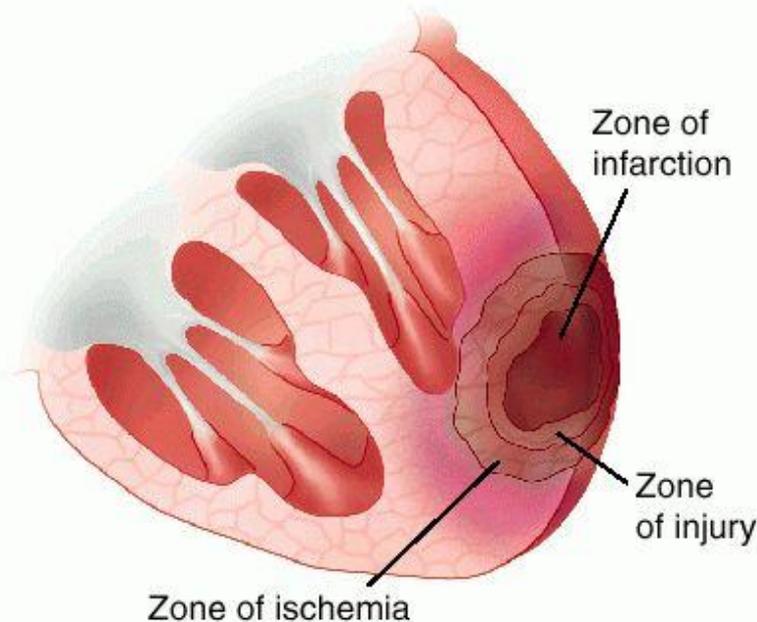


# CORONARY ARTERY DISEASE

---

- **Coronary artery disease (CAD)**, also known as **ischemic heart disease (IHD)**, is a group of diseases that includes: stable angina, unstable angina, myocardial infarction, and sudden cardiac death. Limitation of blood flow to the heart causes ischemia (cell starvation secondary to a lack of oxygen) of the myocardial cells.

