

# Anemia as a Risk Factor for Cardiovascular Disease

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## DESCRIPTION

Anemia, a condition characterized by a decrease in the number of red blood cells or the amount of hemoglobin in the blood, affects millions of people worldwide. While anemia is often associated with fatigue and weakness, it is important to recognize its potential impact on cardiovascular health. Recent research has highlighted the link between anemia and an increased risk of developing cardiovascular disease.

### Anemia and Cardiovascular Disease

**Prevalence of anemia:** Anemia is a global health issue, affecting individuals of all ages and backgrounds. It is estimated that approximately 1.62 billion people worldwide live with anemia, making it a significant public health concern. The most common causes of anemia include iron deficiency, chronic inflammation, chronic kidney disease, and vitamin deficiencies.

### Anemia as a Risk Factor for Cardiovascular Disease

Multiple studies have shown that anemia is an independent risk factor for the development and progression of cardiovascular disease. Anemia is associated with an increased incidence of various cardiovascular conditions, including coronary artery disease, heart failure, stroke, and even mortality from cardiovascular causes. Anemia represents a significant risk factor for the development and progression of cardiovascular disease. The connection between anemia and cardiovascular health is multifaceted, involving reduced oxygen delivery, increased cardiac workload.

### Mechanisms Linking Anemia and Cardiovascular Disease

**Reduced Oxygen Delivery:** Anemia leads to a decrease in the oxygen-carrying capacity of the blood. With lower levels of hemoglobin, tissues and organs, including the heart and blood vessels, may not receive an adequate supply of oxygen. This lack of oxygen can contribute to the development and progression of cardiovascular disease.

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**Increased cardiac workload:** To compensate for the decreased oxygen-carrying capacity, the heart works harder by pumping more blood to meet the body's oxygen demands. This increased workload can lead to cardiac remodeling, strain the heart muscle, and ultimately contribute to the development of heart failure.

**Impaired endothelial function:** Anemia has been shown to impair endothelial function, which refers to the health and function of the cells lining the inner walls of blood vessels. Endothelial dysfunction plays a key role in the development of atherosclerosis and other vascular abnormalities, increasing the risk of cardiovascular events.

**Hemodynamic changes:** Anemia can cause changes in blood viscosity and flow dynamics, resulting in alterations in blood pressure regulation and increased shear stress on blood vessels.

### **Clinical Implications and Management**

**Screening for anemia:** Considering the potential implications

for cardiovascular health, it is important to include anemia screening as part of routine clinical assessments, especially in individuals at higher risk for cardiovascular disease. Screening should involve a thorough evaluation of red blood cell count, hemoglobin levels, and other relevant hematological parameters.

**Treating underlying causes:** Anemia management should focus on addressing the underlying causes. Depending on the specific etiology, treatment may involve iron supplementation, nutritional interventions, erythropoiesis-stimulating agents, or other targeted therapies to correct the anemia and optimize cardiovascular health.

**Multidisciplinary approach:** Given the complex interplay between anemia and cardiovascular disease, a multidisciplinary approach involving collaboration between hematologists, cardiologists, and primary care physicians is essential. This approach ensures comprehensive evaluation, individualized treatment plans, and ongoing monitoring to mitigate the risks associated with anemia and its impact on cardiovascular health.