# EVIDENCE-BASED PRACTICE IN FIRST AID AND PREVENTION GUIDELINES OF BELGIAN RED CROSS-FLANDERS

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## BACKGROUND

In the past, first aid handbooks for lay public were primarily based on experience and specialist knowledge. The Belgian Red Cross-Flanders decided to use an evidence-based approach when **revising its first aid programme**, also containing prevention advice.

## OBJECTIVES

To provide **evidence-based recommendations** in a limited time span of one year for 151 topics.

## RESULTS

During a one year period, the reviewers devoted 2 full-time equivalents (FTE) to prepare the evidence summaries. No relevant evidence was found for 49 of the 151 topics and for the other topics, the available evidence was limited. Eight expert panel meetings (3-4h) were needed to finalise the recommendations.

## EVIDENCE-BASED GUIDELINE DEVELOPMENT

example: syncope — We have chosen to report here the evidence and recommendations for syncope as a sample of one of the 151 diverse topics of the guideline. The example discussed here is the prevention of syncope by leg crossing.

### QUESTION

example: syncope — In individuals who suffer from orthostatic hypotension, does leg crossing prevent transient loss of consciousness or syncope caused by acute short-term drop in blood pressure in case of feeling faint ?

### LITERATURE SEARCH

**Systematic search strategy**

- ✓ Database: GIN, NGC, The Cochrane Library, MEDLINE, BestBETs, EMBASE
- ✓ Specific search terms

example: syncope — Outcome: syncope, orthostatic hypotension; Intervention: leg, cross(ing), ...

- ✓ Search strategy: If an eligible guideline or systematic review was found, we formulated draft recommendations based on this evidence. If not, we searched controlled intervention studies. When no study was retained, the search continued for cohort and case-control studies.
- ✓ One reviewer / topic
- ✓ Period: from date of inception of the database until November 2010

**In- and exclusion criteria**

example: syncope — Evidence that describes a single or a combination of non-pharmacological counter-pressure manoeuvres – other than crossing the legs while standing - were not retained while addressing this specific question.

**Data extraction**

example: syncope

TABLE 1 ▶ EVIDENCE FOR THE QUESTION CONCERNING LEG CROSSING TO PREVENT SYNCOPE

| REF | POPULATION | STUDY TYPE | COMPARISON | KEY RESULTS (INTERVENTION VS. CONTROL) |
|---|---|---|---|---|
| 1 | 88 patients with vasovagal syncope | Within subjects design | Leg crossing with muscle tension vs. standing | Significant increase of systolic and diastolic blood pressure |
| 2 | 21 patients with vasovagal syncope | | | Significant increase of systolic and diastolic blood pressure |
| 3 | 48 subjects in total: 27 patients with vasovagal syncope and 21 healthy subjects | | | Significant increase of systolic but not of diastolic blood pressure in both patients and healthy subjects |
| 4 | 13 healthy subjects | | | Significant increase of mean arterial pressure |
| 5 | 9 patients with orthostatic hypotension | | | Significant increase of systolic blood pressure |
| 6 | 13 subjects in total: 5 patients with orthostatic hypotension and 8 healthy subjects | | Leg crossing without muscle tension vs. standing | Significant increase of systolic and diastolic blood pressure in patients with orthostatic hypotension; no significant difference of systolic and diastolic blood pressure in healthy subjects |
| 7 | 16 subjects in total: 8 patients with sympathetic failure and 8 healthy subjects | | | Significant increase of mean arterial blood pressure in patients; no significant difference in healthy subjects |
| 8 | 13 subjects in total: 7 patients with orthostatic hypotension and 6 healthy subjects | | | Significant increase of systolic and diastolic blood pressure in patients with orthostatic hypotension; no significant difference of systolic and diastolic blood pressure in healthy subjects |
| 9 | 9 healthy subjects | Randomised crossover trial | | Significant increase of orthostatic tolerance<br>No significant difference of systolic and diastolic blood pressure |

**Quality assessment of body of evidence (GRADE approach)**

example: syncope — Level of evidence: moderate (limitations in study design)

### FORMULATING RECOMMENDATIONS

The expert panel formulated the recommendations (by consensus) while taking into account the evidence. The health benefits, side effects, and risks have been considered when formulating the recommendations.

example: syncope — It is recommended that leg crossing is performed to prevent syncope in case of feeling faint

### VALIDATION OF THE GUIDELINE

A multidisciplinary panel of 11 experts discussed the draft recommendations. Thereafter the final recommendations of the guideline were formulated.


Revised first aid curriculum of the Belgian Red Cross-Flanders that incorporates evidence and expert judgment.

### GUIDELINE UPDATE

Update in 2016.

EVIDENCE-BASED PRACTICE
BY THE CENTRE OF EXPERTISE OF THE BELGIAN RED CROSS-FLANDERS

**References**: [REF 1] van Dijk N et al. J Appl Physiol 2005 Feb;98:584-90 - [REF 2] Krediet CT et al. Circulation 2002 Sep 24;106:1684-9 - [REF 3] Kim KH et al. Circ J 2005 Sep;69:1084-8 - [REF 4] Groothuis JT et al. Clin Sci (Lond) 2007 Feb;112:193-201 - [REF 5] Bouvette CM et al. Mayo Clin Proc 1996 Sep;71:847-53 - [REF 6] Ten Harkel AD et al. Clin Sci (Lond) 1994 Nov;87:553-8 - [REF 7] Harms MP et al. Clin Sci (Lond) 2010 May;118:573-81 - [REF 8] van Lieshout JJ et. Lancet 1992 Apr 11;339:897-8 - [REF 9] Krediet CT et al. Am J Physiol Heart Circ Physiol 2006 Oct;291:H1768-H1772.

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