



## FACT SHEET: Atherosclerosis and SCA

### ABOUT ATHEROSCLEROSIS

- Atherosclerosis is the progressive buildup of plaque – deposits of fat, calcium and other substances – in the walls of your arteries.
  - Its name comes from the Greek words *athero* (meaning gruel or paste) and *sclerosis* (hardness).<sup>i</sup>
- For many people, the disease may start early in life. As we get older, arterial plaque can build up and restrict blood flow. Over time this disease can eventually clog your arteries, limiting or blocking blood flow.
- There are two types of plaque that can form in the artery walls:
  - **Stable** plaque has a thick fibrous covering. This type of plaque grows slowly, progressively decreasing the lumen of the artery. Eventually this reduces blood flow to the brain, heart, or other parts of the body enough to cause organ dysfunction, and often associated pain.
  - **Unstable** plaque is more dangerous. Because it has a thin cap, these plaques rupture, causing a sudden complete or severe reduction in blood flow. When this happens in a coronary artery, the result is a heart attack (myocardial infarction) or sudden cardiac arrest (from ischemia related cardiac dysrhythmia such as ventricular fibrillation).
- Whether the plaque in your arteries is stable or unstable, all plaque contains a lipid core – fatty deposits made of cholesterol, cells and a variety of other substances.

### CONSEQUENCES

- Plaque tends to build up slowly in the arteries and atherosclerosis may have no symptoms until the artery becomes severely narrowed or completely blocked. The consequences of atherosclerosis can be severe and far-reaching, including:
  - **Coronary artery disease** (CAD) can result when blood flow is restricted to parts of the heart. Restricted blood flow may cause chest pain (also called angina), heart attack, cardiac arrhythmias, and sudden cardiac death. Another complication is heart failure from weakened heart muscles.
  - **Stroke and transient ischemic attack** (TIA) can occur if blood supply is blocked to part(s) of the brain. Stroke can be very serious, leading to permanent disability or death. TIA has the same symptoms as stroke, but they pass within 24 hours of onset. It may not be as serious as stroke, but it is considered a warning for future attacks and stroke.
  - **Peripheral arterial disease** (PAD) occurs when blood flow to the arms or legs is limited. PAD can cause pain and numbness and, if left unchecked, can result in tissue death, or gangrene, requiring amputation of the affected part of the limb.

### RISK FACTORS and TREATMENT

- Because atherosclerosis usually has no symptoms until the artery becomes completely blocked or severely narrowed, it is important to work with a physician to identify controllable and uncontrollable risk factors for atherosclerosis.
- Controllable risks factors include:
  - High blood pressure



## Sudden Cardiac Arrest Association

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- High LDL cholesterol
- Smoking
- Lack of physical activity
- Obesity
- Poor diet
- Diabetes
- Uncontrollable risk factors include family history and age.

In addition to modifying diet, exercise and other lifestyle habits that raise the risk of atherosclerosis, there are numerous pharmaceutical therapies that are prescribed to patients after blood tests identify elevated cholesterol and/or blood pressure levels. Patient non-compliance with prescribed drug therapies – that is, patients who decline to take the drugs or take them in a sporadic manner – poses an additional lifestyle habit that contributes to heart disease.

### PREVALENCE and LINK TO SCA

- The National Heart, Lung and Blood Institute estimates that two out of three Americans will have some degree of plaque build-up in their arteries by the time they reach age 35.
- Atherosclerosis is usually a slow and progressive condition that often causes coronary artery disease (CAD).
- The American Heart Association estimates that nearly 800,000 Americans have their first heart attack each year and nearly 500,000 Americans will have a recurring attack – many of these events linked to coronary artery disease.
- A previous heart attack and coronary artery disease are leading risk factors for sudden cardiac arrest (SCA) which kills nearly 300,000 Americans each year. In some cases, the cardiac arrest occurs simultaneous or in close sequence with the heart attack event. In other cases, damage to the heart from the heart attack leads to an electrical disruption and SCA at a later time.

### RECOMMENDED ACTION

In addition to proper diet and exercise routines, patients should always share any family history of coronary artery disease, high blood pressure and/or elevated cholesterol with their physician. In addition, when drug therapy is prescribed, patients should take medication consistently per the instructions of their physician.

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*The Sudden Cardiac Arrest Association's mission is to prevent loss of life from sudden cardiac arrest. We seek to increase awareness, encourage training for immediate bystander action, increase public access to defibrillation and promote the use of available medical devices and therapies, principally, implantable cardioverter defibrillators (ICD). SCAA members are the beneficiaries of improved science and medical technology, coupled with the wisdom and caring of thousands of physicians. For more information, please visit us at [www.suddencardiacarrest.org](http://www.suddencardiacarrest.org)*