



Diagnostic des états de choc



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Lyon 2013



Hôpitaux de Lyon

Définition

Clinique



Hypotension artérielle :

- Pression artérielle systolique < 90 mmHg
- Pression artérielle moyenne < 70 mmHg
- + altération de la perfusion des organes

Réalité physiopathologique



Réduction de la perfusion tissulaire
Conduisant à une **inadéquation**
Entre les apports et les besoins en O_2
Dépassant les capacités d'adaptation

Un équilibre permanent



VO_2 : consommation en oxygène

TaO_2 : transport artérielle en oxygène

Etat de choc

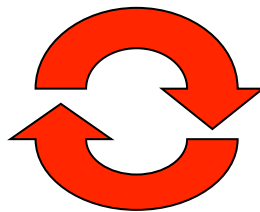


Etat de choc



Mécanismes
d'adaptation

↓ transport en O₂



Hypoxie cellulaire

Mort cellulaire

Rappels physiologiques

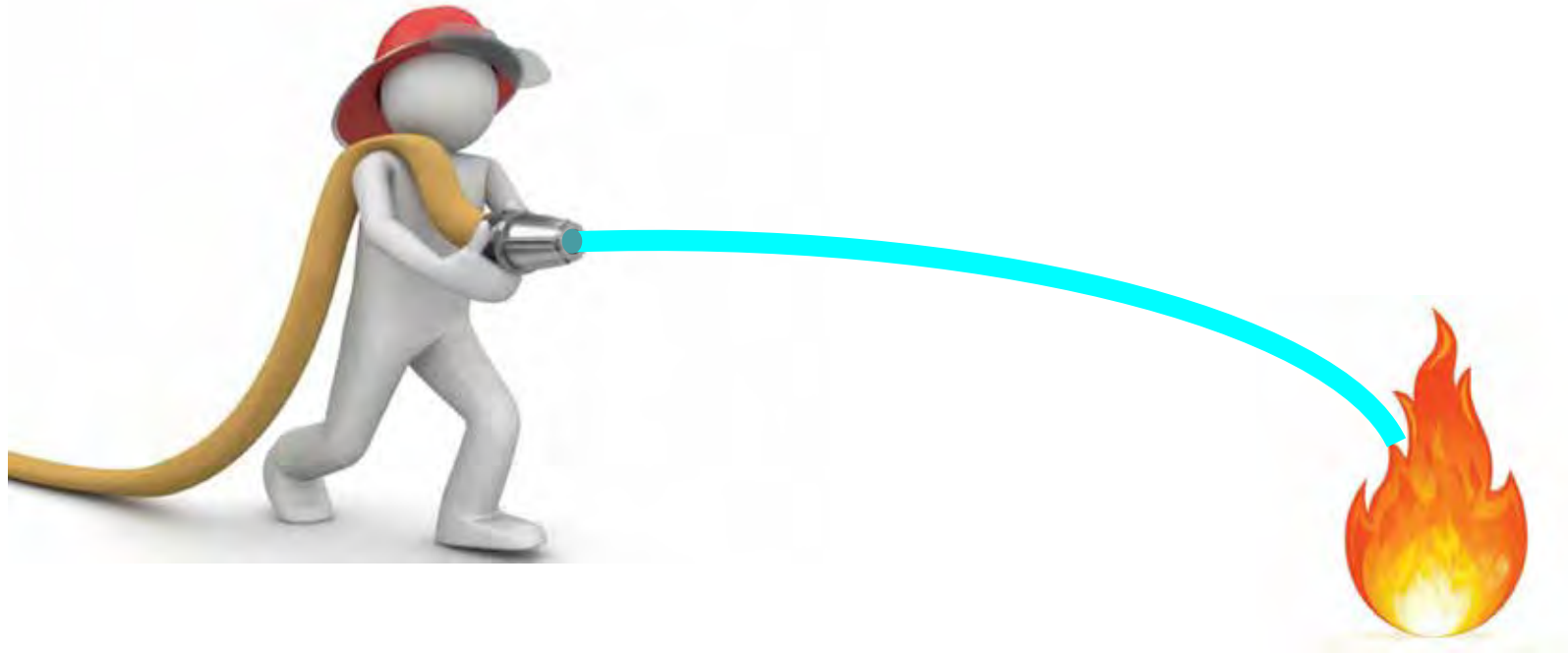
Pour assurer la perfusion d'un organe il faut :

De la pression



Et du débit

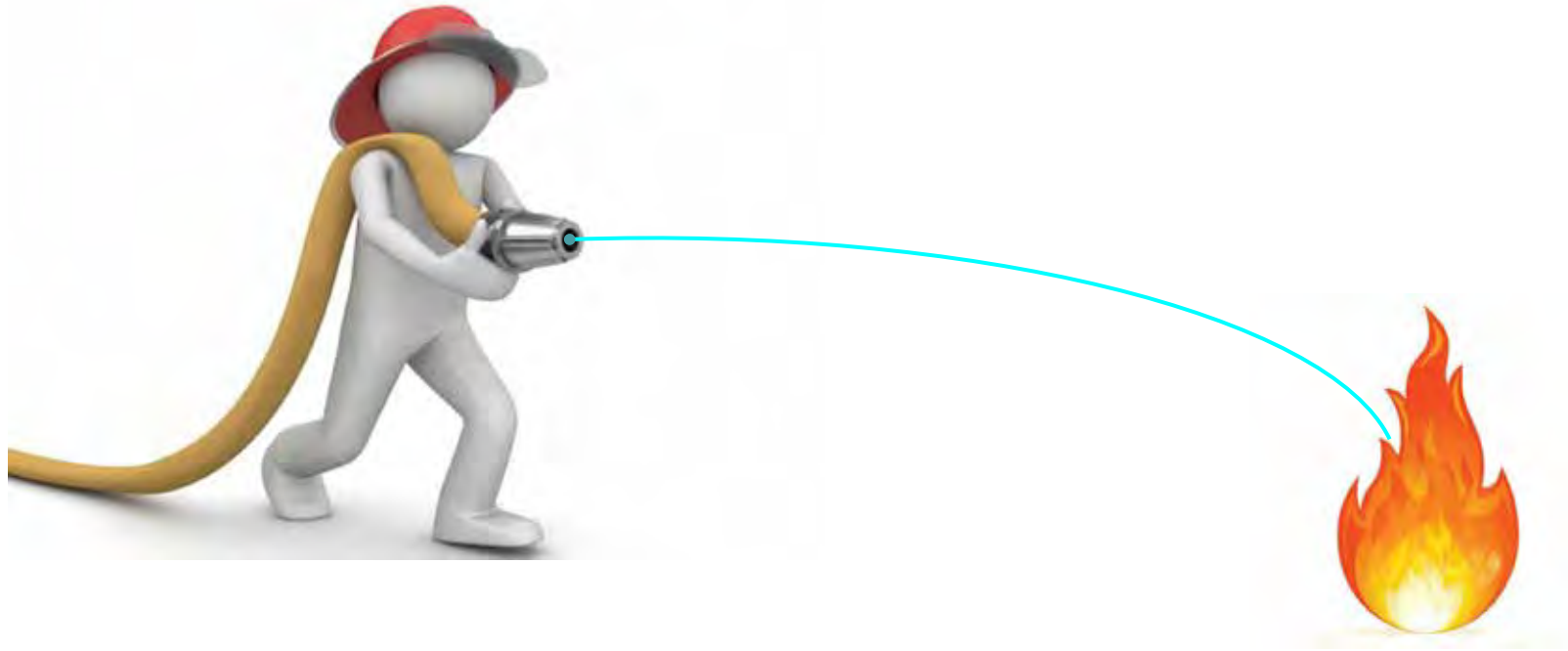
Rappels physiologiques



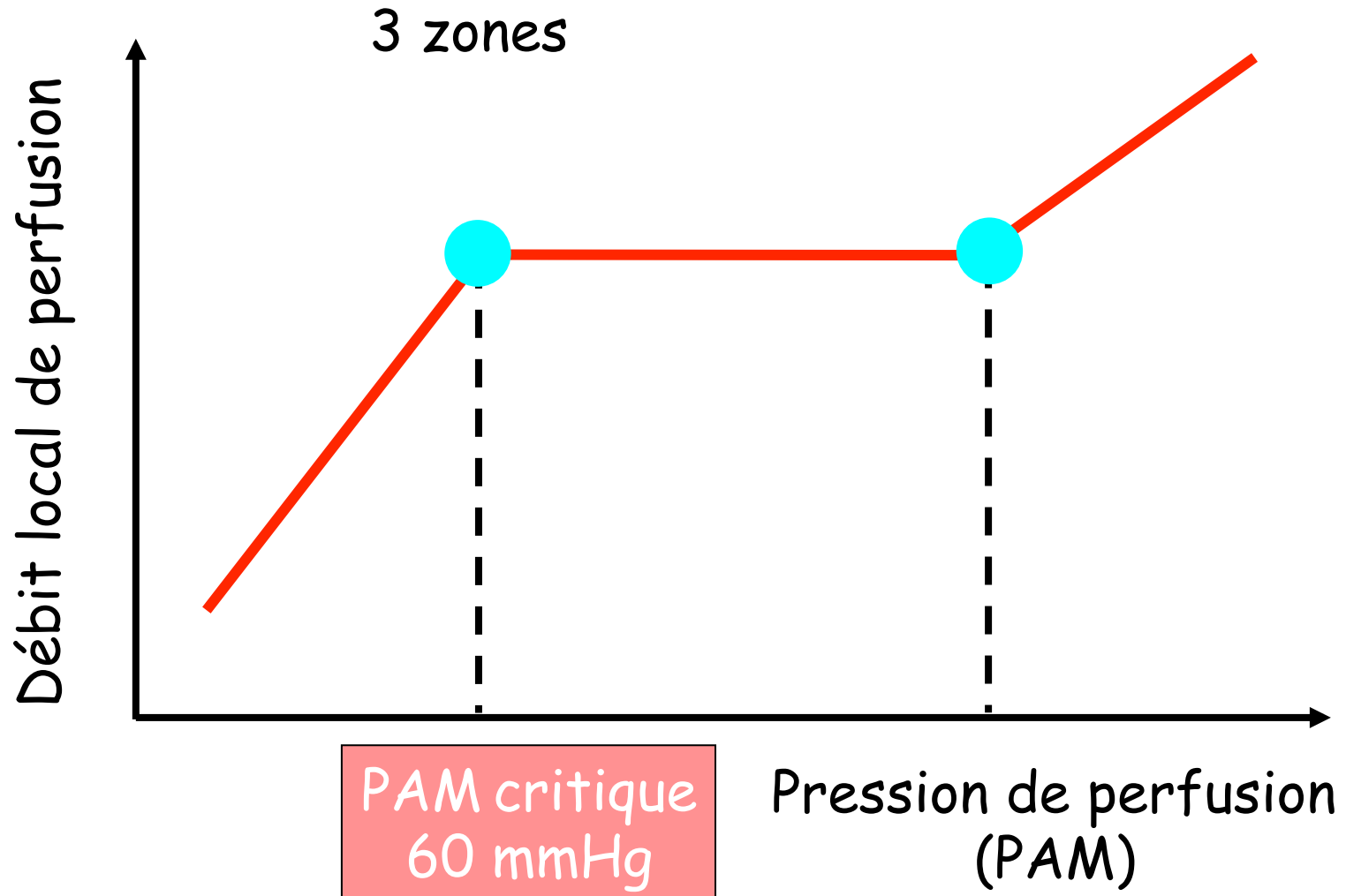
Rappels physiologiques



Rappels physiologiques



Pression de perfusion



Apports d'oxygène aux cellules



Pression

Débit

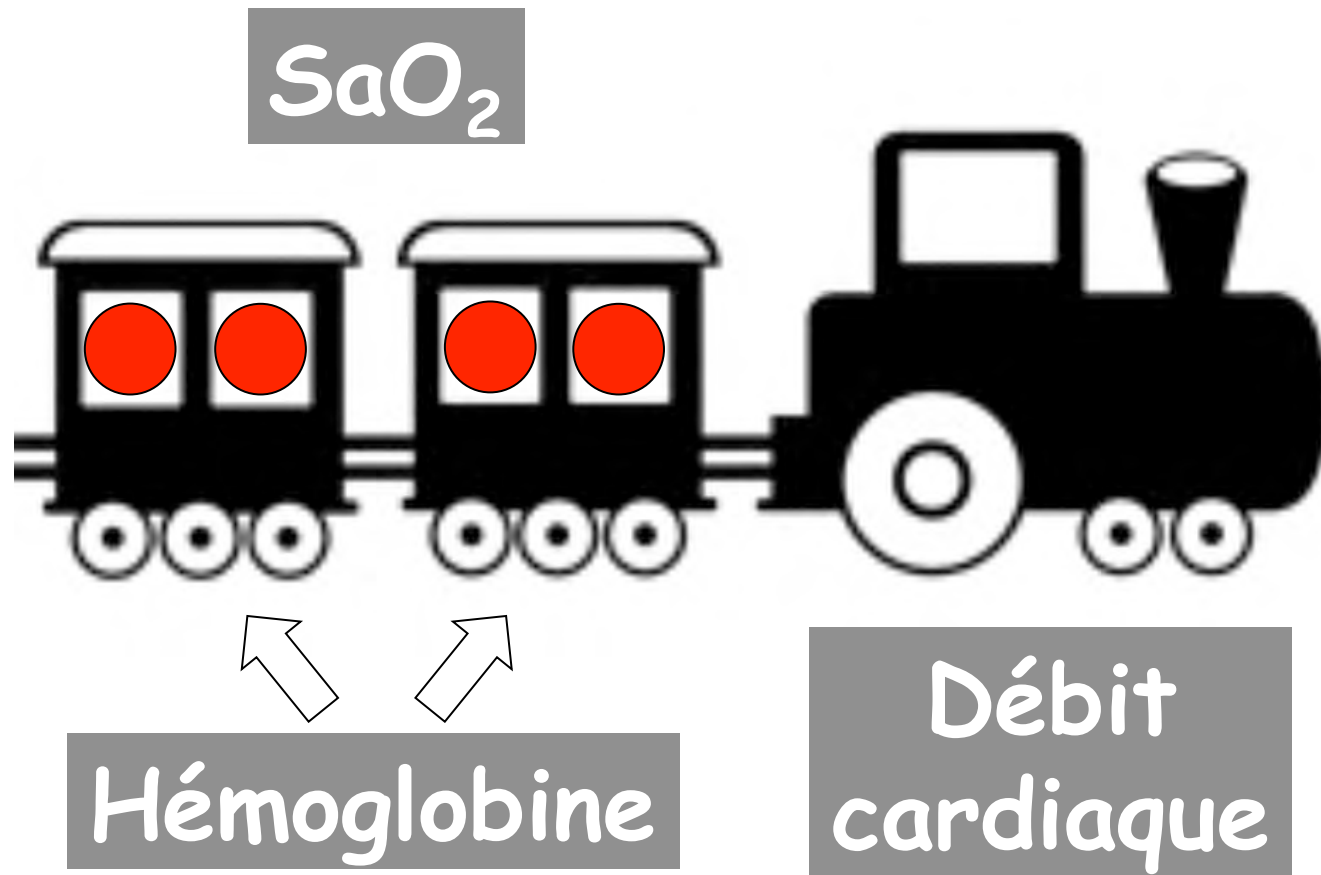
Sang oxygéné

TaO_2

Transport artériel en oxygène

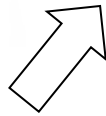
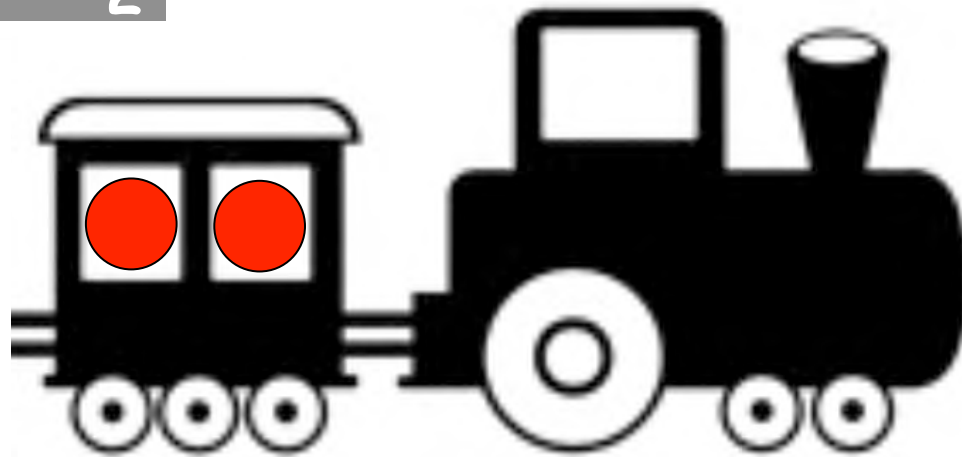
$$TaO_2 = Hb \times SaO_2 \times DC$$