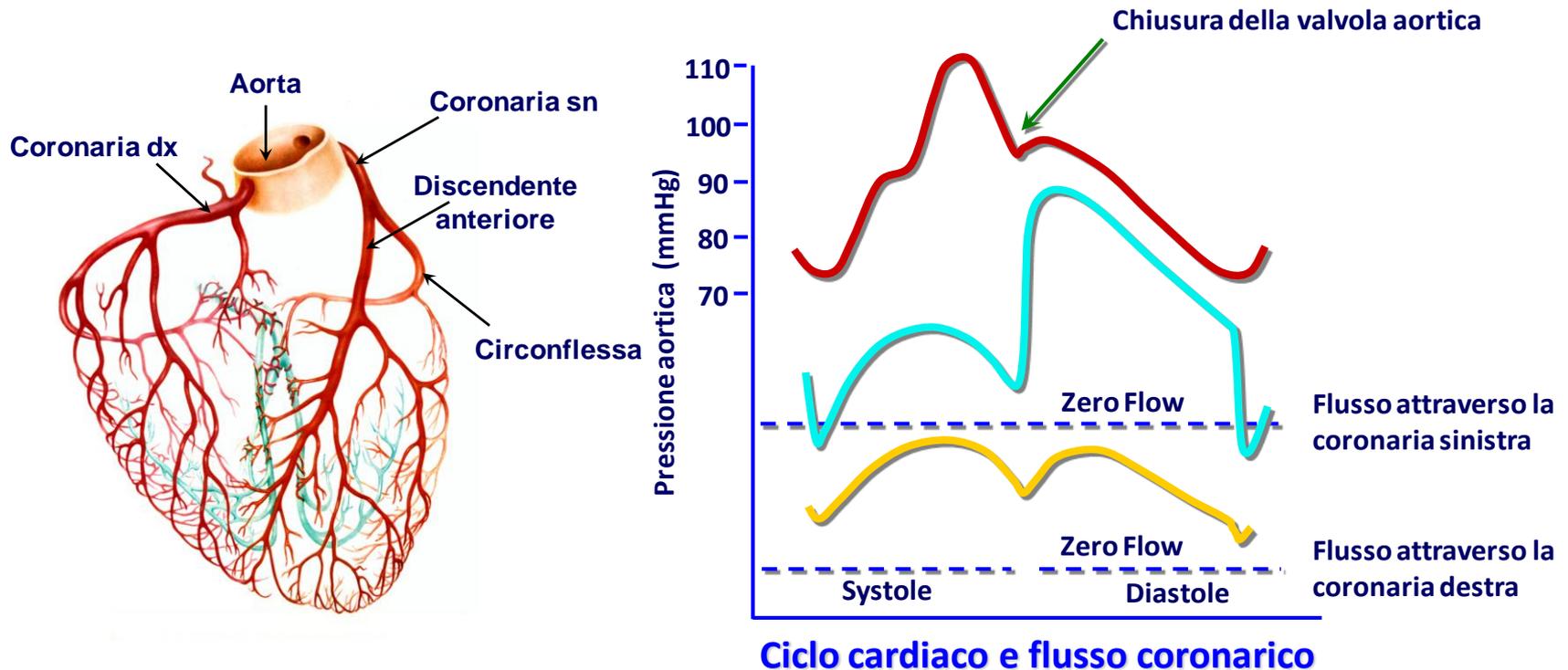


Myocardial cells may die from lack of oxygen and this is called a myocardial infarction (commonly called a heart attack). It leads to heart muscle damage, heart muscle death and later myocardial scarring without heart muscle regrowth. Chronic high-grade stenosis of the coronary arteries can induce transient ischemia which leads to the induction of a ventricular arrhythmia, which may terminate into ventricular fibrillation leading to death

# CORONARY ARTERY DISEASE

Two main factors underlying CAD are represented by:

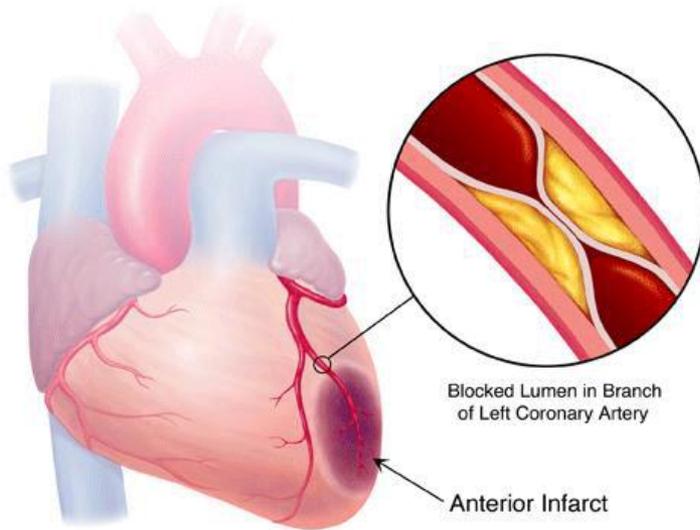
- **REDUCED CORONARY FLOW (oxygen supply)**
- **INCREASED MYOCARDIAL OXYGEN DEMAND ( $MVO_2$ )**



Since myocardial  $O_2$  request is high (approximately 70%), the only compensatory mechanism to meet and increased  $O_2$  need is **a proportional increase on coronary blood flow**, (caused by a coronary vasodilation)

# CORONARY ARTERY DISEASE

---



Several epidemiological studies of the last 30 years have characterized the most important risk factors associated to CAD.

**Coronary atherosclerosis** is by far the most frequent cause of coronary artery disease.

- Male gender
- Increasing age
- Hypercholesterolemia
- Hypertension
- Cigarette smoking
- Diabetes mellitus
- Obesity
- Sedentary lifestyle
- Genetic factors
- Family history of premature ischemic heart disease (male <55 yrs of age, female <65 yrs)

# MEDICAL TREATMENT for CORONARY ARTERY DISEASE

---

## Anti Anginal DRUGS

- Nitrovasodilators
- Beta-blockers
- Calcium-channel blockers

+

## Heart attack DRUGS

- Anti-aggregants (antiplatelet drugs)
- Anticoagulants
- Thrombolytics (fibrinolytics)

# AHA-ACC Guidelines for secondary CAD prevention

smoking	quit
Arterial blood pressure	<140/90 <130/85 if FR or organ damage
<b>Lipid control</b>	Cholesterol-LDL<100 mg/dl
Physical activity	At least 30 m' daily, 3-4 times a week
Bady weight	BMI between 18,5 and 24,9 kg/m2
<b>Glycaemic control</b>	HbA1c < 7%
<b>Antiaggregants</b>	ASA 75-325 mg/die (clopidogrel or warfarin)
ACE-inhibitor	All patients post-IMA
Beta-blockers	All patients post-IMA



→ **Antidyslipidemic drugs**



→ **Antidiabetic drugs**