2015 American Red Cross and AHA First Aid Guidelines

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American Red Cross
Disclosures

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- I have no direct financial conflicts related to the guidelines and the objectives of this program.
- I am employed by the American Red Cross which co-develops and writes the First Aid Guidelines with the American Heart Association for the United States.
- No specific equipment or medications will be discussed within the program.
Overview of Science and Evidence Evaluation Process
What is ECC?

ECC stands for Emergency Cardiovascular Care and is often used to refer to the science update that occurs every 5 years worldwide.
The Process

- Every 5 years, international organizations and experts in first aid, CPR and ECC evaluate the latest evidence to determine treatment recommendations that will lead to the better outcomes.
- This process is led by the International Liaison Committee on Resuscitation (ILCOR) and results in two key outputs:
  - The Consensus on Science with Treatment Recommendations (CoSTR)
  - Guidelines – Interpretation of the CoSTR by a particular country, region or organization
ITLS Involvement in the Process

- Members of the ITLS Editorial Board and Board of Directors participated as ILCOR Evidence Reviewers for the ILCOR First Aid Taskforce.
- ITLS terms and process considered during the consensus building process leading to treatment recommendations.
In the United States

- AHA is the ILCOR member organization in the US.
- AHA develops the CPR and ECC Guidelines.
- Red Cross and AHA jointly develop the First Aid Guidelines.
- Training providers in the US generally follow these guidelines.
- Similar processes across the globe.
The Evidence Evaluation Process

Structure of questions for evidence evaluation.

**Population**
Describes a particular group of patients; may include primary problem, disease, or coexisting conditions
Example: Cardiac arrest patients

**Intervention**
Includes main intervention, prognostic factor, or exposure
Example: Who received CPR

**Comparator**
Describes the main alternative
Example: Compared with no CPR

**Outcome**
What is being accomplished, improved, measured
Example:
1. Neurologically intact survival
2. Survival to discharge
3. ROSC
ILCOR Consensus on Science Workflow

1. **PICO Question Development**
   PICO question is created by the task force, and initial search strategy is completed by the information specialist.

2. **Search Strategy Development**
   Initial search strategy is reviewed and approved by the task force and sent out for public comment. The full literature search is then completed by the information specialists and given to the evidence reviewers.

3. **Evidence Reviewer Article Selection**
   At least 2 evidence reviewers are selected by the task force to complete a single PICO question. They construct the review/bias tables.

4. **GRADE Evidence Review**
   Evidence reviewers capture data in GRADEpro and complete GRADE analysis.

5. **Development of CoSTR**
   Evidence reviewers draft the consensus on science and treatment recommendations. All PICO questions are presented by the evidence reviewers at ILCOR meetings, like 2015 Consensus on Science Conference. ILCOR approves all recommendations that are submitted for publication.

ILCOR 2015 Consensus on Science work flow for all systematic reviews.
PICO Prioritization of Questions

274 PICO questions from 2010

- Combined or merged with other questions
- Retired as not relevant to current practice
- Considered low priority because of few developments in field

