

PHYSIO  
CONTROL

 Restart The Heart



# Sudden Cardiac Arrest

How you can  
make a difference

  
**Arrhythmia Alliance**  
The Heart Rhythm Charity  
[www.hearrhythmcharity.org.uk](http://www.hearrhythmcharity.org.uk)

Registered Charity No. 1107496 ©2011



**Everyday,  
someone like you  
helps save a life  
using an  
Automated  
External  
Defibrillator  
(AED)**

This booklet is intended for people who wish to understand more about Sudden Cardiac Arrest. The information within comes from research and patients' experiences. The booklet offers an explanation of Sudden Cardiac Arrest and how it is treated, alongside true life success stories. Additional information can be sourced at the provided websites.

## Restart The Heart

**Arrhythmia Alliance**, The Heart Rhythm Charity and **Physio-Control** are leading a national campaign **Restart The Heart** to place lifesaving equipment, Automated External Defibrillators, in local communities.

For more information about Restart The Heart and making your community Heart Safe please contact: [info@heartrhythmcharity.org.uk](mailto:info@heartrhythmcharity.org.uk) Tel: 01789 450 787

**Arrhythmia Alliance (A-A)** is a coalition of charities, patient groups, patients, carers, medical groups and allied professionals.

These groups remain independent, however, work together under the **A-A** umbrella to promote timely and effective diagnosis and treatment of arrhythmias.

**A-A** supports and promotes the aims and objectives of the individual groups.

Arrhythmia Alliance patient booklets are reviewed annually. If you have any comments or suggestions please contact A-A.



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**Sudden Cardiac Arrest can strike anyone, any time, anywhere.**

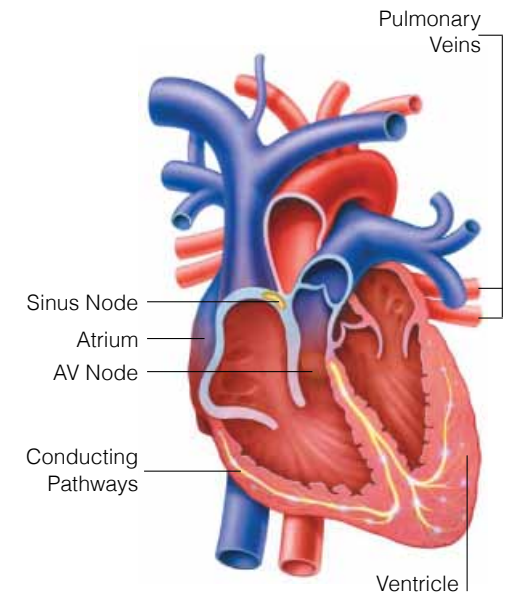


# What is Sudden Cardiac Arrest?

**Sudden Cardiac Arrest (SCA) is a condition in which the heart stops beating suddenly and unexpectedly due to a malfunction in the heart's electrical system. The malfunction that causes SCA is a life-threatening abnormal rhythm; an arrhythmia. The most common arrhythmia is Ventricular Fibrillation (VF).**

When in VF, the heart's rhythm is so chaotic (called "fibrillating") that the heart merely quivers, and is unable to pump blood to the body and brain. Once a heart has entered VF, a Sudden Cardiac Arrest may occur. During SCA a victim first loses his or her pulse, then consciousness and finally the ability to breathe. All of this can happen quickly - in fact, in a matter of seconds...

Sudden Cardiac Arrest strikes without warning. It knows no boundaries, claiming hundreds of thousands of lives around the world every year. People of all ages, fitness levels and walks of life can succumb to it and most do not survive.



# Sudden Cardiac Arrest Facts

- It strikes without warning; **killing 250 people a day** in the UK
- In the UK, less than **5% of victims survive** out of hospital
- It **kills more people** than lung cancer, breast cancer and AIDS combined
- **It can happen to anyone**, even young athletes
- Together with CPR, **defibrillation is the only way** to re-establish the heart's natural rhythm

## Who can be affected by SCA?

Unfortunately, anyone can suffer a Sudden Cardiac Arrest. SCA is unpredictable and can happen to anyone, anytime, anywhere - even teenagers. Risk factors for SCA include a previous heart attack, previous SCA event, fast rhythm in the lower part of the heart, family history of SCA and heart failure. Although pre-existing heart disease is a common cause of cardiac arrest, many victims have never had a heart problem. Among the causes of SCA in younger people (without a previous heart attack or heart failure) are inherited or congenital arrhythmias; these include Wolff-Parkinson-White Syndrome, Long QT Syndrome and Brugada Syndrome.

