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Practice Guideline

European Resuscitation Council Guidelines 2025 First Aid

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Abstract

The European Resuscitation Council has produced these First Aid Guidelines based on the 2025 International Consensus on Science with Treatment Recommendations on First Aid of the International Liaison Committee on Resuscitation (ILCOR), reviews of the expert group composed to write these recommendations, and available selected peer-reviewed literature after discussion and agreement within this experts' group. General topics include expectations of a first aid provider, first aid courses, contents of a first aid kit, how to approach a person with impaired responsiveness, recovery position, use of a pulse oximeter and administration of oxygen. Medical emergencies include anaphylaxis, choking, asthma, chest pain, hypoglycaemia, opioid overdose, recognition of stroke, and suicidal thoughts. Trauma-related emergencies include cervical spinal motion restriction, control of life-threatening bleeding, management of open chest wounds, concussion and preservation of an amputated body part. Environmental emergencies include drowning, hypothermia, hyperthermia and snake bite. First aid procedures for the prevention and management of life-threatening conditions that could progress to cardiac arrest, have been included. The management of cardiac arrest is described in the 2025 ERC Guidelines Basic Life Support.

Keywords: Emergency treatment, Pre-medical treatment, Helping behaviours, Emergency care, Immediate actions

Introduction and scope

First aid is described as a helping behaviour by anyone for any emergency condition, in any situation, including self-care. Its provision typically involves recognising, assessing, and prioritising needs, providing care within the provider's competencies whilst recognising their limitations, and seeking additional help such as activating the emergency services. All resuscitation, including basic and advanced life support, begins with first aid interventions: assessing scene safety, recognising decreased responsiveness or abnormal breathing, positioning the person appropriately, and responding to life-threatening conditions. First aid serves as a crucial first link in the chain of survival. Since 2021, the ERC has focussed its scope and now emphasises the importance of first aid in the cardiac arrest chain of survival, i.e. in reducing morbidity and in preventing cardiac arrest. The ERC Guidelines 2025 First Aid focus on life-threatening conditions and conditions where first aid could reduce morbidity and prevent progression to cardiac arrest. Therefore, topics which were previously included, and are not directly related to the revised scope, may not be included this year (see Table 1). The Guidelines are based on the 2025 International Liaison Committee on Resuscitation (ILCOR) Consensus on Science with Treatment Recommendations (CoSTR) for First Aid[1] and Basic Life Support.[2] When developing these guidelines, the ERC First Aid Writing Group used published systematic reviews and scoping reviews, together with the CoSTRs including careful consideration of the Evidence to Decision tables, the narrative reviews and Task Force discussions specified under justifications. For topics not reviewed by ILCOR, other systematic reviews, single studies or expert consensus of the Writing Group members have been used to inform the Guidelines. In total these guidelines includes 24 topics, subdivided into seven general principles, eight medical emergencies, five trauma emergencies, and four environmental emergencies.

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The importance of first aid may further increase in remote or low-resource settings when the availability of professional medical care is delayed. Therefore, in these first aid guidelines, the World Health Organization (WHO) tool for equity, WHO-INTEGRATE,[3] was used when formulating concise guidelines for clinical practice. A community advisor (LB) was a full member of the Writing Group involved in every step of the process to ensure universal understanding by all readers. Likewise, one writing group member (KT) experienced in working in low-resource settings has screened all advice for clinical practice with guidance from the equity lens INCLEN.[4,5] Full details of how equity has been considered in every step of the development of the guidelines can be found in Appendix A. Finally, an online survey distributed through social media and open between 22/01/25 and 09/04/25, with 1406 respondents from 37 countries, has been used to inform clinical practice (Appendix B).

All First Aid Writing Group members and the Guidelines Steering Committee agreed to this version, which was posted for public comment between 15 May and 30 May 2025. A total of 115 individuals submitted 115 comments, leading to 18 changes in the final version. The guidelines were presented to and approved by the ERC Board and the General Assembly in June 2025. The methodology used for guideline development is presented in the Executive summary (Fig. 1).[6] A summary of the key changes since the 2021 guidelines is presented in Table 1.

Concise guidelines for clinical practice

Implementation of first aid guidelines and considerations for different settings

Considering differences across these four essential domains will support guidelines implementation (Table 2)

- First aid recipient
- First aid provider
- Treatment
- Setting and environment

Expectations of a first aid provider

As a first aid provider, you may minimise further injury, improve health and prevent death by following these three key principles:

- Check for scene safety.
- Call your local emergency number as soon as possible.
- Only use available equipment or medications you have been trained to use.

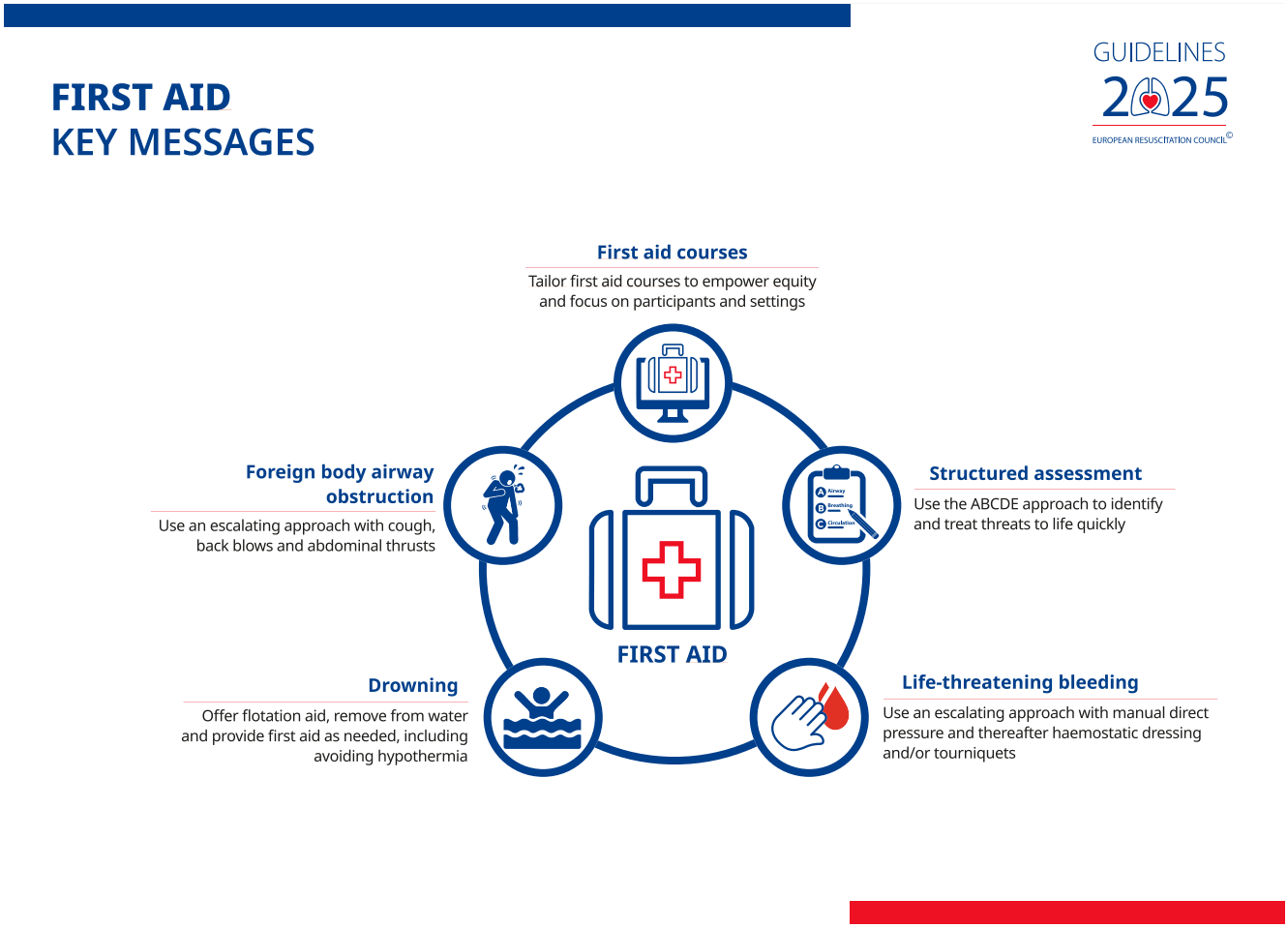

Fig. 1 – First aid – key messages.

Table 1 – The major changes in the ERC Guidelines 2025 First Aid.

ERC Guidelines 2021 First Aid	ERC Guidelines 2025 First Aid
Not included	**Expectations of a first aid provider** – Always call for help as a general principle and only use equipment or medications you have been trained to use.
Not included	**First aid courses** – Should empower equity and be tailored to national/regional requirements rather than conducted in a standard format. They should expand on psychological preparedness training, and how to cope with anxiety and distress before and after providing first aid.
Not included	**First aid kits** – A tailored kit based on risks and users should be clearly marked and available in homes, vehicles, buildings, public spaces, etc.
Recovery position **Optimal position of shock**	**Approach to and body positioning of a person with impaired responsiveness** – Structured first assessment of a person appearing ill or injured (ABCDE). Cardiac arrest, recovery position and optimal position in shock have been merged into a single algorithm.
Not included	**Use of pulse oximetry and administration of oxygen** – Use a pulse oximeter to titrate the administered oxygen to a saturation of 94–98 %. In persons with known chronic obstructive pulmonary disease, aim for an oxygen saturation of 88 – 92 %.
Not included	**Choking** – Use an escalating strategy from encouragement to cough to back blows to abdominal thrusts.
Not included	**Opioid overdose** – Administer nasal naloxone in an unresponsive person with suspected opioid overdose who is not breathing or is breathing abnormally .
Not included	**Suicidal thoughts** – Ask about suicidal ideation, offer hope and help to contact professionals.
Not included	**Preservation of amputated body part** – Keep the part cold without freezing and transport it with the injured person to the hospital.
Not included	**Drowning** – Untrained first aid providers should not enter the water but instead provide a flotation device or lifebuoy. If trained and appropriate to do so, enter the water with flotation devices. After removal from the water, if unresponsive, call for help, provide 5 rescue breaths and continue standard BLS.
Not included	**Snake bite (European Viper)** – Keep the person calm and with the bitten body part immobilised whilst transferring to a medical facility.
• Oral rehydration solutions for treating exertion-related dehydration • Management of presyncope • Cooling of thermal burns • Thermal burn dressings • Dental avulsion • Compression wrap for closed extremity joint injuries • Straightening an angulated fracture • Eye injury from chemical exposure	Not included. Since 2021, the ERC has focussed its scope and now emphasises the importance of first aid in the cardiac arrest chain of survival, i.e. in reducing morbidity and in preventing cardiac arrest. As these topics were not directly related to this revised scope, they were no longer included.

First aid courses

- First aid courses should be accessible to the widest possible audience and promote equal opportunities in both providing and receiving first aid.
- Course providers should tailor content based on the needs of participants, their context (low-resource settings, rural areas), sociocultural appropriateness and feasibility.
- Courses should teach awareness of the regional Good Samaritan laws.
- Courses should include measures to help bystanders, lay rescuers and professional first aid providers to overcome fear, anxiety and moral distress during and after providing first aid.

First aid kits

- All workplaces, leisure centres, public buildings, homes and cars should have first aid kits.
- Public first aid kits should meet local legal requirements, be clearly marked and readily accessible.

Table 2 – Essential domains to consider when implementing first aid guidelines to ensure accuracy and promote equity.

First aid domains for evidence evaluation and treatment recommendations	Examples of characteristics
First aid recipient	Age, sex, gender, health status, capacity to provide consent
First aid provider	Knowledge, training/education, preparedness, familiarity, duty to respond, professional scope, capability
Treatment	Invasiveness, skills required, technology, efficacy and effectiveness, cost
Setting and environment	Low- or high-resource, safety, cultural norms and values, urban or remote

- The content of the kits should be based on the setting, expected risks and the users.
- All first aid kits should be inspected regularly and properly maintained.

Cardiac arrest

- If you suspect a cardiac arrest, call the emergency number (112) and follow the dispatcher instructions on how to perform cardiopulmonary resuscitation (CPR).
- Start CPR without worrying about accidentally hurting the person. It is more important to try to save their life than worry about causing an injury.
- Continue CPR until professional help arrives and takes over or tells you to stop.

Structured first aid assessment of a person appearing ill, injured or in shock (ABCDE)

- Pay immediate attention to safety, responsiveness of the victim, and catastrophic bleeding (Fig. 2).