Transport artériel en oxygène



Diminution de la TaO_2

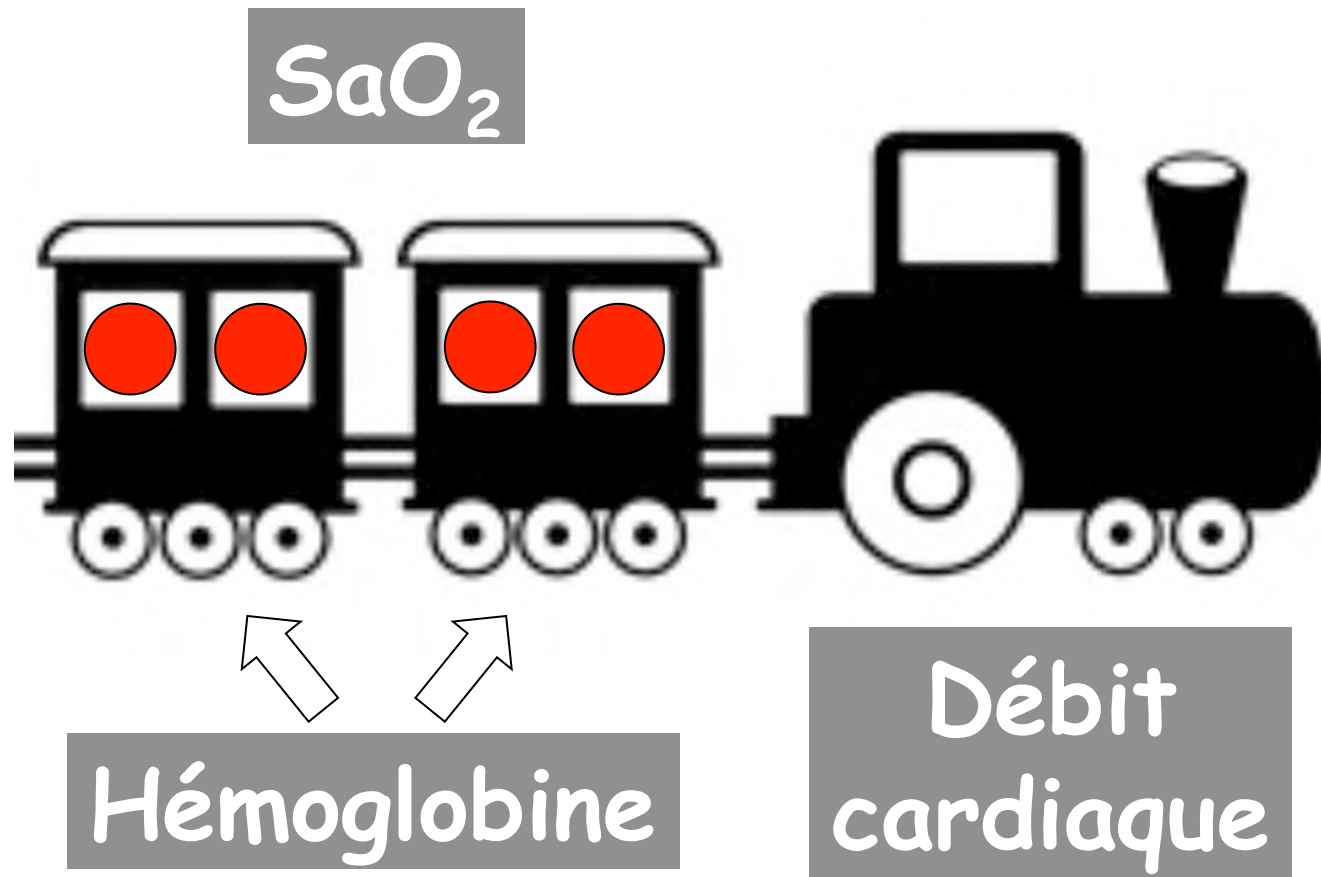
SaO_2



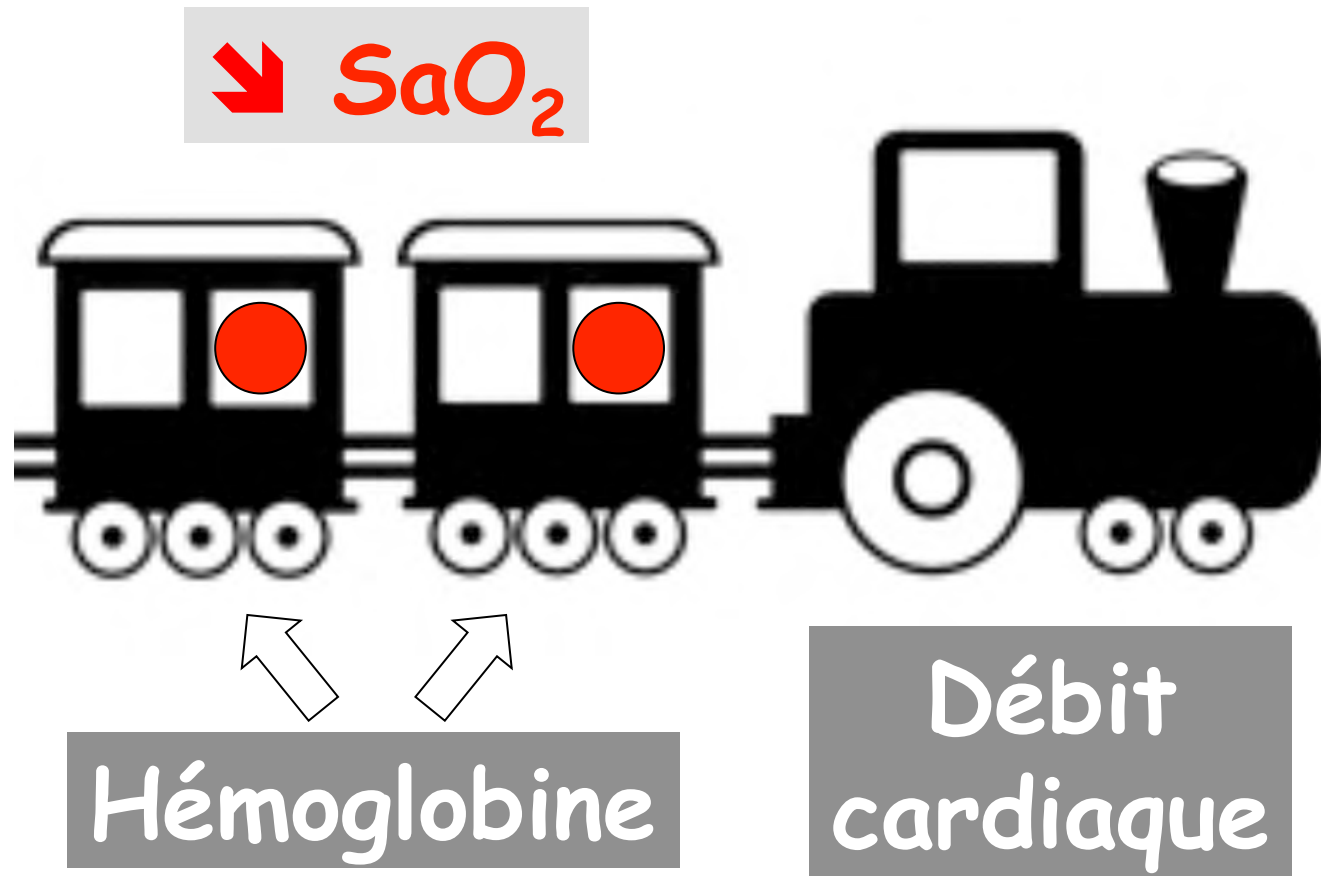
↘ **Hémoglobine**

Débit
cardiaque

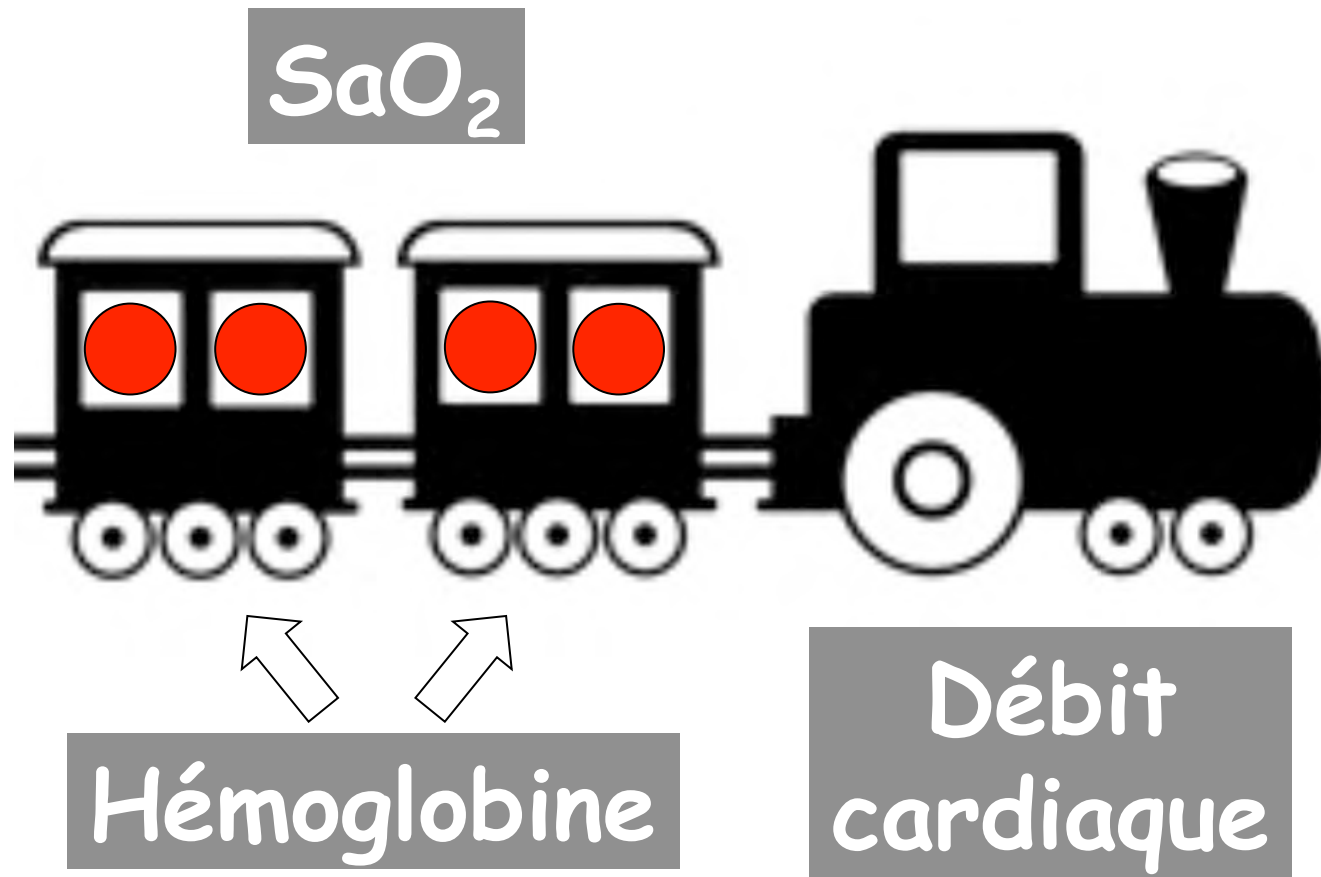
Diminution de la TaO_2



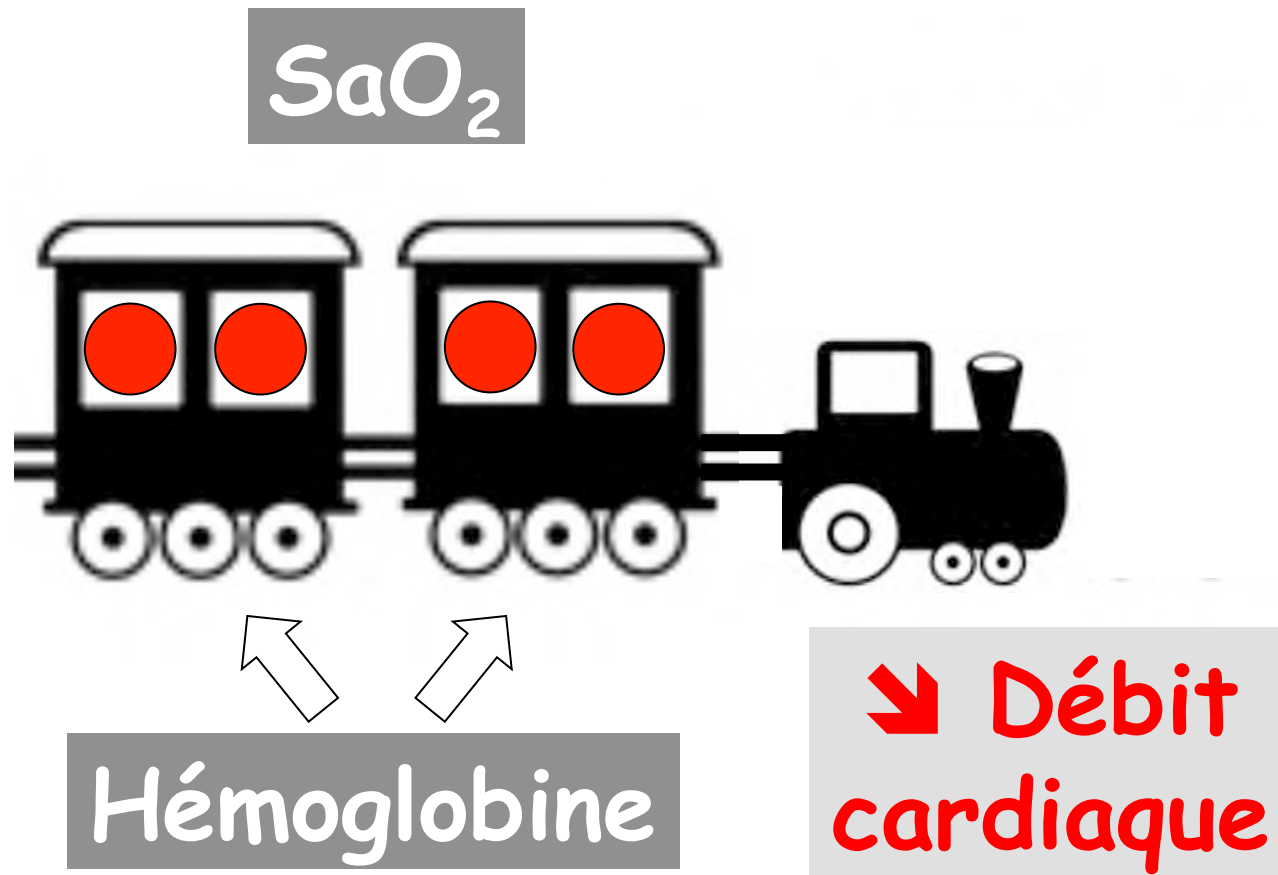
Diminution de la TaO_2



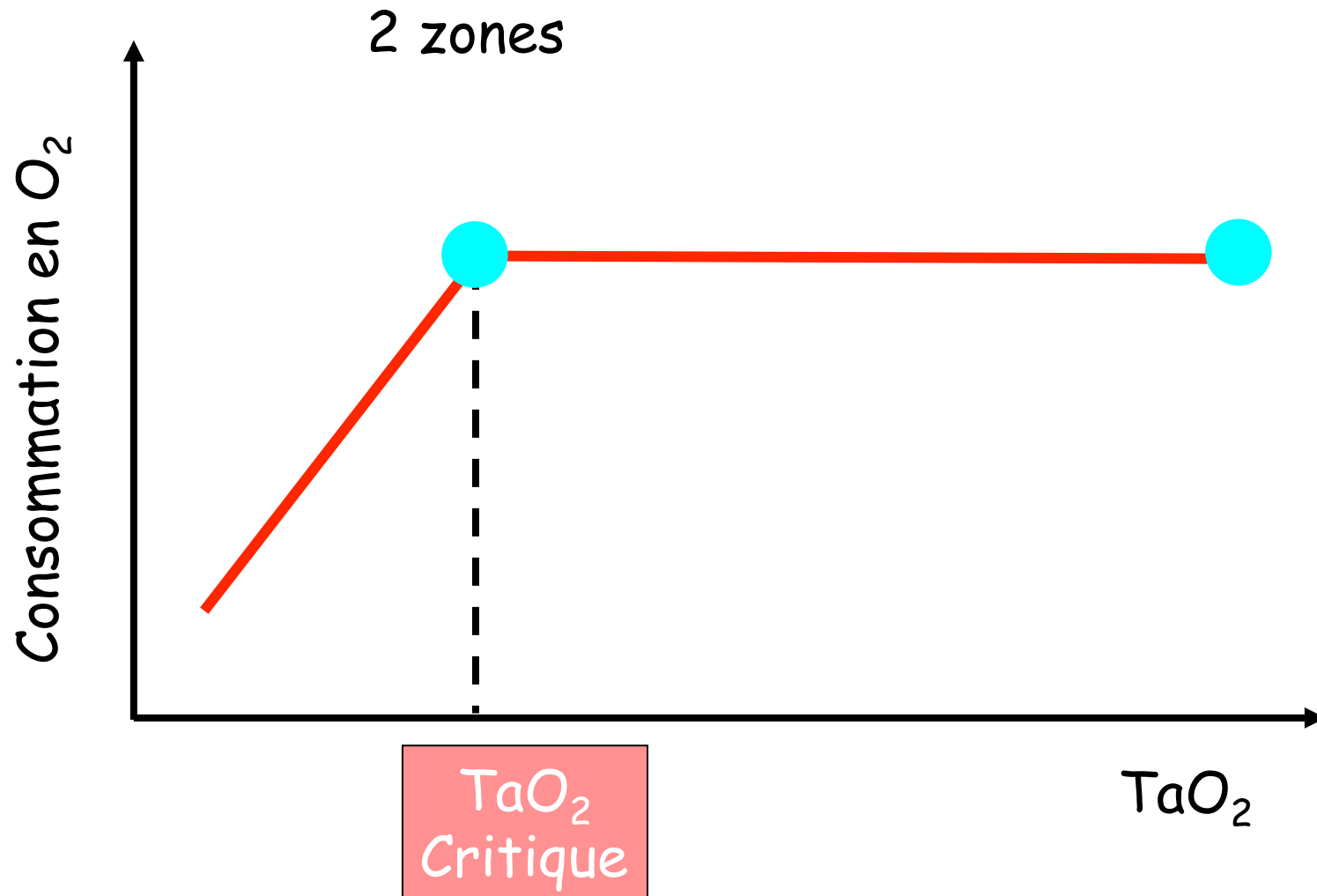