“SCA IS  
UNPREDICTABLE”

### For further information contact

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[info@heartrhythmcharity.org.uk](mailto:info@heartrhythmcharity.org.uk)

## Is SCA the same as a heart attack?

**SCA is not the same as a heart attack, although a person suffering a heart attack has an increased risk of SCA.**



### SCA

Caused by an abnormal heart rhythm, usually Ventricular Fibrillation.

There is rarely a warning and the patient always loses consciousness.

### Heart Attack

Caused by a blockage in an artery that supplies blood to the heart.

The affected heart muscle then begins to die due to lack of oxygen.

Symptoms include central crushing chest pain, often radiating to arms and jaw. The patient usually remains awake and alert.

## How is SCA treated?

When someone suffers SCA, defibrillation together with CPR (Cardiopulmonary Resuscitation) is the only way to re-establish the heart's natural rhythm.

**CPR alone will not restart a heart following a Sudden Cardiac Arrest.**

**CPR alone = 5% Survival**

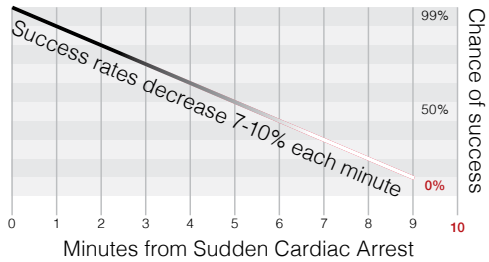
**CPR + Early Defibrillation = 50% Survival**

## What is CPR?

CPR is a temporary measure used to continue a minimal supply of oxygen to the brain and other organs.

CPR is otherwise known as Basic Life Support (BLS) and guidelines are available for out-of-hospital adults, children, and newborns. The Resuscitation Guidelines 2010 are published by the Resuscitation Council (UK) and are available at [www.resus.org.uk](http://www.resus.org.uk)

# Quick action saves lives



1. Cummins, R.O. 1989. From concept to standard-of-care. Review of the clinical experience with automated external defibrillator. Annals of Emergency Medicine 18: 1269-75.



## What is an AED?

An AED (Automated External Defibrillator) is a small, portable device that analyses the heart's rhythm and prompts the user to deliver a shock only if it is needed. Once activated, the AED guides the user through each step of the defibrillation process by providing voice and/or visual prompts.

## Who can use an AED?

Anyone! Putting AEDs in the community; offices, shops, public places, home, etc can dramatically reduce the time from collapse to defibrillation and has been shown to greatly improve survival rates.

- Survival rates drop 7 - 10 percent every minute without defibrillation<sup>1</sup>.
- CPR is a temporary measure that maintains blood flow and oxygen to the brain. It will not return the heart to a normal rhythm. Only defibrillation can return a heart to a normal rhythm.
- Quick action by the first person on the scene can truly make a difference in saving a life.

## Using an AED is simple

AEDs are designed for use by anyone with minimal training and little or no experience.



# RESTART THE HEART

## The Chain of Survival

Worldwide guidelines for response to Sudden Cardiac Arrest include 'The Chain of Survival'. Quick action by the first person on-scene can truly make a difference in saving a life.

The Chain of Survival represents the sequence of four events that must occur quickly to optimise a person's chance of surviving a cardiac arrest.



### Early access to care

Dial 999 immediately!



### Early CPR

Provide Cardiopulmonary Resuscitation to help maintain blood flow to the brain until the next step



### Early defibrillation

Defibrillation is the only way to restart a heart in cardiac arrest



### Early advanced care

After defibrillation, an emergency team provides advanced cardiac care on scene, such as intravenous medications

# Mini-Anne CPR & AED Training Kit

Arrhythmia Alliance is proud to introduce the 'Mini-Anne Self Directed CPR & AED Skills Learning Programme'.

With a fully interactive DVD, the self-directed Mini-Anne CPR & AED Training Kit allows individuals to learn the core skills of CPR and the use of an AED in less than an hour.

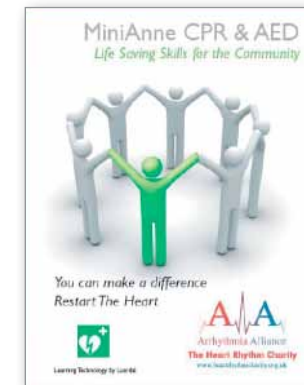
The kit includes the complete set of apparatus needed to simulate the process of performing CPR and using an AED; from identifying a patient in need of medical assistance to the arrival of the emergency services.