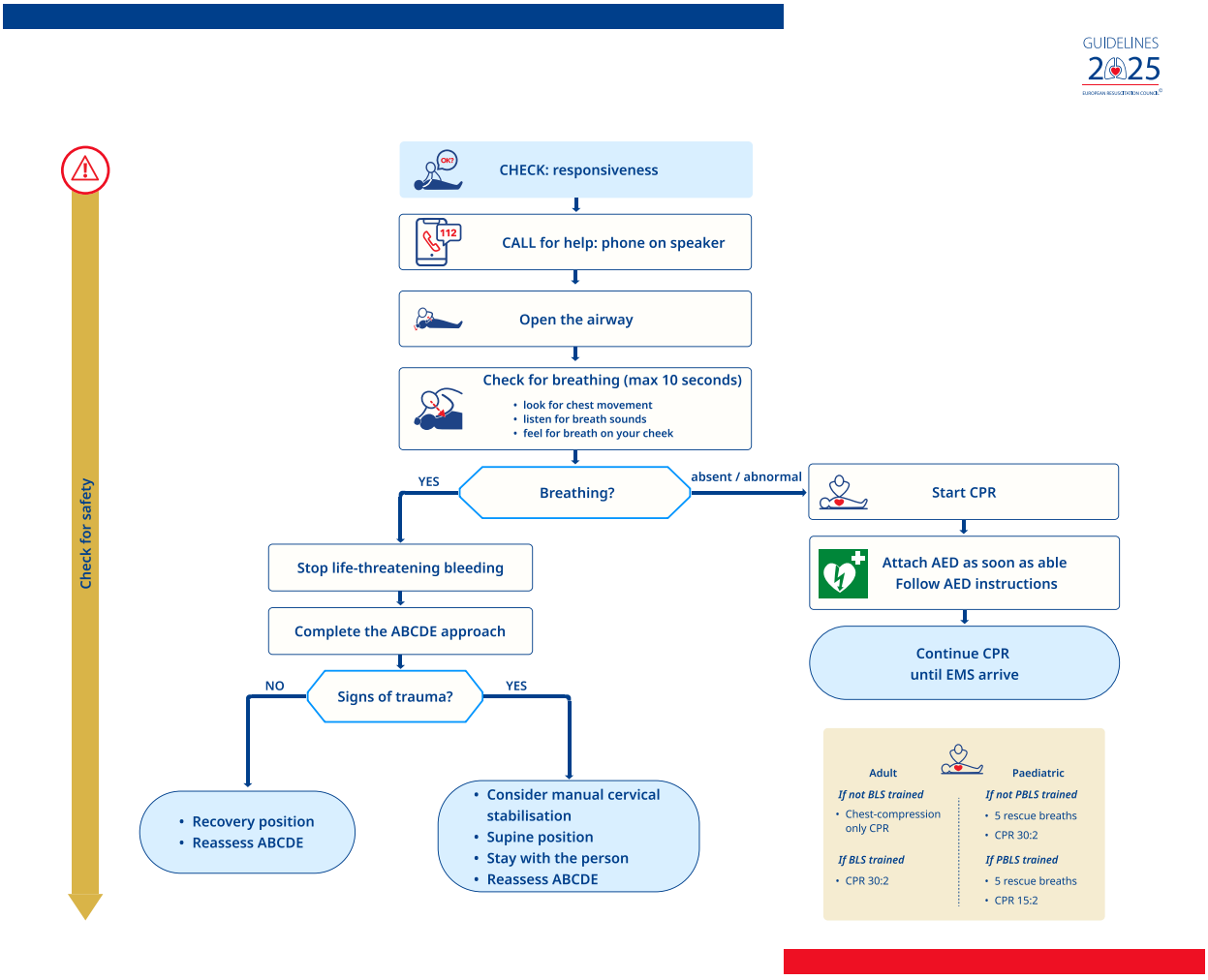

Fig. 2 – Approach to a person with impaired responsiveness and positioning their body.

- Use the ABCDE framework to structure your assessment of a person in need (Table 3).

Recovery position

- Place adults and children with decreased level of responsiveness who do NOT meet the criteria for CPR into a lateral (side-lying) recovery position (Fig. 3).
- In cases of agonal breathing or trauma, do NOT move the person into the recovery position.

Use of a pulse oximetry and use of oxygen for acute difficulty breathing

- Give oxygen to a person with difficulty breathing and looking cyanosed (blue tinged) but only if you are trained in its use.

Table 3 – The ABCDE for a first aid provider.

	Assess	Possible immediate action for an adult person
Safety	Is it safe to approach the person? (Road traffic? Spilled chemicals? Violent persons?)	
Responsiveness	Gently stimulate the person. Ask loudly "Are you ok?"	
Life-threatening Bleeding	Are there any signs of life-threatening bleeding?	Stop the bleeding with direct manual pressure, gauze dressings, haemostatic dressings or a tourniquet (Fig. 9).
A-Airway	Is the person´s airway open? Has the person fallen from a height or experienced major trauma? (Consider cervical spine injury)	Place one hand on the forehead and the fingertips of your other hand under the point of the chin, gently tilt the persons head back, lifting the chin to open the airway (QR-code 1). Do not move the person unless they are in an unsafe situation. Apply cervical spinal motion restriction (QR code 1)
B- Breathing	Is the person breathing? "Look, Listen, Feel" for normal breathing (maximum 10 s). Listen for wheezing or stridor. Is there any obvious swelling of the oral airway? Is the person choking and unable to cough? Ask "are you choking?" Are there any signs of hypoxia (bluish discoloration of lips, nails or skin)? Assess oxygen saturation level with a pulse oximetry.	If unresponsive and not breathing normally, call your local emergency number and start CPR according to dispatcher instructions. If suspected anaphylaxis, if trained, administer adrenaline 0.5 mg intramuscular (Fig. 4). If suspected choking give back blows and abdominal thrusts (Fig. 5). If trained and indicated, administer oxygen to improve oxygen saturation to 94–98 %.
C-Circulation	Does the person have chest pain? Is there any pain in the chest, neck or arm; or a 'severe pressure in the chest' feeling? Are there any signs of a low blood pressure or shock: o Very fast or very slow heart rate? o Skin pale, cool or clammy? o Dizziness or confusion?	Make the person comfortable. If suspected cardiac chest pain – administer 150–500 mg chewable aspirin. Consider the use of passive leg raising as a temporising measure while waiting for advanced emergency medical care. Continue to monitor person carefully for deterioration or loss of responsiveness (possible cardiac arrest).
D-Disability	Assess level of responsiveness using the acronym ACVPU; Use a scale for stroke assessment if appropriate • A-Alert • C-Confusion- any new or deterioration? • V- Verbal- respond to your voice • P- Pain- respond to pain from squeezing their shoulder • U- Unresponsive	If suspected concussion, – remove from physical activity. If suspected hypoglycaemia, – administer glucose or dextrose tablets (15–20 g) via mouth. If suspected opioid overdose, – administer nasal naloxone (Fig. 6).
E-Exposure	Check for external injuries by checking the whole body surface area (head, neck, trunk and limbs). Measure core temperature (if possible).	Prevent hypothermia –remove wet clothes and use blankets. Hyperthermia – start active cooling. Preserve amputated parts in cooled container and bring them to the same hospital as the injured person.

Use the recovery position in a person with a decreased level of responsiveness of nontraumatic aetiology, who is breathing normally and does not require immediate resuscitation interventions (Fig. 3).

Reassess for signs of airway occlusion, inadequate or agonal breathing, and unresponsiveness.

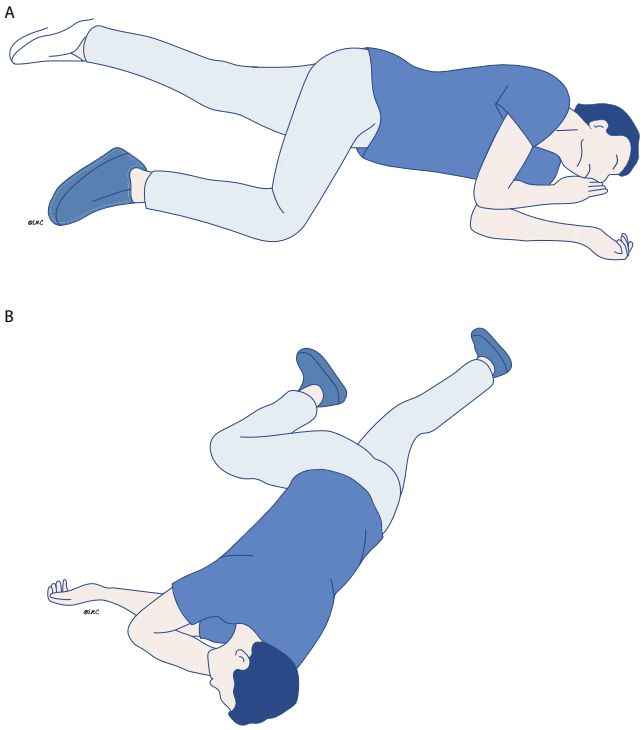

Fig. 3 – Recovery position to maintain an open airway with arm bent (a) and arm straight (b).

- Use a pulse oximeter to titrate the administered oxygen.
- Give oxygen via a simple facemask or non-rebreathing mask and then titrate flow rate to maintain an oxygen saturation of 94–98 %.
- If the person has chronic obstructive pulmonary disease, titrate the oxygen flow to maintain an oxygen saturation of 88–92 %.
- In the presence of life-threatening hypoxaemia (oxygen saturation <88 %) give oxygen with a higher flow to everyone, including persons with chronic obstructive pulmonary disease having difficulty in breathing in the out-of-hospital setting.

Medical emergencies

Anaphylaxis

- Suspect anaphylaxis if someone has:
  - o Stridor (which could be due to upper airway swelling), wheezing (which could be due to lower airway obstruction) or breathing difficulties
  - o Flushing, rash (hives), cold or clammy skin or is feeling faint
  - o Abdominal pain, vomiting, or diarrhoea
  - o A recent exposure to known food allergens or insect stings
- Call your emergency number (112).
- Ensure that the person remains in a seated or lying position.
- Give intramuscular adrenaline as soon as possible via autoinjector into the outer thigh in the recommended dose (self-administered or given by trained individuals) (Fig. 4),
  - o 0.15 mg for children aged 1–5 years
  - o 0.3 mg for children aged 6–12 years
  - o 0.5 mg for adults
- If an autoinjector is not available, use a device for intranasal administration.
- Give a second dose of adrenaline, if symptoms persist 5 min after administration.

Choking in an adult person

- Suspect choking if a person is suddenly unable to speak or cough, particularly if eating.
- Ask the person – “Are you choking?”
- Encourage the person to cough.
  - If the person is unable to cough or the cough becomes ineffective, give up to 5 back blows (Fig. 5).
  - If back blows are ineffective, give up to 5 abdominal thrusts (Fig. 5).
  - If choking has not been relieved after 5 abdominal thrusts, continue alternating 5 back blows with 5 abdominal thrusts until choking is relieved, or the person becomes unresponsive.
  - Call your emergency number (112).
  - Do NOT use blind finger sweeps to try and remove a foreign body from the mouth or airway.
  - If the person becomes unresponsive, start CPR.
  - Any person successfully treated for choking with abdominal thrusts or chest compressions should be evaluated by a healthcare practitioner since complications and injuries may occur.

Asthma

- If a person with asthma is experiencing breathing difficulties, a first aid provider should help them to use their own reliever inhaler, using a spacer device if one is available.

Chest pain

- Reassure the person and sit or lie them in a comfortable position.
- Encourage and assist a person with cardiac sounding chest pain in self-administering 150–500 mg of chewable aspirin as soon as possible whilst awaiting transport to hospital (but not to adults with known aspirin allergy).
- Assist a person with known angina to self-administer their nitroglycerine spray or tablets.
- Stay with the person until professional help arrives.

Hypoglycaemia (low blood sugar value)

- Suspect hypoglycaemia in someone with diabetes or chronic malnutrition AND sudden impaired responsiveness or behavioural change.
- Give glucose or dextrose tablets (15–20 g), by mouth if the person is awake and able to swallow.
- If feasible, measure capillary blood sugar using a blood glucose meter and treat if low (a value less than 4.0 mmol/L or 70 mg/dL) and repeat measurement after treatment.
- If glucose or dextrose tablets are not available give other dietary sugars, such as a handful of sugary sweets or 50–100 ml of fruit juice or sugar containing soda.
- If oral glucose is not available, give a glucose gel (partially held in the cheek, and partially swallowed).
- Repeat giving oral glucose if the symptoms are still present and not improving after 15 min.
- If the person has a prescribed glucagon autoinjector, this could be administered under the skin in the outer thigh (self-administered or by trained individuals). Some diabetics may have glucagon syringes for nasal use.

- For children, consider administering half a teaspoon of table sugar (2.5 g) under the child's tongue, if they are uncooperative with swallowing oral glucose.
- Call your emergency number (112) if the person is/or becomes unresponsive or the condition does not improve.
- Following recovery from symptoms (5–10 min after sugar intake) encourage the person to eat a light snack.
- For unresponsive persons, do not give oral sugar due to the risk of aspiration, instead call your local emergency number (112).

QR code 1 – Airway opening, jaw thrust (a) and chin lift (b).

Opioid overdose

- Suspect an opioid overdose if the person is breathing is slowly, irregularly or not at all, is extremely drowsy or unresponsive, or has pinpoint (very small) pupils.
- If the person is unresponsive and not breathing normally, start CPR and call your local emergency number (112) (Fig. 6).
- Administer intra-nasal naloxone, or if you are trained, use an intramuscular naloxone autoinjector.
- Reassess the person according to ABCDE (Table 3).
- Follow package instructions on when to give another dose of naloxone.

The management of general intoxications and opioid overdose has been described in the ERC Guidelines 2025 Special Circumstances in Resuscitation.

Stroke

- Use a stroke assessment scale to decrease the time to recognition and call for help.
- Give oxygen only if you are trained in its use and the person is showing signs of hypoxia (bluish lips and rapid breathing).

Suicidal thoughts

If you think a person might harm themselves;

- Ask the individual "Are you alright?" "How do you feel and why?" (Fig. 7)
- Ask if the person has suicidal thoughts and plans (How? Where? When?).
- Summarise to the person your understanding of how and why they have certain feelings.
- If the person has made concrete threats or plans for suicide, tell them you are going to ask for help, and call your emergency number (112).
- Give hope.

