**Clinical question.**

In breathing but unresponsive victims (P), does positioning the victim in a lateral, side-lying, recovery position (i.e. lateral recumbent or modified HAINES) (I) decrease complications (O) as compared to leaving them in a supine position (C)?

**Is this question addressing an intervention/therapy, prognosis or diagnosis?** Intervention/therapy.

**State if this is a proposed new topic or revision of existing worksheet:** Revision. There were three worksheets which addressed this topic for Guidelines 2005:

1. **Question #1** - For patients with an altered mental status but an intact airway, spontaneous respirations and signs of circulation, placement of the victim in a recovery position (left lateral recumbent or recovery position) is recommended.

2. **Question #2** - The lateral recovery position with lower hand in front is safer, more effective and more feasible then the HAINES position.

**Markenson, 2005 (W274)**

- H1: The lateral recovery position with the lower hand placed in front of the patient is safe, feasible, and effective.
- H2: The HAINES recovery position is safe, feasible, and effective for patient with possible traumatic injuries.

**Judge, 2005 (W264)**

- H1: The lateral recovery position with the lower hand placed in front of the patient is safe, feasible, and effective.
- H2: The HAINES recovery position is safe, feasible, and effective for patient with possible traumatic injuries.

**Handley, Lerner, 2005 (W155)**

**Conflict of interest specific to this question**

Do any of the authors listed above have conflict of interest disclosures relevant to this worksheet? No.

**Search strategy (including electronic databases searched).**

- Medline via Pub Med - “recovery position” OR “HAINES” AND “unconscious” as text words, all fields (34 references); also, “position” AND “unconscious” AND “complications” as text words, all fields (125 references); also, “position” AND “unconscious” AND “aspiration” as text words, all fields (15 references); also, “unconscious” AND “airway obstruction” AND “position”, as text words, all fields (6 references).
- Cochrane database for systematic reviews – posture AND unconscious (0 references).
- AHA End Note Library on “recovery position” or “HAINES” (14 references).
- Review of references of all relevant articles.

Complications were defined to include spinal cord damage, airway obstruction, aspiration, and nerve or vessel injury.

- **State inclusion and exclusion criteria**

  Studies were selected after applying the appropriate search terms (listed above) and excluding irrelevant articles. All English-only, peer-reviewed, human studies resulting from this search met the inclusion criteria. Review-only or abstract-only articles were excluded, as were animal studies.

- **Number of articles/sources meeting criteria for further review:**

  Ten articles met criteria for further review. One was LOE 4, and nine were LOE 5.
# Summary of evidence

## Evidence Supporting Clinical Question

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<th>5</th>
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**Level of evidence**

- A = Return of spontaneous circulation
- B = Survival of event
- C = Survival to hospital discharge
- D = Intact neurological survival
- E = Other endpoint (decreased complications)
- *Italics = Animal studies*
### Evidence Neutral to Clinical question

<table>
<thead>
<tr>
<th>Level of Evidence</th>
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<th>Fair</th>
<th>Poor</th>
<th>Other Endpoint (decreased complications)</th>
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<tbody>
<tr>
<td>1, 2, 3, 4, 5</td>
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<td></td>
<td>Blake 2002, 289 – E</td>
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<td>Rathgeber 1996, 13 – E</td>
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<td>Doxey 1998, 161-E</td>
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<td>Gunn 1995, 239 – E</td>
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<td>Leaves 1998, 316 – E</td>
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<td>Turner 1998, 153 – E</td>
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<td>Ryan 2003, 432 – E</td>
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<td>Adnet 1999, 745-E</td>
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</tbody>
</table>

**Level of evidence**

A = Return of spontaneous circulation  
C = Survival to hospital discharge  
E = Other endpoint (decreased complications)

B = Survival of event  
D = Intact neurological survival

*Italicics = Animal studies*

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### Evidence Opposing Clinical Question

