

Brief Non-Exhaustive Summary of Initial Management of Shock

Definition:

Shock is a state of systemic hypoperfusion, with inadequate blood supply to the tissues.

This can occur due to a lack of blood flow, or blood pressure, or both.

Final common pathway to death, no matter the underlying pathology.

It is important to identify shock early; without identification, you won't/can't treat it.

What are things to look for?

Haemodynamics: tachy, brady, BP, pulse pressure. Trends are more useful than one off measurements.

Urine output (<0.5mL/kg/hr, use IBW)

Mental status

Skin perfusion: warm or cool, mottling, urticaria/angioedema/flushing/pruritus

Types of shock:

1. Cardiogenic
2. Vasodilatory or Distributive
3. Hypovolaemic
4. Obstructive

Alternative categorisation:

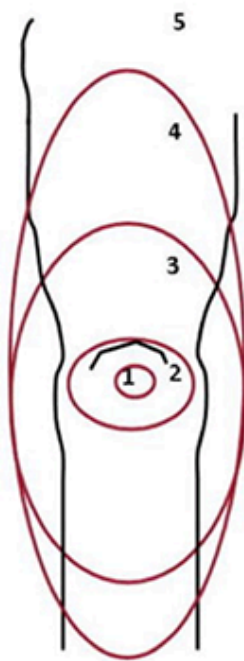
1. Preload (hypovolaemia)
2. Cardiac Rate
3. Cardiac Rhythm
4. Cardiac Contractility
5. Afterload (vasodilation)

Diagnosis

1. History (infection, cardiac, resp, VTE, meds (consider epidural infusion if post-op), immunosuppression, devices, recent procedures)
2. Exam
3. Labs (role of lactate)
4. ECG
5. Imaging (POCUS/X-Ray/CT)

Initial Management

1. Call for help.
2. Volume resus (500mL of crystalloid bolus nearly always reasonable)
3. Vasopressor (to achieve goal BP)
 - a. Bolus metaraminol 0.5mg-1mg every 2-3 minutes, OR
 - b. Bolus adrenaline 10-20mcg every 2-3 minutes (1 mL of 1:10,000 adrenaline, **diluted** to 10mL, gives 10mcg/mL)
4. If sepsis possible, appropriate antibiotics (+/- source control); check MRO status
5. Steroids (hydrocortisone 100mg IV stat may be reasonable)



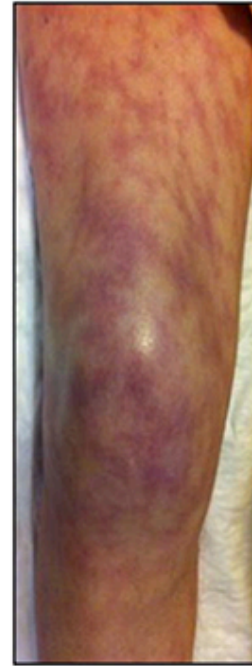
Mottling score



Stage 2



Stage 3



Stage 5

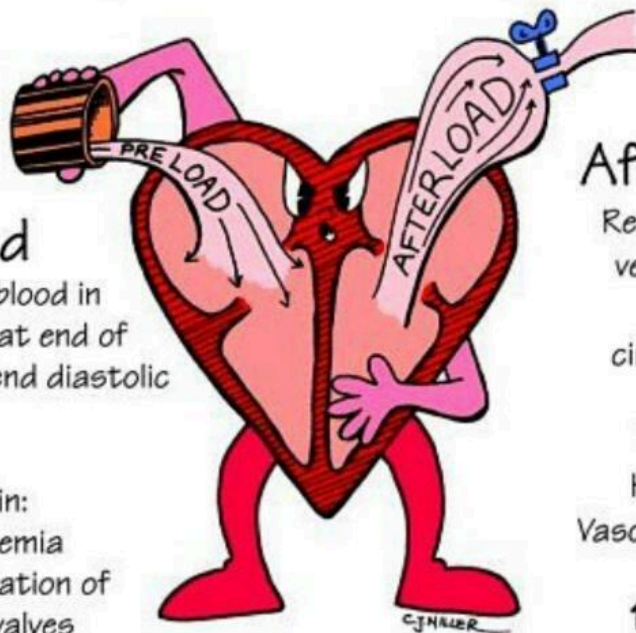
Mottling isn't particularly sensitive, but when present it is highly concerning. Image from [Galbois A 2015](#).

PRELOAD AND AFTERLOAD

Preload

Volume of blood in ventricles at end of diastole (end diastolic pressure)

Increased in:
Hypervolemia
Regurgitation of cardiac valves
Heart Failure



Afterload

Resistance left ventricle must overcome to circulate blood

Increased in:
Hypertension
Vasoconstriction

↑ Afterload =
↑ Cardiac workload

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