Trauma emergencies

Cervical spinal motion restriction

- Suspect a cervical spine injury in a person who fell or dived from a height, was crushed by machinery or a heavy object, was involved in a road traffic, or a sporting accident.
- Minimise movement of the neck if the person is awake and alert and encourage them to self-maintain their neck in a comfortable stable position.
- Never force an uncooperative person into any position, as this may exacerbate an injury.
- In unresponsive persons lying on their back, kneel behind their head and immobilise their head and neck using head or trapezius squeeze (Fig. 8).
- Consider the need to open the person's airway using the 'jaw-thrust' technique (QR code 1).
- If the person is unresponsive and is lying face-down, check if their airway is open and hold their neck in a stable position.
  - If you need to open their airway, ask others to help you carefully roll them as a unit onto their back whilst keeping their neck in line with their body and as stable as possible. Then apply the head or trapezius squeeze.
- First aid responders with specialised training (e.g. ski patrol, lifeguard) may consider the selective use of spinal motion restriction using their existing protocols.

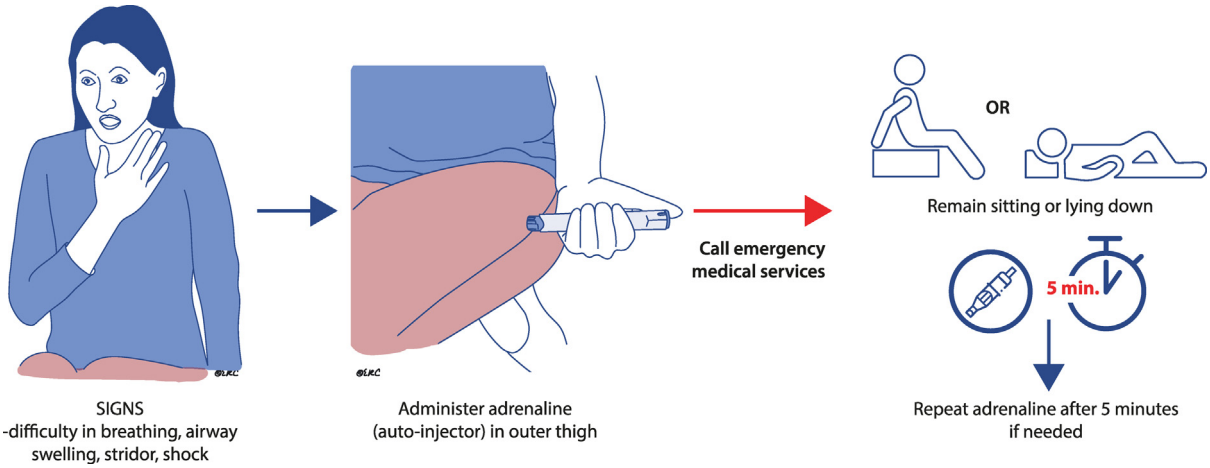

Fig. 4 – Order of actions for anaphylaxis.

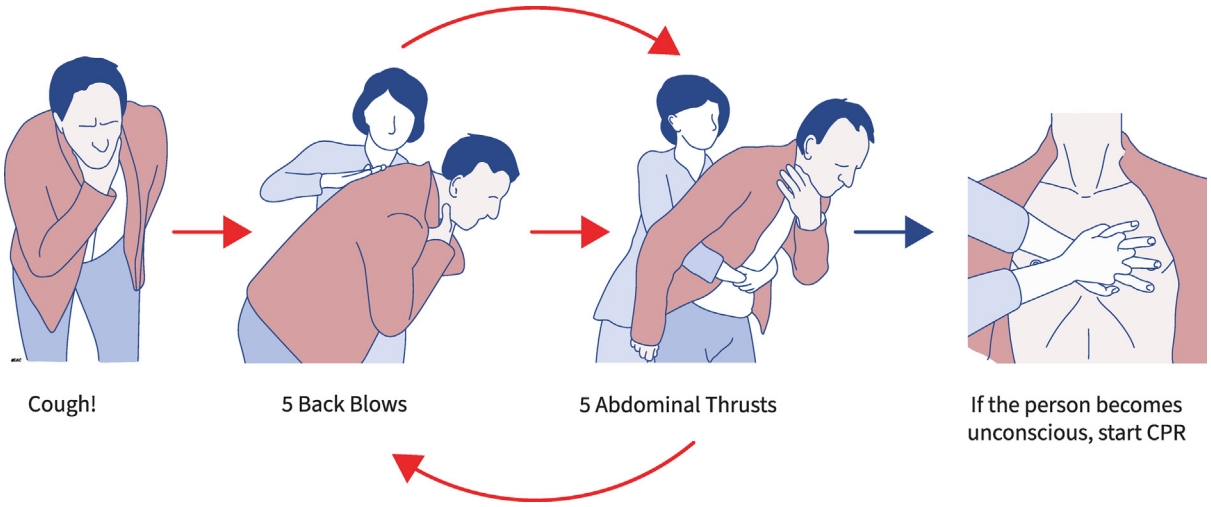

Fig. 5 – Order of actions for choking.

Control of life-threatening bleeding

- Apply firm direct manual pressure to the bleeding injury (Fig. 9).
- Apply a standard or haemostatic dressing directly into the bleeding injury and then apply firm direct manual pressure on top of the dressing.
- Once bleeding is under control, apply a pressure dressing.
- Apply a tourniquet as soon as possible for life-threatening extremity bleeding that is not controlled by direct manual pressure.
- Write the time of application on the tourniquet.

Open chest wounds

- Leave an open chest wound exposed to freely communicate with the external environment.
- Do not apply a dressing or cover the wound.
- If necessary, control localised bleeding with direct pressure.
- If you are trained and the equipment is available, apply a specialised non-occlusive or vented dressing, ensuring a free outflow of air when breathing out.
- Observe the wound for air flow obstruction due to bleeding or clotted blood.

Concussion

- Suspect a concussion if a person has difficulties with thinking/remembering, displays physical symptoms (headache, change in vision, dizziness, nausea or vomiting, seizures, sensitivity to light/noise), emotional changes or changes in behaviour (increased sleepiness, reduction in normal activities, loss of responsiveness, confusion).
- Remove the person from physical activities.
- Refer to a healthcare professional for assessment and further advice.

Preservation of an amputated body part

- Manage any severe bleeding first (see 'Control of life-threatening bleeding').
- Retrieve the body part as quickly as possible and keep it cold without freezing (Fig. 10).
  - o Wrap the part in a sterile dressing or a clean cloth moistened with saline or water.
  - o Place the wrapped part in a clean watertight plastic bag or container.
  - o Put the bag or container holding the body part, inside another bag containing ice or ice-water. If ice is unavailable, you can use a cooler with instant cold packs.
- Keep the part cooled at all times. Avoid direct contact with ice or freezing. Label the container with the person's name and time the part was stored.
- Transport the part with the injured person to the same hospital as quickly as possible.

Environmental emergencies

Drowning

- Do not enter the water as you might risk drowning yourself if you are not trained in water rescue.
- If the person is awake and responsive, stay on land and reach out to the person through floatation devices, lifebuoy, rescue tube or other rescue equipment.

Trained first aiders or lifeguards in the water or on a boat (Fig. 11).

- Call for help before you enter the water.
- Provide a flotation device, lifebuoy, rescue tube or other rescue equipment.
- Keep the person´s head out of the water.
- Assess if the person is unresponsive and not breathing. If feasible and safe (with an effective flotation device), provide 5 rescue breaths in the water as soon as possible.
- Retrieve the person to land or a rescue boat as soon as possible.
- Once out of the water, provide 5 rescue breaths if the person is not breathing, if necessary, start standard CPR.
- Attach an AED, if available and after drying the chest, and follow the instructions.

On land, if the person has drowned and is unresponsive and not breathing:

- If feasible and safe, provide 5 rescue breaths and start standard CPR.

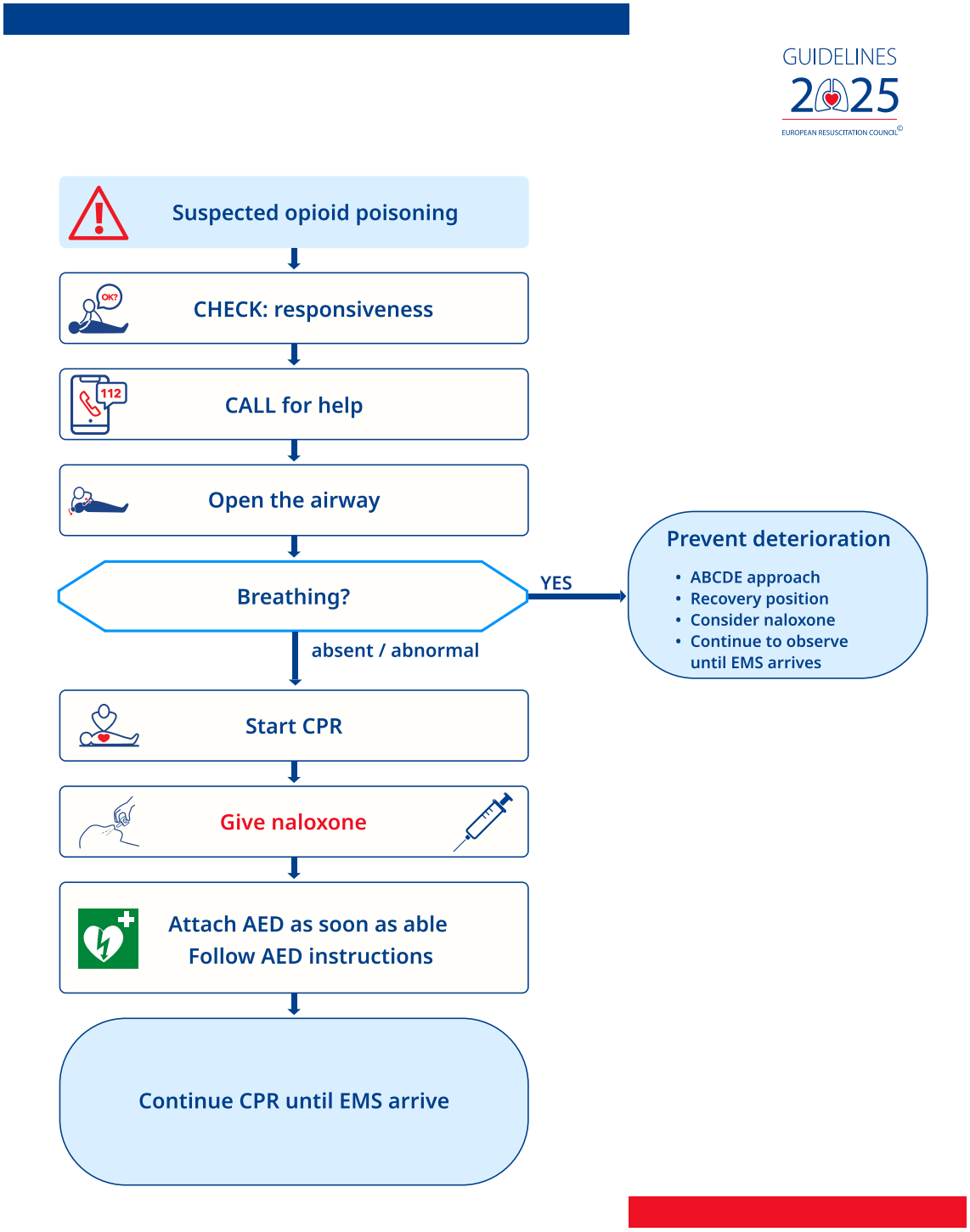

Fig. 6 – Order of actions for opioid overdose.

- Attach an AED, if available and after drying the chest, and follow the instructions.

Prevention of hypothermia

- Insulation: Cover the individual with dry blankets or clothing to minimise heat loss.
- Wind protection: Shield the person from wind using barriers or by moving them to a sheltered area.
- Wet clothing removal: Gently remove wet clothing and replace it with dry garments to prevent further cooling.
- Ground isolation: Place insulating materials, such as blankets or pads, between the individual and the cold ground.
- In settings where hypothermia might be common, implement tailored prevention plans and training for first aid providers.

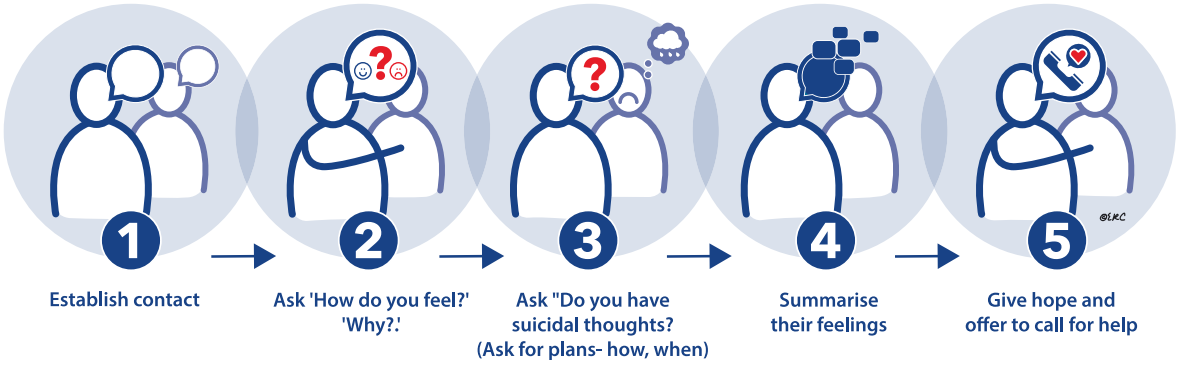

Fig. 7 – Chain of first aid actions in mental health crisis.

