**Worksheet for Evidence-Based Review of Science for First Aid**

**Worksheet author(s)**

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**Date Submitted for review:** 29 January 2010

### Clinical question.

What is the best re-training / update for first aid?

**FA-2103:** In First Aid Training (P) how frequently are retraining / update sessions required (I) in order to maintain the participant’s skills (O)

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

State if this is a proposed new topic or revision of existing worksheet:

### Conflict of interest specific to this question

Do any of the authors listed above have conflict of interest disclosures relevant to this worksheet?

**NO INDUSTRIAL CONFLICT OF INTEREST**

**POTENTIAL INTELLECTUAL CONFLICT OF INTEREST:** Coordinator of the European Reference Centre for First Aid Education, National Medical Advisor of the French Red Cross, Member of the board of the French Resuscitation Council, Co-chair of the BLS-AED working group of ERC.

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

Articles published in the last 10 years: clinical trials, meta-analysis, practice guidelines, randomized controlled trial, in English – Spanish – French


And then

Limits: Clinical Trial, Meta-Analysis, Practice Guideline, Randomized Controlled Trial, Review, English, French, Spanish (15)

And hand search (5)

Google Scholar search with same keywords
Cochrane Library search with same keywords
EMBASE search with same keywords

• **State inclusion and exclusion criteria**

Studies about retraining, methods, frequency (period) and tools used have been considered. As only one study is available in the field of first aid we have considered retraining studies in the field of BLS, PLS (including neonatal) and ALS.

**Total Number of articles analyzed: 55**

Articles have been excluded in case of expert opinion based, if it is a review article or if it is out topic.

**47 excluded articles:**
- Expert Opinion based;
- Same study and same population of another study;
- Review article;
- No Group Control;
- Out topic

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

8
## Summary of evidence

### Evidence Supporting Clinical Question

<table>
<thead>
<tr>
<th>Good</th>
<th>Fair</th>
<th>Poor</th>
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<tbody>
<tr>
<td></td>
<td>(Stross 1983, D; Berden, Willems et al. 1993, A; Curran, Aziz et al. 2004, C; Woollard, Whitfield et al. 2006, B)</td>
<td>Capone, Lane et al. 2000, A</td>
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**Level of evidence**

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<th>2</th>
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**Outcomes** – Please define outcomes for this question, place them after letters below and use letters to identify studies which evaluate this outcome.

- A = Improvement of technical skills
- B = Skill deterioration
- C = Retention of technical skills
- D = Maintaining skill competences
- E = Knowledge

### Evidence Neutral to Clinical question

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<th>Good</th>
<th>Fair</th>
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<tr>
<td></td>
<td>(Su, Schmidt et al. 2000, E)</td>
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**Level of evidence**

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**Outcomes** – Please use the same outcomes as defined for the Evidence Supporting table above.
### Evidence Opposing Clinical Question

<table>
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<tr>
<td>Good</td>
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<td>Fair</td>
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<td>Poor (Chamberlain, Smith et al. 2002, A, B)</td>
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Outcomes – Please use the same outcomes as defined for the Evidence Supporting table above
Most of the studies as the old Berden study (Berden, Hendrick et al. 1993) suggest that the best retraining period for BLS is probably between 3 to 6 months.

Alternative studies determined the skill decay following initial training. With computerized training simulator in the field of neonatal resuscitation (Curran, Aziz et al. 2004), the post-training interval seems to be 4 months. One study (Lester, Donnelly et al. 2000) suggests that retraining groups are more efficient when we compare groups with and without retraining after 4 years. Professionals are also evaluated (Su, Schmidt et al. 2000) (Stross 1983) and the studies suggest that retesting and refreshing courses are effective for paramedics and physicians at one year after training.

As regards first aid, one study (Capone, Lane et al. 2000) suggests that retraining by TV spots can decrease the skill decay significantly, and the best proof is that over 50% of the TV group participants performed correctly five of the eight first aid skills including positioning and hemorrhage control. The same study was done with CPR retraining (Lester, Donnelly et al. 2000) (Woollard, Whitfield et al. 2006) and shows that those who have been retrained are better than those who had not.

Only one study (Chamberlain, Smith et al. 2002) deals with the efficiency of retraining, and the value of conventional retraining for community volunteers in the field of resuscitation. In this study no difference was observed between retrained and no retrained groups.

BLS skills decay rapidly, after 3 months after initial training. There are suggestions that retraining at 3 or 6 monthly intervals would delay this decay.

There is no published study that answers the question about retraining intervals not only for First Aid training but also for BLS training, for the lay public as well as for the health professionals.

For first aid, research is needed to define the frequency of retraining to maintain skills and to define the best method of retraining.

Acknowledgements:
**Citation List**


LOE: 1  
Quality: Fair  
Direction of support: Supporting  
Comments: This study assess different intervals between reinstructions, but doesn't conclude concerning the optimal interval between reinstructions.


LOE: 2  
Quality: Fair  
Direction of support: Supporting  
Comments: It is the only study which is in the field of first aid which demonstrates the interest of evaluation during simulation and the level of retention at different periods (1 week, 1 month, and 13 months).


LOE: 1  
Quality: Poor  
Direction of support: Opposing  
Comments: It is the only opposing study about an ineffective effect of retraining, The value of conventional re-training is underlined for community volunteers.


LOE: 1  
Quality: Fair  
Direction of support: Supporting  
Comments: This study demonstrates that computerized simulator system is as effective as video for maintaining resuscitation skills of medical students with an evaluation at 4 & 8 months.


LOE: 1  
Quality: Poor  
Direction of support: Supporting
Comments: this study demonstrates that participants who had retrained were more confident than those who had not and 89% of those who had not retrained were willing to do so


LOE: 1  
Quality: Fair  
Direction of support: Supporting  
Comments: These results indicate that reinforcement after continuing medical education may enhance knowledge retention, but does not maintain motor skills.


LOE: 1  
Quality: Fair  
Direction of support: Neutral  
Comments: This study demonstrates that there was no difference between the groups in knowledge scores at 12 months, despite the refresher interventions at six months.


LOE: 1  
Quality: Fair  
Direction of support: Supporting  
Comments: In this study about AED & CPR, there was no significant difference in performance between subjects attending two versus three refresher classes.