

Congestive Heart Failure: What Is It?

Congestive Heart Failure (CHF): Blood circulation is inadequate to meet tissue needs.

- Usually occurs gradually over many years, due to a weakening of the heart muscle as individual cells die or malfunction. The following factors often contribute to the development of CHF.
 - **Coronary atherosclerosis:** Clogging of coronary arteries with fatty buildup; leads to hypoxia of myocardium and therefore weaker contractions.
 - **Persistent high blood pressure:** Enhanced afterload begins and can lead to an elevated ESV (thus, lower stroke volume and cardiac output). The heart muscle hypertrophies to try and keep up with the workload, but eventually begins to weaken.
 - **Multiple myocardial infarcts:** Dead heart cells are replaced with scar tissue and heart weakens.
 - **Dilated cardiomyopathy (DCM):** ventricles enlarge as the myocardium becomes fat-filled.

Hypertension “Silent Killer”: High blood pressure damages blood vessels

- May lead to inflammation and atherosclerosis.
 - Atherosclerosis is often treated with an angioplasty.
- High afterload in the heart from the hypertension gradually weakens the heart over time.
- Damages organs, notably the heart, the kidneys, and the eyes.

Heart Attack (Myocardial Infarction—MI)

- Heart stops beating effectively and muscle cells become ischemic.
- Sometimes they cells die during the ischemic event.
- Dead cells are replaced with collagen fibers (scar tissue).
- The heart loses some of its flexibility and ability to have a high preload.