BASIC LIFE SUPPORT (BLS) for adults

This student script for the exam has been prepared and shortened according to the European Resuscitation Conuncil (ERC) Guidelines from 2025 and is not an original scientific work and may not be reproduced or used outside of its stated purpose.

The four-ring ERC Chain of Survival (Figure 1) was first presented 20 years ago as a concept to highlight time-sensitive interventions that aim to improve survival of cardiac arrest victims. It included early recognition and activation of the emergency medical services in the first ring, early CPR and defibrillation in the second and third ring, and post-resuscitation care in the fourth ring.

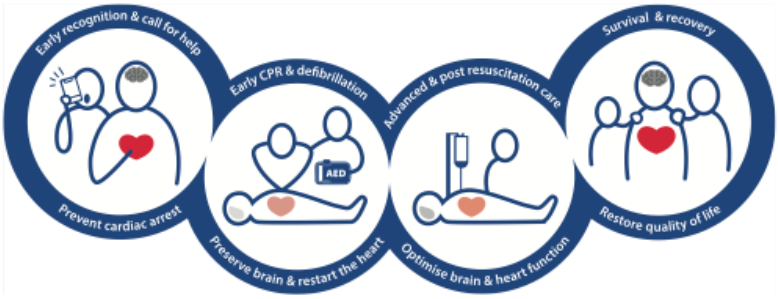

Figure 1. ERC Chain of Survival

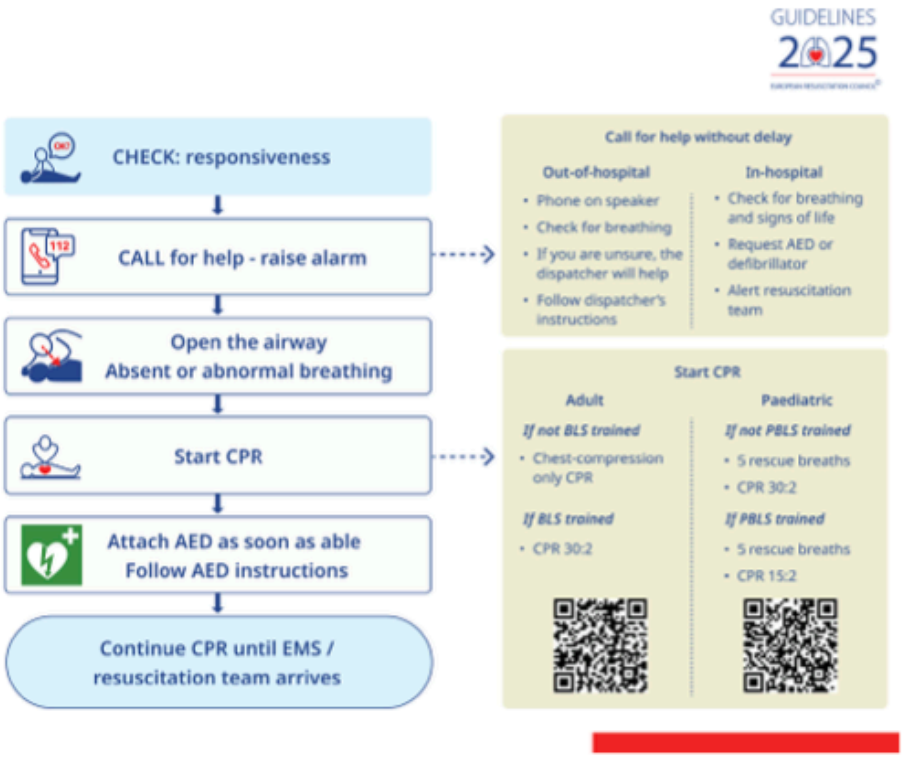

Figure 2. Universal BLS protocol

CLINICAL PROCEDURE IN BLS

The ERC Guidelines 2025 adult Basic Life Support cover cardiac arrest recognition, alerting emergency services, chest compressions, rescue breaths, automated external defibrillation and safety considerations.

