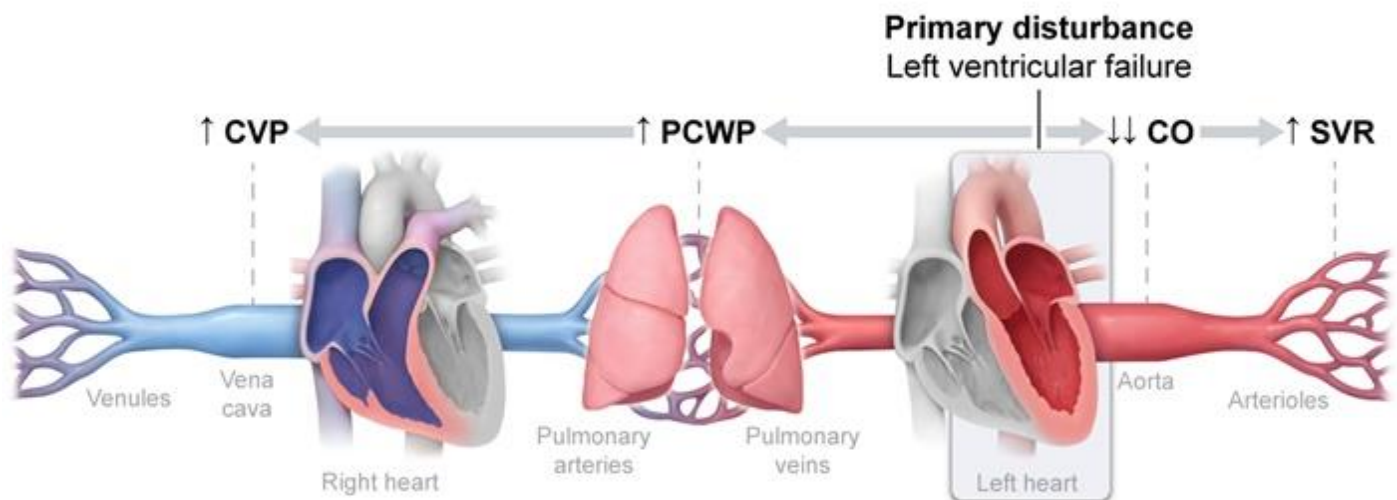


Shock Supplement

Hemodynamic measurements in shock			
Parameter	Hypovolemic shock	Cardiogenic shock	Septic shock
Right atrial pressure (preload)	↓	↑	Normal to slight ↓
Pulmonary capillary wedge pressure (preload)	↓	↑	Normal to slight ↓
Cardiac output (pump function)	↓	↓↓	↑
Systemic vascular resistance (afterload)	↑	↑	↓