Diminution de la TaO_2



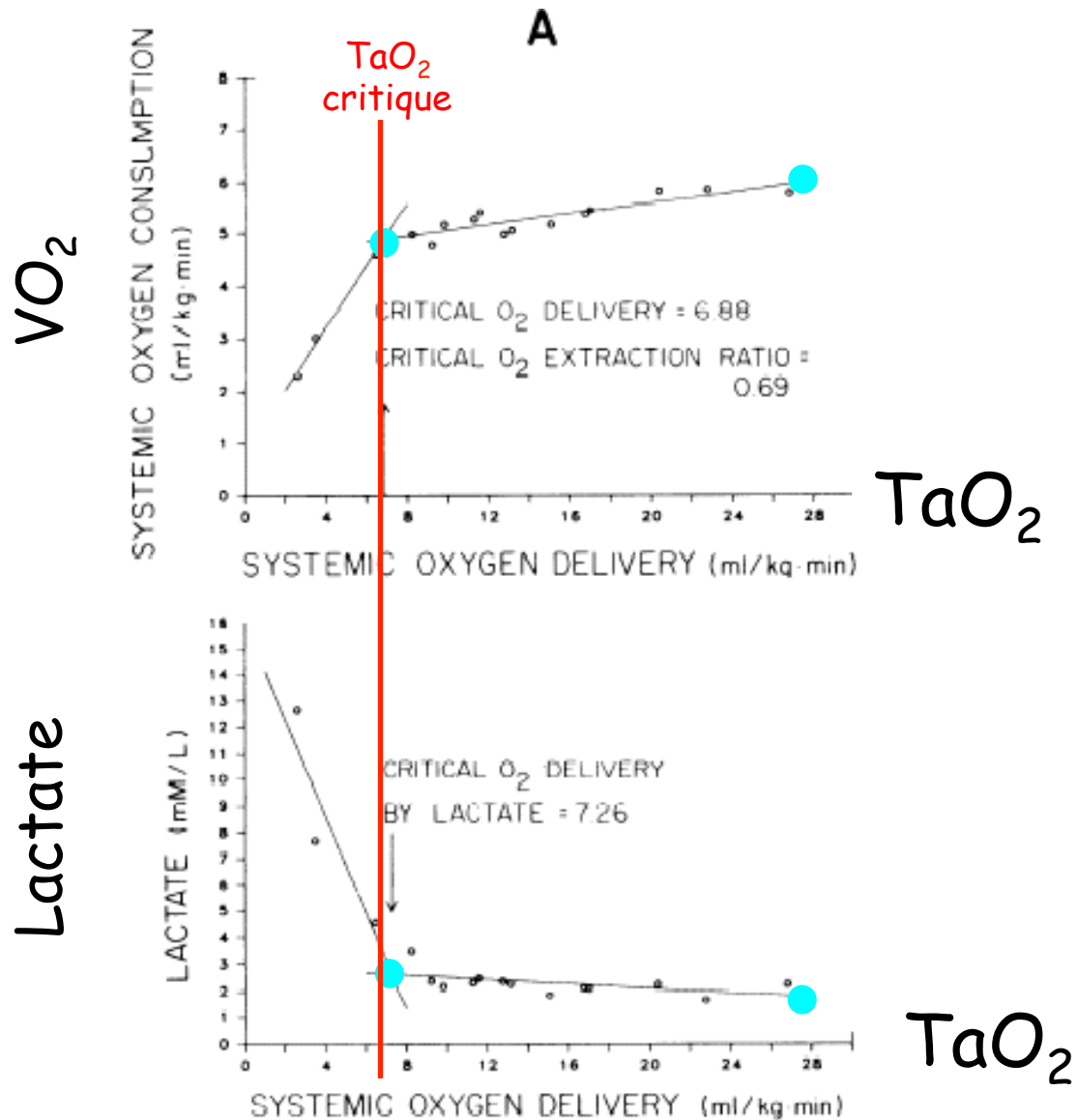
Diminution de la TaO_2



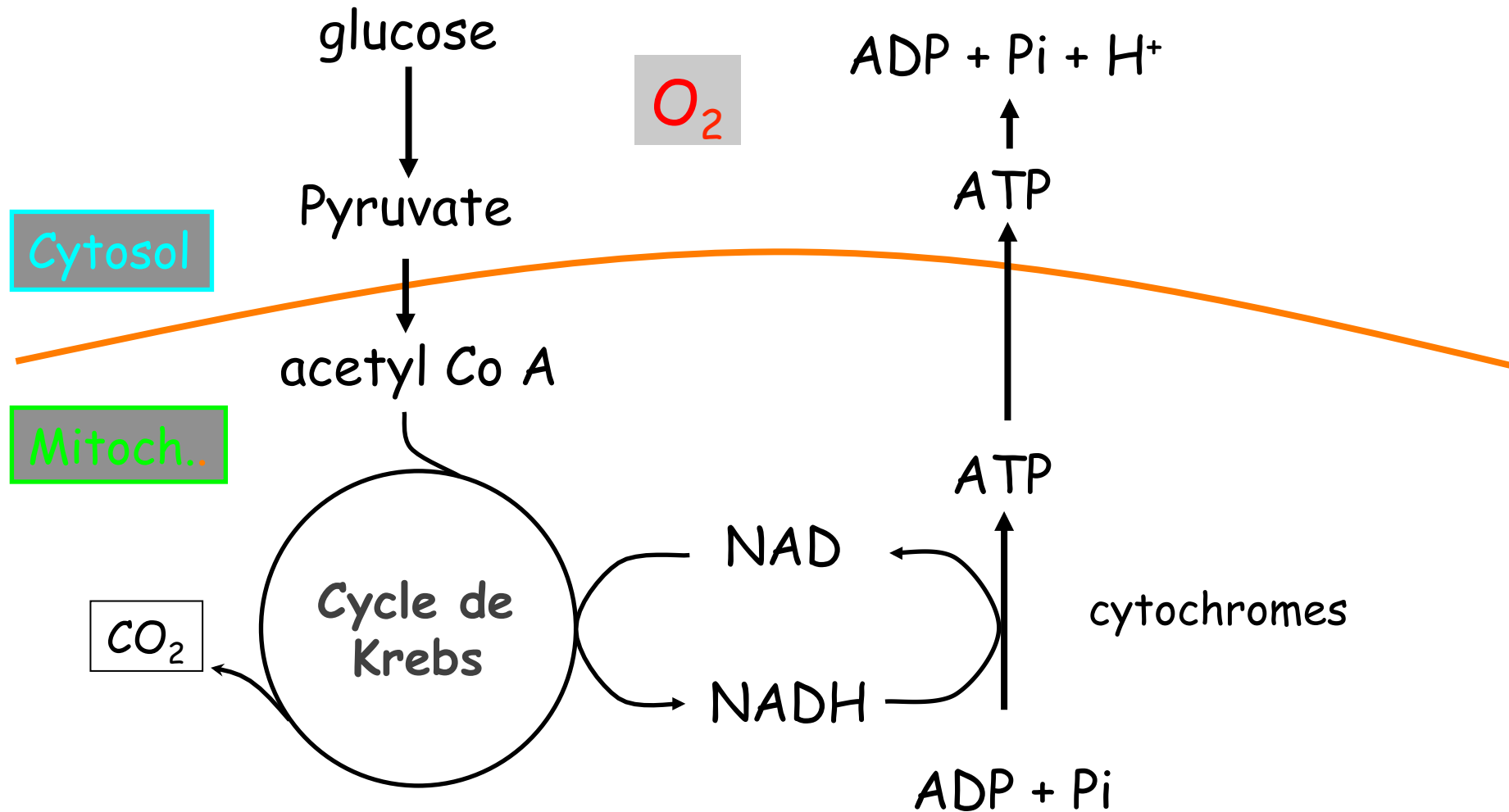
Transport artériel en O_2



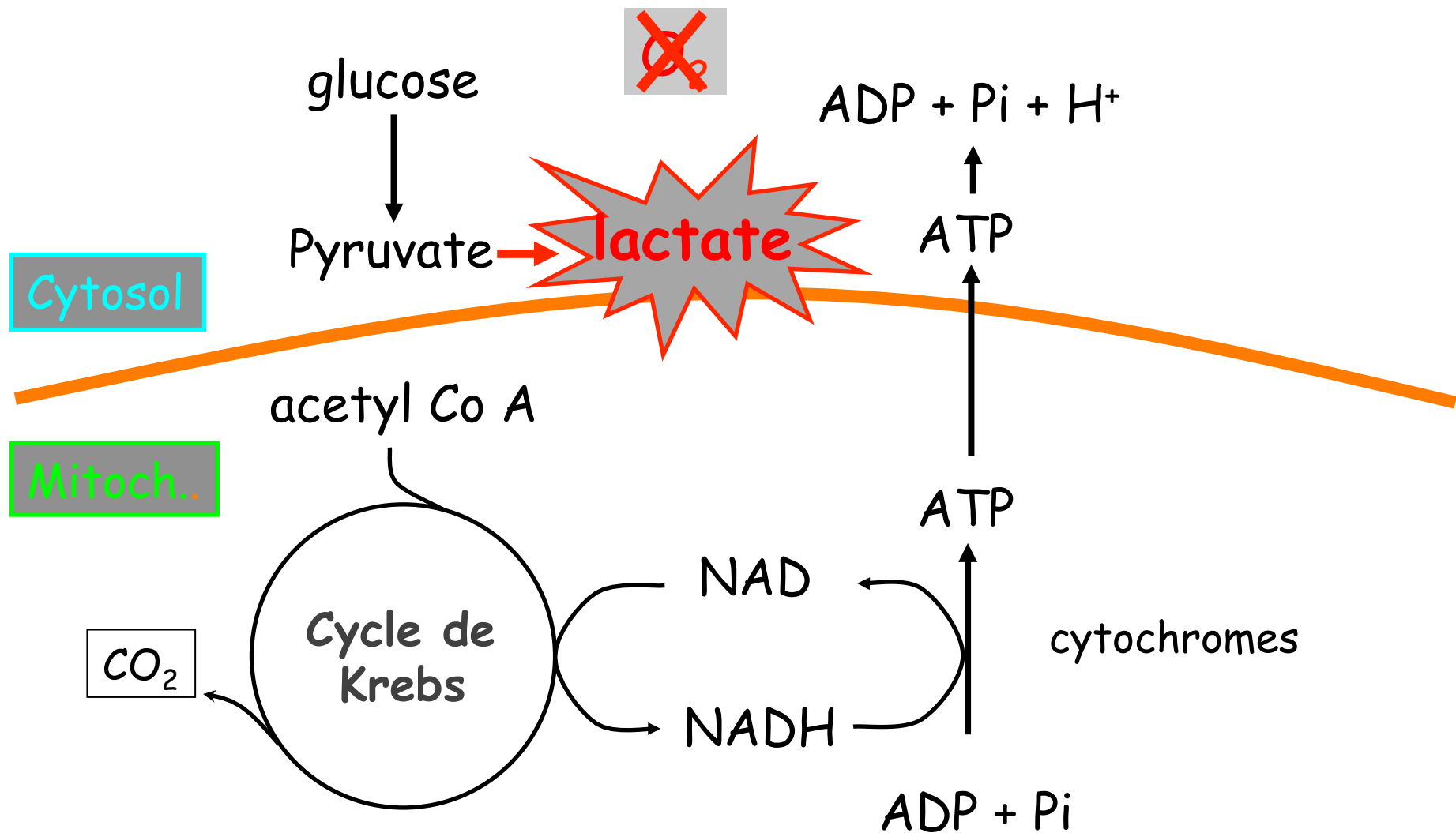
Rapport TaO_2/VO_2



Lactatémie



Lactatémie



Etat de choc



Etat de choc

Pompe

Distribution

Bouché

Vide