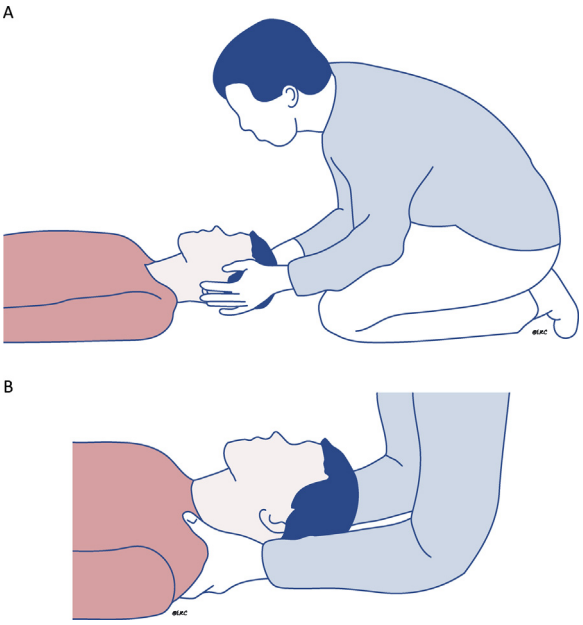

Fig. 8 – Spinal motion restriction to maintain an open airway with the head squeeze method (a) and the trapezius squeeze method (b).

Heat stroke

- Consider symptoms of heat stroke with high ambient temperature, like elevated core body temperature, confusion, agitation, disorientation, seizures or unresponsiveness.
- Prevent exertional heat stroke (i.e. during long-distance sport events in a hot climate) by adequate preparation and provide tools to support recognition (e.g. rectal temperature probes) and cooling (e.g. immersion ice-water baths).
- With suspected heat stroke remove the person from the heat source and commence passive cooling by removing excess clothing and placing the person in a cooler/shaded location (Fig. 12).
- Use any technique immediately available to provide active cooling, if core temperature >40 °C.
- Use whole body (neck down) cold water (1 to 26 °C) immersion until the core temperature falls below 39 °C. Alternatives are: tarp-assisted cooling oscillation (TACO) (Fig. 13) ice sheets, commercial ice packs, fan alone, cold shower, hand cooling devices, cooling vests and jackets or evaporative cooling (mist and fan).
- Where possible monitor core temperature (rectal thermometer).
- If a core temperature cannot be obtained, continue cooling for 15 min or until neurological symptoms resolve, whichever is first.
- Remember: cool first, transfer second.
- Continue cooling as needed during transportation to a medical facility for further evaluation.

Snake bite

The only indigenous highly venomous snake in Europe is the European Viper, which has a haemolytic toxic venom.

- Call your local emergency number (112).
- Keep the person calm and at rest.
- Keep the bitten body part still and immobilise the affected limb as this may slow venom spread.
- Remove tight clothes, rings or watches from the affected limb.
- Avoid harmful actions:
  - Do not apply a pressure dressing, ice, heat, or use tourniquets.
  - Do not cut the wound and never try to suck out the venom (QR code 2).

QR code 2 – ERC Guideline 2025 First Aid in pictures.

The evidence informing the first aid guidelines

Expectations of a first aid provider, first aid courses, implementation of first aid guidelines and considerations for different settings

These guidelines provides evidence-informed recommendations aimed at improving the immediate response to injury and sudden illness. Research in first aid is limited and indirect evidence from prehos-

pital studies have been used to inform these guidelines. Put simply, all resuscitation starts with first aid and first aid is often just the start of interventions needed to save lives. First aid is the helping behaviour that could be lifesaving. For some first aid providers, the only step will consist of calling the local emergency number for help. For others, calling for help will be the first step in a series of interventions. All first aid providers should only use the equipment and medication they have been trained to use. A systematic review[7] and two cohort studies[8] suggest that simple manoeuvres such as opening the airway or stopping a bleed might prevent death. An ILCOR scoping review suggests that these helping behaviours and the willingness to train is stronger in first aid providers who have witnessed someone collapsing.[9]

When teaching first aid and implementing first aid guidelines, four essential domains should be considered: the recipient, the provider, the treatment, and the setting (Table 2). Taking these domains into account will support implementation across various provider skill levels, ranging from untrained bystanders to healthcare professionals, and across diverse environments including remote and low-resource areas. Remote and low-resource settings may highlight the increased importance of first aid when there is a longer delay before professional medical care is available. In many settings first aid providers are legally protected by Good Samaritan laws.[10] The ethical aspects of first aid have been described in the ERC Guideline 2025 Ethics in Resuscitation,[11] while the educational aspects are in the ERC Guideline 2025 Education for Resuscitation.[12]

First aid courses are designed to equip participants with the knowledge, skills, and confidence needed to act in a wide range of situations, fostering a community prepared to respond effectively when emergencies arise. The ERC promotes structured educational programs reducing known barriers to training such as advanced age, lower socioeconomic and educational status, as well as being part of minority groups due to race or language.[13]

Helping severely ill or injured persons as a first aid provider may be stressful.[14,15] An ILCOR scoping review[9] suggested that courses with a tailored content based on the participants' needs and requirements, related to specific environmental risks, may be more effective than the delivery of standardised one-size-fits-all courses.[9] Course directors should promote equity by delivering courses that reduce disparities between disadvantaged and privileged populations. Furthermore, the content should be socio-culturally appropriate, and the knowledge and skills taught should be appropriate for use within the regional health system.[3,5] The comprehensive and multifaceted aspects of education within resuscitation have been described in the ERC Guidelines 2025 Education for Resuscitation.[12]

First aid kits

The ERC recommends that all workplaces, leisure centres, public buildings, homes, and vehicles should be equipped with appropriate first aid kits. The content of a first aid kit should be tailored to the environment and to potential medical emergencies that may arise. In workplaces and public spaces, these kits should comply with local legal health and safety requirements, be clearly marked, and remain easily accessible.[16] For the home or vehicle use, individuals can purchase a pre-filled first aid kit or assemble one themselves if local laws allow. A well-stocked first aid kit should include essential supplies such as adhesive dressings, medium and large wound dressings, roller bandages, triangular bandages, safety pins, adhesive tape, disposable gloves, disposable face masks, plastic aprons, hand sanitisers, and a face shield or a pocket mask, all stored in a suitable well-marked watertight container. Additional useful items can include scissors, tweezers, and tough cut shears. In many countries, car first aid kits must include a warning triangle and a high-visibility jacket to improve first aid provider safety and to meet legal

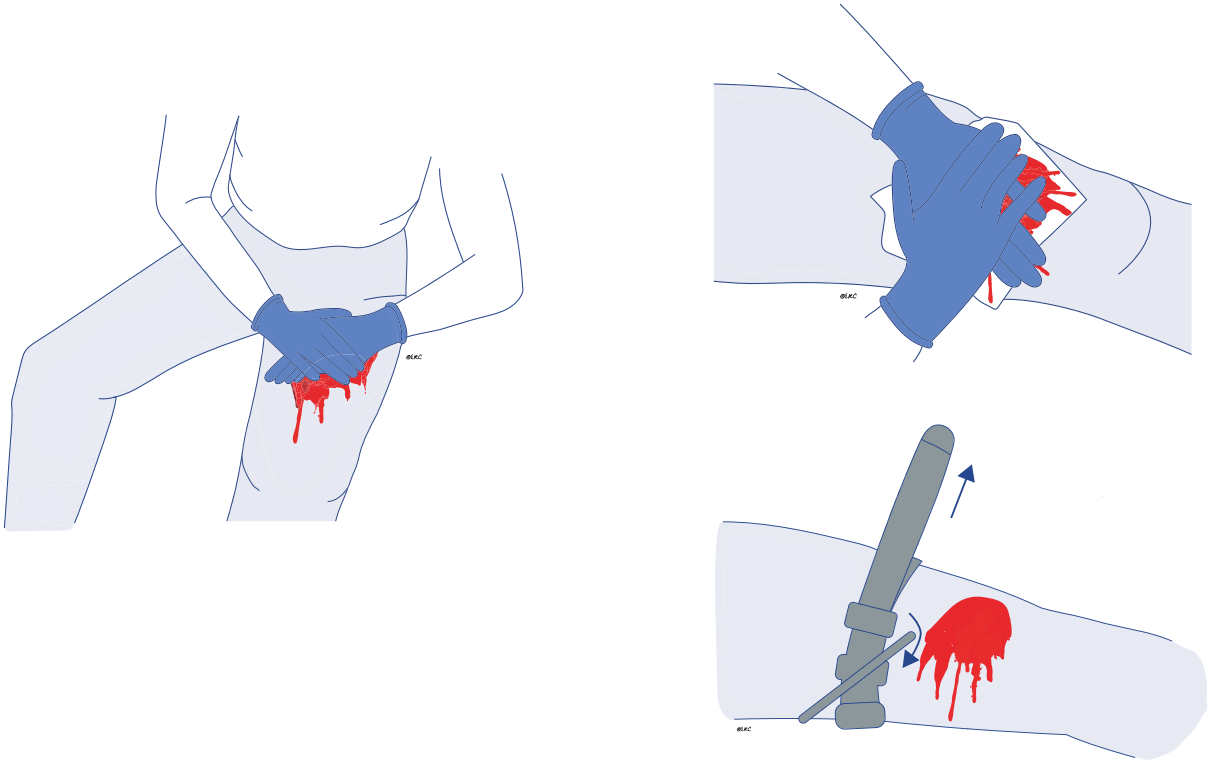

Fig. 9 – Control of life-threatening bleeding.

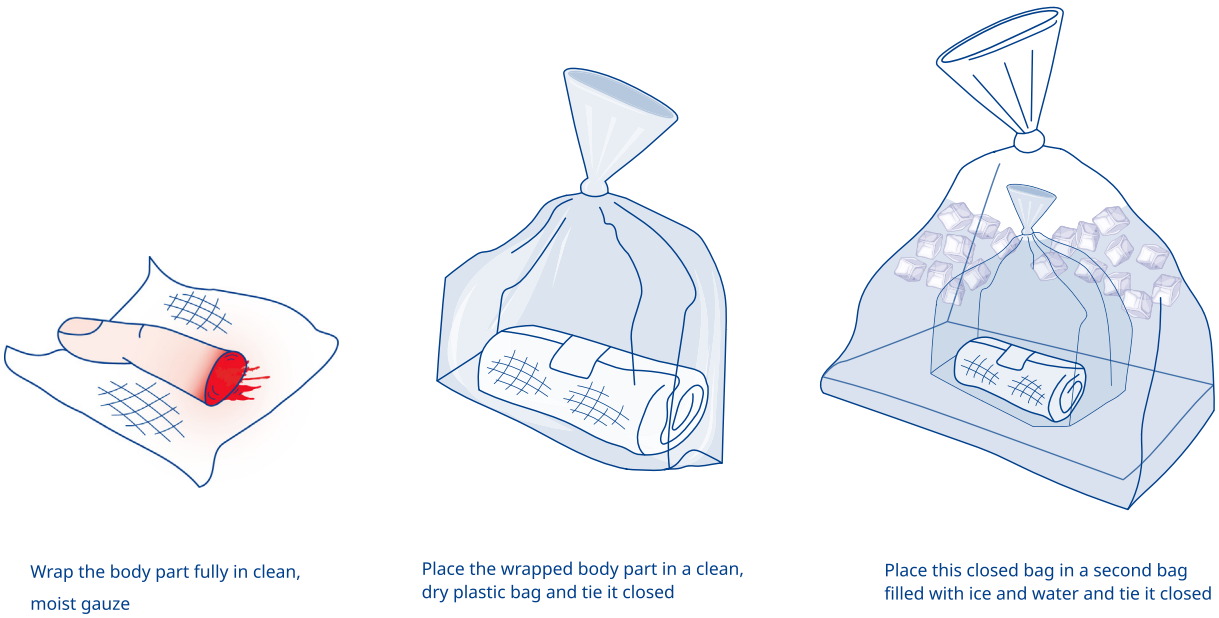

Fig. 10 – Steps for preservation of an amputated body part.

requirements. Specialised first aid equipment should be included in first aid kits based on the specific risks associated with a job or location.

An online survey by this Writing Group (Appendix B) found that tourniquets (for life-threatening bleeding) and naloxone (for opiate overdose treatment) are becoming more widely available and used, underscoring the growing understanding of their significance in first aid and emergency response situations.

First aid kits in workplaces with a high risk of life-threatening bleeding, such as forestry or construction, should contain tourniquets and haemostatic dressings. The presence of bleeding control kits in public spaces has been shown to improve confidence of lay responders[17] who are more likely to use them, particularly if they have received prior training in these techniques. Additionally, bystander training programs such as 'Stop the Bleed' have demonstrated that individuals equipped with trauma first aid kits are more confident and effective in hemorrhage control.[17] High-risk environments for opioid-related medical emergencies, such as substance abuse treatment centers, nightclubs, and public transportation hubs, should have naloxone readily available for immediate overdose intervention,[18] if compatible with local legislation. Those providing first aid in extreme weather outdoor settings should consider adding a compact survival bag, splinting, wound dressings, a flashlight, and a whistle to first aid kits.

Cardiac arrest

The delivery of high-quality chest compressions is a key step in the chain of survival for patients in cardiac arrest and immediate CPR initiated by first aid providers is associated with improved outcomes. However, there may be reluctance amongst first aid providers to initiate CPR for fear of causing harm. Injuries resulting from CPR performed on persons with prolonged cardiac arrest are common and mainly involve rib and sternal fractures, and lung and abdominal organ injuries.[19,20] On the other hand, the risk of harming persons by doing CPR while they are actually not in cardiac arrest, is largely unfounded. A systematic review of persons who received chest compressions but were not in a cardiac arrest undertaken by the ILCOR First Aid Task Force included five observational studies with 1031 patients,[21] with only 9 (<1 %) experiencing injuries, including rib fractures and different internal bleedings, and 24 (2 %) reporting symptoms such as post incident chest pain.[21] First aid providers and other rescuers such as trained bystanders, healthcare professionals and those with a duty to respond, should initiate CPR for presumed cardiac arrest without concerns of causing unintentional injury, even if a person might not be in cardiac arrest. The initial management of a cardiac arrest has been described in the ERC Guidelines 2025 Adult Basic Life Support.[22]

Structured first aid assessment of a person appearing ill, injured or in shock (ABCDE)

A recent scoping review[23] including 57 studies reported 39 different assessment tools for healthcare professionals or healthcare students. Of these, 23 used the structured ABCDE approach.[23] The reasons for variation between the 23 different ABCDE approaches related to different assessor competencies and specific overall goals for the assessment. Time to completion of the first assessment in the scoping review was between two to six minutes in a simulated environment. The ERC recommends the use of the ABCDE structured assessment, or a similar assessment framework for all healthcare professionals and first aid providers.