Hemodynamic measurements in shock

Cardiogenic shock

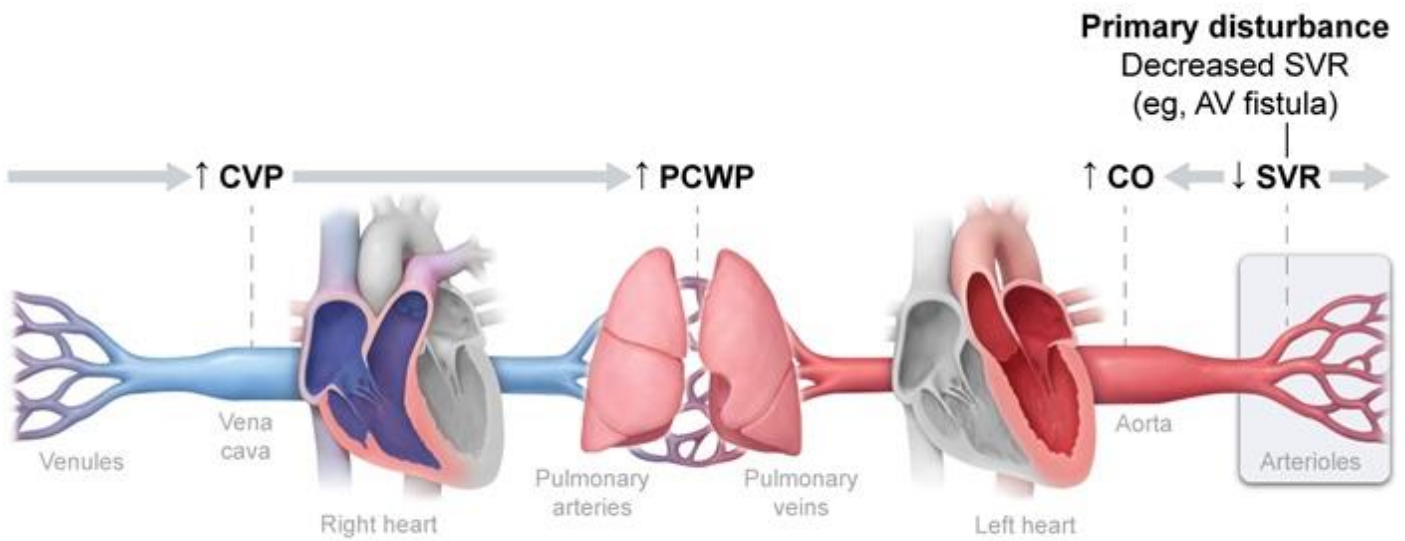


CO = cardiac output; CVP = central venous pressure;
PCWP = pulmonary capillary wedge pressure; SVR = systemic vascular resistance.

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Cardiogenic shock

High-output heart failure

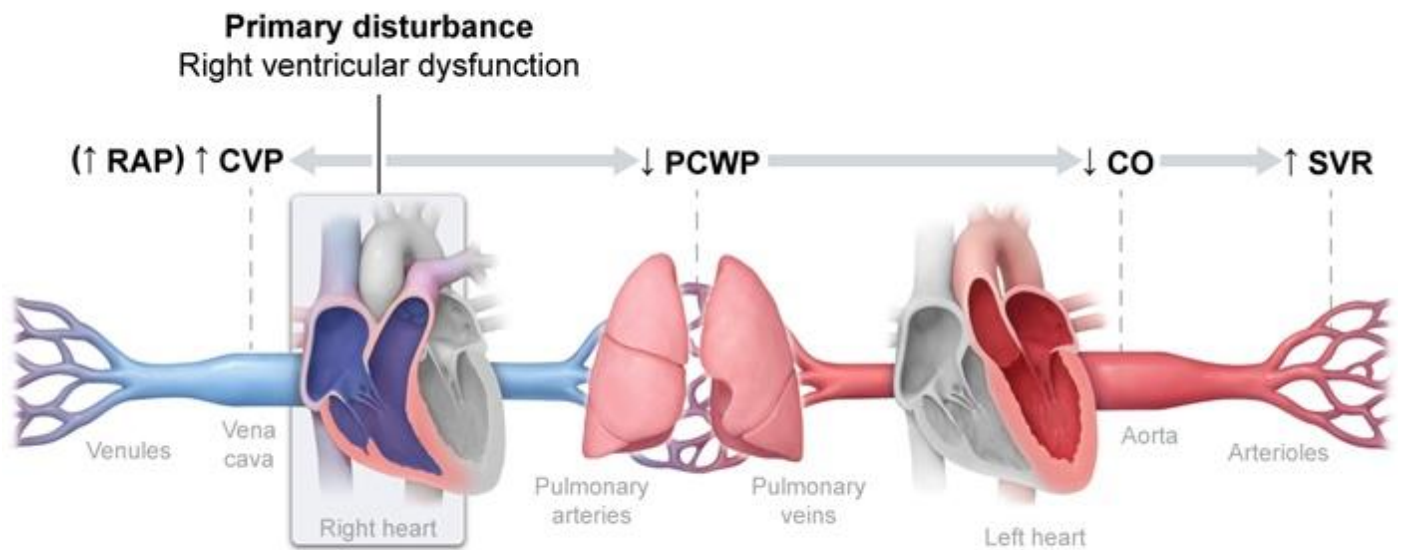


AV = arteriovenous; CO = cardiac output; CVP = central venous pressure; PCWP = pulmonary capillary wedge pressure; SVR = systemic vascular resistance.