The interactive DVD is a revolutionary method of teaching these life-saving skills. It employs a unique 'watch and do' technique where the user can practice CPR (30 compressions: 2 breaths) on a personal manikin (Mini-Anne) and learn how to use an AED.

The Mini-Anne CPR & AED Training Kit is suitable for people of all ages and levels of prior knowledge, providing an invaluable source of AED training and demonstration. The information given is clear, concise and easy to follow and is complimentary to additional AED training that may be supplied (by a medical professional). In addition to this, trained personnel may also benefit from the kit as a means of providing refresher training.

## Pass it on

Those who receive the kit are able to share the programme with their community. By passing the kit on to family members and friends, one 'Mini Anne CPR & AED Training Kit' can go a long way to help make a community 'Heart Safe'.



STAND CLEAR...



Deliver shock...



Continue CPR...

## Purchasing a Mini-Anne CPR & AED Training Kit

The kits are available directly from Arrhythmia Alliance. Prices are available on application.

For more information, or to order your own Mini-Anne CPR & AED Training Kit(s), please contact Arrhythmia Alliance.



## Kick start your heart

Gary Humphries will never forget the time his heart stopped beating for more than two minutes as he played his weekly game of squash. The 49 year old suffered a Sudden Cardiac Arrest in the middle of a game in November 2003 and had no pulse or heartbeat.

# “I ACTUALLY DIED ON THE SQUASH COURT FLOOR”

said Gary of Caerphilly, South Wales.

Fortunately for Gary, he and his squash partner were playing at the Hawthorn Leisure Centre in Rhondda Cynon Taff, where a new type of resuscitation device was available. The LIFEPAK® defibrillator was put on his chest and moments later his heart was beating again.

Gary said: “I felt nothing, no pain or anything. In fact, I remember very little about it. I was clinically dead for 2 minutes.”

“I would not have pulled through but for the defibrillator, and if we hadn’t gone to that particular Leisure Centre I’d be dead.”

7 out of 10 cardiac arrests such as that suffered by Gary happen outside the hospital and only a tiny fraction of victims survive, largely because of the lack of rapidly available resuscitation equipment.

The chances of survival drop by up to 10% for every minute that goes by without treatment.

Less than 5% of people in the UK survive cardiac arrests outside hospital, whereas the rate in Seattle has climbed to 40% since defibrillators have been made available to the public.

Gary was playing against his friend and work colleague, Mike Smith, when he collapsed, and together they campaigned for a defibrillator to be installed at their workplace. Since Gary resumed work in September 2004, General Electric, the company they work for, has invested in an AED.

## Are there treatments for patients who survive SCA?

Patients who survive a SCA or who are diagnosed as being at risk of SCA can be treated in a number of ways. Many will be implanted with an ICD (Implantable Cardioverter Defibrillator), a device like a pacemaker which is placed beneath the skin (usually on the upper chest wall) and has wires connecting it to the heart. This device constantly monitors the heart and will deliver a shock to defibrillate the heart if needed. Being fully implanted and completely automatic, the patient is able to lead a normal life with few limitations, safe in the knowledge that the ICD will respond immediately if required (see the A-A leaflet on ICD/CRT Patient Information). Some patients may only need to take medication alone, or in addition to an ICD. Occasionally some causes of SCA such as WPW (see the A-A leaflet on Wolff-Parkinson-White) can be treated by a curative procedure whereby the additional wiring is destroyed by a small burn inside the heart, using a technique known as 'Catheter Ablation' (see the A-A leaflet on Catheter Ablation).

All patients who have survived a SCA should be reviewed by a cardiac electrophysiologist (a specialist in heart rhythm disturbances) in order to determine how best to prevent further events and to consider whether family members need to be screened.

## Useful websites

A list of useful sites can be found at: [www.heartrhythmcharity.org.uk](http://www.heartrhythmcharity.org.uk). This list is not exhaustive and it is constantly evolving. If we have excluded anyone, please accept our sincerest apologies and be assured that as soon as the matter is brought to the attention of the Arrhythmia Alliance, we will quickly act to ensure maximum inclusiveness in our endeavours.

