

Sudden Cardiac Death  
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The National Heart Lung and Blood Institute of the United States defines Sudden Cardiac Death (SCD) as an unexpected and sudden condition that occurs without prior notice leading to abrupt stopping of the heart beat and termination of blood flow into the brain and other vital organs leading to immediate death unless the condition is reversed immediately.

(<http://www.nhlbi.nih.gov/health/health-topics/topics/scda>)

The causes for sudden cardiac death may vary. By definition, they are all related to the heart, but they are not necessarily all caused by a heart attack and should be differentiated from a heart attack.

A heart attack may cause sudden cardiac death but not all sudden cardiac deaths are caused by a heart attack.

Many notable people who have died of sudden cardiac death bring to our memory important individuals who have left their mark on the history of the region and the world.

The late Zaha Hadid, one of the world's most respected and greatest architect recently died of sudden cardiac death. Her death sent waves of shock in the world of engineering, architecture, and art.

Recently, the head of the Jordan Psychiatry Association died of sudden cardiac death.

Few years ago, the highly respect Jordanian politician, diplomat and former career soldier Al Shareef Zaid Ben Shaker died of sudden cardiac Death.

The late Jamal Abdul Nasser, President of Egypt died in 1970 of SCD.

Few months ago, in Atlanta, the grandson of former President Jimmy carter died of sudden cardiac death

In the small Arab-American community of Atlanta, in the span a year sudden cardiac deaths caused the loss of lives of 2 young Arab American males. This event led physicians in the community to hold a series of educational programs

on warning signs and risk factors leading to premature cardiac diseases and sudden cardiac deaths conducted by senior diagnostic cardiologists, cardiac electro-physiologists, interventional cardiologists and cardiac surgeons.

Although the exact incidence of Sudden Cardiac Death in the Middle East and North Africa is not known, in Jordan 36% of deaths of people younger than 60 years of age is attributed to cardiovascular diseases according to the Director of Jordan's Non-Communicable Disease Department at the Ministry of Health as reported in Jordan Times on 10/27/2015.

### **Magnitude of the Problem**

According to reports published by the American Heart Association 420,000 Americans every year have Out of Hospital Cardiac Arrest (OHCA), with only 10% of those surviving their cardiac arrests. The use of Automated External Defibrillators (AEDs) in a report on 19,300 witnessed cardiac arrest where patients had dysfunctional rhythms (ventricular tachycardia or ventricular fibrillation) in which AED were used led to 31 % survival rate.

*(10/26/2015 AHA Releases 2015 Heart and Stroke Statistics | Sudden Cardiac Arrest Foundation)*

In contrast, in a multi-national Asia-Pacific prospective study on OFCA on 66,780 cases, with 41,000 cases presumably being of cardiac origin, ages varied from as young as 49.7 years to 71.7 years.

Less than 1% of patients received bystander defibrillation. Overall hospital survival varied between different centers between 0,5% and 8,5%. Cumulative reported survival with good neurological function was as low as 1.6% to 3%.

These two studies point to the value of AEDs and education of their use in saving lives of SCD patients

*(Ong ME, et al. Resuscitation. 2015. 10/28/2015 Outcomes for out-of-hospital cardiac arrests across 7 countries in Asia: The Pan Asian Resuscitation Outcomes Study (PAROS)).*

Children are also at risk of having sudden cardiac arrest, with 10,200 pediatric cases of OHCA reported annually. Sudden cardiac arrest is a highly fatal problem. With every minute without active Cardio Pulmonary Resuscitation (CPR) the risk of death increase by 7-10%.

Sudden Cardiac Deaths has received high visibility in the past, particularly when happened to athletes. In athletes, the incidence of SCD, in a study performed in

the State of Minnesota between 1993 and 2012, was rather low at 0.24 per100,000 athlete-year.

*(American Heart Association Heart Disease and Stroke Statistics 2015 Update  
(<http://circ.ahajournals.org/content/early/2014/12/18/CIR.000000000000152>)*

## **Causes of Sudden Cardiac Deaths**

Coronary artery disease (CAD) is the most common cause of sudden cardiac death with up to 80% of such cases being attributed to CAD

Other causes of sudden cardiac deaths include:

Rhythm disturbance such as Long QT Syndrome, Short QT Syndrome, Timothy Syndrome, WPW Syndrome, Burgada Syndrome, and Catecholaminergic polymorphic Ventricular Tachycardia.

Additional causes of sudden cardiac death include:

- Acute Aortic Dissection, a rapid tear in the walls of the aorta leading to rupture and massive bleeding and or tear that extends into the coronary arteries or into the arteries of the brain causing loss of blood supplies to vital organs causing sudden death.
- Massive Pulmonary Embolism, caused by the sudden travel of large blood clots formed in large leg and lower pelvis veins into the heart and lungs and interrupting flow of blood from right heart into the left heart through the lungs thus causing the patient to effectively suffocate is another cause of sudden death.

Some observers would argue that sudden cardiac death in certain patients may be “not so sudden” but in fact an entity that had prior signs or was associated with known risk factors in the patient but went unrecognized or intentionally simply ignored for one reason or another.

## **Risk Factors for Sudden Cardiac Deaths**

- Family history of heart disease
- Prior patient history of heart disease
- Personal or family history of cardiac arrest
- Abnormal heart rhythms
- Congenital heart defects
- Congestive heart failure

- Illegal drug use, such as cocaine
- Use of amphetamines
- Unrecognized or untreated heart infection
- Stress

### **Profile of the Individual at Risk**

- Older age (peaks at ages of 45-75 years of age)\*\*
- Male (men 3x more than women)\*\*
- Hypertensive
- Elevated Cholesterol
- Diabetic
- Smoker
- Does not Exercise
- Obese
- Has history of heart disease or has unrecognized heart disease

*\*\* (Neuspiel DR, Kuller LH. Sudden and unexpected natural death in childhood and adolescence. JAMA. 1985;254:1321–1325.)*

### **What to do to become heart-healthy?**

- Regular exercise
- Control weight
- No smoking
- Manage Cholesterol, Blood Pressure and Blood Sugar
- See your doctor regularly

### **What to do when you face a SCD?**

- Recognize the event as a life threatening “sudden cardiac death”.
- Call 911
- Start CPR
- Defibrillate if an Automated External Defibrillator (AED) available
- Initiate Advanced Life Saving Support
- Transport and Provide Definitive Care

### **Public Health Issues and Recommendations in order to reduce cardiac disease, unexpected cardiac events and Sudden Cardiac Deaths**

1. Initiate CPR Education in High Schools
2. Institute placement of AEDs in Public Places and educate the public on their use.
3. Educate the public on early signs and symptoms of heart disease
4. Promote Smoke-free environments
5. Stress importance of blood pressure, cholesterol and diabetes control in at risk population
6. Stress role of weight control
7. Encourage regular daily exercise for people of all ages.
8. Physical check-ups