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High-output heart failure

Right-sided heart failure

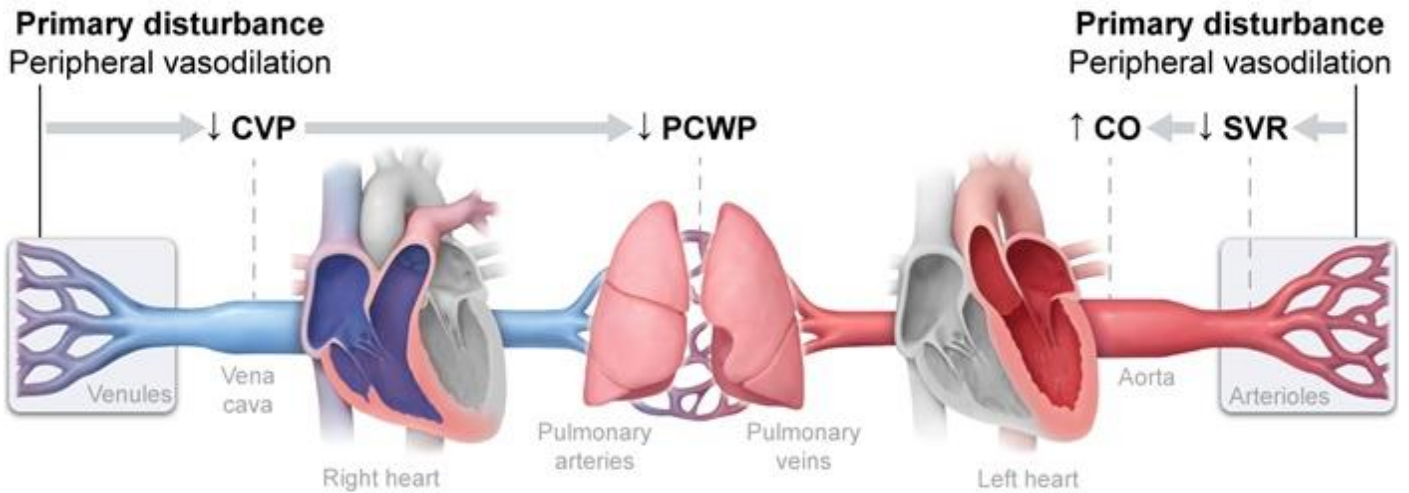


CO = cardiac output; CVP = central venous pressure; PCWP = pulmonary capillary wedge pressure; RAP = right atrial pressure; SVR = systemic vascular resistance.