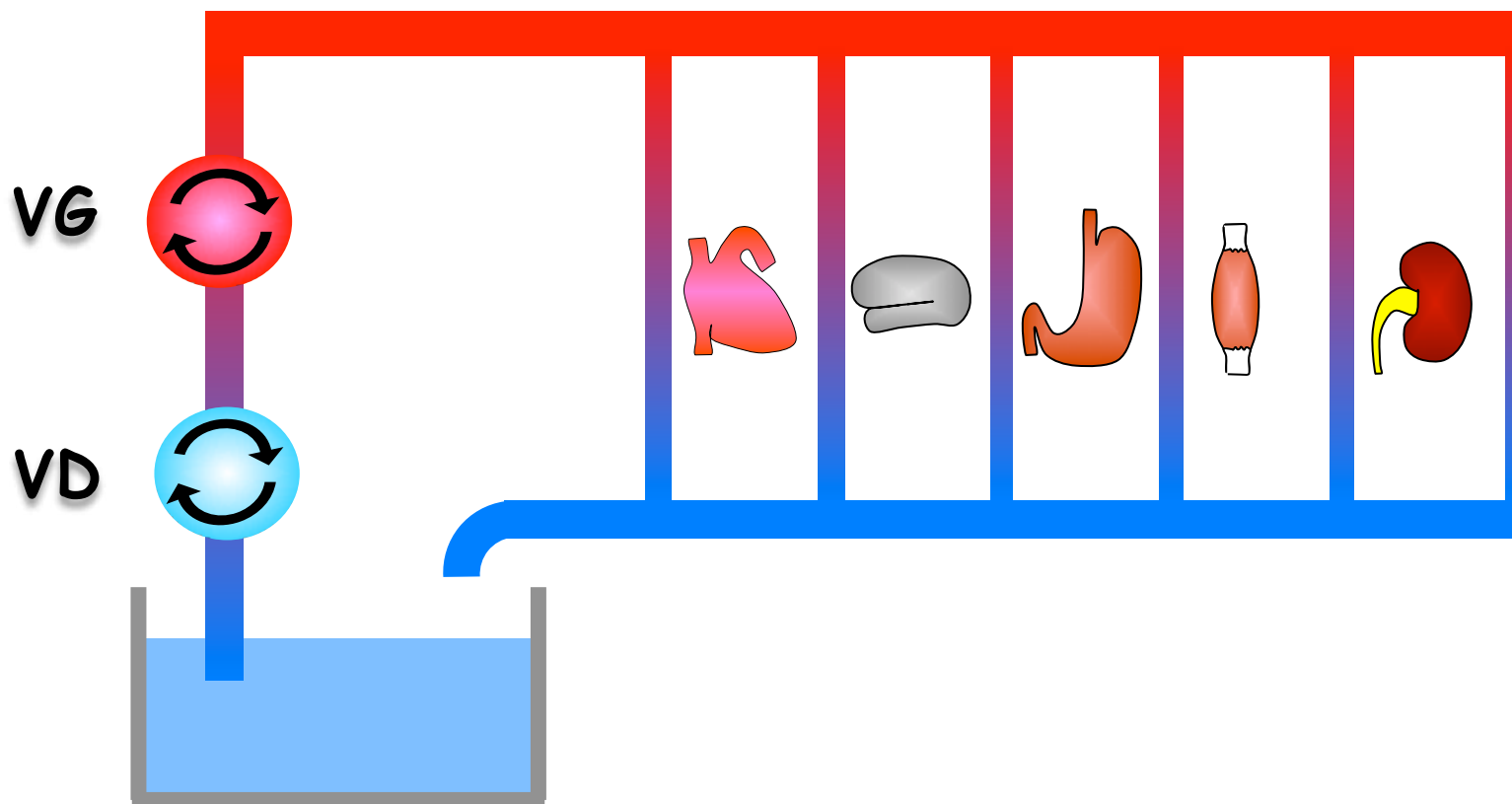


Classification des chocs

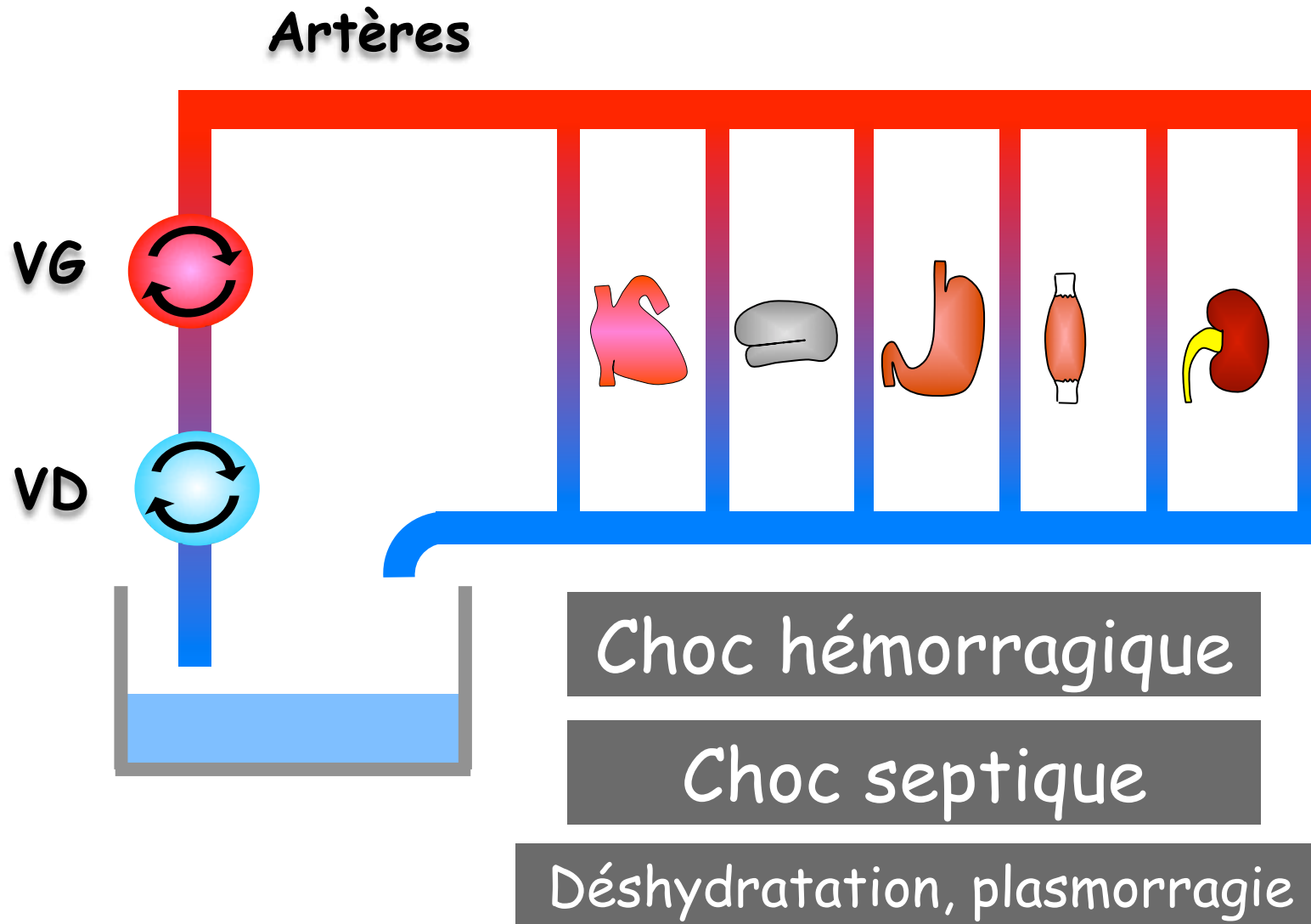


Classification des chocs

Artères

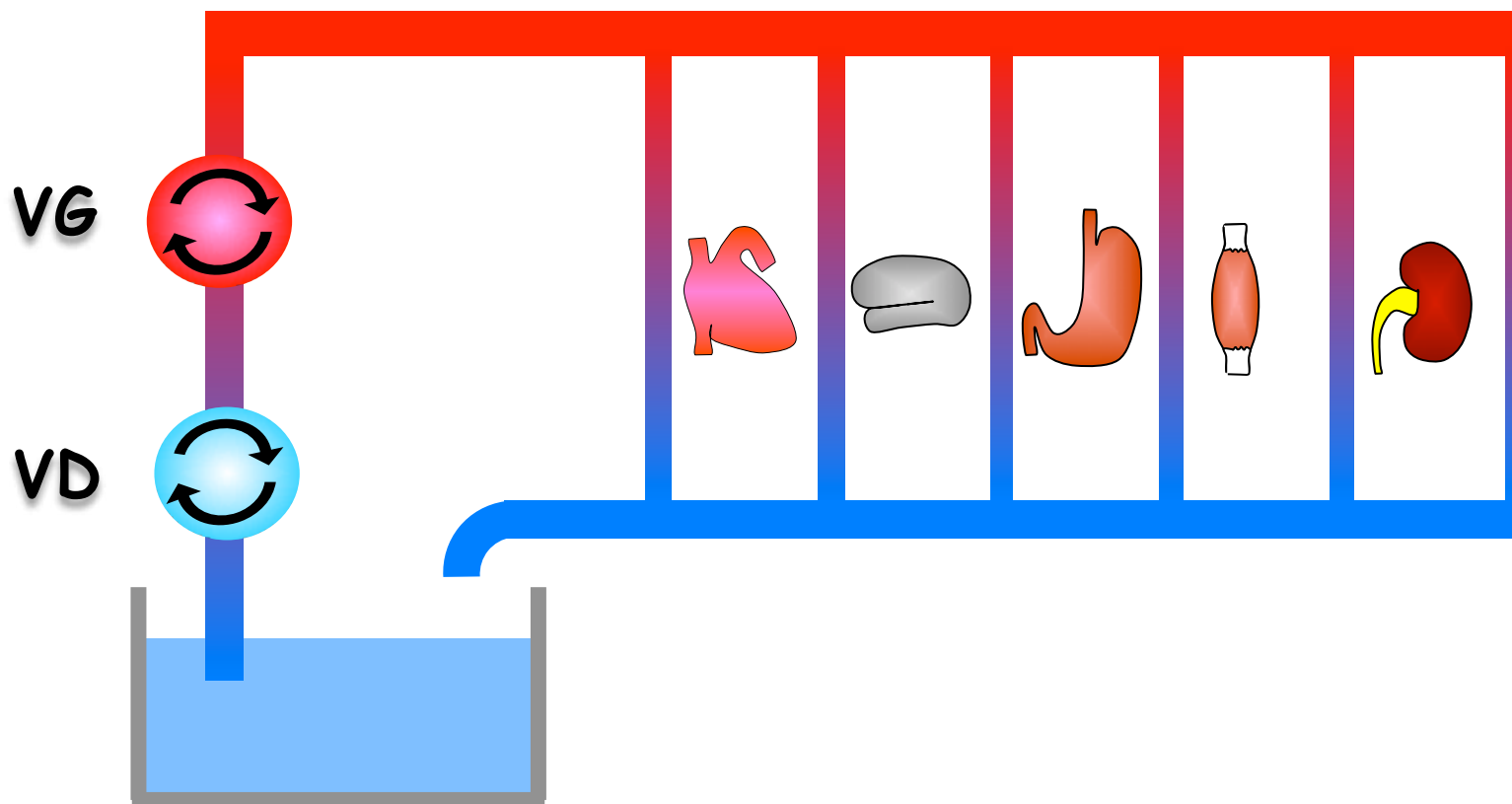


Hypovolémique (vrai)

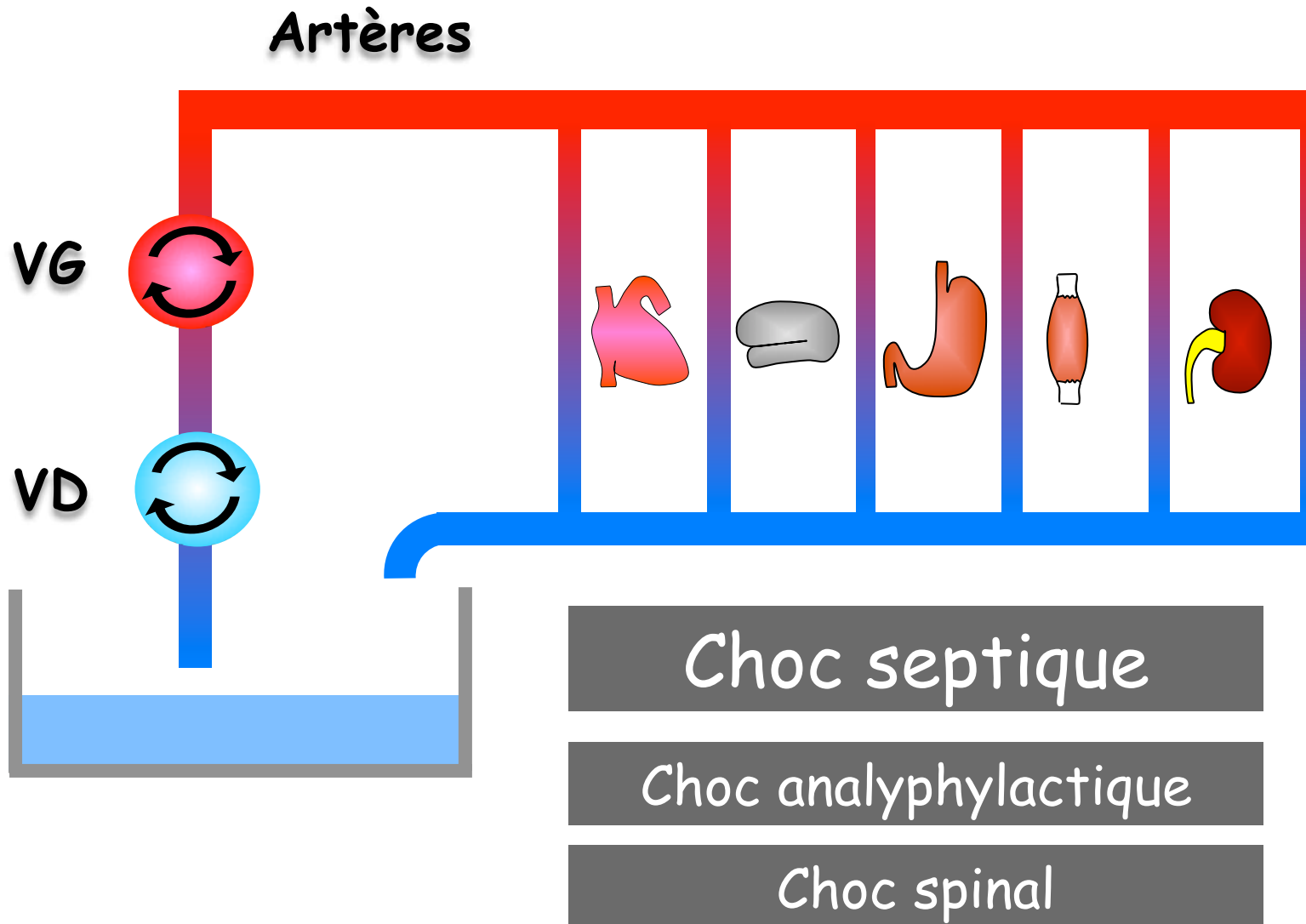


Classification des chocs

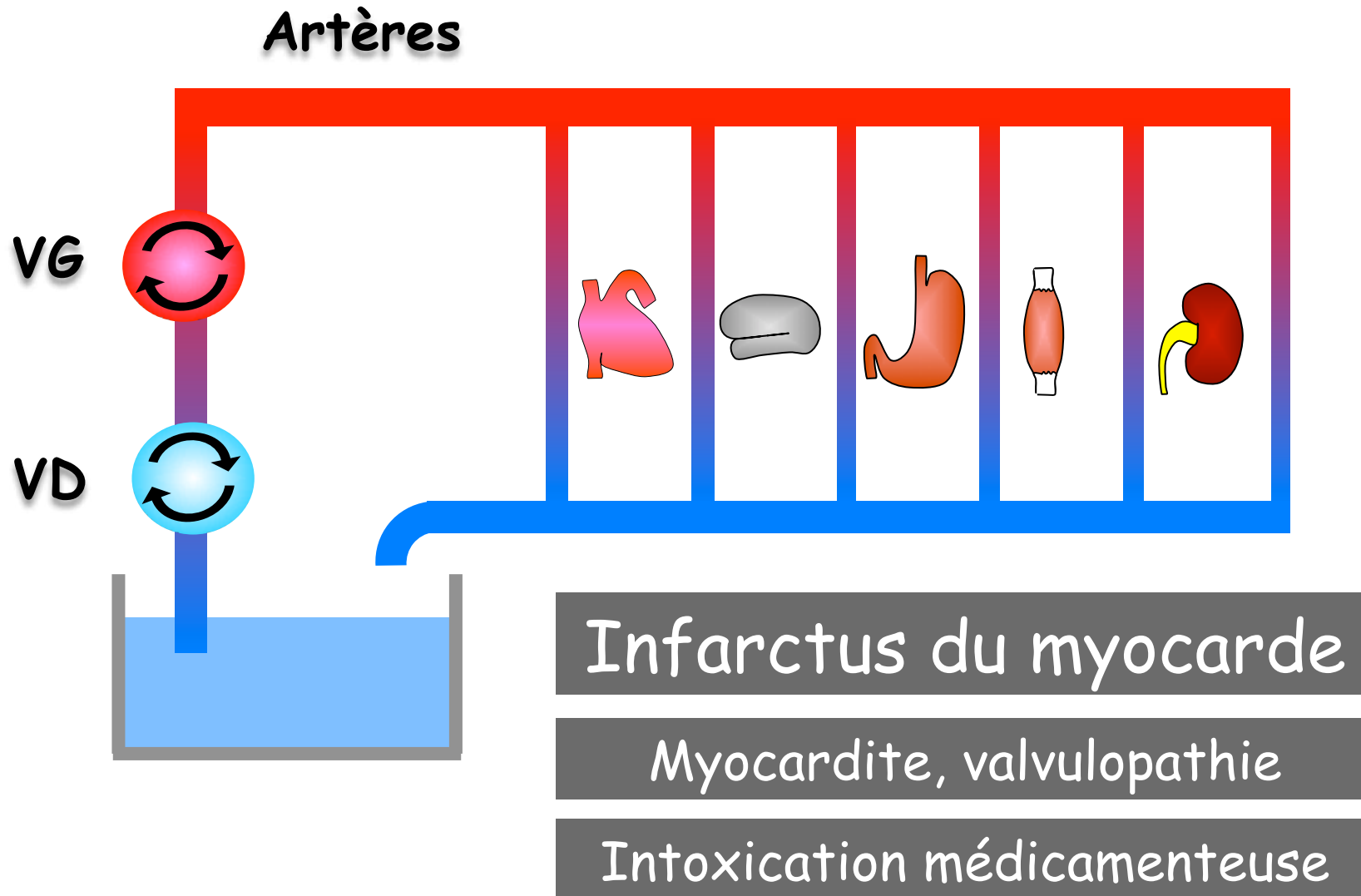
Artères



Hypovolémique (relatif)