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<tr>
<th>Level of Evidence</th>
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<th>Fair</th>
<th>Poor</th>
<th>Other Endpoint (decreased complications)</th>
</tr>
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<tbody>
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</table>

**Level of evidence**

A = Return of spontaneous circulation  
C = Survival to hospital discharge  
E = Other endpoint (decreased complications)

B = Survival of event  
D = Intact neurological survival

*Italicics = Animal studies*
REVIEWER’S FINAL COMMENTS AND ASSESSMENT OF BENEFIT / RISK:

DISCUSSION: There were only a limited number of studies (10) that pertained to the clinical question. Most (80%) were studies that compared different types of lateral positioning; only two (20%) compared the supine position versus some type of lateral position. There does not seem to be any evidence to support moving the unconscious, breathing person to some type of lateral position to reduce complications versus leaving them alone, although it would seem intuitive that positioning an unconscious, breathing person in some type of lateral position would reduce the incidence of airway obstruction, or aspiration, with its resultant morbidity and/or mortality.

There was some evidence supporting the HAINES position for patients with spinal injury because it caused less spinal movement (Blake 2002, 289; Gunn 1995, 239). There was other evidence that described the potential adverse effects of vessel and nerve damage when using the HAINES position (Fulstow 1993, 89; Kumar 1996, 69; Rathgeber 1996, 13). The lateral recumbent recovery position seemed easier for rescuers to use and was more comfortable for the victim (Doxey 1998, 161; Leaves 1998, 316; Turner 1998, 153). However, comfort should not be an issue in the unconscious patient. Ryan discussed that there were no cardiac autonomic tone advantages to be gained by placing a person in a recovery position on one side versus another (Ryan 2003, 432). Adnet et al concluded that the prone position appeared to be associated with a lower incidence of suspected aspiration pneumonia in a group of acutely poisoned comatose patients, but that the lateral decubitus position did not appear to protect against aspiration pneumonia (Adnet 1999, 745). Other than the studies by Adnet and Ryan, none of the studies compared positioning in a lateral position versus leaving the person in the supine position in regards to reducing complications. In addition, only one study (Adnet 1999, 745) was actually performed using unconscious patients; all other studies used healthy, conscious volunteers.

There were no new studies identified since the C2005 worksheets were completed. Although previous worksheet authors on this topic (Markenson, Judge, Handley, Lerner, 2005) addressed use of a recovery position, their focus was on comparing various recovery positions rather than on the risk vs. benefit of moving the victim into a recovery position versus leaving them alone (supine).

In Guidelines 2005 as published in Circulation 2005, these were the treatment recommendations:

Positioning the Victim
As a general rule, a victim should not be moved, but there are times when you should do so:

- If the area is unsafe for you or the victim, move the victim to a safe location.
- If the victim is face down and needs CPR, turn the victim face up.
- If the victim is unresponsive, has an open airway, and is breathing spontaneously, turn the victim onto his or her side (recovery position) with the victim’s hand in front (Class IIb; LOE 7,8,9).
- Be aware of the potential for nerve and vessel injury if the victim lies on one arm for a prolonged period; it may be necessary to roll the victim to the other side (Class indeterminate; LOE 7,8,9).
- If you suspect that the victim might have a spinal cord injury, it is best not to move the victim. If the injured victim is unresponsive and has difficulty breathing because of copious secretions or vomiting, or if you are alone and have to leave the victim to get help, place the victim in a modified HAINES recovery position by extending one of the victim’s arms above the head and rolling the body to the side so that the victim’s head rests on the extended arm. Bend both legs to stabilize the victim (Class IIb; LOE 7,8,9).

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Acknowledgements: We would like to acknowledge the previous C2005 worksheet authors on this topic – David Markenson, Anthony Handley, E. Brooke Lerner, Lei Huang, and Wanchun Tang.
Citation List


Note: LOE 4, Fair; Summary of Evidence Neutral


Note: LOE 5, Good; Summary of Evidence Neutral


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