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Right-sided heart failure

Septic (distributive) shock

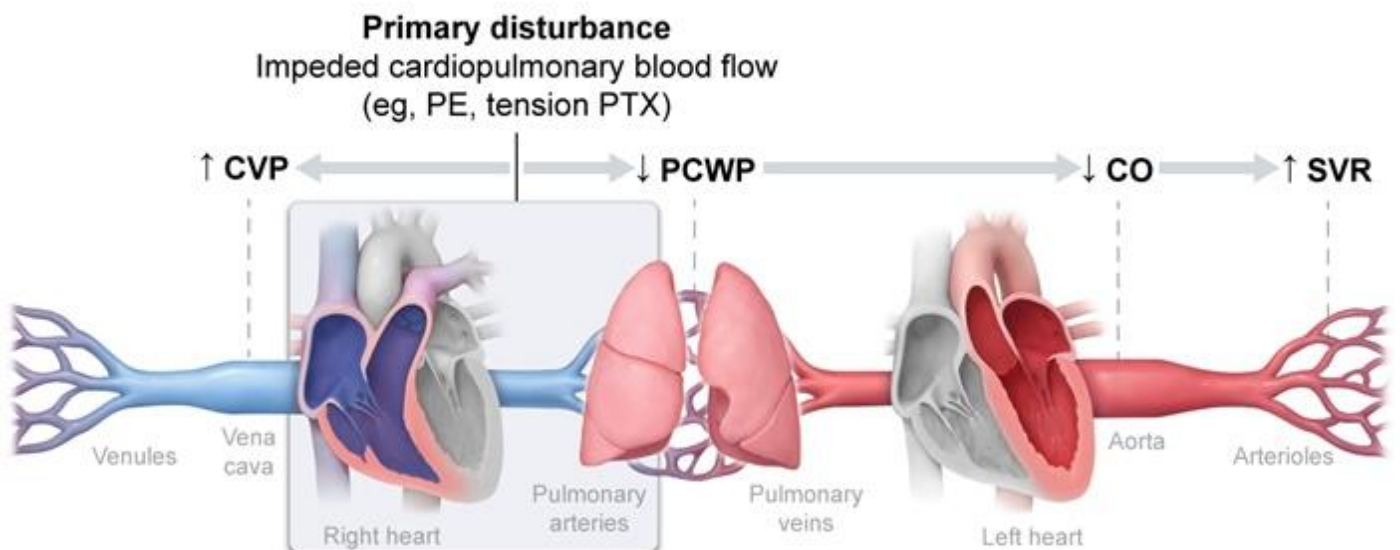


CO = cardiac output; CVP = central venous pressure; PCWP = pulmonary capillary wedge pressure; SVR = systemic vascular resistance.

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Septic (distributive) shock

Obstructive shock



CO = cardiac output; CVP = central venous pressure; PCWP = pulmonary capillary wedge pressure; PE = pulmonary embolism; PTX = pneumothorax; SVR = systemic vascular resistance.

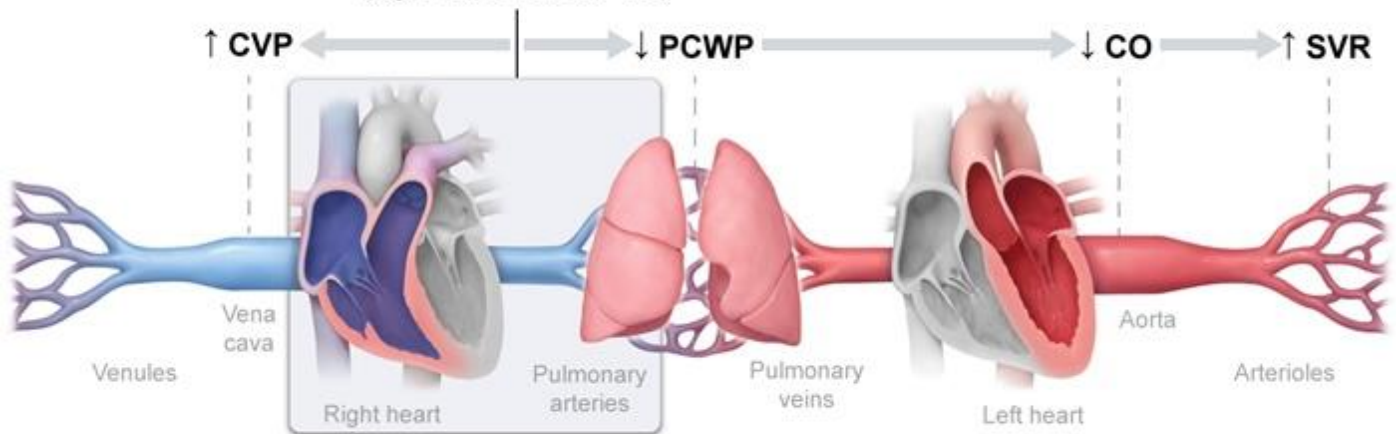
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Obstructive shock

Obstructive shock (prepulmonary)

Primary disturbance

Impeded cardiopulmonary blood flow
(eg, PE, tension PTX)



CO = cardiac output; CVP = central venous pressure; PCWP = pulmonary capillary wedge pressure;
PE = pulmonary embolism; PTX = pneumothorax; SVR = systemic vascular resistance.