If you encounter someone who appears to be unresponsive follow the 3 steps to save a life:

1. Check Is it safe to approach? Is the person conscious?

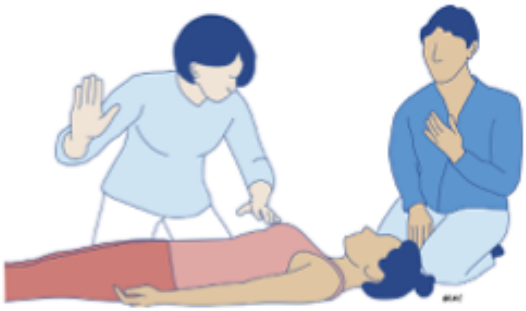

Figure 3. Safety

Figure 4. Check

2. Call EMS immediately if they are unresponsive. Assess breathing. If you are unsure the call-taker will assist you.

Figure 5. Call

Figure 6. Check for breathing

Figure 7. Not breathing normally

3. Cardiopulmonary resuscitation (CPR): Start CPR immediately if they are unresponsive with abnormal breathing. As soon as an Automated External Defibrillator (AED) is available, attach it and follow the AED instructions If you are unsure the call-taker will assist you.

Figure 8. Both hands perform chest compressions

Figure 9. Arms straight, vertical above the victim

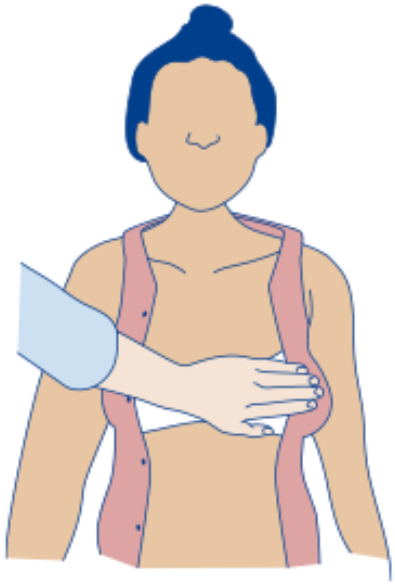

Figure10. Hand in the center of the chest

Figure 11. If untrained or unable to do rescue breath, apply only chest compression.

Figure 12. If trained and able provide rescue breaths with a compression-ventilation ratio of 30:2.

Figure 13. When AED arrives, continue chest compressions, while placing defibrillation pads.

Figure 14. Follow AED instructions

Figure 15. If shock is indicated, deliver shock and continue chest compressions.

Figure 16. If a shock is not indicated, continue chest compressions.

Recognizing cardiac arrest

Suspect cardiac arrest in any person who is unresponsive. Call your local emergency number without delay. Assess breathing while you wait for the call to be answered. Slow, labored breathing, as well as other abnormal patterns such as agonal gasping or panting, must be recognised as signs of cardiac arrest; in such cases, or when in doubt, always start CPR. A short period of seizure-like activity may occur at the onset of cardiac arrest. Once the seizure stops, assess breathing. If any person is unresponsive with abnormal breathing, cardiac arrest should be assumed. If you are uncertain the call taker will be able to assist you. If there is any doubt, assume cardiac arrest and start CPR.

Alerting the emergency medical services

If you have a mobile phone, activate speaker mode, call the local emergency number without delay. Assess breathing while you wait for the call to be answered. If you are alone and do not have a mobile phone, or there is no mobile phone network/satellite connection, you can shout for help and then continue to assess breathing. If you think no-one will come to help, then you will have to leave the person to alert the local emergency service. Do this as quickly as possible. If they remain unresponsive and are not breathing normally when you return from summoning help, immediately start CPR.

