

## Risk Factors of Pediatric Atherosclerosis and its Treatment

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### DESCRIPTION

The development of fat and cholesterol in the airways causes atherosclerosis, which causes heart disease, stroke, and cardiac arrest. Atherosclerosis can be diagnosed in youngsters just like it is in adults. Arteries are muscular tubes that carry oxygen-rich blood from the heart to all of the body's tissues. When the tubes narrow, they become less effective in transporting blood throughout the body, resulting in less blood reaching the tissues. Children with atherosclerosis are more likely to experience sudden cardiac arrest, excessive cholesterol, and strokes. The condition is usually not identified until the adolescent years (12-17 years of age). Most children's artery alterations are minor and may be avoided by leading a healthy lifestyle.

Although the terms arteriosclerosis and atherosclerosis are sometimes used interchangeably, there is a distinction between the two. Arteriosclerosis is a condition in which the arteries that carry oxygen and nutrients from someone's heart to the rest of a child's body thicken and stiffen, reducing blood flow to various organs and tissues. Healthy arteries are flexible and elastic, but the walls of human arteries can stiffen over time, a disease known as artery hardening. Atherosclerosis is a kind of arteriosclerosis that has a particular cause. The buildup of lipids, cholesterol, and other chemicals in and on the walls of the arteries is known as atherosclerosis. Plaque is the term for this accumulation. As a result of the plaque, the arteries may contract, restricting blood flow. Cholesterol can potentially rupture, resulting in a blood clot. The hardening and constriction of child arteries caused by cholesterol plaques lining the artery over time are known as atherosclerosis. It can obstruct blood flow, putting child health in danger. Arteriosclerosis, or atherosclerotic cardiovascular disease, is another name for it. It's the most significant reason for heart attacks, strokes, and peripheral arterial disease, all of which are grouped as cardiovascular disease.

### Causes

Atherosclerosis is a chronic, slow-moving illness that can start in childhood. Although the specific etiology of atherosclerosis is

uncertain, it is thought to begin with injury or damage to the inner layer of an artery. The following factors may contribute to the damage: blood pressure that is too high, cholesterol levels are high, stroke, etc. At the damage site, fatty deposits (plaque) formed of cholesterol and other cellular products solidify over time, restricting their arteries. Organs and tissues related to clog arteries receive insufficient blood to operate correctly.

Atherosclerosis normally doesn't manifest itself until people are in their forties or fifties. When the constriction gets severe, blood flow might be cut off, causing agony. Blockages can also burst at any time. Blood clots inside an artery at the bursting area as a result of this.

### Risk factors

These circumstances are referred to as risk factors and the number of factors a person has increased their chances of having coronary artery disease. Most risk factors can be controlled, and cardiovascular disease can be avoided or delayed - which also include high cholesterol and Low-Density Lipoprotein (LDL) in the blood, high blood pressure, diabetes mellitus, tobacco smoke, obesity, sedentary lifestyles, and age. A family history of heart disease is another risk factor that is difficult to control.

Blood pressure is deemed high if it remains at or above 140/90 mmHg for an extended length of time. Smoking damages and tightens blood vessels raises cholesterol levels and raises blood pressure; in addition, smoking prevents enough oxygen from reaching the body's tissues. Insulin resistance is a condition in which the body's own insulin is unable to transfer blood sugar into cells where it can be utilized. Insulin resistance arises when the body's own insulin is unable to do so adequately. Diabetes is a condition in which the body's blood sugar levels are abnormally high due to a lack of insulin production or improper insulin utilization.

### Treatment

Lifestyle modifications, including eating a balanced diet and exercising, are the first line of defense against atherosclerosis, and they may be all people need. However, medicines or surgical treatments may be required in rare cases.

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A more aggressive approach to treating atherosclerosis is sometimes required. The doctor may consider one of the following surgical treatments if people have significant symptoms or a blockage:

**Endarterectomy:** Cholesterol accumulation on the walls of a restricted artery may require surgical removal. Carotid

Endarterectomy is an operation that involves the removal of arteries in the neck (the carotid arteries).

**Coronary artery bypass surgery:** The doctor uses a healthy blood vessel from another region of the body to build the pass all around vascular system, diverting blood flow. A graft consisting of synthetic material is often used as a bypass.