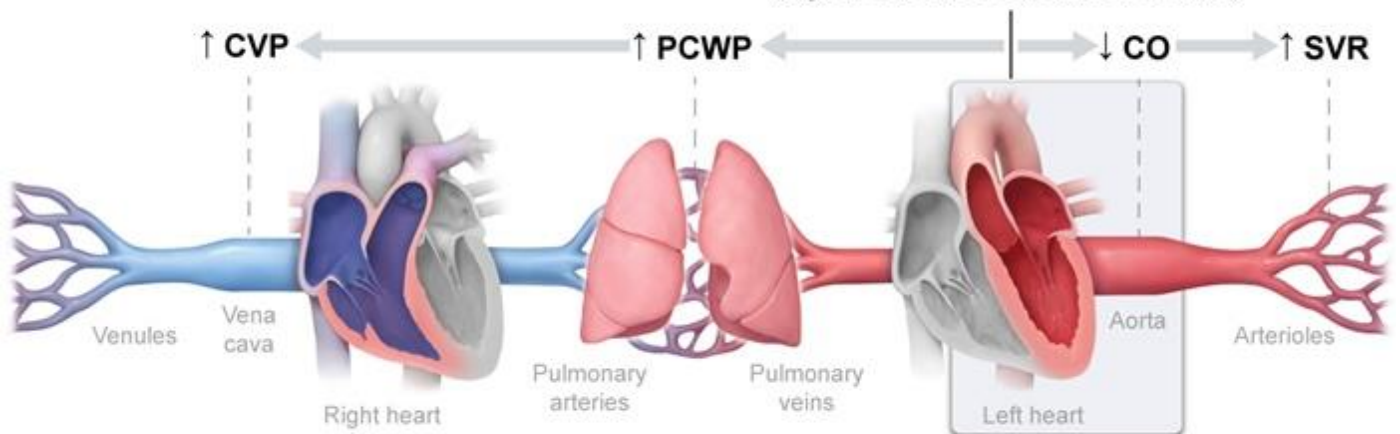
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Obstructive shock (prepulmonary)

Obstructive shock (postpulmonary)

Primary disturbance

Impaired left ventricular outflow
(eg, aortic dissection, severe AS)