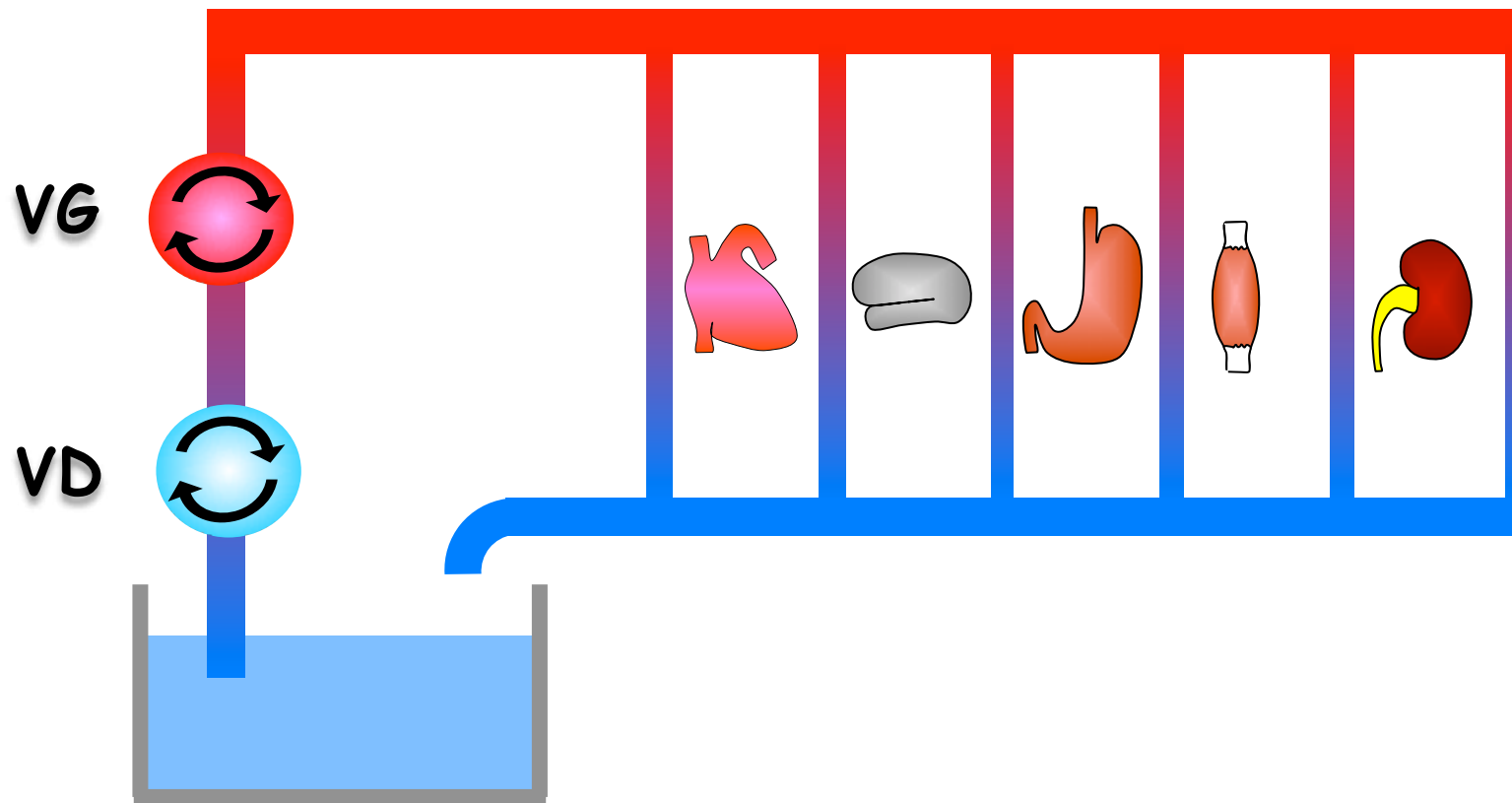


Cardiogénique

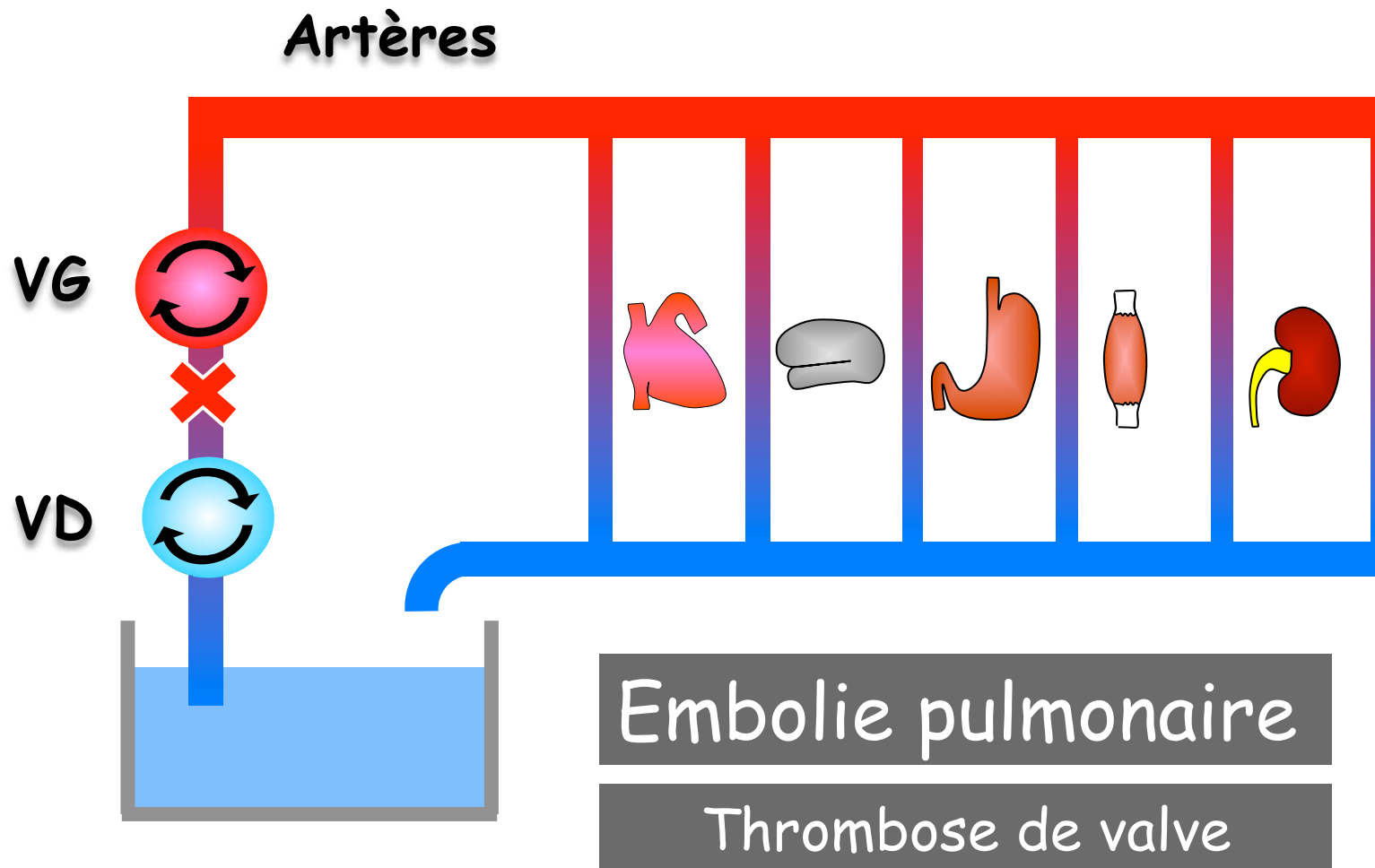


Obstructif

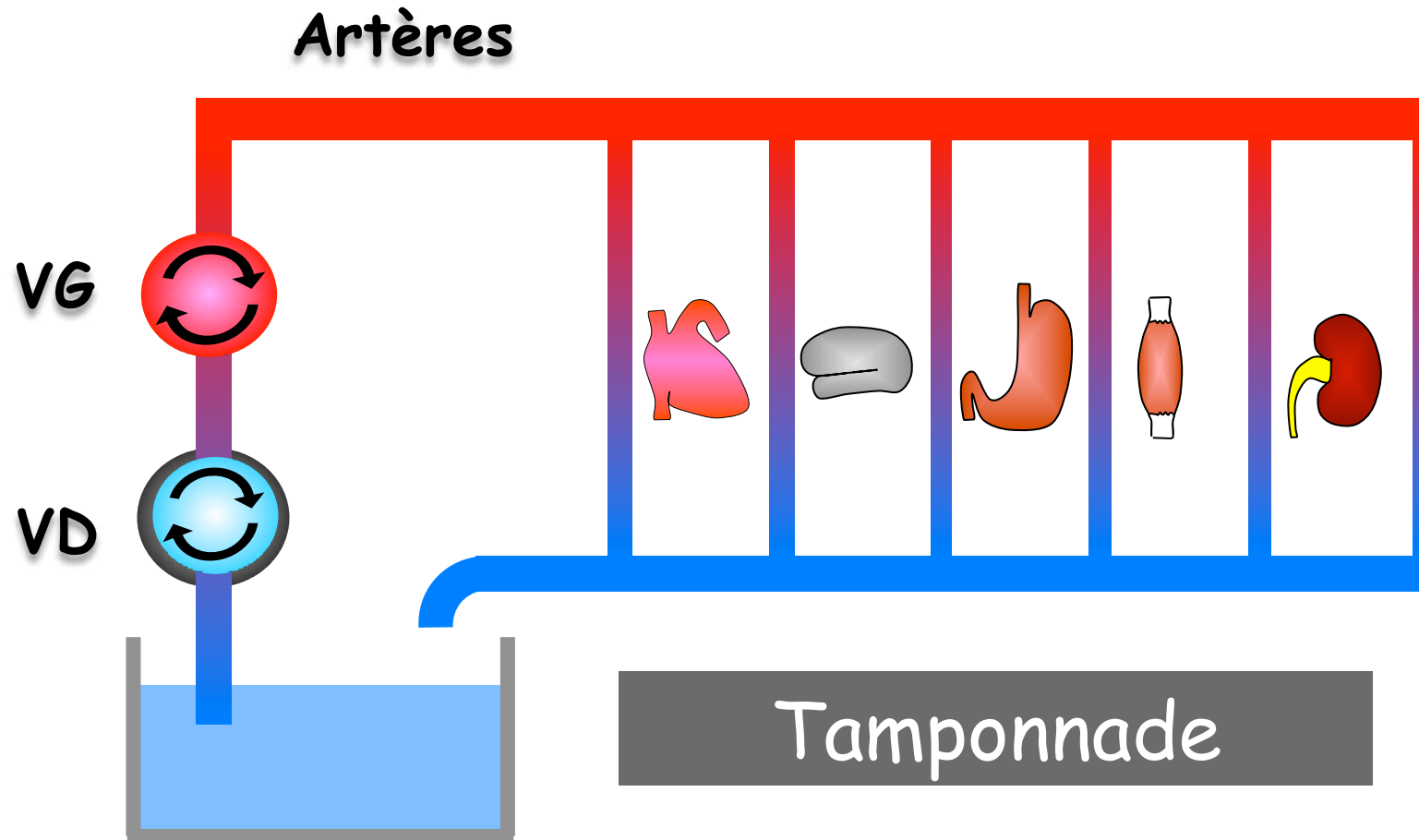
Artères



Obstructif

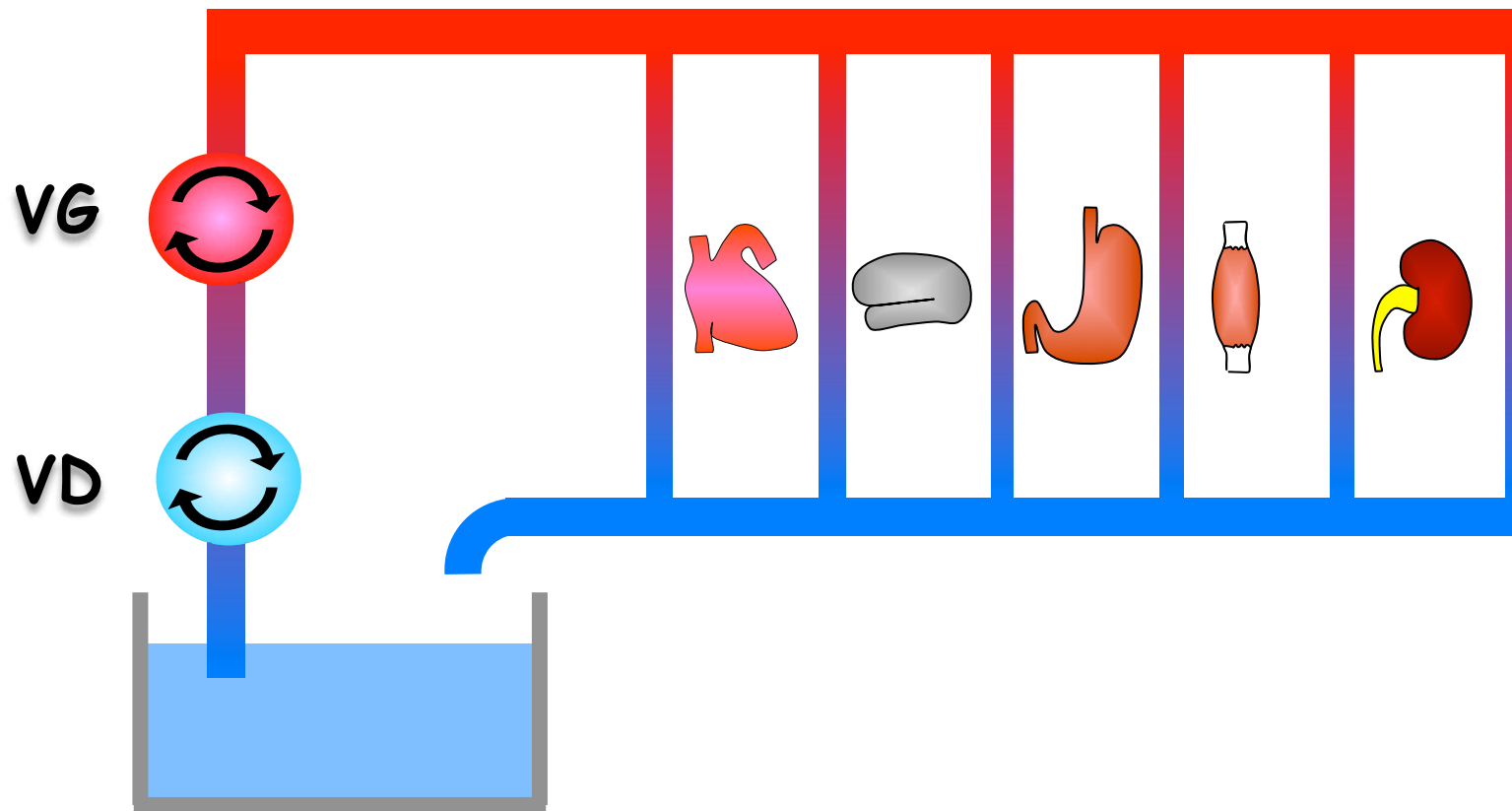


Obstructif

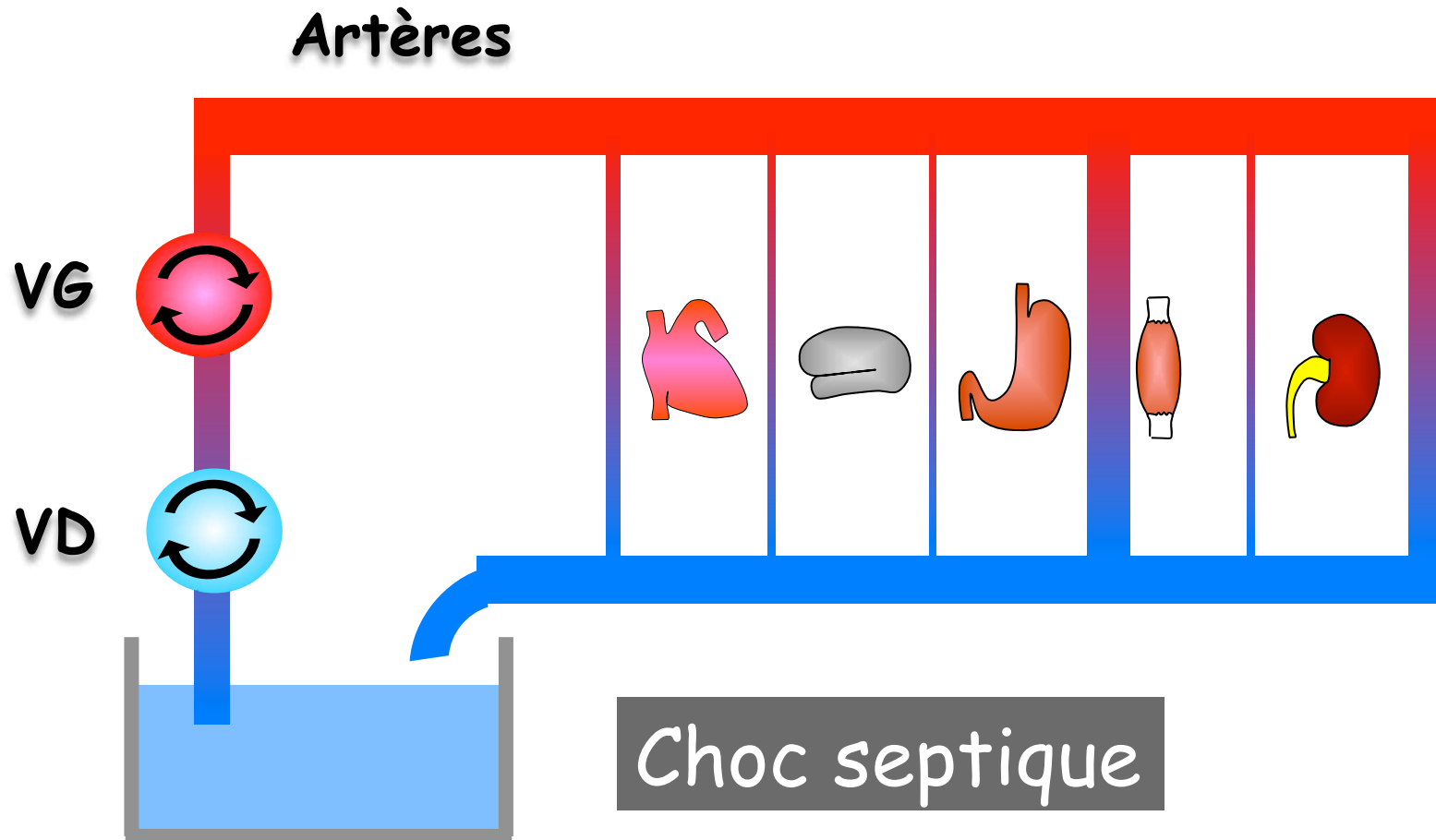


Distributif

Artères



Distributif



En pratique

1. Examen clinique

Hypotension

Marbrures

Oligurie



Le diagnostic d'un état de choc est avant tout clinique

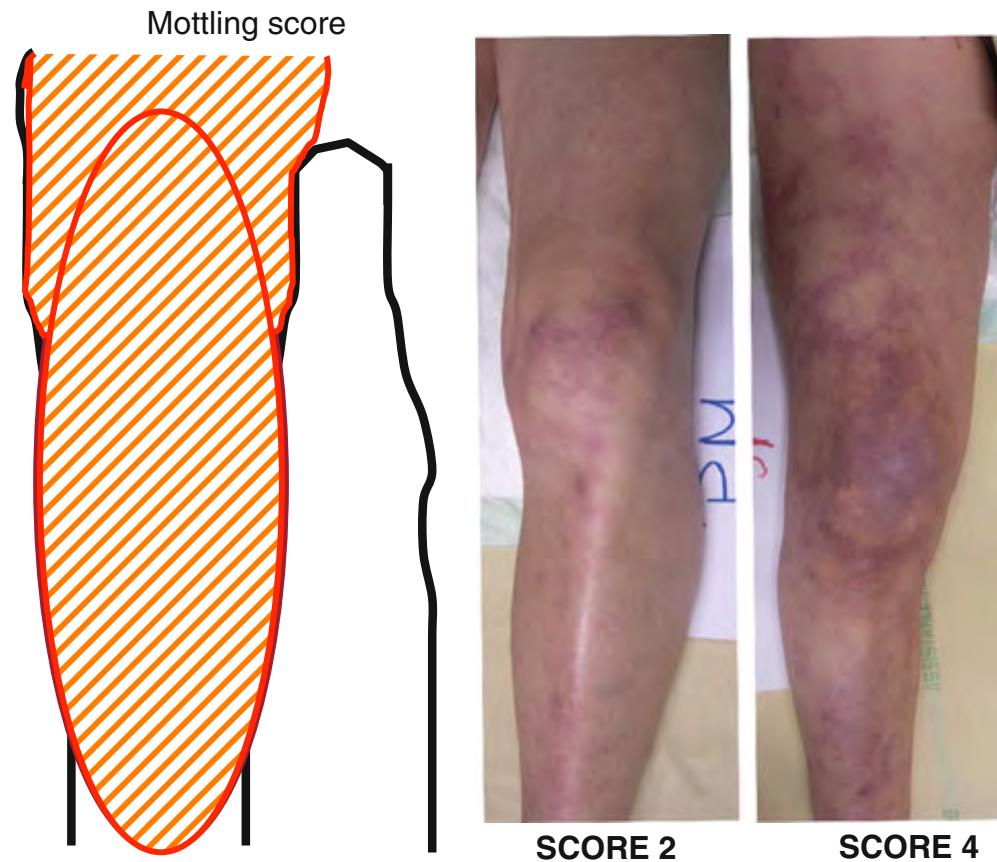
Les marbrures

Intensive Care Med (2011) 37:801–807
DOI 10.1007/s00134-011-2163-y

ORIGINAL

Ait-Oufella *et al.*

Mottling score predicts survival in septic shock