Following an initial check for scene safety, the first aid assessment begins with checking for responsiveness and the presence of any immediate life-threatening conditions such as life-threatening bleeding or cardiac arrest. To assess a responsive person, observe their appearance, ask questions to learn about their symptoms, allergies and medical history and, after obtaining permission, check for physical signs of any illness or injury. The framework ABCDE could

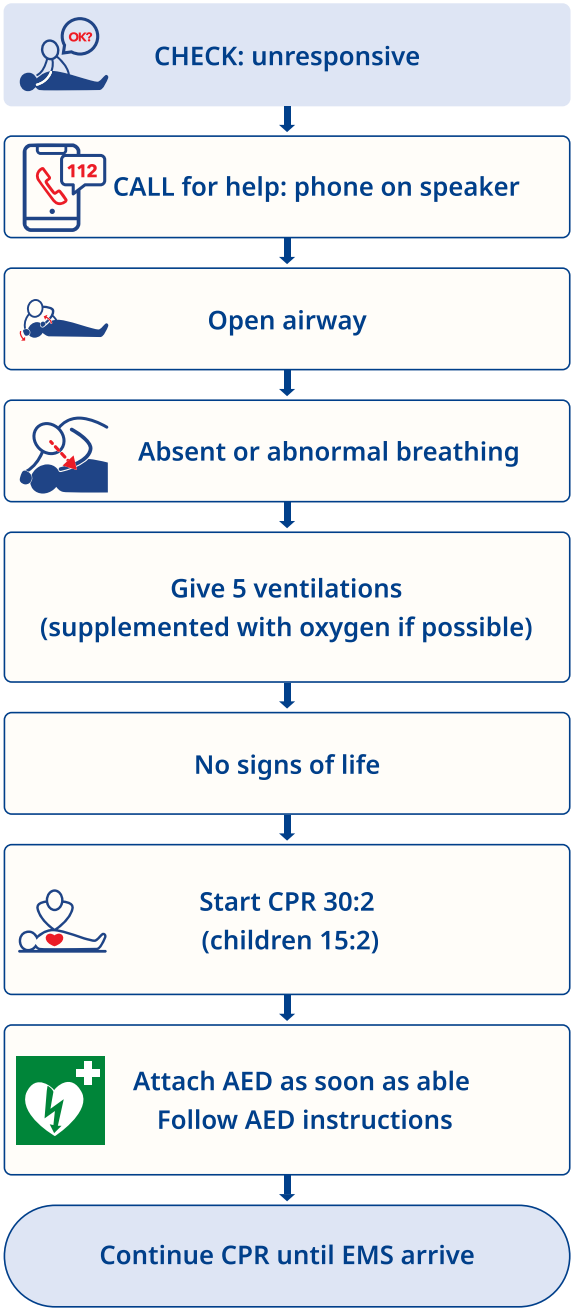

Fig. 11 – CPR after drowning.

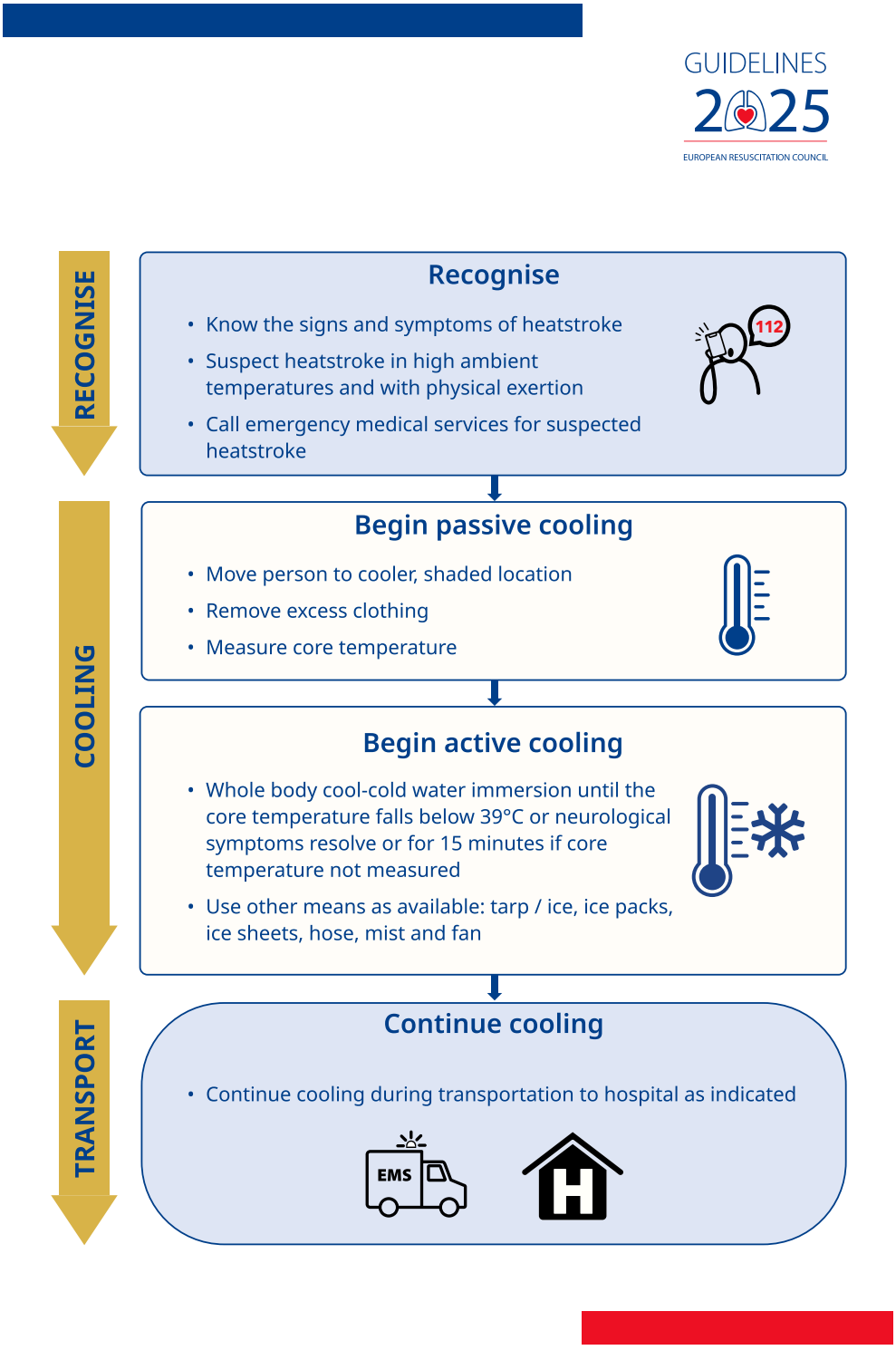

Fig. 12 – Management of heatstroke and exertional hyperthermia.

be used to structure the assessment of a person appearing ill or injured. Table 3 is a summary of the assessment process and immediate actions to undertake, details are provided under each subsection. The assessment should be thorough but only take a few minutes to complete. The assessment of an ill or injured child is described in the ERC Guidelines 2025 Paediatric Life Support.[24]

The European Society of Intensive Care Medicine has defined shock as a life-threatening, generalised form of acute circulatory failure associated with inadequate oxygen utilisation by the cells.[25] Shock has multiple causes, however the main aim for a first aid provider should be to recognise further deterioration by reassessing vital signs as well as by keeping the person in a supine position, rather

Fig. 13 – Tarp assisted oscillating cooling in heat stroke.

than by moving them into an alternative position.[26] The use of passive leg raising may provide a transient (<7 min) improvement in heart rate, mean arterial pressure, cardiac index, or stroke volume for those with no evidence of trauma.[27,28] The optimal degree of elevation has not been determined, with studies of passive leg raising ranging between 30–60-degrees elevation. Because improvement with passive leg raising is brief and its clinical significance uncertain, it is not recommended as a routine procedure, although it may be appropriate in some first aid settings. These recommendations place an increased value on the potential, but uncertain, clinical benefit of improved vital signs and cardiac function, by positioning a victim with shock in the supine position (with or without passive leg raise), over the risk of moving the victim.

Recovery position

An ILCOR scoping review of the recovery position in adults and children with decreased levels of responsiveness—due to medical illness or non-physical trauma and not meeting criteria for CPR—identified 34 studies.[26] Most of these were conducted in awake, healthy volunteers and focused on comfort and ensuring non-occlusion of the vascular supply to the dependent arm. A recent randomised controlled trial (RCT) on volunteers positioned in recovery position with bent or straight arm showed no difference in upper arm vascular supply or comfort,[29] therefore either position may be used. It can be used in persons with reduced responsiveness to maintain a clear airway and, in children, results in decreased hospitalisation rates.[30] However, in a single observational study, the semi recumbent position was favoured over the lateral position in opioid overdose.[31] Based on the ILCOR scoping review, the ERC recommends positioning the person in a lateral, side-lying recovery (lateral recumbent) position as opposed to leaving the person supine. A person placed in the recovery position should be monitored for continued airway patency, breathing and their level of responsiveness. If these critical signs deteriorate the person should be repositioned into a supine position and, if required, CPR initiated. For a person with agonal breathing or who has suffered trauma, you should not use the recovery position. Persons with a known trauma should be kept in supine position.

For adults and children with a decreased level of responsiveness due to medical illness or non-physical trauma, who do NOT meet the criteria for the initiation of rescue breathing or chest compressions (CPR), place the person into a lateral (side-lying) recovery position (Fig. 3):

- Make sure that the person's legs are straight.
- Place the arm nearest to you out at a right angle to the body. The arm can be straight (Fig. 3a) or bent (Fig. 3b).
- Bring the far arm across the chest and hold the back of the hand against the person's cheek nearest to you.

- With your other hand, grasp the far leg just above the knee and gently lift the knee up, keeping the foot on the ground, to bend the knee.
- Keeping the hand pressed against the cheek, pull on the far, bent leg to carefully roll the person towards you onto their side.
- Adjust the upper leg so that both hip and knee are bent at right angles.
- Carefully tilt the head back to make sure the airway remains open.
- Adjust the hand under the cheek, if necessary, to keep the head tilted and facing downwards to the side to allow liquid material to drain from the mouth.
- Check regularly for normal breathing.
- Only leave the person unattended, if necessary, to seek help.

In cases where there is a large size difference between the first aid provider and the unresponsive person, you may consider positioning the knee first, to reduce the stretching required to reach the far arm.

Use of pulse oximetry

A pulse oximeter is a non-invasive device that sends red and infrared light through a fingertip, earlobe or other tissue and, using a sensor, measures the oxygen saturation (the level of oxygen bound to haemoglobin) in the blood and the pulse rate. A 2022 ILCOR scoping review did not identify any studies evaluating the use of pulse oximetry specifically in the first aid setting.[32] However, pulse oximeters have been widely used by the public for daily self-monitoring of blood oxygen saturation and heart rate during COVID-19 and other respiratory infections, and in patients with chronic obstructive pulmonary disease (COPD), pulmonary embolism, asthma, and cystic fibrosis.[32] Pulse oximeters are now commonly included in many first aid kits and wearables such as watches and fitness bands. Use of a pulse oximeter should never replace or delay a structured ABCDE assessment (Table 3). Hypoxaemia may be missed due to an overestimation of oxygen saturation in persons with dark skin and others with high levels of skin pigmentation.[7,33–36] Pulse oximeter readings may also be inaccurate or unreadable in shock or low perfusion states, with increased nail thickness or polish, a low battery level, movement or vibration, and in extremes of temperature.[37]

Use of oxygen for acute difficulty of breathing

Not all first aid providers are trained or allowed to administer oxygen. However, some first aid organisations train and equip their members to safely and effectively give supplementary oxygen for specific conditions associated with hypoxia, such as following drowning, or carbon monoxide poisoning.

A 2015 ILCOR review suggested the use of supplementary oxygen in persons with symptoms of hypoxia.[38,39] More recently, the use of supplementary oxygen in persons with an acute exacerbation of COPD was highlighted in a 2025 ILCOR scoping review.[40] One RCT[41] evaluated the emergency medical service use of fixed flow oxygen of 8–10 L/min via a nonrebreathing face mask compared with titrated oxygen via nasal prongs to maintain an oxygen saturation between 88–92 % in persons with diagnoses of COPD and acute shortness of breath. The use of titrated oxygen in persons with an acute exacerbation of COPD was found to reduce mortality by 58 % compared with high-flow oxygen. Similarly, retrospective studies have also found uncontrolled oxygen flow in acute exacerbations of COPD to be associated with an increased risk of death, assisted ventilation or respiratory failure.[42–44] No evidence was found in the scoping review to suggest against the first aid administration of oxygen in adults or children exhibiting signs or symptoms of acute shortness of breath or hypoxia in the out-of-hospital setting. The indirect evidence identified suggests that uncontrolled oxygen may be harmful for persons with acute exacerbations of COPD. These first aid recommendations are based on an ILCOR good practice statement that suggests that supplementary oxygen administration should be titrated to an oxygen saturation of 88–92 % for patients with an acute exacerbation of COPD.[40] However, in the presence of life-threatening hypoxaemia (oxygen saturation <88 %), high-flow or high concentration oxygen should not be restricted.

