



British Heart  
Foundation

# Cardiac arrest

## What is a cardiac arrest?

A cardiac arrest is when a person's heart stops pumping blood round their body and they stop breathing, or stop breathing normally. They will have collapsed and be unresponsive. The person will die within minutes without immediate help. Over 30,000 cardiac arrests occur out of hospital in the UK every year, and the survival rate is low. Less than 1 in 10 people survive.

The BHF has launched the Nation of Lifesavers to improve these survival rates. The Nation of Lifesavers aims to raise awareness of CPR and defibrillation. We offer training packages to schools, community groups and workplaces, to teach lifesaving skills.

For more information, to obtain the CPR training kit and to find a Heartstart course near you to learn CPR, visit: [bhf.org.uk/lifesavers](http://bhf.org.uk/lifesavers)

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HEARTBEAT**

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## What causes a cardiac arrest?

There are many reasons why someone may have a cardiac arrest. It can happen at any age, and there are many causes:

### HEART RELATED CAUSES

- Heart and circulatory disease, such as a heart attack, or blood clot on the lung
- Cardiomyopathy (disease of the heart muscle)
- Heart failure
- An inherited abnormal heart rhythm such as long QT syndrome

### OTHER CAUSES

- Extreme blood loss
- Lack of oxygen, for example choking
- Recreational drugs such as cocaine
- Electrocutation

Many cardiac arrests in adults happen as a result of a heart attack. A heart attack happens when a blood clot forms in one of the coronary arteries. This can block the blood supply to the heart muscle causing permanent damage. A heart attack can sometimes cause an electrical disturbance, triggering a life threatening heart rhythm, resulting in a cardiac arrest.

## How to help someone survive

It is possible to survive and recover from a cardiac arrest if you get the right treatment quickly. You can help save a person's life by phoning 999 immediately and giving CPR. CPR stands for cardiopulmonary resuscitation. It means taking over the work of the person's heart and lungs, by performing chest compressions and rescue breathing.

Three simple steps that could mean the difference between life and death: **CALL PUSH RESCUE**  
**CALL** for help  
**PUSH** hard and fast in the centre of the chest 30 times  
Give 2 **RESCUE** breaths

Keep going until emergency services arrive.

## What is defibrillation?

A person who is having a cardiac arrest may develop a dangerous heart rhythm which can be fatal. It is sometimes possible to shock the heart back into a normal rhythm by giving the heart an electrical shock using a defibrillator.

There are **Public Access Defibrillators** (PADs) in many workplaces, shopping centres, train stations, leisure centres, stadiums and village halls. They are designed to be used by members of the public and are simple and safe to use. The machine gives clear spoken instructions and you don't need any training to use one. All ambulance personnel and vehicles, as well as community first responders, carry a defibrillator.

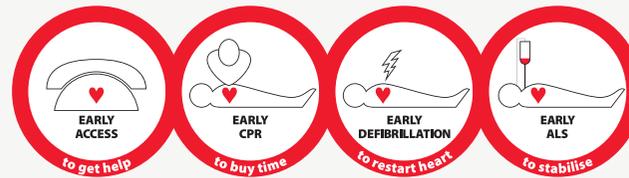
**If a PAD is not available when a cardiac arrest happens, it is vital that CPR continues to keep oxygen circulating around the body until a defibrillator arrives.**

It's a good idea to find out where the PADs are in your local area. For more information about obtaining and using defibrillators, go to [bhf.org.uk/defibs](http://bhf.org.uk/defibs)

## What to do if someone has collapsed or is not responding

### The chain of survival

CPR is one of the links in the Chain of Survival. The best chance of survival is when all four links have been implemented.



If someone has had a cardiac arrest, they will be unconscious, and either not breathing or not breathing normally. The person needs immediate help or they will die within minutes.

First check that it is safe to approach the person.

To find out if the person is conscious, gently shake him or her, and shout loudly, 'Are you all right?' If there is no response, the person is unconscious.