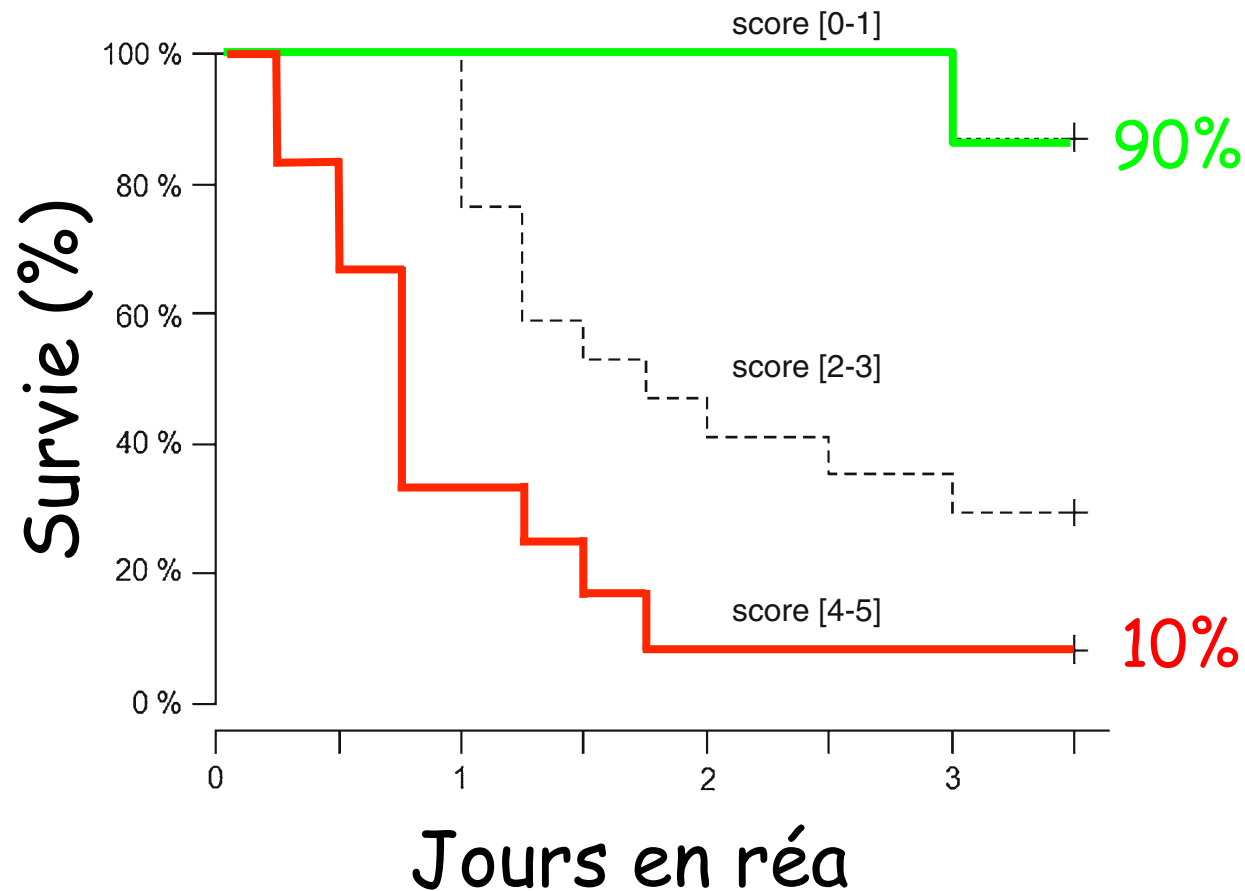
Les marbrures

Intensive Care Med (2011) 37:801–807
DOI 10.1007/s00134-011-2163-y

ORIGINAL

Ait-Oufella *et al.*

Mottling score predicts survival in septic shock



Diagnostic positif

2. Examens biologiques

Lactatémie



Le meilleur examen biologique est la mesure de la lactatémie

Hypotension artérielle

NON ←

Signes d'hypoperfusion ?

→ OUI

Confusion



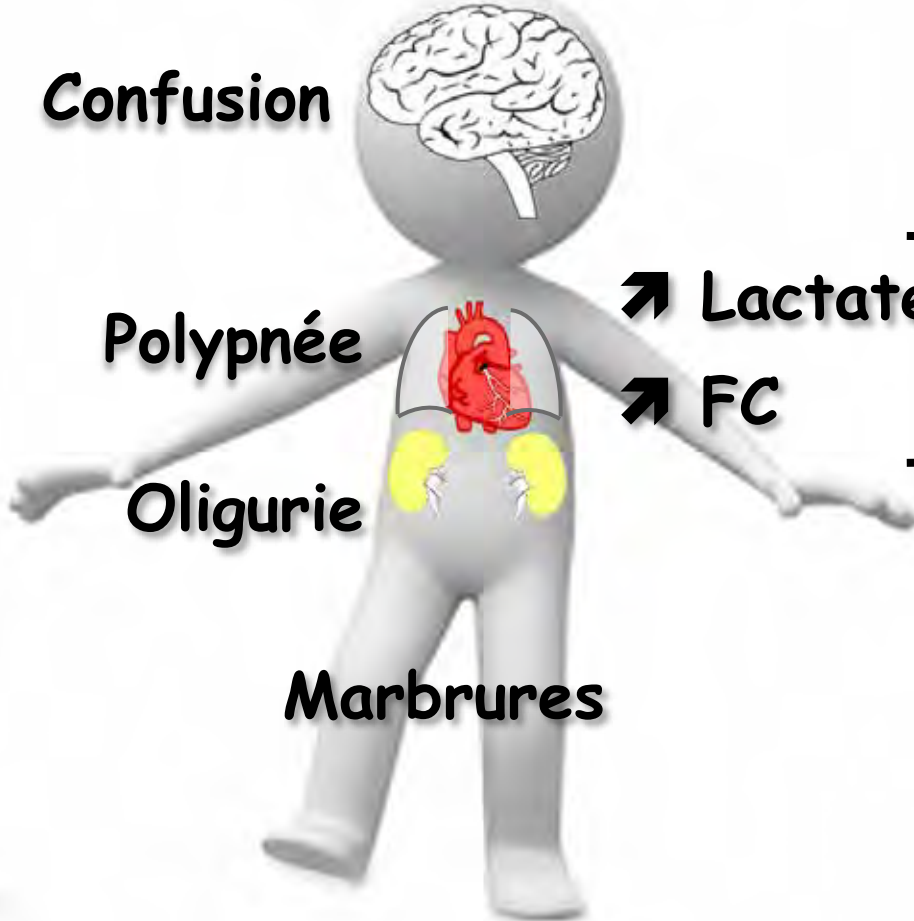
Polypnée

↗ Lactate

↗ FC

Oligurie

Marbrures



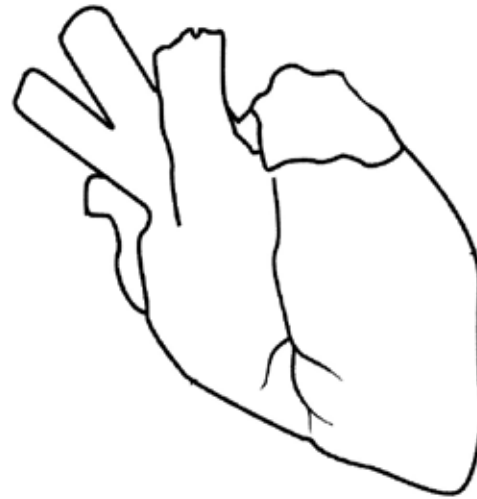
CHOC

TaO₂ ?

Diagnostic étiologique



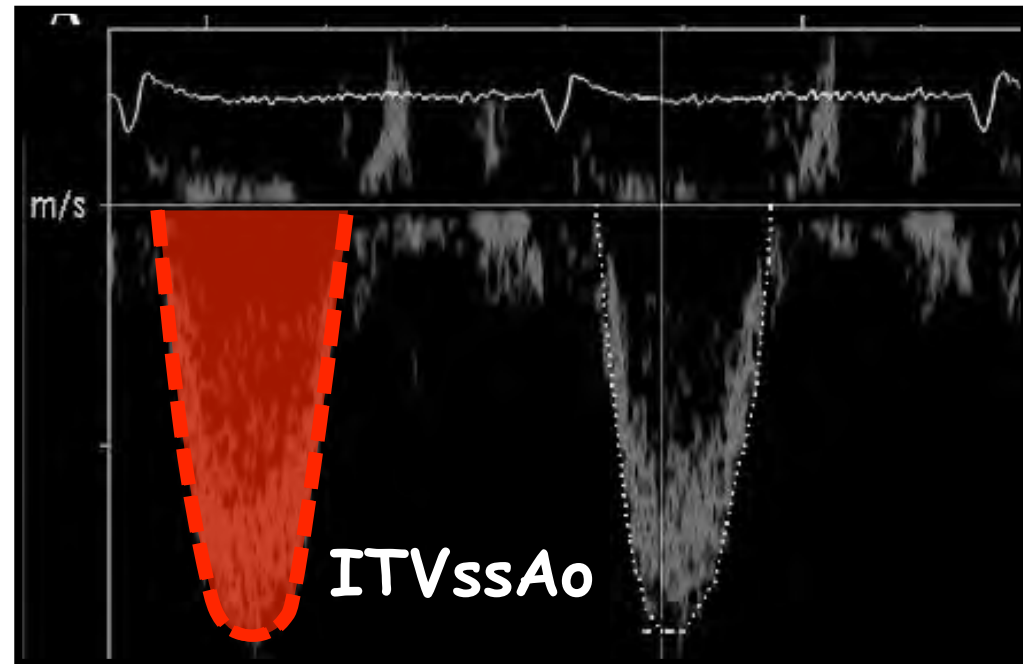
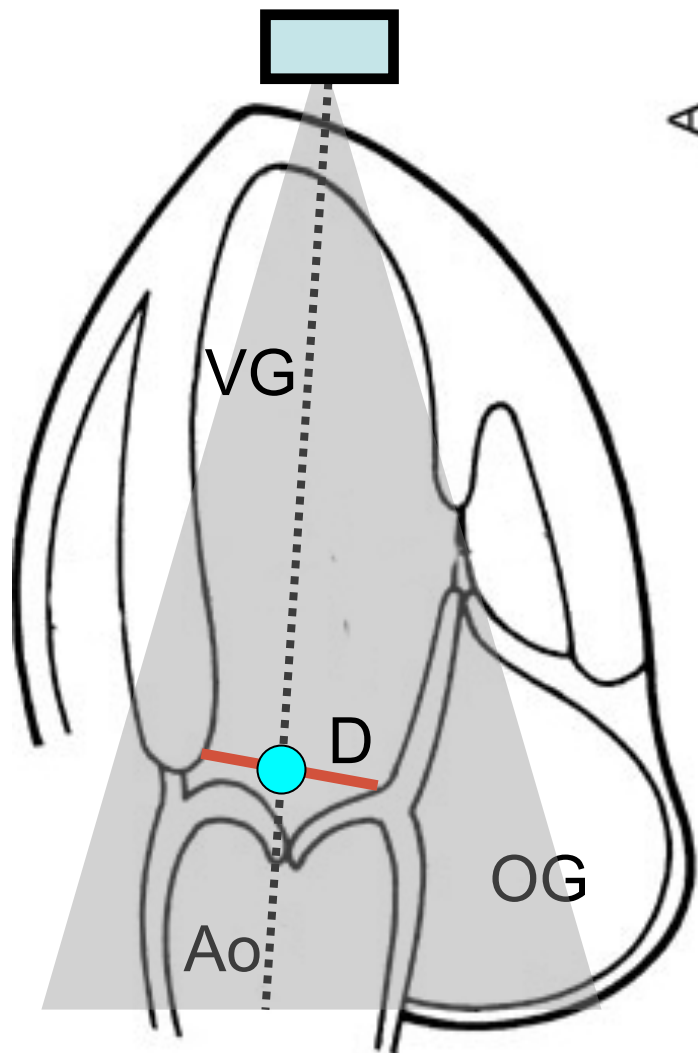
Hémoglobine