Role of the dispatcher

Dispatchers should use standardized protocols to facilitate recognition of cardiac arrest. Once cardiac arrest is recognized, dispatchers should provide CPR instructions to all callers. Dispatchers should assume the caller does not know how to perform CPR and provide chest-compression-only instructions. If the caller subsequently states they know how to perform rescue breaths, then

dispatchers should facilitate 30:2 CPR. Once CPR is underway, dispatchers should ask if there is an 'AED' or 'defibrillator' at the scene. If no AED is available at the scene, and more than one bystander is present, dispatchers should guide bystanders to the nearest AED. As soon as an AED is available at the patient, dispatchers should instruct the bystander to activate the AED and to follow the AED instructions. Where first responder systems have been implemented, dispatchers should activate registered community volunteer responders to the incident and to retrieve a nearby AED.

High quality chest compressions

Commence chest compressions as soon as possible. Place the heel of one hand on the lower half of the sternum ('in the centre of the chest'). If you are unable to adequately visualise the sternum due to clothing, it is reasonable to displace or remove such garments so you can identify the correct anatomic landmark. Place the heel of your other hand on top of the first hand. Interlock your fingers of the hands to ensure that pressure is not applied over the ribs. Keep your arms straight. Position your shoulders vertically above the persons chest. Compress to a depth of at least 5 cm, but not more than 6 cm. Compress the chest at a rate of 100–120 min with as few interruptions as possible. Allow the chest to recoil completely after each compression; avoid leaning on the chest. CPR is most effective when performed on a firm surface. However, rescuers should not move a person from a 'soft' surface e.g. bed, to the floor. Start CPR on the bed and, if needed, compress the chest deeper to compensate for the soft mattress.

Rescue breaths

If you have been trained to provide rescue breaths, alternate 30 chest compressions with 2 rescue breaths. When providing rescue breaths, deliver just enough air to make the chest start to rise; avoid excessive ventilation. If you are unable ventilate the chest after 2 attempts, consider for eign body airway obstruction (see ERC Guidelines 2025 FirstAid). If you are not trained to provide rescue breaths, perform continuous chest compressions, without interruptions.

Using an automated external defibrillator (AED)

Anyone can use an Automated External Defibrillator (AED).

How to find an AED:

Ensure that AED locations are indicated by clear signage . Signage should state that AEDs can be used by anyone and that no training is needed. AED locations may also be identified using electronic mapping systems available on some mobile phone and computer applications. The local emergency service should be able to direct callers to he nearest available AED.

When and how to use an AED:

Use an AED as soon as it is available. Open the AED case (if present). Some AEDs automatically turn on when opened. If not, identify the power button and turn it on. Follow the audio/visual prompts from the AED. Attach the electrode pads to the person's bare chest according to the position shown on the AED (or AED pads). If more than one rescuer is present, continue CPR while the defibrillation pads are being attached. Ensure that nobody touches the person whilst the AED is analysing the heart rhythm. If a shock is indicated, ensure that nobody is touching the person. Some AEDs (fully automatic AEDs) will deliver a shock automatically, while others (semi-automatic AEDs) will require the rescuer to press the shock button to deliver the shock. After the shock has been delivered, immediately restart chest compressions. If no shock is indicated, immediately restart CPR chest compressions. Continue to follow the AED instructions. Usually, the AED will instruct the rescuer to perform CPR, then, after a set time interval the AED will instruct the rescuer to pause CPR to undertake rhythm analysis.

Where to place AEDs:

AEDs should be placed in clear sight. AED cabinets should be unlocked and readily available 24 h a day, 7 days a week, 365 days per year. Locations with a high population flow, such as airports, shopping centres and train stations should have on-site AEDs that are readily available for public use. Communities are encouraged to deploy AEDs in public spaces, particularly those with a higher incidence of cardiac arrest. AEDs should be registered with the local emergency service, especially if they are linked to AED registries and first responder programmes.