New topics added based on task force or public comment

391 PICO questions prioritized for 2015 review

New ILCOR First Aid Task Force developed 55 PICO questions

165 systematic reviews completed

ILCOR process for prioritizing PICO questions for systematic reviews.
Comparison of the number of systematic review questions (PICO questions) addressed or deferred/not reviewed in 2015 versus 2010 reported by Part in the ILCOR International Consensus on CPR and ECC Science With Treatment Recommendations (CoSTR) publication. BLS indicates Basic Life Support; Defib: Defibrillation*; CPR Tech and Dev: Cardiopulmonary Resuscitation Techniques and Devices; ALS: Advanced Life Support; ACS: Acute Coronary Syndromes; Peds: Pediatrics; NLS: Neonatal Resuscitation; EIT, Education, Implementation, and Teams. *Note that defibrillation content (Defib) of 2010 was absorbed within the 2015 Basic Life Support, Advanced Life Support, and Pediatric CoSTR parts, and the CPR Techniques and Devices questions of 2010 were absorbed by the Advanced Life Support CoSTR part in 2015.
<table>
<thead>
<tr>
<th>CLASS (STRENGTH) OF RECOMMENDATION</th>
<th>LEVEL (QUALITY) OF EVIDENCE</th>
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</thead>
<tbody>
<tr>
<td>CLASS I (STRONG)  Benefit &gt;&gt;&gt; Risk</td>
<td>Level A</td>
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<tr>
<td>Suggested phrases for writing recommendations:</td>
<td>- High-quality evidence from more than 1 RCTs</td>
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<tr>
<td>- Is recommended</td>
<td>- Meta-analyses of high-quality RCTs</td>
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<tr>
<td>- Is indicated/useful/effective/beneficial</td>
<td>- One or more RCTs corroborated by high-quality registry studies</td>
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<tr>
<td>- Should be performed/administered/other</td>
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<tr>
<td>- Comparative-Effectiveness Phrases:</td>
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<tr>
<td>- Treatment strategy A is recommended/indicated in preference to treatment B</td>
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<tr>
<td>- Treatment A should be chosen over treatment B</td>
<td></td>
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<tr>
<td>CLASS IIa (MODERATE)  Benefit &gt;&gt; Risk</td>
<td>Level B-R  (Randomized)</td>
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<td>Suggested phrases for writing recommendations:</td>
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<tr>
<td>- Is reasonable</td>
<td>- Meta-analyses of moderate-quality RCTs</td>
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<tr>
<td>- Can be useful/effective/beneficial</td>
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<tr>
<td>- Comparative-Effectiveness Phrases:</td>
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<tr>
<td>- Treatment strategy A is probably recommended/indicated in preference to treatment B</td>
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<tr>
<td>- It is reasonable to choose treatment A over treatment B</td>
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<td>Level B-NR  (Nonrandomized)</td>
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<td>- Moderate-quality evidence from 1 or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies</td>
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<tr>
<td>- May/might be reasonable</td>
<td>- Meta-analyses of such studies</td>
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<tr>
<td>- May/might be considered</td>
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<tr>
<td>- Usefulness/effectiveness is unknown/unclear/uncertain not well established</td>
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<td>Level C-LD  (Limited Data)</td>
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<td>- Randomized or nonrandomized observational or registry studies with limitations of design or execution</td>
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<td>- Is not recommended</td>
<td>- Meta-analyses of such studies</td>
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<td>- Is not indicated/useful/effective/beneficial</td>
<td>- Physiological or mechanistic studies in human subjects</td>
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<td>CLASS III: Harm (STRONG)  Risk &gt; Benefit</td>
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<td>- Potentially harmful</td>
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<td>- Causes harm</td>
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<td>- Associated with excess morbidity/mortality</td>
<td></td>
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<tr>
<td>- Should not be performed/administered/other</td>
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**COR and LOE are determined independently (any COR may be paired with any LOE). A recommendation with LOE C does not imply that the recommendation is weak. Many important clinical questions addressed in guidelines do not lend themselves to clinical trials. Although RCTs are unavailable, there may be a very clear clinical consensus that a particular test or therapy is useful or effective. 1 For comparative-effectiveness recommendations (COR I and IIa, LOE A or B only), studies that support the use of comparator verbs should involve direct comparisons of the treatments or strategies being evaluated. 2 The method of assessing quality is evolving, including the application of standardized, widely-used, and preferably validated evidence grading tools; and for systematic reviews, the incorporation of an Evidence Review Committee. COR indicates Class of Recommendation; EO, expert opinion; LD, limited data; LOE, Level of Evidence; NR, nonrandomized; R, randomized; and RCT, randomized controlled trial.**
# ILCOR Recommendations

Class of Recommendation and Levels of Evidence for the 2015 Guidelines Update: Demonstrating the Gap in Resuscitation Science

<table>
<thead>
<tr>
<th>Class of Recommendation</th>
<th>LOE A</th>
<th>LOE B-R</th>
<th>LOE B-NR</th>
<th>LOE C-LD</th>
<th>LOE C-EO</th>
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<td>12</td>
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<tr>
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<td>4</td>
<td>3</td>
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<td>47</td>
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</tbody>
</table>

Legend: LOE, Level of Evidence; NR, non-randomized; R, randomized;
2015 Red Cross and AHA First Aid Guidelines
Definition of First Aid

- Defined as initial care provided for an acute illness or injury.
- Goals – preserving life, alleviating suffering, preventing further illness or injury, promoting recovery.
- First aid can be initiated by anyone.
- First aid assessments and interventions should be medically sound and based on scientific evidence or, in the absence of such evidence, on expert consensus.
Recovery Position - Updated

- Unresponsive, breathing normally and no signs of trauma use a lateral side-lying recovery position.
- If neck, back, hip, or pelvic injury, **do not roll**; leave in the position found.
  - Except to open blocked airway or reach a safe location.
- The use of the modified H.A.IN.E.S. position is no longer recommended.
Shock Position - Updated

- Place person on their back (supine).
- First aid providers may now raise the person’s feet about 6-12 inches (30-60 degrees) if no evidence of trauma.
- Do not raise feet if movement or position causes pain.
Stroke – FAST Works

- While programs have been teaching FAST for years, first time assessment tools were evaluated as part of ILCOR process.
- Research now formally supports use of stroke assessment systems, such as FAST
- Leads to faster stroke recognition and improved outcomes
Aspirin for Chest Pain - Updated

- Aspirin should only be given if chest pain is of cardiac origin (e.g., suspected heart attack)
- Suggested dose:
  - 1 adult 325-mg tablet, or
  - 2 - 4 low-dose “baby” aspirins (81 mg each)
- Important for aspirin to be chewed.
- Enteric coated aspirin is now acceptable.
Oxygen in First Aid - Updated

- No evidence supporting routine oxygen use in first aid.
  - May be beneficial:
    - Decompression injury
    - Advanced cancer patients with dyspnea and hypoxemia
    - Carbon monoxide poisoning (no evidence identified)
Anaphylaxis- Updated