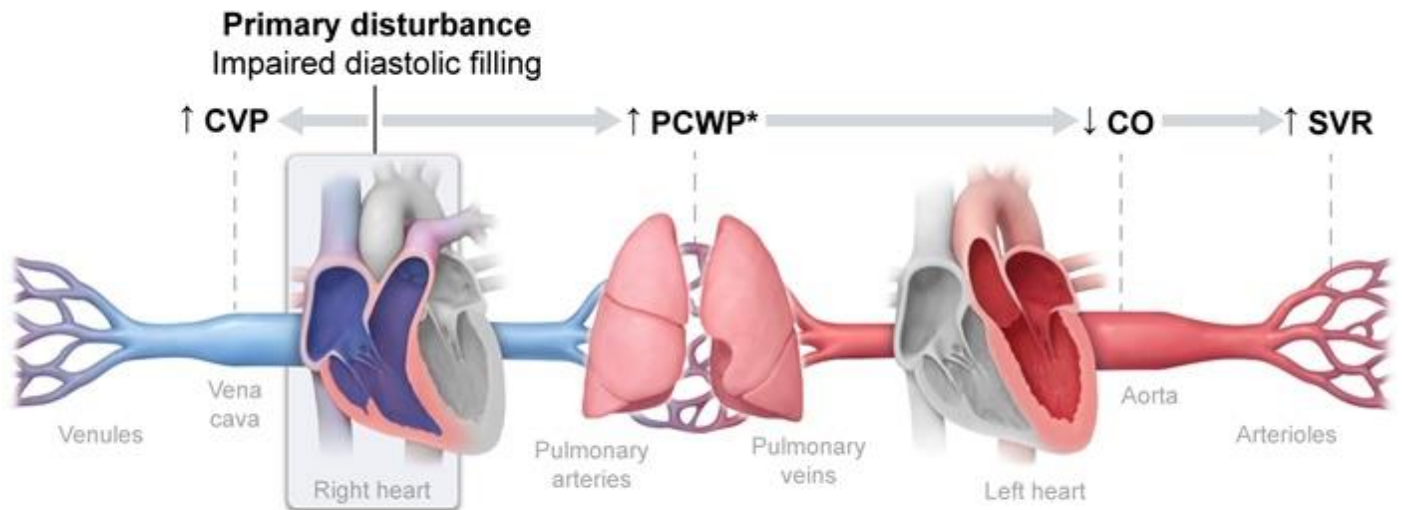


AS = aortic stenosis; CO = cardiac output; CVP = central venous pressure;
PCWP = pulmonary capillary wedge pressure; SVR = systemic vascular resistance.

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Obstructive shock (postpulmonary)

Obstructive shock due to cardiac tamponade



*Despite decreased blood flow to the left atrium, PCWP is increased due to left atrial compression.

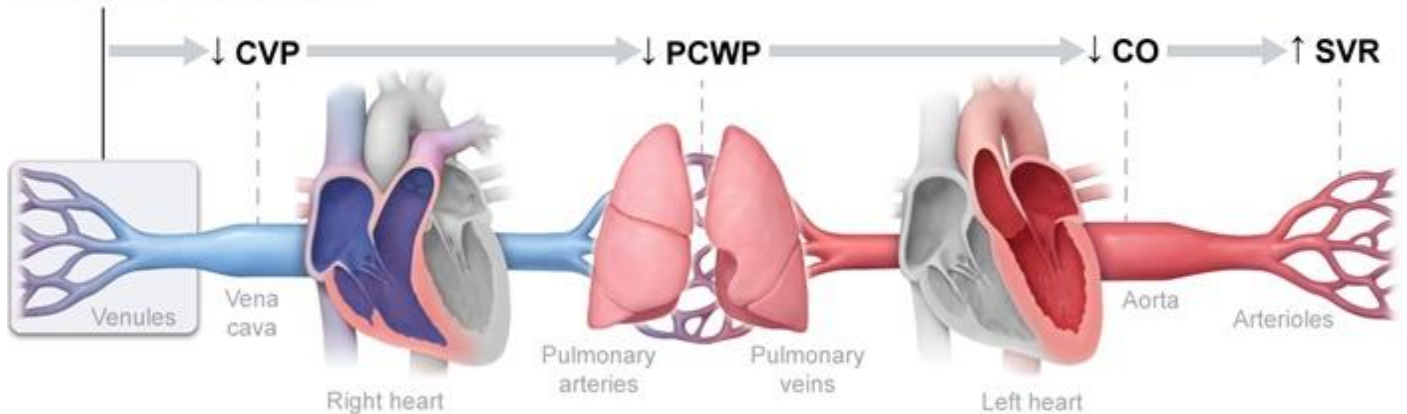
CO = cardiac output; CVP = central venous pressure; PCWP = pulmonary capillary wedge pressure; SVR = systemic vascular resistance.

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Obstructive shock due to cardiac tamponade

Hypovolemic shock

Primary disturbance
Decreased blood volume



CO = cardiac output; CVP = central venous pressure; PCWP = pulmonary capillary wedge pressure; SVR = systemic vascular resistance.

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Hypovolemic shock