SaO₂

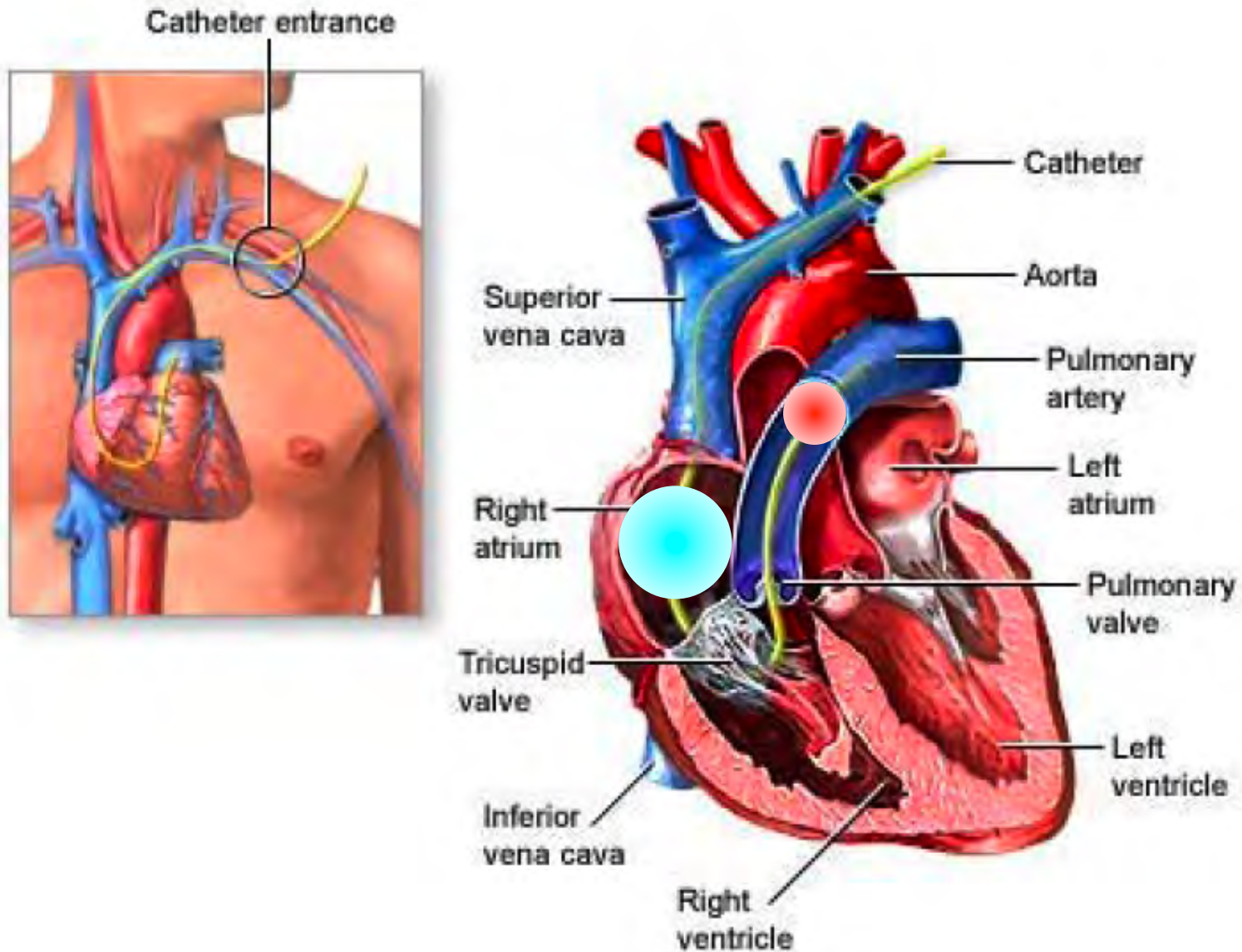
Débit
cardiaque

Mesure du débit cardiaque

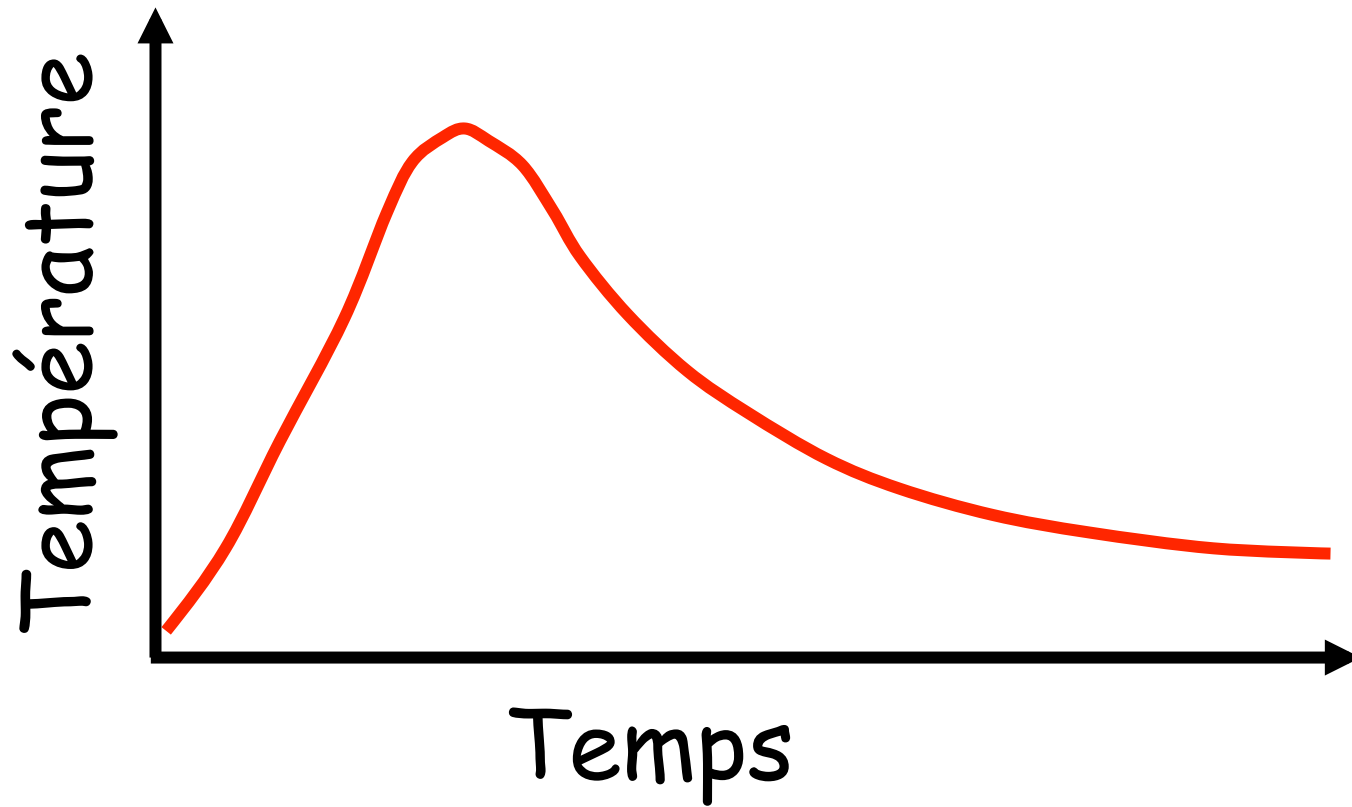


$$\begin{aligned} \text{VES} &= \text{ITVssAo} \times \text{surface} \\ \text{VES} &= \text{ITVssAo} \times \pi D^2 / 4 \\ \text{Débit cardiaque} &= \text{VES} \times \text{FC} \end{aligned}$$

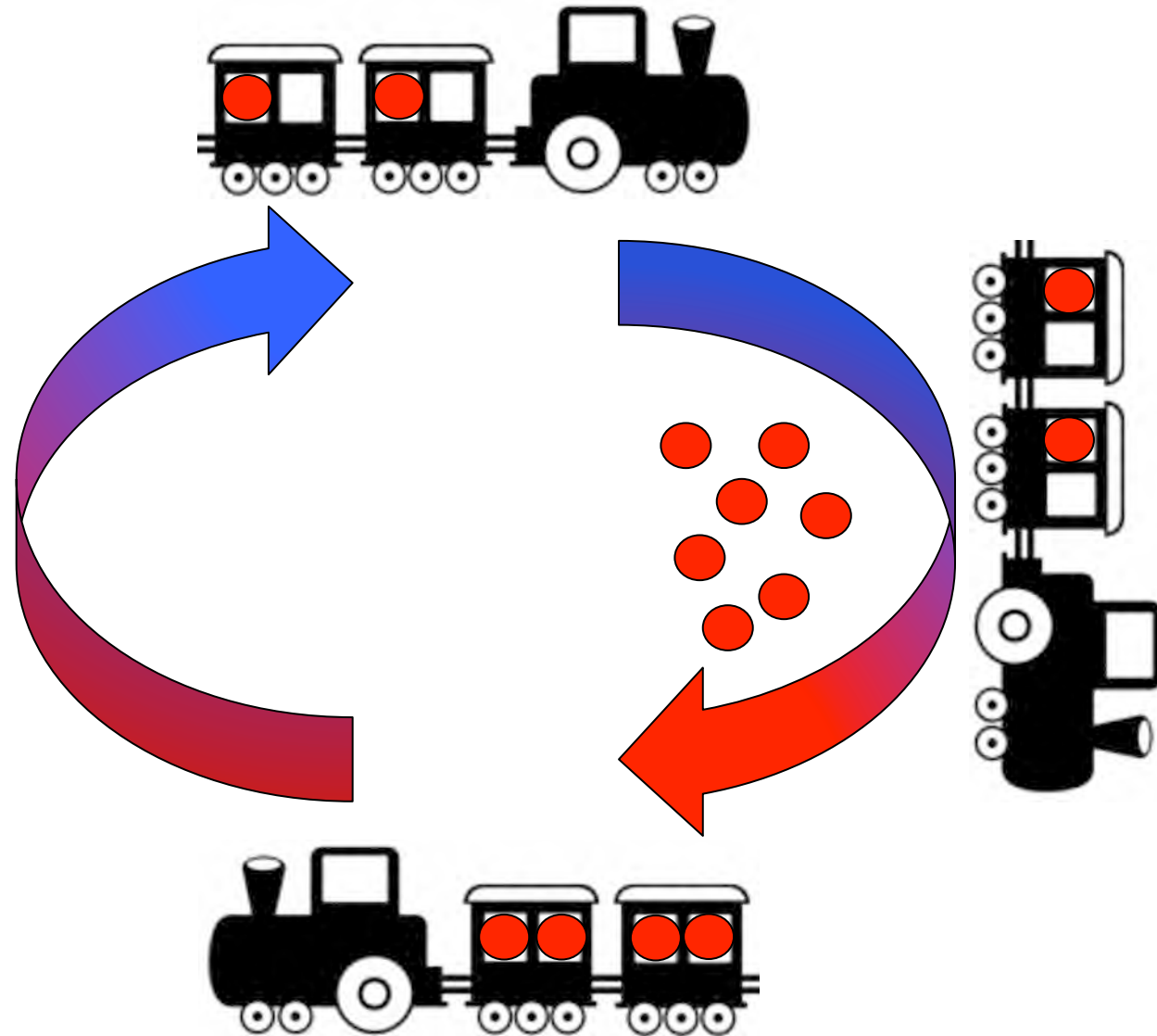
Mesure du débit cardiaque



Mesure du débit cardiaque



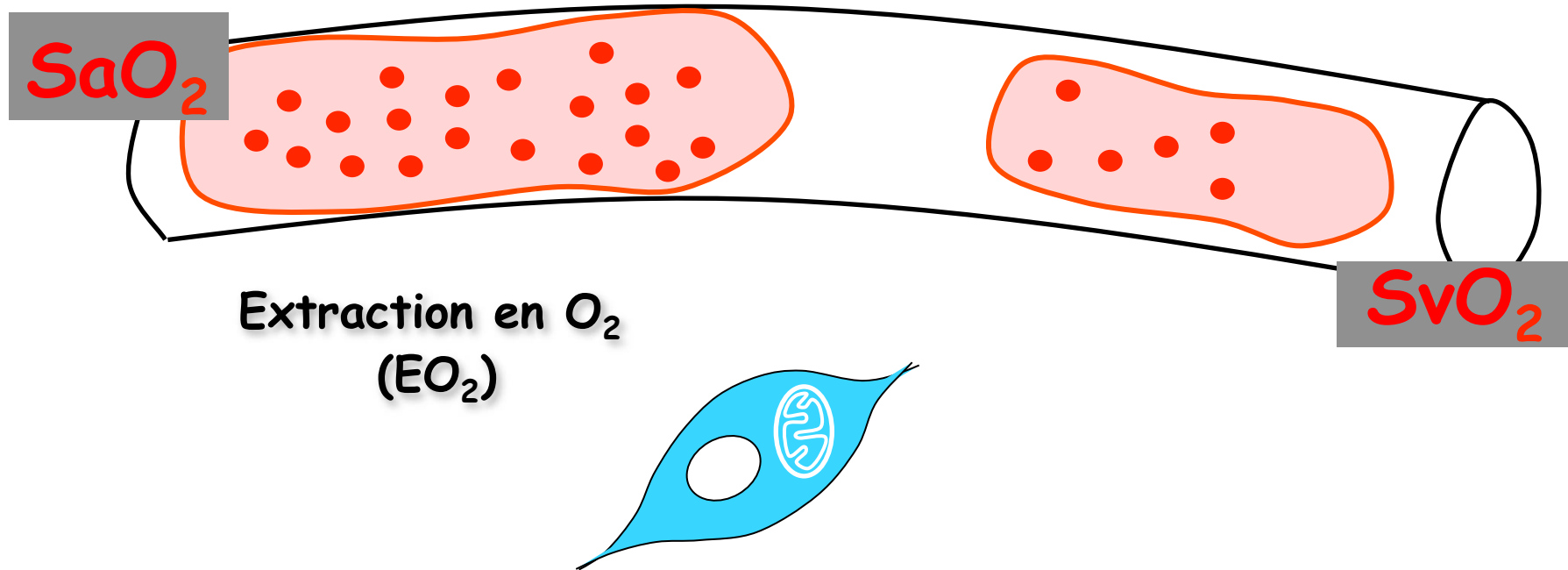
Saturation veineuse en O_2 (SVO_2)



Saturation veineuse en O_2 (SvO_2)

Transport artériel
en O_2 (TaO_2)

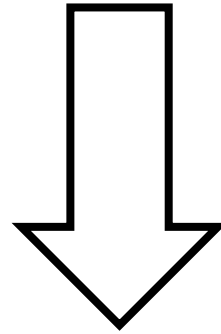
SaO_2 , Hb, débit



Une SvO_2 basse suggère une diminution du débit cardiaque

Diagnostic étiologique

Débit cardiaque
abaissé

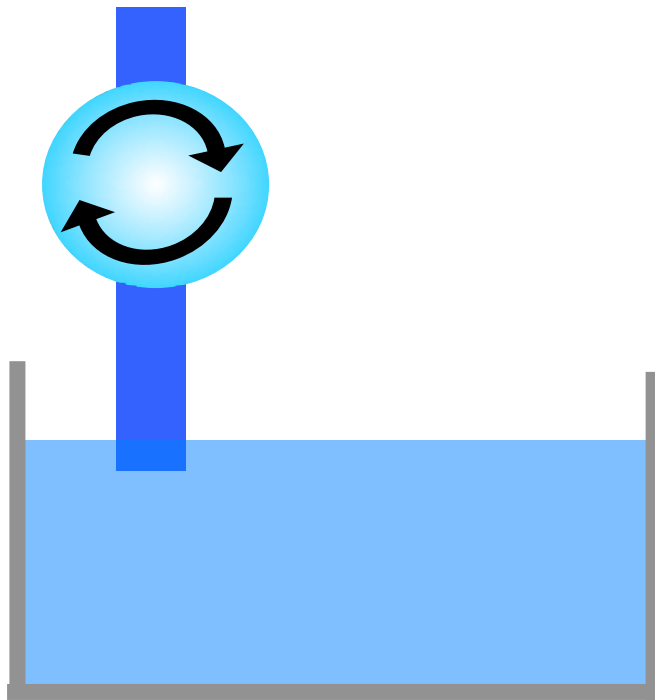


Volémie ?