Medical emergencies

Anaphylaxis

Anaphylaxis is a severe, life-threatening hypersensitivity reaction that can be fatal if not promptly identified and treated. Foods, drugs, insect stings or venom and latex are the most common triggers in Europe according to a systematic review.[45] About one quarter of all cases in the European Anaphylaxis Registry occur in children, with the most common trigger being food (tree nuts, cow´s milk, chicken eggs) while bee stings are most common in adults.[46,47] Fatal anaphylaxis can occur rapidly following exposure. The time to reaction depends on route of exposure and type of allergen—within five minutes for iatrogenic reactions, 15 min for insect stings or venom, 30 min for food-related reactions and up to a delay of more than 4 h for oral drugs.[46] These timeframes underscore the critical importance of effective first aid strategies for managing anaphylaxis.[48]

Recognition of anaphylaxis. Recognising and diagnosing anaphylaxis can be challenging due to a wide constellation of symptoms that often mimic allergic and non-allergic disorders.[49] An updated 2023 ILCOR scoping review lists the most common signs and symptoms for anaphylaxis as anxiety, breathing difficulties (including noisy breathing, wheezing or persistent cough), airway narrowing, swelling of the face and the tongue, difficulty in talking and/or a hoarse voice, abdominal pain, diarrhoea, nausea and vomiting, hives, welts and flushing, signs of shock (including confusion or agitation, pallor and floppiness, loss of responsiveness), and cardiac arrest.[50] The same ILCOR scoping review identified recent studies on education, action plans, protocols, and factors affecting adrenaline auto-injector use which suggest that training improves anaphylaxis recognition.

Treatment of anaphylaxis. Positioning the person lying supine with raised legs, or in case of breathing problems sitting with legs stretched, might prevent circulatory deterioration (expert opinion).[51,52]

The World Allergy Organisation recommends the administration of intramuscular adrenaline as the first-line treatment for anaphylaxis, at a dose of 0.01 mg/kg up to a maximum of 0.5 mg for adults and teenagers. For children this is equivalent to 0.15 mg for those aged 1–5 years and 0.3 mg for children aged 6–12 years.[53] Adrena-

line is typically self-administered via an autoinjector and can be given by trained individuals, including family members, friends, and first aid providers. Prompt administration is critical, and in persons where symptoms persist, a second dose may be necessary (Fig. 4).

The ILCOR scoping review identified three studies related to second-dose adrenaline administration for anaphylaxis, but none focused on the first aid setting. One study found that patients receiving multiple doses of adrenaline for anaphylaxis had higher hospital admission rates, but no data were reported on symptom resolution or adverse effects.[54] A second study documented that anaphylaxis patients needing multiple doses of adrenaline experienced more severe symptoms but ultimately were more likely to have resolution of symptoms compared with those not receiving multiple doses.[55] The third study compared the pharmacokinetics and pharmacodynamics of three different adrenaline delivery methods: intramuscular injection, autoinjectors, and intranasal administration and concluded that intranasal administration might be a safe and effective option, particularly for persons reluctant to carry and use injection devices.[56] Based on an ILCOR scoping review[57] and a 2025 evidence update[1], we recommend that a second adrenaline dose may be injected after 5 min when symptoms of severe anaphylaxis fail to resolve.[58] The management of anaphylaxis has been described in the ERC Guidelines 2025 Special Circumstances in Resuscitation.[59]

Choking

Choking, or foreign body airway obstruction (FBAO), is a common problem and occurs most frequently in young children and in elderly persons.[60,61] Children, in particular, tend to put various objects in their mouths that can easily obstruct their airway,[62] while adults tend to choke on meat, nuts, grapes, and other food.[62,63] The ERC guidelines are informed by the 2020 ILCOR systematic review[64] and ILCOR 2025 evidence update and CoSTR including justifications.[1]

Recognition and Immediate intervention. A foreign body can lodge in the upper airway, trachea, or lower airway (bronchi and bronchioles).[65] In a partial airway obstruction, air may still pass around the obstruction, allowing some ventilation and the ability to cough or to speak. With complete obstruction, no air can pass around the obstruction and a person is unable to speak, has a weakening or absent cough, and is struggling or unable to breathe. If untreated, complete airway obstruction will rapidly cause hypoxia, loss of responsiveness and cardiac arrest in a few minutes.

Evidence from the 2025 ILCOR evidence update[1] supports existing recommendations for bystanders to undertake foreign body removal as soon as possible after recognition. When performed *prior* to cardiac arrest, bystander first aid interventions for foreign body removal have been shown to be effective and to improve survival.[60,66–68] The largest observational cohort study to date evaluated the effectiveness of FBAO interventions in both responsive and unresponsive patients with out-of-hospital FBAO.[60] A bystander performed the initial FBAO intervention in 643 cases (90.7 %) and was successful in relieving the obstruction in 492 patients (76.5 %). Of the 492 patients who had relief of their FBAO with bystander intervention, 480 (97.6 %) survived. A second multicentre observational study of 407 patients transported to the emergency department after a FBAO reported that bystanders attempted to intervene in 192/352 (55 %) of witnessed cases and successfully relieved the obstruction in 93/192 (48 %) of witnessed cases. Survival was significantly higher with bystander interventions, and 96/407 (24 %) of patients had a favourable neurological outcome.[69]

Treatment of the awake, responsive person with foreign body airway obstruction. A person who is awake, responsive and able to cough, should be encouraged to do so as coughing generates high and sustained airway pressures and may expel the foreign body.[70–72] Back blows, abdominal and chest thrusts are reserved for persons who have signs of severe complete airway obstruction, such as inability to cough or speak. If the person starts to show signs of fatigue, back blows are the recommended initial intervention. Compared with back blows, abdominal thrusts and chest thrusts or chest compressions as a first intervention are associated with decreased odds of FBAO relief and more reports of intervention-associated injuries.[60] Although guidelines recommend alternating back blows and abdominal/chest thrusts, many FBAOs may be resolved using a single technique. In a 2024 cohort study, only 16 % of responders reported alternating techniques[60]

If unable to cough or the cough becomes ineffective, give up to 5 back blows (Fig. 5):

- Stand behind the person.
- Use the heel of your hand to apply blows between the shoulder blades in the centre of the back.

If back blows are ineffective, give up to 5 abdominal thrusts (Fig. 5):

- Stand behind the person and put both your arms around the upper part of their abdomen.
- Lean the person forward.
- Clench your fist and place it between the umbilicus (navel) and the ribcage.
- Grasp your fist with the other hand and pull sharply inwards and upwards.

If choking has not been relieved after 5 abdominal thrusts, continue alternating 5 back blows with 5 abdominal thrusts until choking is relieved, or the person becomes unresponsive.

We have not identified any studies on a person being alone when choking and therefore lack data on the situation and what's feasible to do.

Treatment of the unresponsive person with foreign body airway obstruction. If at any point, the choking person becomes unresponsive with absent or abnormal breathing, chest compressions must be initiated in accordance with standard BLS and CPR continued until the person recovers or emergency services arrive. The rationale for this is that chest compressions generate higher airway pressures than abdominal thrusts and may potentially alleviate the obstruction, whilst also providing a cardiac output.[73,74]

A blind finger sweep, as a means of removing unseen solid material, may worsen airway obstruction or cause soft tissue injury.[75] Only attempt a finger sweep when an obstruction can be clearly seen in the mouth.

Suction-based devices for choking. In recent years, manual negative-pressure (suction-based) devices have become increasingly available and promoted for the removal of FBAO. The devices work by attaching a mask to a plunger unit with a one-way valve, placing the mask over the choking person's face and pulling on the plunger handle to create suction. One version of the device includes a phalange attached to the mask and that must be inserted into the patient's mouth. A 2020 ILCOR systematic review[75] and CoSTR included a single observational study that reported relief of the FBAO and survival in 10 patients with FBAO who were treated with a suction-based device. The evidence was insufficient to make any recommendation related to use of these devices. Since 2020, several new studies of these devices have been published. The largest study, conducted in Japan, was a prospective multicentre observational study of 407 patients transported to the emergency department after a FBAO.[69] The study reported that bystanders attempted to intervene in 55 % of witnessed cases and successfully relieved the obstruction in 48 % (92/192). The use of a suction device was the most common first intervention (25 %, n = 101/407) followed by back blows (21 %, n = 85/407)). However, it was not clear what type of suction device was used in this study (e.g., portable powered, vacuum, or manual airway clearance device).

Six case series reported relief of FBAO with use of a suction-based device in a total of 595/610 cases (97.5 %).[76–81] Two of these case series focused on children (320 cases, total),[77,79] while two[76,81] focused on use of a specific suction-based device by healthcare providers in an adult daycare/senior centre. In the case study by Bhanderi,[76] the device use was part of a protocol and was introduced after 2 rounds of 5 back blows alternating with 5 abdominal/chest thrusts failed to resolve the FBAO. An additional case series[67] noted relief of FBAO in 3/8 cases with suction from a vacuum cleaner. In the 2023 case series by Dune[78] use of a suction-based device was the last intervention before resolution of FBAO signs and symptoms in 96.2 % of 157 cases with one type of airway clearance device, and for 93.1 % of 29 cases with a second type of device. Most case series used data supplied from the manufacturers, which creates serious bias because only the positive or successful results are typically reported and the denominator is missing. A simulation study showed equally successful number of attempts but higher positive pressure gradients in the thorax with abdominal thrusts than with the use of a specific suction-based device.[82]

The reported number of 'pulls' or suction manoeuvres required for FBAO relief varies between case series, with one study[81] reporting 54 % requiring a single pull and 37 % requiring 2–3 pulls. The case series by Costable[77] reported relief of the FBAO required between 1 and 10 pulls with the device. Following use of a device, a finger sweep or rolling the person onto their side was required to completely remove the foreign body in up to a third of cases reported in one series.[78]

Few complications have been reported with use of suction-based devices for choking. Two cases of perioral bruising felt to be due to the device were reported by Dunne.[78] For other reported adverse events, including airway oedema (3 cases), intraoral abrasions/pain (3 cases) and oesophageal perforation (1 case), it was unclear if these were due to the FBAO, other BLS interventions before use of the device, or due to the device itself. Dental injury was reported with the use of one brand of device in 1/25 (3 %) of patients in a retrospective analysis[81] and a single case of abrasions to the oropharynx and gingiva was reported with the use of the same brand device in the case series by Dunne.[78] Device malfunctions reported include occasional separation of the mask from the plunging unit.[78]

The evidence supporting the use of back blows and abdominal thrusts also comes primarily from case reports.[64] However, these interventions can be applied immediately, with minimal training and at no additional cost, with success reported in over three-quarters of cases. Users of devices would have to remove the device from packaging, assemble it and unless trained refer to device instructions, which may delay delivery of care using established FBAO protocols. Users of these devices should be aware of potential adverse effects and issues such as lack of adequate suction, lack of efficacy, oral injury, poor outcomes, and potential delay in performing CPR once a choking person becomes unresponsive. ILCOR did not make a recommendation because of insufficient evidence[1] and, for the same reason, the ERC is also unable to make a recommendation for or against the use of these devices.

Aftercare and referral for medical review. There are multiple case reports of serious injuries following treatment of FBAO with abdominal thrusts, and fewer reports of injuries following chest thrusts/compressions and back blows, as well as reports from the use of suction devices.[64,78] Any person successfully treated with these measures should therefore be examined by a healthcare practitioner.

The management of choking in children has also been described in the ERC Guidelines 2025 Paediatric Life Support.[24]

Asthma

A 2022 scoping review from ILCOR identified no significant harm from bronchodilators administered to individuals with asthma and respiratory symptoms.[1] The ERC agrees with the ILCOR First Aid Task Force recommendation that first aid providers should help to administer the persons own bronchodilators in individuals with asthma who are experiencing difficulties in breathing.

Chest pain

Chest pain is the most common symptom of an acute coronary syndrome also known as a 'heart attack'.[83] The pain is often described as pressure in the chest, with or without radiation of the pain to the neck, lower jaw, or left arm. According to the European Society of Cardiology, a quarter of women report jaw pain, nausea or shortness of breath instead of the classic symptoms which may delay diagnosis and treatment.[84] Patients with diabetes might express pain in the epigastric region or shortness of breath.[83]

An 2020 ILCOR systematic review found that early prehospital aspirin improved survival compared with later in-hospital administration and there was no significant difference in the risk of complications.[85] Although harm from aspirin in individuals with nontraumatic chest pain is uncommon, the ILCOR systematic review found no studies evaluating the risks of aspirin administration in the first aid setting.[85] Therefore, we continue to recommend the early prehospital administration of 150–500 mg aspirin to those with cardiac chest pain, by first aid providers before the arrival of EMS, unless there is a potential contraindication such as aspirin allergy. For persons with known angina pectoris, we recommend first aid providers assist them to self-administer their own nitro-glycerine spray or tablets.