You will need to assess the person's airway and breathing.

Open the person's airway by tilting their head back and lifting their chin.

Look, listen and feel for signs of normal breathing. Only do this for up to ten seconds. Don't confuse gasps with normal breathing. If you're not sure if their breathing is normal, act as if it is not normal.

Now remember: **CALL PUSH RESCUE**

# How to do CPR

## CALL

### Call for help

If the person is unconscious and is either not breathing or not breathing normally, they are in cardiac arrest.

### Call 999 immediately.

- Send someone else to call 999 for an ambulance while you start CPR.
- **Or, if you are alone with the person, call 999 before you start CPR.**



## PUSH

### Push hard and fast on the centre of the chest.

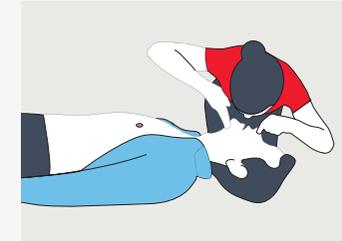


Start chest compressions. Place the heel of one hand in the centre of the person's chest. Place the heel of your other hand on top of your first hand and interlock your fingers. Press down firmly and smoothly on the chest 30 times, so

that the chest is pressed down between five and six centimetres each time. Do this at a rate of about 100 to 120 times a minute. That's about two each second.

## RESCUE

### Give rescue breaths.



After 30 compressions, open the airway again by tilting the head back and lifting the chin, and give two of your own breaths to the person. These are called rescue breaths.

To do this, pinch the soft part of the person's nose closed. Take a normal breath, make a seal around their mouth, with your mouth, and then breathe out steadily. The person's chest should rise and fall with each breath. It should take no more than five seconds to give the two rescue breaths. Then give another 30 chest compressions and then two rescue breaths.

Keep doing the 30 chest compressions followed by two rescue breaths until:

- the ambulance crew arrives and takes over, or
- the person starts to show signs of regaining consciousness, such as coughing, opening their eyes, speaking, or moving purposefully and starts to breathe normally, or
- you become exhausted.

## Heart Helpline

**Our cardiac nurses and information support officers are here to answer your questions and give you all the heart health information and support you need.**

**Call us on 0300 330 3311**

Similar cost to 01 or 02 numbers.  
Lines are open 9am - 5pm Monday to Friday.

**This information does not replace the advice that your doctor or nurse may give you. If you are worried about your heart health in any way, contact your GP or local healthcare provider.**

## Hands only CPR

If you have not been trained to do CPR, or if you're not able, or not willing, to give rescue breaths, give chest compressions only. This is known as **hands only CPR**.

**Hands only CPR is still likely to increase a persons' chance of survival and is definitely better than doing nothing.**

By simply pushing **hard and fast** in the centre of the person's chest until help arrives could help save their life. 'Hard' means pushing on the chest to a depth of 5cm to 6cm, and 'fast' means 100-120 compressions a minute.

For more on this, see [bhf.org.uk/handsonly](http://bhf.org.uk/handsonly)

**If you've been trained in CPR and feel confident using your skills, you should still give chest compressions with rescue breaths.**

## What's the difference between a cardiac arrest and a heart attack?

A cardiac arrest is not the same as a heart attack.

A **heart attack** is when the blood supply to the part of the heart is suddenly interrupted, causing damage to the heart muscle. The heart is still pumping blood around the body and the person remains conscious and breathing.

A **cardiac arrest** is when a person's heart suddenly stops pumping blood around their body and they stop breathing or breathing normally. The person will suddenly collapse and lose consciousness. Unless immediately treated this will lead to death within minutes.

Some cardiac arrests happen because of a heart attack. This is because a person who is having a heart attack may develop a dangerous heart rhythm, which can cause a cardiac arrest. A heart attack and a cardiac arrest are both life threatening emergency situations and require immediate help. Call 999 straight away.

For more information about cardiac arrest and how to save a life see [bhf.org.uk/lifesavers](http://bhf.org.uk/lifesavers)