Dal Cappello T, Gatterer H, Palma M, Erckert M, Oberhuber L, Bliemsrieder B, Brugger H, Paal P. Suspension syndrome: a potentially fatal vagally mediated circulatory collapse—an experimental randomized crossover trial. European journal of applied physiology. 2019 Jun;119(6):1353-65.
4. Adish A., Robinson L., Codling A., Harris-Roberts J., Lee C., Porter K. Evidence based review of the current guidance on first aid measures for suspension trauma. Health and Safety Executive. Research Report RR708. May 2009. <http://www.hse.gov.uk/research/rrpdf/rr708.pdf>
5. Raynovich B, Rwaili FT and Bishop P. (2009). Dangerous suspension. Understanding suspension syndrome & prehospital treatment for those at risk. JEMS : a journal of emergency medical services. 34(8):44-51, 53;

## Further Reading

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- ANZCOR Guideline 3 Recognition and First Aid Management of the Unconscious Person
- ANZCOR Guideline 4 Airway
- ANZCOR Guideline 8 Cardiopulmonary Resuscitation
- ANZCOR Guideline 9.1.6 Management of Suspected Spinal Injury
- ANZCOR Guideline 9.2.3 Shock

## About this Guideline

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<b>Search date/s</b>	January 2020
<b>Question/PICO :</b>	For people suspended in a harness for a prolonged period awaiting rescue, what interventions are effective in the prevention of poor clinical outcomes
<b>Method:</b>	Scoping literature review
<b>Primary reviewers:</b>	Finlay Macneil
<b>Other consultation:</b>	Kevin Nation
<b>Worksheet</b>	<a href="https://resus.org.au/download/worksheets/worksheets_to_support_guidelines/g1-9-1-5-harness-suspension-trauma-worksheet-final.pdf">https://resus.org.au/download/worksheets/worksheets_to_support_guidelines/g1-9-1-5-harness-suspension-trauma-worksheet-final.pdf</a>
<b>Approved:</b>	April 2021
<b>Guidelines superseded:</b>	ARC Guideline 9.1.5 - July 2009