Hypoglycaemia

Hypoglycaemia is most often defined as a blood glucose level below 4 mmol/L (or 70 mg/dL).[86,87] There are several different wordings of the definition of hypoglycaemia. A cross-sectional study from the US has shown that the wording of different definitions is associated with misinterpretations and therefore discrepancies in the prevalence of severe hypoglycaemia and the number of severe hypoglycaemia episodes.[88] People with lower education, lower household income and self-identified racial minorities were associated with these discrepancies.[88] Hypoglycaemia most commonly occurs in individuals with diabetes who use insulin or other glucose-lowering medications, but it may also occur in persons without diabetes because of prolonged fasting, excessive alcohol consumption, or critical illness.[87] Symptoms of hypoglycaemia can range from sweating, tremors, and palpitations to confusion, seizures, and unresponsiveness.[86]

An ILCOR systematic review from 2017 demonstrated that early recognition and intervention significantly reduced the risk of severe hypoglycaemia-associated complications, including cognitive impairment and cardiac arrhythmias.[89] An ILCOR systematic review from 2019 compared different administration routes and concluded that oral glucose is preferred above buccal administration.[89] The review also showed that sublingual administration has better results than oral administration in children with hypoglycaemia and moderate clinical symptoms of concomitant malaria or respiratory tract infections.[89] A 2018 review article highlighted the importance of structured education programs for individuals with diabetes to enhance the awareness and self-management of hypoglycaemia symptoms.[90] The European Diabetes Working Group emphasise the role of continuous glucose monitoring in reducing severe hypoglycaemic episodes, particularly in insulin-dependent individuals.[91]

Treatment of hypoglycaemia. The 2017 ILCOR systematic review identified evidence supporting that if the hypoglycaemic person is responsive and able to swallow safely, they should be encouraged to consume 15–20g of fast-acting carbohydrates, such as glucose or dextrose tablets, fruit juice, or regular (non-diet) soda.[88a] Blood glucose values should be rechecked 15min after ingestion of sugar and, if hypoglycaemia persists, an additional 15g of carbohydrates should be given.[88a] If symptoms improve, the person should follow up with a balanced meal to prevent recurrent hypoglycaemia.

Oral sugars should not be provided to unconscious persons due to risk of blocking the airway and aspiration. Sublingual sugar should be considered for children, if they are uncooperative with swallowing oral glucose.[89] First aid providers may administer glucagon, either via injection or nasal spray, as per the manufacturer's instructions if it is available and if they have been trained in its administration.[87] Early administration of glucagon in severe hypoglycaemia has been shown to improve recovery outcomes and to reduce the risk of prolonged hypoglycaemia-induced complications.[92] The implementation of public training programs, especially among schoolteachers, in glucagon administration has significantly improved response times and outcomes.[93–95]

Opioid overdose

Opioid overdose causes central nervous system depression (sleepiness, unresponsiveness) and respiratory depression, which, if untreated, can progress to respiratory arrest, cardiac arrest and death. Naloxone is a safe and effective antidote that reverses the effects of opioid overdose, restoring responsiveness and breathing.[96,97] Naloxone is only effective for opioid overdoses and it can take several minutes to work. Naloxone is not effective once cardiac arrest has occurred.

This guideline is based on the 2024 ILCOR recommendation[40] and on the 2024 American Heart Association and American Red Cross Guidelines for First Aid.[98] According to a 2025 online survey conducted by the ERC First Aid Writing Group (Appendix B), naloxone is used by a wide range of individuals, from doctors to bystanders, regardless of whether they have received formal training. Respondents indicated that naloxone was most often administered in confirmed opioid overdoses (82 %, n = 903) or in unresponsive individuals with suspected opioid overdose (71 %, n = 787). Only one-third of respondents reported the existence of formal training programs for naloxone use. Kits most commonly included injectable naloxone or autoinjectors (90 %, n = 874), followed by intranasal formulations (40 %, n = 394). Intranasal naloxone has less efficacy but higher usability than intramuscular administration[99,100] and is now widely available in many countries. It was the preferred option among respondents, largely due to its ease of use by non-medical personnel. In most countries, naloxone may be administered by doctors, nurses, and paramedics. In some countries, police officers and lay persons are also authorised to use it.

Individuals who respond to an opioid overdose with naloxone should remain under observation after administration due to the risk of respiratory depression recurring. Training in opioid overdose recognition and naloxone administration increases the likelihood of effective intervention, although study findings are variable.[101,102] One RCT found that individuals who received practical training were more likely to use naloxone than those who received only passive education.[103] ERC recommend that first aid providers administer naloxone to individuals with suspected opioid overdose. The management of opioid overdose and general intoxication are both outlined in the ERC Guidelines 2025 Special Circumstances in Resuscitation.[59]

Stroke

The global burden of stroke is high and increasing.[104] Over the last 20 years, new treatments such as the rapid administration of thrombolytic therapy or endovascular reperfusion techniques for ischaemic stroke, together with the medical or surgical treatment for haemorrhagic stroke, have significantly improved outcomes.[105] Therefore, the European Academy of Neurology and the European Stroke Organisation strongly recommend stroke recognition campaigns for laypeople, tools facilitating early detection of stroke and prenotification of the hospital.[105] An ideal stroke assessment system for first aid use must be easily understood, learned and remembered, must have high sensitivity and must take a minimal time to be completed.

The 2024 evidence update[1] of the ILCOR First Aid task force did not identify any relevant article concerning the recognition of stroke since the previous systematic review published in 2020.[106] Neither the review nor evidence update could find evidence supporting the use of one scale over another. There are several suitable stroke scales for first aid providers, such as the BE-FAST (Balance, Eyes, Face, Arm, Speech, Time)[107] or FAST (Face, Arm, Speech, Time)[108] or CPSS (Cincinnati Prehospital Stroke Scale).[109] Further, the use of MASS (Melbourne Ambulance Stroke Screen)[110] or LAPSS (Los Angeles Prehospital Stroke Screen)[111] can increase the specificity of stroke recognition if glucose measurement is available.

Suicidal thoughts

About 720,000 people die worldwide from suicide every year.[112] Suicidal thoughts might be the result of exposure to a stressful event and subsequent mental shock.[113] Two meta-analyses have shown that a structured public health program such as 'Mental Health First Aid' increases knowledge and reduces negative attitudes towards persons with mental health problems.[114,115] However, one Cochrane review could not demonstrate the long-term effects of Mental Health First Aid programs.[116] An evidence-based guideline by the Belgian Red Cross-Flanders informed by systematic literature searches[117] listed the warning signs of suicide as threats of suicide or self-injury, planning of suicide (how, where, when) and communicating (verbally or writing) about death or suicide. On recognising that someone is experiencing a mental health crisis or expressing suicidal thoughts or concrete plans, a first-aid provider may feel concerned about maintaining confidentiality.[117] However, it is important to seek professional help for a thorough assessment of any mental health problem or suicide risk. Talking through suicidal ideas with someone may decrease the risk of suicide.[117] Experts recommend five principles for providing help in a mental health crisis: promote calmness, a sense of safety, a sense of self- and community efficacy, instil connectedness and infuse hope.[118–120] Fostering calmness aims to reduce immediate reactions, and it can be done by taking a deep breath or just sitting down. Safety can be promoted by communicating that it is safe to talk and that you will listen. Enabling of self and collective efficacy is about helping the person to take an active role and thereby receive control and influence their own recovery. Instilling connectedness is done by avoiding isolation and reminding them that they are not alone. Lastly hope can be infused by reminding the person that they will have capacity to recover and feel better after some help.

Trauma emergencies

Cervical spinal motion restriction

A 2015 systematic review by the ILCOR First Aid Task Force suggested that first aid providers should not use cervical collars.[58] A 2024 ILCOR scoping review identified 46 experimental and 20 observational studies on the effectiveness of different types of spinal motion restriction.[121] The scoping review[1,122] identified evidence from 35 studies that supports not routinely applying cervical collars because although they decrease the range of cervical motion, they may impair respiration and swallowing, as well as contribute to a raised intracranial pressure.[123] In 2024, the ILCOR First Aid Task Force acknowledged that this treatment recommendation should not, however, preclude trained first aid providers (e.g. lifeguards treating a person with a diving injury) from using spinal motion restriction devices (such as cervical collars) in accordance with existing local spinal motion restriction protocols. Based on the 2019 ILCOR scoping review[124] with no identified contradicting evidence in the 2024 scoping review,[121] the ERC suggests that manual stabilisation may be applied by either head squeeze or trapezius squeeze techniques to limit cervical spine movement.

Head squeeze (Fig. 8a):

- Place your elbows on the ground or on your knees.
- Hold the person's head between your hands.
- Position your hands so that your thumbs are above their ears and your other fingers are below their ears.
- Do not cover their ears so that the person can still hear.

Trapezius squeeze (Fig. 8b):

- Place your elbows on the ground or on your knees.
- Slide your hands onto the person's shoulder muscles on either side of their head.
- Make sure that your thumbs point downwards on the front of the muscles and your fingers are parallel to the spine on the back.
- Move your forearms inwards to support their head. Firmly immobilise the head between your forearms at ear-height.

- Consider the need to open the person's airway using the 'jaw-thrust' technique (QR code 1).
- If the person is unresponsive and is lying face-down, check if their airway is open and hold their neck in a stable position.
- If you need to open their airway, ask others to help you carefully roll them as a unit onto their back whilst keeping their neck in line with their body and as stable as possible. Then apply the head or trapezius squeeze (Fig. 8b).
- First aid providers with specialised training (e.g. ski patrol, lifeguard) may consider the selective use of spinal motion restriction using their existing protocols.
- Never force an uncooperative person into any position, as this may exacerbate an injury.

Control of life-threatening bleeding

Uncontrolled bleeding is a potentially preventable cause of death in trauma.[125] The order of actions (Fig. 9) for the control of life-threatening bleeding are based on interventions included in ILCOR's evidence update from 2025[1] and two initial 2021 systematic reviews.[126,127]

Pressure devices or pressure points. Since the 2021 systematic review, the ILCOR evidence update[1] found seven new studies comparing pressure device to add pressure local on the wound or proximal to it or pressure points proximal to the wound with direct manual pressure on the site of the wound. While findings in these studies suggested some potential benefits for the use of pressure points or pressure devices in some settings, there were insufficient data to change any ILCOR recommendations. The ERC agrees with ILCOR's continued recommendation to use direct manual compression instead of pressure devices or pressure dressings, and against the use of pressure points.

Tourniquets. Since the 2021 systematic review, the ILCOR evidence update[1] identified data from 29 new studies demonstrating reduced in-hospital mortality and a lower incidence of shock with the use of tourniquets, thereby supporting their use to limit life-threatening bleeding. Commercial tourniquets were shown to be simpler to apply and, compared with improvised tourniquets, achieved better arterial occlusion. However, a systematic review and meta-analysis from 2025 did not demonstrate a significant reduction in mortality or blood products with the use of prehospital tourniquets.[128] Recent studies from Ukraine have raised a concern about secondary avoidable injuries due to prolonged usage of tourniquets.[129,130]

Use a manufactured tourniquet, if available:

- Place the tourniquet around the traumatised limb 5–7 cm above the injury, but not over a joint.
- Tighten the tourniquet until the bleeding slows and stops. This may be painful for the person.

- Write the time the tourniquet was applied on the device.
- Do not release the tourniquet. It should only be released by a healthcare professional.
- In some cases, you may need to apply a second tourniquet, above the first tourniquet, to slow or stop the bleeding.

The 2021 ILCOR systematic review compared the effectiveness of different types of paediatric tourniquets. Based on two cohort studies, ILCOR suggested the use of a manufactured windlass tourniquet for the management of life-threatening extremity bleeding in children.[127] There was insufficient evidence to recommend for or against the use of other tourniquet types in children. For infants and children with extremities that are too small to allow the effective application of a tourniquet before activating the circumferential tightening mechanism, direct manual pressure is recommended, with or without the application of a haemostatic trauma dressing.

Haemostatic dressings. Since the 2021 ILCOR systematic review, an ILCOR evidence update[1] identified five new articles suggesting that haemostatic dressings decrease the duration of bleeding and improve survival with low reported rates of side effects when compared to conventional gauze dressings. Therefore, use of haemostatic dressings is recommended by the ERC for first aid providers.

Open chest wounds

The correct management of an open chest wound is important because inadvertent sealing of the wound through the use of an occlusive dressing or device may result in the potential life-threatening complication of a tension pneumothorax.[131] The 2015 ILCOR CoSTR suggested that first aid providers should not apply an occlusive dressing or device to individuals with an open chest wound because of lack of human studies. A 2024 ILCOR evidence update found that it is reasonable for the trained first aid provider to apply a specialised non-occlusive or vented dressing if available.[1] This statement was based on identification of five porcine studies,[132–136] one experimental study of chest seal adhesion on healthy volunteers,[137] and one retrospective observational study from prehospital data on penetrating chest trauma.[138] ERC agrees with the ILCOR good practice statement and recommends that chest wounds be primarily left open to freely communicate with the external environment, but if trained, an appropriate non-occlusive or vented dressing could be applied, ensuring a free outflow of air when breathing out and observing the wound carefully for air flow obstruction due to bleeding or clotted blood.

Concussion

Concussion (often called minor traumatic brain injury) is common in adults and children following head injury. Head injury is important to recognise because if the primary injury is missed it can lead to secondary brain injury and a worse outcome. Concussion is difficult to recognise because of the complexity of the symptoms and signs and the variation from immediate to delayed onset. Furthermore, no consensus definition of concussion exits despite extensive work on finding such.[139] Symptoms such as difficulties with thinking/remembering, physical symptoms (headache, change in vision, dizziness, nausea or vomiting, seizures and a sensitivity to light/noise), emotional changes or changes in behaviour (increased sleepiness, reduction in normal activities, loss of responsiveness, confusion) can all indicate a concussion.

