

Critical Care Guidelines and Values: The Basics for Nursing Students	
ARTERIAL BLOOD GASES	
Normal Values	
<b>pH</b>	7.35-7.45 (7.40 absolute normal) <7.35=acidosis >7.45= alkalosis
<b>HCO3</b>	22-26 mEq/L < 22= acidosis >26= alkalosis
<b>PaCO2</b>	35-45mmHg >45= acidosis <35= alkalosis
<b>PaO2</b>	80-100 mmHg for people under 60 For each year the patient is over 60 deduct 1 mmHg from the lower end of normal <u>Critical zone: &lt;60 mmHg</u>
Compensated vs Uncompensated	
Is the pH normal?	Compensated
Is the pH abnormal?	Uncompensated
Respiratory Acidosis vs Respiratory Alkalosis	
<b>Respiratory Acidosis</b>	<b>Values:</b> pH <7.35; PACO2 >45 <b>Causes:</b> airway obstruction, drug overdose, pulmonary edema, COPD, chest trauma, neuromuscular disease <b>S/S:</b> confusion, easily fatigue, lethargy, SOB, etc. <b>Treatment:</b> aimed at underlying disease but may include: bronchodilators, CPAP or BiPAP, education on cessation of smoking, etc.
<b>Respiratory Alkalosis</b>	<b>Values:</b> pH >7.45; PACO2 <35 <b>Causes:</b> hyperventilation, anxiety, hypoxia, fever, pregnancy, high altitudes, initial stages of a PE <b>S/S:</b> dizziness, lightheadedness, numbness of the hands and feet, etc. <b>Treatment:</b> treat the cause, possibly breathing into a paper bag, reduce anxiety, etc.
Metabolic Acidosis vs Metabolic Alkalosis	
<b>Metabolic Acidosis</b>	<b>Values:</b> pH <7.35; HCO3 <22 <b>Causes:</b> salicylate OD, shock, sepsis, severe diarrhea, renal failure <b>S/S:</b> depends on the underlying cause <b>Treatment:</b> treat the cause; sodium bicarbonate may be given to reduce the acidity of the blood, and IVF
<b>Metabolic Alkalosis</b>	<b>Values:</b> pH >7.45; HCO3 >26 <b>Causes:</b> loss of gastric juices, potassium wasting diuretics, overuse of antacids <b>S/S:</b> confusion, hand tremor, muscle twitching, n/v, numbness or tingling in the face, hands, or feet, prolonged muscle spasms (tetany) <b>Treatment:</b> first find the underlying cause; receive O2, monitor VS closely
<b>PRIOR to ABGS:</b> ALWAYS perform Allen's test and gather a clinical history and assessment	
<b>Rules to Remember:</b> ROME (respiratory opposite, metabolic equal); the pH is inversely proportional to the PACO2; the pH is directly proportional to the HCO3	
<b>Patient-Centered Care:</b> Evaluate patient/family concerns, requests, and/or needs.	
<b>Therapeutic Communication:</b> Communicate results/findings to the nurse and your instructor. Educate your patient on your findings.	

RASS SCALE		
Normal Values		<b>Procedure:</b> (1) Observe patient. Calm? (score 0) Restless or agitated behavior? (score 1-4). (2) If not alert, speak name in a loud clear voice and direct the patient to look at the speaker. Repeat once if necessary. Gauge response: (score -1 to -3). (3) If no response to voice, then physically stimulate the patient. Gauge response (score -4 to -5)
COMBATIVE	+4	
VERY AGITATED	+3	
AGITATED	+2	
RESTLESS	+1	
ALERT AND CALM	0	
DROWSY	-1	
LIGHT SEDATION	-2	
MODERATE SEDATION	-3	
DEEP SEDATION	-4	
UNAROUSABLE	-5	
INTERPRETING EKGs		
1. First ask, is this rhythm regular? 2. Then, count the atrial and ventricular rate 3. Measure the PR, QRS and QT interval 4. Look at the shape of the wave forms and their consistency 5. Identify the underlying rhythm 6. Is the patient tolerating this rhythm? 7. Finally, what are some clinical implications of the rhythm?		
MUST KNOW HEMODYNAMICS		
Heart Rate	60-100	
Blood Pressure	120/80	
Cardiac Output	3-5 liters per minute	
CVP	5-12 mmHg	
PAWP	5-12 mmHg	
SVR	600-1200 (afterload)	
PAP: Systolic/Diastolic	15-25 mmHg/5-12 mmHg	
CLASSIFICATIONS OF SHOCKS		
<b>Hypovolemic Shock</b>	Inadequate intravascular blood volume	↑ HR, SVR, ↓ BP, CO, CVP, PAWP
<b>Cardiogenic Shock</b>	Heart fails to act as an effective pump	↑HR, CVP, PAWP, SVR, ↓BP, CO
<b>Obstructive Shock</b>	Physical impairment to adequate circulation blood flow	↑ HR, CVP, PVR, PAWP, ↓ BP, CO
<b>Distributive Shock:</b>	Widespread vasodilation and decreased vascular tone resulting in a relative hypovolemia	↓HR, ↓BP, CO, CVP, PAWP, SVR
	<ul style="list-style-type: none"> <li>• Neurogenic</li> <li>• Anaphylactic</li> <li>• Septic</li> </ul>	
Reference		
Yousefi, H., Toghiani, F., Yazdannik, A. R., & Fazel, K. (2015). Effects of using Richmond Agitation Sedation Scale on duration of mechanical ventilation, type and dosage of sedation on hospitalized patients in intensive care units. <i>Iranian Journal of Nursing and Midwifery</i> , 20(6), 700-704. doi:10.4103/173.5-9066.170008		