Evaluation de la volémie

Mesure de la PVC

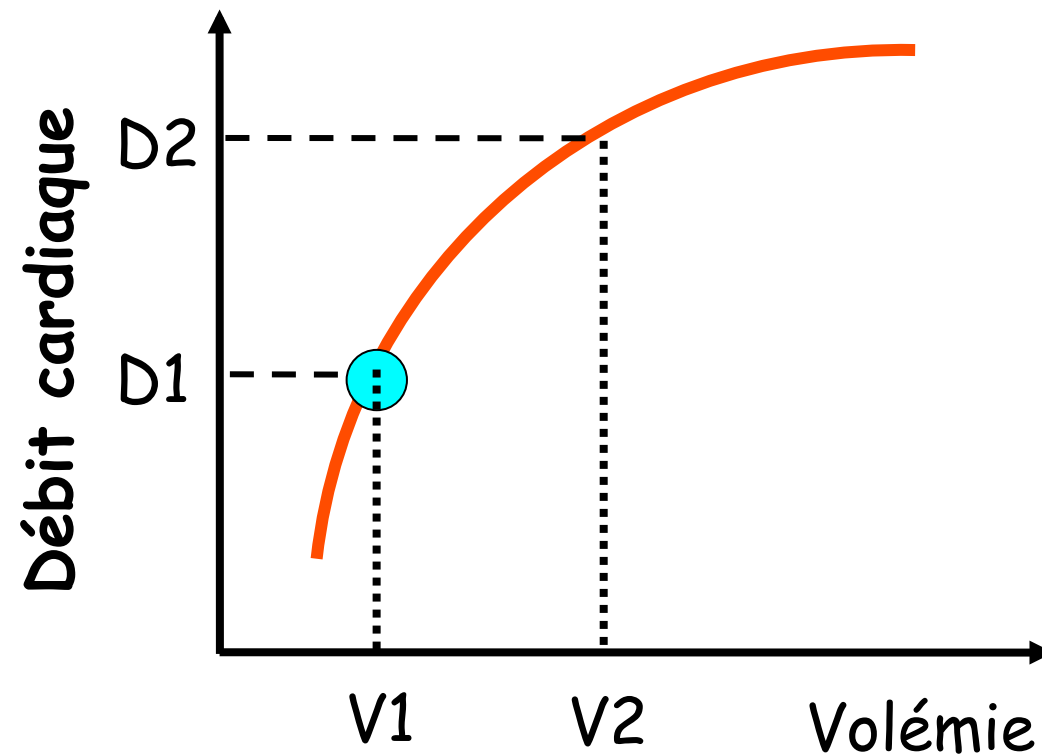
Echocardiographie



Evaluation de la volémie

Mesure de la PVC

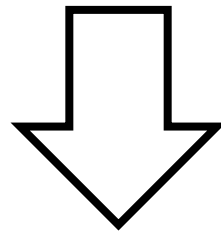
Echocardiographie



Diagnostic étiologique



Volémie haute



ETT

CARDIOGENIQUE

Dilatation VG
↘ contractilité
Valvulopathies



OBSTRUCTIF

Dilatation aigue VD
Tamponnade

Résumé

The NEW ENGLAND JOURNAL of MEDICINE

REVIEW ARTICLE

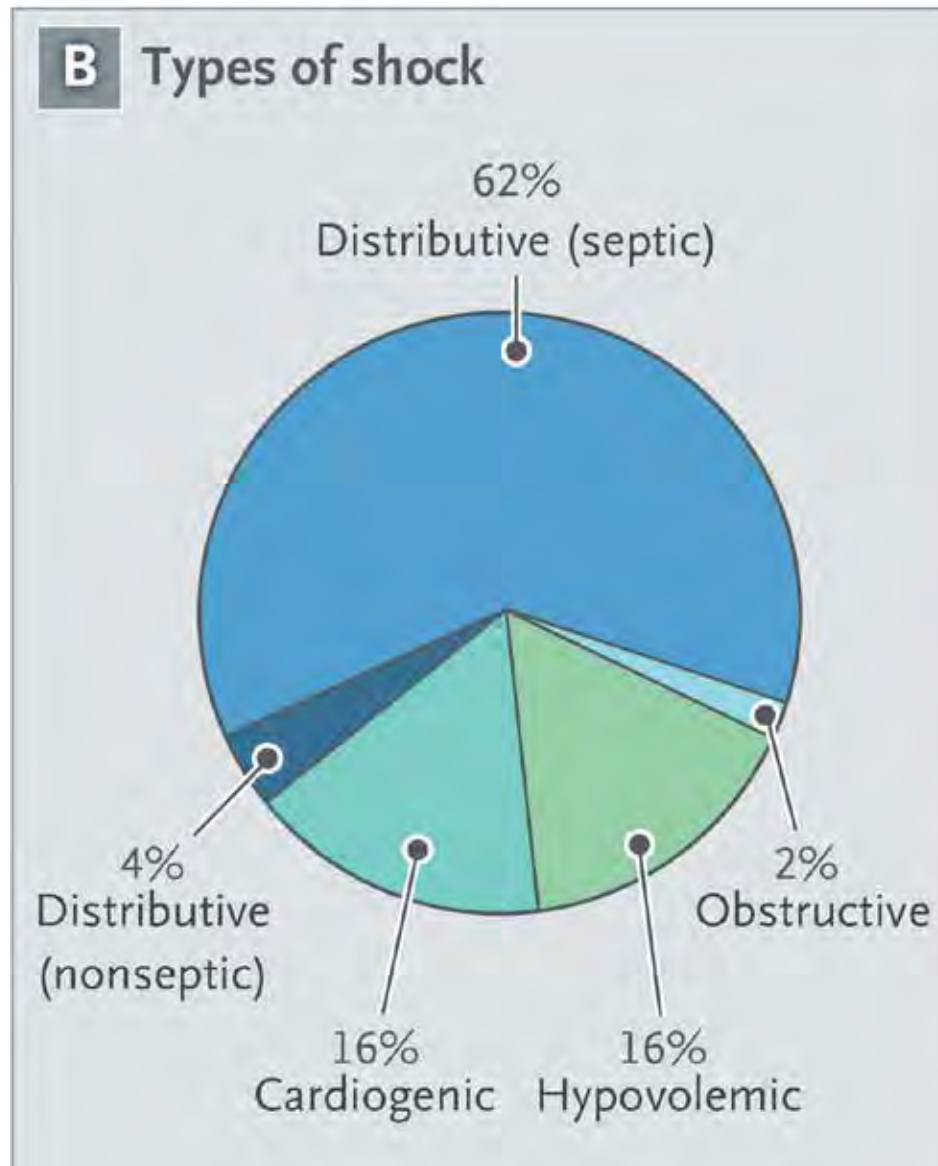
CRITICAL CARE MEDICINE

Simon R. Finfer, M.D., and Jean-Louis Vincent, M.D., Ph.D., *Editors*

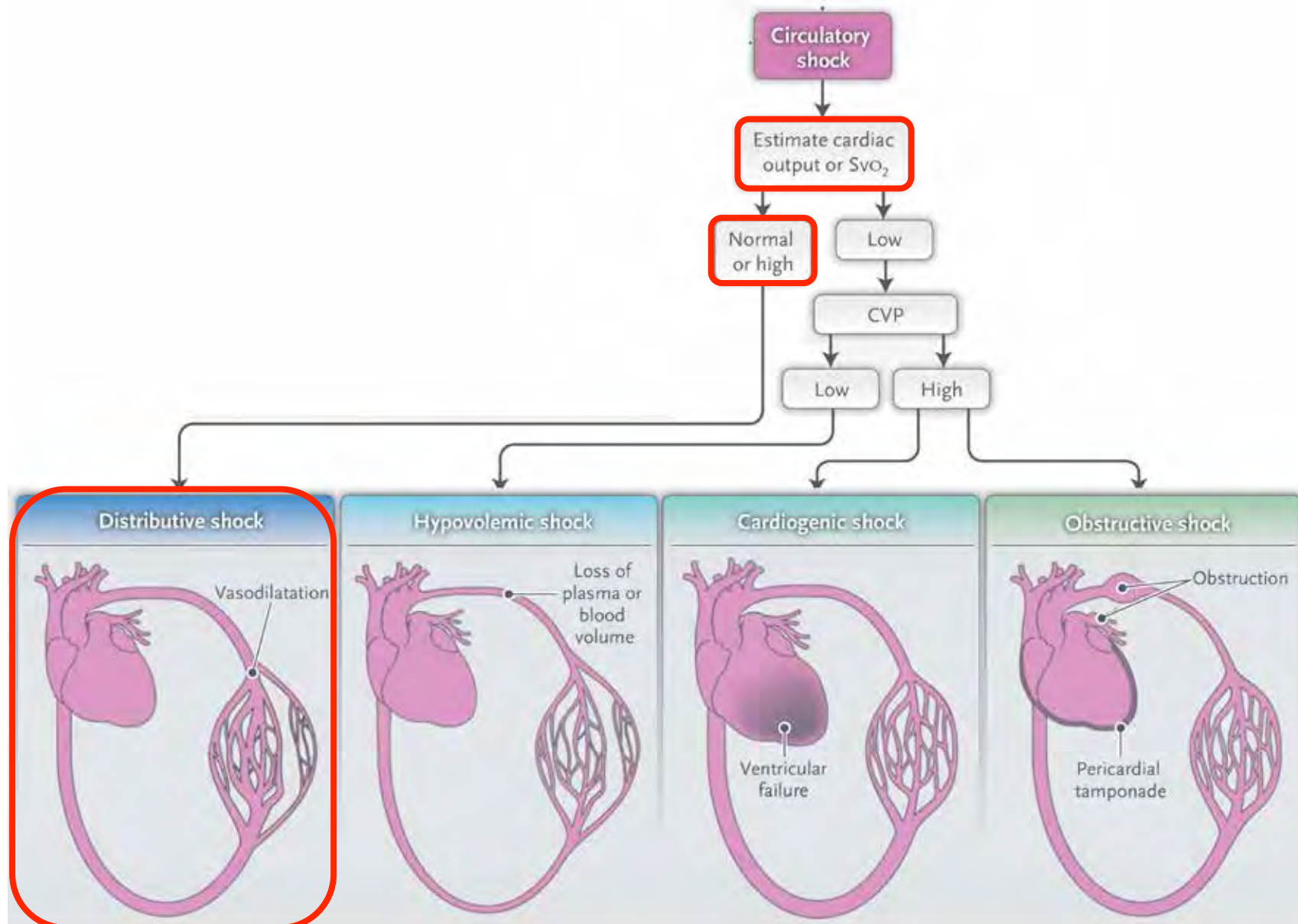
Circulatory Shock

Jean-Louis Vincent, M.D., Ph.D., and Daniel De Backer, M.D., Ph.D.

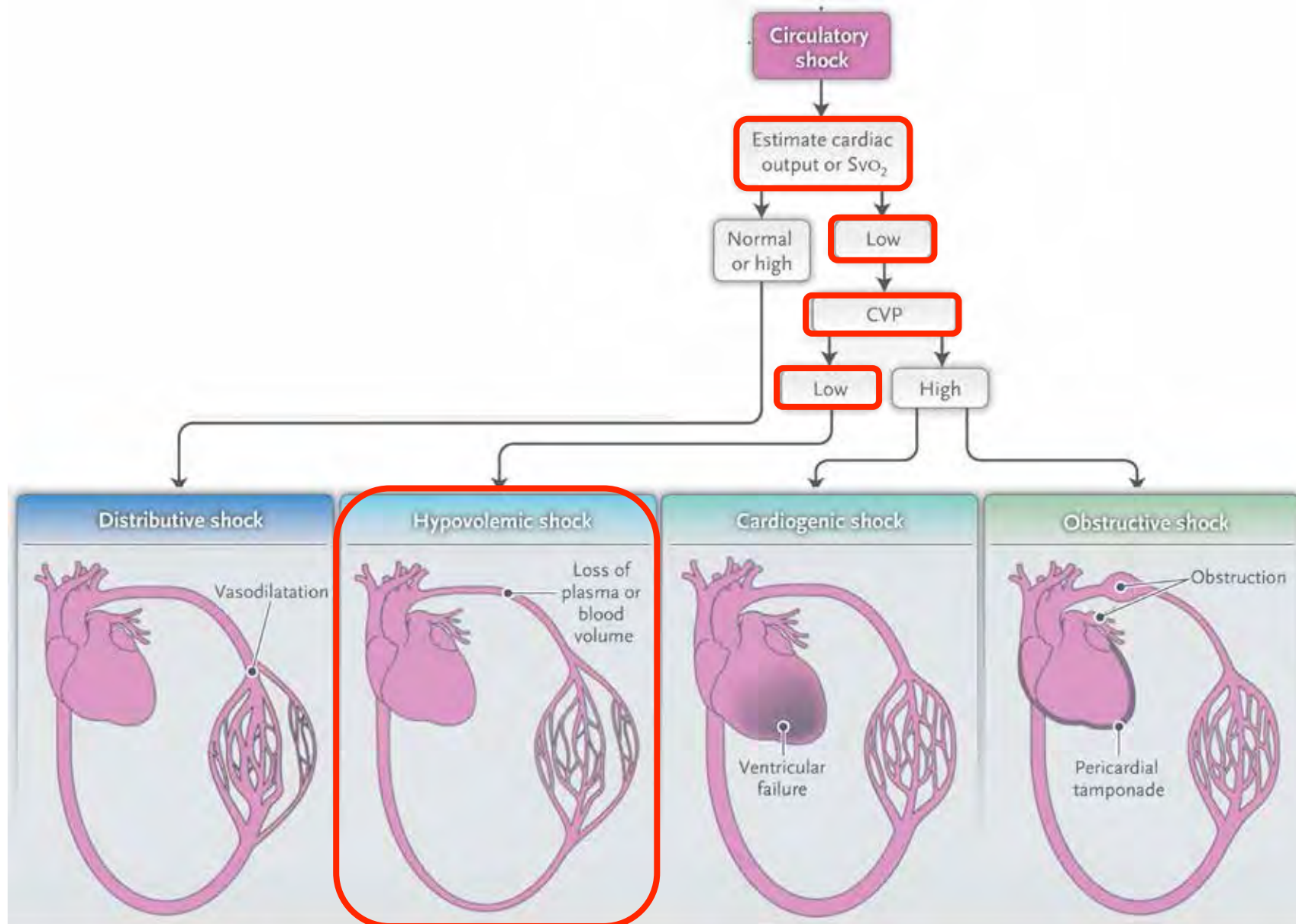
Résumé



Résumé



Résumé



Résumé

