# CIRCULATORY FAILURE

- The main function of circulation is perfusion of organs

## BP = CO x TPR

# CIRCULATORY FAILURE

$$BP = CO \times TPR$$

**CO decrease:**

- ✓ lower volume in circulation – lower venous return

decrease of filling pressure and by Frank-Starling principle decrease of CO

Clinical symptoms:  vasomotor syncope

Therapy: infusion of physiological solution

# CIRCULATORY FAILURE

$$BP = CO \times TPR$$

## CO decrease:

✓ **vasodilatation of venous system - sudden periphery vasodilatation**

**Clinical symptom: vasovagal syncope**

# CIRCULATORY FAILURE

$$BP = CO \; x \; TPR$$

**CO decrease:**

✓ **lower pumping function of the heart**

**Started reflex reaction on periphery vessels and tissues**

**Resultes: cardiogenic shock**
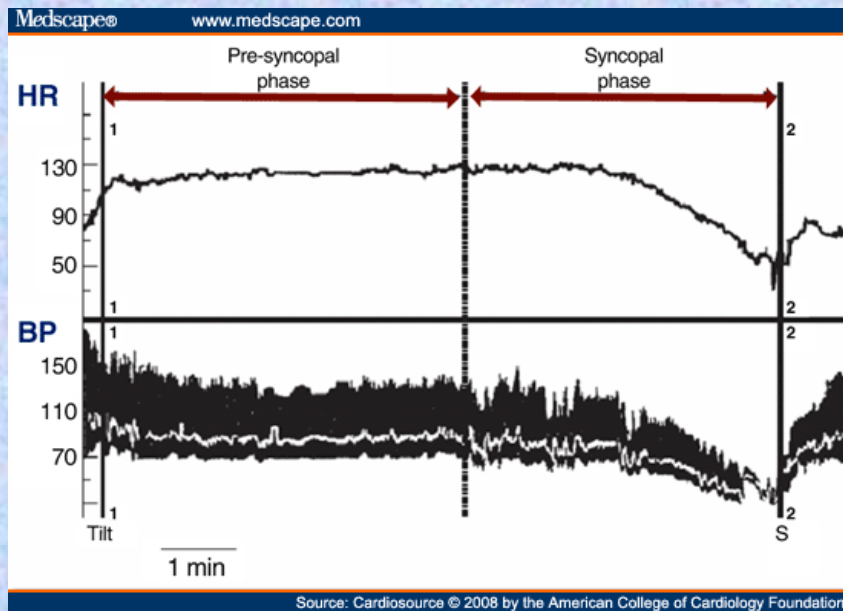
# CIRCULATORY FAILURE

$$BP = CO \ x \ TPR$$

## TPR decrease:

- ✓ toxic vasodilatation (by histamin-allergy)
- ✓ Dysbalance of autonomy nervous system – sympathetic part – decrease of sympathetic tone of vessels
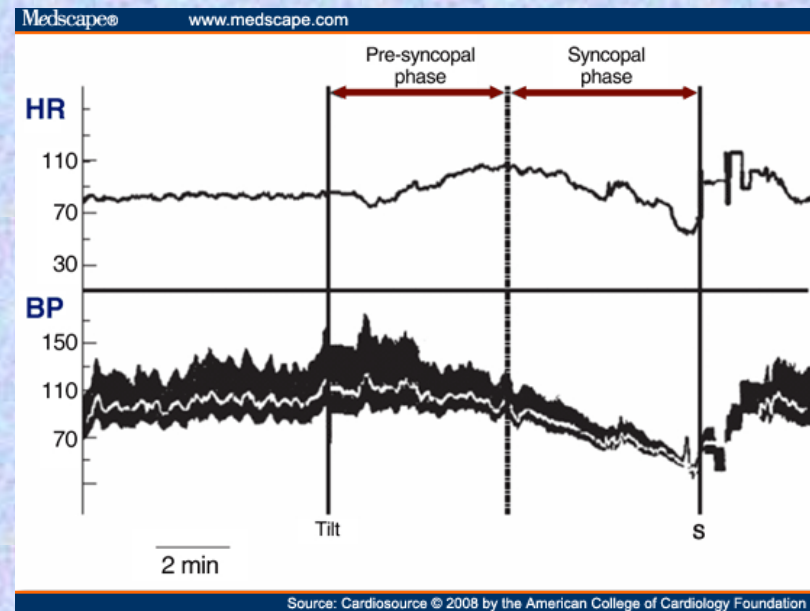
# NYHA classification

| Functional Capacity | Objective Assessment |
| --- | --- |
| Class I | Patients with cardiac disease but without resulting limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitations, dyspnea, or anginal pain. |
| Class II | Patients with cardiac disease resulting in slight limitation of physical activity. They are comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea, or anginal pain. |
| Class III | Patients with cardiac disease resulting in marked limitation of physical activity. They are comfortable at rest. Less than ordinary activity causes fatigue, palpitation, dyspnea, or anginal pain. |
| Class IV | Patients with cardiac disease resulting in inability to carry on any physical activity without discomfort. Symptoms of heart failure or the anginal syndrome may be present even at rest. If any physical activity is undertaken, discomfort is increased. |

**Source:** Adapted from New York Heart Association, Inc., *Diseases of the Heart and Blood Vessels: Nomenclature and Criteria for Diagnosis,* 6th ed. Boston, Little Brown, 1964, p. 114.

# Vasovagal syncope



Classic



Dysauthonomic