- **Anaphylaxis now “Care First” emergency.**
  - Alone – administer epinephrine before calling 9-1-1.
  - Not alone – call 9-1-1 and administer epinephrine simultaneously.
- Updated protocol – Administer 2\textsuperscript{nd} dose if:
  - No response to the 1\textsuperscript{st} dose, and
  - **Arrival of advanced care exceeds 5 - 10 minutes.**
Hypoglycemia - New

- Glucose tablets should be used as the primary treatment IF awake, able to swallow and follow commands.
  - Dose: 15-20 grams = 4 - 5 glucose tablets
- When tablets aren’t available: Glucose candy, sucrose candy, jelly beans, orange juice, fructose (dried fruit strips), whole milk (15-20 grams).
- May wait 10 - 15 minutes before calling EMS and re-treating diabetic with mild hypoglycemia.
- If condition worsens or unable to give sugar, call EMS right away.
Exertional Dehydration - Updated

- Assist or encourage individuals with exertional dehydration and heat illness to drink carbohydrate-electrolyte (CE) drinks.
  - Only if absence of shock, confusion, or inability to swallow.
- New Alternatives – coconut water and 2% milk.
  - If not available, potable water may be used.
Chemical Eye Injuries – Updated

- Rinse eyes immediately with large amount of tap water for **at least 15 minutes** or until advanced medical care arrives. (Time frame added)
- If tap water not available, normal saline or another commercially available eye irrigation solution may be used. (New alternative solutions added)
- Contact local **poison control center** or, if a poison control center not available, seek help from a medical provider or 9-1-1.
External Bleeding

- Direct Pressure:
  - Continues to be first line of treatment.
  - Controls bleeding in most cases.

- Elevation/Pressure Points:
  - Continues to be no evidence to support use of pressure points or elevation.

- When severe bleeding isn’t controlled by direct pressure:
  - Tourniquets (Increased emphasis)
  - Hemostatic Dressings (New)
Severe Life-threatening Bleeding

**Tourniquets**

- Use when direct pressure fails to control bleeding on an extremity.
- Also appropriate for initial care when direct pressure is not feasible:
  - Multiple patients with inadequate resources
  - Multiple life-threatening injuries
  - Cannot access the site of the injury (e.g. caught in a machine)
Severe Life-threatening Bleeding

Hemostatic Dressings

- Dressings are coated with a clotting agent.
  - Available over the counter at pharmacies
  - Follow manufacturer instructions
- Use when direct pressure alone does not control life-threatening bleeding.
- Like tourniquets, appropriate for initial care when direct pressure is not feasible.
- Dressing needs to reach source of the bleeding.
Open Chest Wounds - New

- Covering an open chest wound can lead to a life-threatening complication (tension pneumothorax).
- Open chest wounds should be left *uncovered* (open to air) without a dressing or seal unless bleeding control is required.
- If need to control bleeding, ensure dressing saturation doesn’t result in partial/complete occlusion.
  - Remove any saturated gauze dressing and apply new gauze dressings.
Concussion – Traumatic Brain Injury

- While many first aid programs already include information on recognizing concussions, this is the first time concussions were examined as part of the ILCOR science process.
- No evidence screening tools work in a first aid setting.
- Important to recognize signs and symptoms.
- Someone with a suspected concussion should not return to activities, such as sports, driving and operation of machinery, until cleared by a healthcare provider.
Spinal Injury (SMR) - Updated

- Cervical collars are not recommended due to lack of benefit and potential harm.
- If spinal injury suspected
  - Have person remain as still as possible until EMS arrives.
  - Do not restrict the head or neck; provide comfort to the person as needed.
Thermal Burns - Updated

- Updated timeframe for cooling burns:
  - Cool with cool or cold potable water for at least 10 minutes.
  - If cool or cold water is not available, a clean cool/cold, but not freezing, compress can be used.
Burns – Updated

Treatment protocols have been updated as follows:

- In remote or wilderness settings where commercially made topical antibiotics are not available, honey may be applied topically as an antimicrobial agent even though evidence of effectiveness is limited.

- Blistering and broken skin have been added to the list of critical burns that require advanced care:
First Aid Providers should not move or straighten and injured extremity.

EMS and Remote Settings: Protect the injured person and splint to:
- Limit pain
- Reduce chance of further injury
- Facilitate safe and prompt transport
Sprains and Strains - Updated

- Cold application decreases hemorrhage, edema, and pain.
- Cooling best accomplished by:
  - Plastic bag or damp cloth with a mixture of ice and water.
    - Mixture BETTER than Ice alone
    - Re-Freezable gel packs not as effective
  - Limit to < 20 minutes to prevent cold injury.
Avulsed Tooth - Updated

- Store tooth in one of these solutions (listed in order of preference):
  - Hank’s Balanced Salt, propolis, egg white, coconut water, Ricetral, whole milk. (Updated List)
- If none of these are available, store in the injured person’s saliva (not in the mouth). (New)
- Seek medical care as soon as possible; reimplanting within an hour provides greatest chance for tooth survival.
Questions?