Step by step BLS

GUIDELINES 2025
EUROPEAN RESUSCITATION COUNCIL©

SEQUENCE / ACTION	TECHNICAL DESCRIPTION
SAFETY 	• Make sure that you, the victim and bystanders are safe
RESPONSE Check for a response 	• Shake the victim gently by the shoulders and ask loudly: ***"Are you all right?"***
ALERT EMERGENCY SERVICES 	• If victim is unresponsive, ask a helper to call the emergency medical services or call them yourself • Stay with the victim if possible • Activate the speaker function or hands-free option on the telephone so that you can start CPR whilst talking to the dispatcher
AIRWAY Open the airway 	• If there is no response, position the victim on their back • With your hand on the forehead and your fingertips under the point of the chin, gently tilt the victim's head backwards, lifting the chin to open the airway
BREATHING Look, listen and feel for breathing 	• Look, listen and feel for breathing for no more than 10 seconds • A victim who is barely breathing, or taking infrequent, slow and noisy gasps, is not breathing normally
SEND FOR AED Send someone to get an AED 	• Send someone to find and bring back an AED, if available • If you are on your own, fetch an AED only if you can get and apply it within one minute; otherwise, start CPR immediately
CIRCULATION Start chest compressions 	• Kneel by the side of the victim • Place the heel of one hand in the centre of the victim's chest - this is the lower half of the victim's breastbone (sternum) • Place the heel of your other hand on top of the first hand and interlock your fingers • Keep your arms straight • Position yourself vertically above the victim's chest and press down on the sternum at least 5 cm (but not more than 6 cm) • After each compression, release all the pressure on the chest without losing contact between your hand and the chest • Repeat at a rate of 100-120 min^{-1}
COMPRESSION-ONLY CPR 	• **If you are untrained, or unable to give rescue breaths,** give chest-compression-only CPR (continuous compressions at a rate of 100-120 min^{-1})

COMBINE RESCUE BREATHING WITH CHEST COMPRESSIONS 	• **If you are trained to do so**, after 30 compressions, open the airway again, using head tilt and chin lift • Pinch the soft part of the nose closed, using your index finger and thumb of your hand on the forehead • Allow the victim's mouth to open, but maintain chin lift • Take a normal breath and place your lips around the victim's mouth, making sure that you have an airtight seal • Blow steadily into the mouth whilst watching for the chest to rise, taking about 1 second as in normal breathing. This is an effective rescue breath • Maintaining head tilt and chin lift, take your mouth away from the victim and watch for the chest to fall as air comes out • Take another normal breath and blow into the victim's mouth once more to achieve a total of two rescue breaths • Do not interrupt compressions by more than 10 seconds to deliver the two breaths, even if one or both are not effective • Then return your hands without delay to the correct position on the sternum and give a further 30 chest compressions • Continue with chest compressions and rescue breaths in a 30:2 ratio
WHEN AED ARRIVES Switch on the AED and attach the electrode pads 	• As soon as the AED arrives, switch it on and attach the electrode pads to the victim's bare chest • If more than one rescuer is present, CPR should be continued whilst the electrode pads are being attached to the chest
FOLLOW THE SPOKEN/ VISUAL DIRECTIONS	• Follow the spoken and visual directions given by the AED • **If a shock is advised**, ensure that neither you nor anyone else is touching the victim • Push the shock button as directed • Then **immediately** resume CPR as directed by the AED
IF NO SHOCK IS ADVISED Continue CPR 	• **If no shock is advised,** immediately resume CPR and continue as directed by the AED

IF NO AED IS AVAILABLE
Continue CPR 
	• If no AED is available, **or** whilst waiting for one to arrive, continue CPR
	• Do not interrupt resuscitation until:
	  • A healthcare professional tells you to stop OR
	  • The victim is definitely waking up, moving, opening eyes, and breathing normally OR
	  • You become exhausted
	• It is rare for CPR alone to restart the heart. Unless you are certain that the victim has recovered, continue CPR
	• Signs that the victim has recovered
	  • Waking-up
	  • Moving
	  • Opening eyes
	  • Breathing normally

This scrip was prepared according to the European Resuscitation Conuncil (ERC) Guidelines from 2025.

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