The 2015 ILCOR CoSTR[58] as well as the ERC First Aid 2021 Guidelines[140] made no recommendation on a specific tool over another to recognise concussion but acknowledged the role that a simple, validated, single-stage concussion scoring system could play in the recognition of concussion by first aid providers. One study of lay responders identified insufficient confidence and knowledge to make a decision about how to act in a head injury scenario other than seeking medical assistance.[141] The following validated concussion assessment tools designed for use by trained healthcare providers were identified but they do not fulfil the requirements for reliable concussion assessment to be made by first aid providers because of their complexity or need to perform neurocognitive testing: Glasgow Coma Scale (GCS),[142] Alert Verbal Pain Unresponsive scale (AVPU),[143] Concussion Recognition Tool (CRT 6),[144] Immediate Post-Concussion Assessment and Cognitive Testing (ImPACT),[145] Standardized Assessment of Concussion (SAC),[146] and the Sport Concussion Assessment Tool (SCAT 6).[147] Sports related guidelines and studies[139,148,149] refer to the memorable phrases 'recognise, remove and refer' or 'when in doubt, sit them out' approach. The ERC recommends that persons with a suspected concussion of any cause, be removed from physical activities and seek immediate medical review.

Preservation of an amputated body part

The ERC recognises that the top priority when approaching a patient with an amputated or avulsed body part is to stop the bleeding and to resuscitate the person. However, retrieval and preservation of the amputated body part should not be overlooked, as surgical reimplantation may be attempted. A 2024 ILCOR scoping review identified 37 publications, mostly case reports and observational studies, documenting various techniques for preserving amputated and avulsed body parts prior to arrival at a hospital.[150] The evidence from this review supports non-freezing cold storage of amputated body parts. This storage method is associated with higher rates of successful reimplantation, even after longer time intervals between the injury and surgery.

The recommended preservation method is: Wrap the body part in a sterile gauze dressing or clean piece of cloth moistened with saline or water. Place the wrapped body part in a clean watertight plastic bag or container. Cool the bag or container containing the body part, inside another bag with ice or ice-water (Fig. 10). The retrieved body part should be transported with the injured person to the hospital. No matter which part gets amputated or avulsed (ear, nose, lip, scalp, penis), the rates of successful reimplantation are surprisingly high. Even when cold storage is not possible and the transport time is more than 6 h, it may still be possible to reimplant the body part successfully. Fingertips and fingers especially, appear to tolerate a lack of cooling better than other tissues.[150]

Environmental emergencies

Drowning

Drowning is the process of experiencing respiratory impairment from submersion or immersion in liquid.[151] Children under five years of age account for nearly a quarter of all deaths among the 300,000 annual drownings worldwide.[152]

Drowning rescue stresses prevention, recognition, provision of flotation, removal from water and further care as required (Fig. 14). According to a 2021 scoping review, the risk of an untrained rescuer dying while trying to rescue a drowning person could be reduced using a non-contact approach.[153] A non-contact approach means

reaching out to the person via a pole, rope, or flotation equipment without entering the water.[153] When balancing which actions to undertake in water versus on ground, time to be on the ground has to be considered. This is something that can be discussed in courses and training sessions.

The main medical problems in drowning are hypoxia, hypovolaemia and hypothermia. The 2022 ILCOR systematic review recommended in-water resuscitation to start with ventilations only and on-boat resuscitation to be either ventilations only or standard CPR based on feasibility and safety.[154] The initial number of rescue breaths lacks scientific evidence but for clarity the ERC recommends five initial ventilations. A retrospective case-matched observational study on oxygen administration by lifeguards did not show an increase in oxygen saturation or survival.[155]

The 2022 ILCOR systematic review stratified actions between lay persons and those with a duty to respond such as lifeguards. Lay persons are recommended to start resuscitation with chest compressions to prioritise the initiation of simple and fast resuscitation. This should be followed by mouth-to-mouth or the use of a pocket mask to provide expired air ventilation, if appropriate. Those with a duty to respond should consider providing initial rescue breaths with a bag-mask since the time to ventilation is critical in 'non-cardiac arrests' and may prevent deterioration to a cardiac arrest.[156]

A minority (6 %) of drowning victims who deteriorate to cardiac arrest have a shockable rhythm.[157] The use of an AED has been given lower priority than initial rescue breaths, however for those with a shockable rhythm, early use of an AED will increase the chances of survival. The management of drowning is described in the ERC Guidelines 2025 Special Circumstances in Resuscitation.[59]

Prevention of hypothermia

Accidental hypothermia, defined as an unintentional drop in core body temperature to below 35 °C poses significant risks, including cardiac arrest. First aid providers play a crucial role in the prevention and initial management of hypothermia. Prehospital insulation, fast transfer to a hospital and rewarming are key interventions. A prospective observational study has shown that first aid interventions such as removing wet clothes, drying the person's body, the use of (isothermal) blankets and the use of heating pads, all individually increased core temperature in trauma patients.[158] A two-step RCT among fire fighters has shown that active methods such as rewarming with warm air could be beneficial during a technical rescue in challenging terrain and it has been shown that fleece blankets will stop, but not correct heat loss.[159] An RCT involving trauma patients compared standard interventions such as removing wet clothing, providing clean dry garments and applying localised coverings for warmth with a more proactive strategy that included a tailored prevention plan and targeted training.[160] The study found that the tailored approach led to improved temperature regulation, enhanced quality of temperature management, better coagulation function, and a reduced incidence of adverse reactions.[160]

The full management of accidental hypothermia has been described in the ERC Guidelines 2025 Special Circumstances in Resuscitation.[59]

Heat stroke and exertional hyperthermia

Heat stroke is a severe heat-related illness that occurs when the body's thermoregulation system becomes overwhelmed or stops working. It is a true medical emergency and can lead to severe organ damage, cardiovascular collapse and death.[161] Non-exertional heat stroke typically occurs after prolonged exposure to the sun and is often seen during heat waves. However, it may occur during periods of hot weather in persons with impaired heat regulation, such as in elderly people or children. Exertional hyperthermia presents similarly but is associated with strenuous exercise.

Recognition and immediate care. Suspect heat stroke in the setting of high ambient temperatures, in a person with a high core body temperature exceeding 40 °C, and with altered mental status (confusion, disorientation, agitation, coma) or seizures. Similar signs and symptoms are present in a person with exertional heatstroke due to strenuous physical activity. Although a core body temperature above 40 °C is an important finding in someone with suspected heat stroke, the measurement of core body temperature in first aid can be problematic as it requires availability of a specialised thermometer that is inserted into the person´s rectum.[162,163] In addition to privacy and cultural considerations, training in the use of a core thermometer may be necessary. The tympanic temperature can be measured but it will only provide an approximation and not a definitive core temperature measurement. Similarly, oral and cutaneous thermometer measurements have been found to be inaccurate[164] although when a temperature is elevated with one of these devices, it may support clinical suspicion of hyperthermia and heat stroke.

The management of heat stroke and exertional hyperthermia is immediate, rapid cooling. A cooling rate of $\geq$0.15 °C /min has been shown to be associated with survival without medical complications for exertional heat stroke.[165,166] Moving a person with suspected heat stroke out of the sun or away from a hot environment to a cooler, shaded location, removing excess clothing, and limiting exertion will initiate the cooling process (Fig. 12). Emergency medical services should be summoned simultaneously while beginning cooling, and cooling is continued during transportation to the hospital until a target core temperature below 39° C is reached.[167,168]

Active cooling. Active cooling interventions actively remove heat from the body and provide faster cooling for heat stroke than passive cooling. These interventions can include cool or cold/ice water total body immersion, spraying or misting water and fanning, and application of ice packs to the axilla and groin. A 2020 ILCOR systematic review of cooling methods for heat stroke summarised the rate of cooling achieved with various techniques from 63 studies.[169] The evidence supports active cooling using whole body (from the neck down) water immersion at 1 to 6 °C until a core body temperature below 39 °C has been reached. If the measurement of the core body temperature is not feasible, American first aid guidelines recommend to continue cooling for up to 15 min or until neurological symptoms resolve, whichever is first.[98] Water immersion cooled faster than all other forms of active cooling, however ice and cold water may not always be available. Alternative methods of cooling include ice packs to the axillae, groin and neck, use of showers, ice sheets or towels, and misting/fanning but they are less effective than water immersion. There are no studies of cooling techniques in children or in people with non-exertional heatstroke, but the evidence from the ILCOR systematic review supports rapid cooling with similar modalities in these populations.[169] In the first aid setting, improvisation may be necessary to provide active cooling. Placing the heat-injured person in a baby pool filled with water from a hose or wrapping a tarp around the person (filled with ice and gently oscillating the tarp) are alternative ways to provide active cooling in the outdoor setting (Fig. 13).

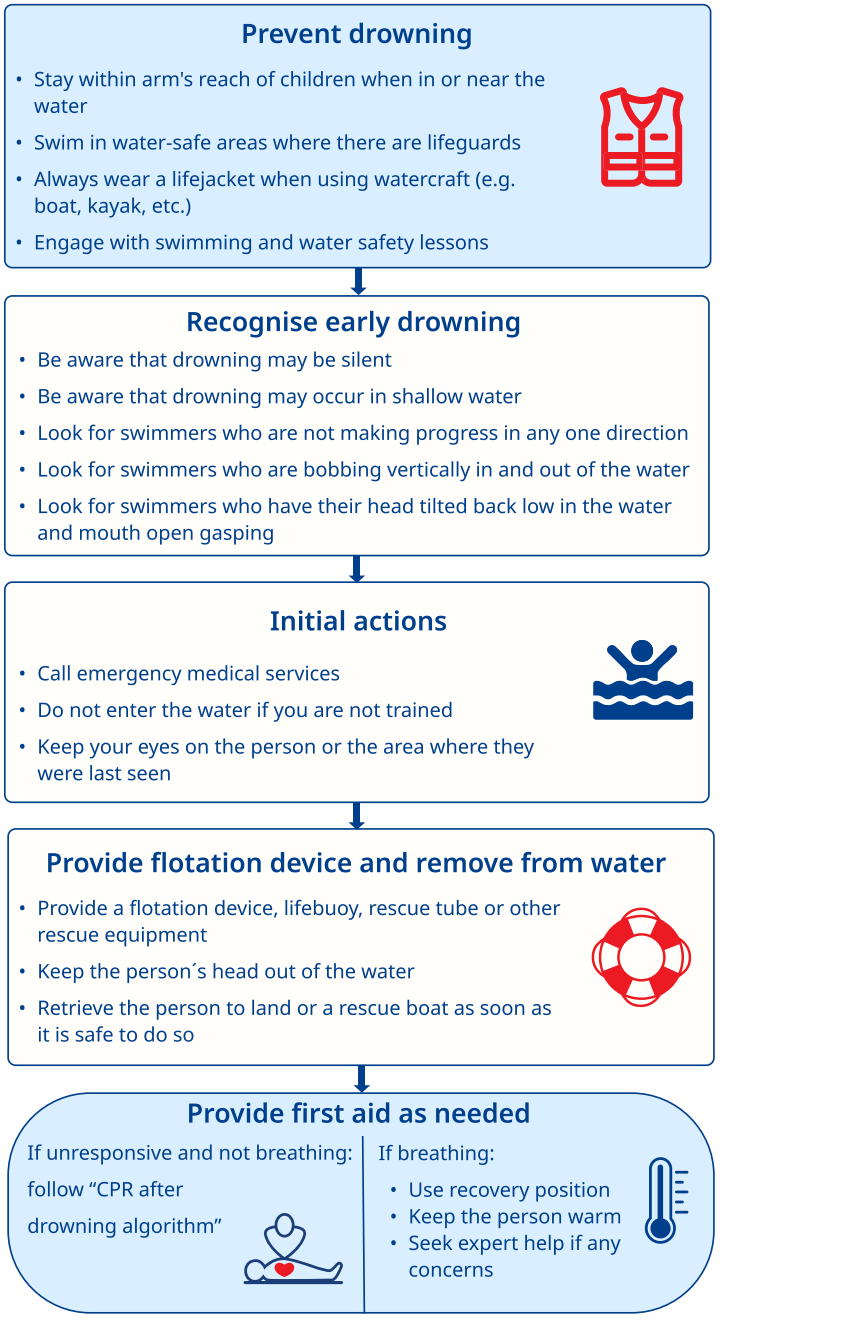

Fig. 14 – First aid in drowning.

Cooling techniques reviewed in the systematic review were, in decreasing order of effectiveness, ice water immersion (15 °C), temperate water immersion (20 to 25 °C), cold water immersion (14 to 17 °C), colder water immersion (8 to 12 °C), commercial ice packs, showers (20 °C), ice sheets and towels (3 °C), hands and feet cold water immersion (16–17 °C), cooling vests and jackets, cold intravenous fluids, fanning, passive cooling, hand cooling devices and evaporative cooling.[169] The full management of accidental hypothermia and heat stroke has been described in the ERC Guidelines 2025: Special Circumstances in Resuscitation.[59]

Snake bite

Snakebites in Europe are relatively uncommon, with approximately 7992 cases reported annually, of which 15 % are classified as severe.[170] Most incidents involve vipers of the Vipera genus, such as the common European Viper or Adder (Vipera berus), the asp viper (Vipera aspis), and the nose-horned viper (Vipera ammodytes). However, there are many rare and dangerous snakes which are kept as pets. Envenomation's (bites) often result in localised symptoms, including pain, swelling, and bruising, while severe cases may lead to systemic complications like coagulopathy and, in rare instances, organ failure. Two systematic review on first aid for snakebites[171,172] and an expert opinion[173] emphasise minimising movement, immobilising the affected limb, and avoiding ineffective or harmful interventions such as tourniquets, wound incisions, or venom suction. Seeking immediate medical attention remains crucial for effective management. European health organisations, the World Health Organization and National Health Service UK,[174,175] provide specific protocols for treatment. Unlike elapid snakebites with non-swelling neurotoxic venom,[175] which may benefit from pressure immobilisation, viper envenomation's require simple limb immobilisation without compression.

Declaration of competing interest

Declarations of competing interests for all ERC Guidelines authors are displayed in a COI table which can be found online at https://doi.org/10.1016/j.resuscitation.2025.110752.

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Appendices A and B. Supplementary material

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