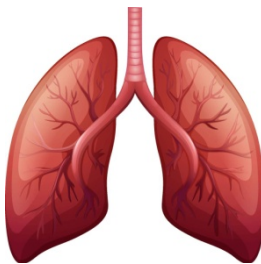


Critical Care Cheat Sheet

Modes of Ventilation

Mode	Components	Description
SIMV Synchronised Intermittent Mandatory Ventilation	<ul style="list-style-type: none"> Volume or pressure controlled Mandatory breaths are set Time-cycled Machine or patient triggered Permits spontaneous breathing 	VC SIMV – the patient is supplied with a set tidal volume VT during mandatory breaths. Spontaneous breathing is permitted during the expiration phase on PEEP level. During spontaneous breathing at PEEP level, the patient is supported by Pressure Support.
Volume Control - Patient is supplied with a set Tidal Volume Pressure Control - Patient is supplied with a set pressure P _{insp}		
SPN – CPAP/PS Spontaneous – Continuous Positive Airway Pressure/Pressure Support	<ul style="list-style-type: none"> Spontaneous breathing Continuous positive pressure level with or without pressure support 	The patient breathes at the PEEP level. Compared to atmospheric pressure, the airway pressure is increased during the complete breathing cycle – inspiration & expiration.
PC-BIPAP Pressure Control – Biphasic Positive Airway Pressure	<ul style="list-style-type: none"> Pressure-controlled Time-cycled Machine or patient triggered Inspiration and expiration synchronised Permitted spontaneous breathing during whole breathing cycle 	The patient can breathe spontaneously at any time, but the number of mandatory breaths are specified. Mandatory breaths are synchronised with the breathing attempts of the patient both for inspiration & expiration.
PC-APRV Pressure Control – Airway Pressure Release Ventilation	<ul style="list-style-type: none"> Pressure-controlled Time-cycled Machine-triggered Spontaneous breathing under continuous positive breathing pressure with brief pressure relief times 	The patient's spontaneous breathing takes place at the upper pressure level P _{max} . This pressure P _{max} is maintained for the duration of T _{high} . To evocate an active expiration, the pressure is reduced for the brief period T _{low} to P _{low} .
P=Pressure T=Time		

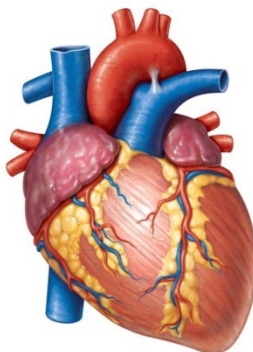


Arterial Blood Gases

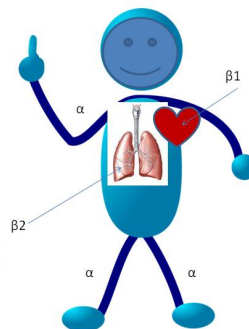
ABGs	PH	PaCO2	HCO3	Common Causes
Normal	7.35-7.45	4.4-6.0	21-27	
Respiratory Acidosis	↓	↑	Normal or ↑	Respiratory Depression (Drugs, CNS, Trauma) COPD, Pneumonia
Respiratory Alkalosis	↑	↓	Normal or ↓	Hyperventilation – Anxiety, Pain, Over-Ventilation
Metabolic Acidosis	↓	Normal or ↓	↓	Diabetes, shock, renal failure
Metabolic Alkalosis	↑	Normal or ↑	↑	Sodium Bicarbonate Overdose, Diuresis, prolonged vomiting, NG drainage

Vasopressors

Pressor	Receptors	Main Effect	Main Shock Use
Adrenaline	α1, α2, β1, β2	Vasoconstriction Inotropy, chronotropy	Cardiac Arrest AAA, Anaphylaxis Asthma
Noradrenaline	α1, α2	Vasoconstriction Chronotropy	Septic Shock 1 st line for hypotension in ITU
Phenylephrine	α1	Vasoconstriction	Hypotension
Metaraminol	α1	Vasoconstriction	Hypotension
Vasopressin	V1	Vasoconstriction	Adjunct to Noradrenaline for hypotension
Dobutamine	β1, β2	Inotropy Mild vasodilation	Cardiogenic Shock



Receptor Man



- Adrenaline:**
- high affinity for β1, β2 and α1
 - β effects are more pronounced at a small dose
 - α1 effects at a higher dose.
- Noradrenaline:**
- Potent α1 effects and modest β activity
- Dobutamine:**
- Strong β1 and β2 effects.
- Vasopressin:**
- V1 receptors causing constriction of vascular smooth muscle
 - Its V2 effects increase renal collecting duct permeability to improve water reabsorption.

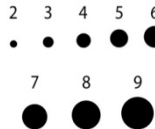
GCS

GLASGOW COMA SCALE	
EYE OPENING RESPONSE	Spontaneous — 4 To sound — 3 To pressure — 2 None — 1
VERBAL RESPONSE	Oriented — 5 Confused — 4 Words — 3 Sounds — 2 None — 1
MOTOR RESPONSE	Obey commands — 6 Localising — 5 Normal flexion — 4 Abnormal flexion — 3 Extension — 2 None — 1

Pupil Reaction



Pupil gauge (mm)



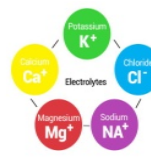
Haematology

TEST	UNITS	REF RANGE
Hb	g/L	130-180(M) 115-165(F)
WBC	X10 ⁹ /L	4.0-11.0
Platelets	X10 ⁹ /L	150-400
Neutrophils	X10 ⁹ /L	2.0-7.5
PT	sec	10.5-13.5
APTT	sec	26.0-36.0

U & E's

TEST	UNITS	REF RANGE
Sodium	mmol/L	137-144
Potassium	mmol/L	3.5-5.0
Chloride	mmol/L	98-107
Urea	mmol/L	3.0-9.0
Creatinine	mmol/L	64-110
eGFR	mL/min/1.73 m ²	>60
Glucose	mmol/L	3.9-7.8
Calcium	mmol/L	2.10-2.55
Corrected Calcium	mmol/L	2.12-2.62
Albumin	g/L	35-50
Bilirubin	Umol/L	3-21
ALT	U/L	0-55
ALP	U/L	40-150
Magnesium	mmol/L	0.66-1.07
Phosphate	mmol/L	0.74-1.52

Normal Values



Richmond Agitation Sedation Scale

RASS score			CAM-ICU
Score	Description		
+4	Combative	Violent, immediate danger to staff	RASS ≥ -2 Proceed to CAM-ICU assessment
+3	Very agitated	Pulls at or removes tubes, aggressive	
+2	Agitated	Frequent non-purposeful movements, fights ventilator	
+1	Restless	Anxious, apprehensive but movements not aggressive or vigorous	
0	Alert & calm		
-1	Drowsy	Not fully alert, sustained awakening to voice (eye opening & contact >10 secs)	RASS < -2 STOP Feedback later
-2	Light sedation	Briefly awakens to voice (eye opening & contact <10 secs)	
-3	Moderate sedation	Movement or eye-opening to voice (no eye contact)	
-4	Deep sedation	No response to voice, but movement or eye opening to physical stimulation	
-5	Un-rousable	No response to voice or physical stimulation	

CAM - ICU