## Further reading

The following list of Arrhythmia Alliance patient booklets are available to download from our website or to order please call:  
+44 (0)1789 450 787

- Arrhythmia Checklist - Could your heart rhythm problem be dangerous?
- Atrial Fibrillation (AF)
- AF Checklist
- Blackouts Checklist
- Bradycardia (Slow Heart Rhythm)
- Brugada Syndrome
- CRT/ICD
- CRT Patient Information
- Catheter Ablation
- Drug Treatment for Heart Rhythm Disorders (Arrhythmias)
- Electrophysiology Studies
- Exercising with an ICD
- FAQs
- Genetic Testing for Inherited Heart Disorders
- Highlighting the Work of Arrhythmia Alliance
- ICD
- Implantable Device Recall
- Implantable Loop Recorder
- Long QT Syndrome
- National Service Framework Chapter 8
- CRT/Pacemaker
- Pacemaker
- Palpitation Checklist
- Remote Monitoring for ICDs
- Sudden Cardiac Arrest
- Supraventricular Tachycardia (SVT)
- Tachycardia (Fast Heart Rhythm)
- Wolff-Parkinson-White

Please feel free to discuss any concerns with your doctor, physiologist or specialist nurse, at any time.

# You can make a difference

Please help us to improve services for all those affected by arrhythmias and to save lives by making a donation today.

Please complete the donation form opposite and return to:

PO Box 3697,  
Stratford upon Avon,  
CV37 8YL

or visit:  
[www.hearrhythmcharity.org.uk](http://www.hearrhythmcharity.org.uk)  
and click the Donate icon.



Membership is free to individuals, however, if you would like to make a **DONATION** please complete and return.

Make me a member

Tick here

I would like to make a donation to A-A and enclose

£

I have made a donation via PAYPAL at [www.arrythmiaalliance.org.uk](http://www.arrythmiaalliance.org.uk) to the sum of

£

I have arranged a standing order from my Bank/Building Society Account (min amount £10p.a.)

£

Please tick the box if you agree to **Gift Aid** your subscription/donation

Tick here

## Gift Aid

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Address

Postcode

Please allow Arrhythmia Alliance to claim an extra 28p for every £1 you donate at no cost to you. I want Arrhythmia Alliance to treat all donations I have made since 6 April 2000, and all donations I make from the date of this declaration until I notify you otherwise, as Gift Aid donations. I currently pay an amount of income tax and/or capital gains tax at least equal to the tax that Arrhythmia Alliance reclaims on my donations in the tax year. I may cancel this declaration at any time by notifying A-A. I will notify A-A if I change my address.

Please note full details of Gift Aid tax relief are available from your local tax office in leaflet IR 65. If you pay tax at a higher rate you can claim further tax relief in your Self-Assessment tax return.

## Standing Order Authority

My Bank

Bank Address

Please Pay: A-A, Account: **02685818**  
Sort Code: **30-98-26**,  
Lloyds TSB Plc, 22 Bridge St, Stratford upon Avon,  
CV37 6AG

The Sum of £/€/\$:      On (1st Date):    /    / 20\_\_

And after this, every: Month / Year (delete)

Account No.

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Signature

Date

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Card type

Card Number

Name on Card

Expiry date

Amount of £/€/\$:

Address

Please hand this form in to your Bank



# Glossary

## **AED**

Automated External Defibrillator; a portable device used to shock the heart if it is needed

## **BLS**

Basic Life Support

## **CPR**

Cardiopulmonary Resuscitation; a temporary measure used to continue a minimal supply of oxygen to the brain and other organs

## **Defibrillation**

The re-establishment of the heartbeat

## **SCA**

Sudden Cardiac Arrest; when the heart stops beating suddenly and unexpectedly without warning

## **VF**

Ventricular Fibrillation; a dangerously fast heart rhythm which causes the heart to stop pumping blood effectively. This rhythm needs a shock to stop it and return the heart back to a normal rhythm. Sudden Cardiac Arrest can soon follow if the rhythm is not treated quickly with a shock

## **VT**

Ventricular Tachycardia; a fast heart rhythm which can cause collapse or degenerate into VF

## **ICD**

Implantable Cardioverter Defibrillator; a device which functions like an AED, but is small enough to be implanted in a patient to allow automatic defibrillation at any time

## **SVT**

Supraventricular Tachycardia; a fast rhythm that starts in the upper chambers of the heart; less commonly associated with SCA

Return to:  
PO Box 3697,  
Stratford upon Avon,  
CV37 8YL

## Contact

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Please remember these are general guidelines and individuals should always discuss their condition with their own doctor.

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