

I. Problem Set #1

- A. Determine the primary acid-base disturbance.
- B. Indicate if the ABG is uncompensated, compensated or partially compensated.
- C. Indicate whether the hypoxemia is mild, moderate or severe.
- D. Determine which patients need to be intubated and mechanically ventilated.
- E. Determine which ABG is normal for a patient with COPD.
- F. Assume all samples are obtained with the patient breathing room air. Which ones would be a lab error?

pH	PaCO <sub>2</sub>	PaO <sub>2</sub>	HCO <sub>3</sub> <sup>-</sup>	Interpretation
7.39	55	32	32	<b>FULLY COMPENSATED RESPIRATORY ACIDOSIS WITH SEVERE HYPOXEMIA DO NOT INTUBATE/VENTILATE COPD PATIENT</b>
7.10	40	92	12	<b>UNCOMPENSATED METABOLIC ACIDOSIS WITH NORMOXEMIA DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>
7.21	62	40	24	<b>UNCOMPENSATED RESPIRATORY ACIDOSIS WITH MODERATE/SEVERE HYPOXEMIA INTUBATE &amp; VENTILATE NOT A COPD PATIENT</b>
7.20	90	32	34	<b>PARTIALLY COMPENSATED RESPIRATORY ACIDOSIS WITH SEVERE HYPOXEMIA INTUBATE AND VENTILATE PROBABLY A COPD PATIENT</b>
7.51	23	80	18	<b>PARTIALLY COMPENSATED RESPIRATORY ALKALOSIS WITH NORMOXEMIA. DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>
7.64	40	68	42	<b>UNCOMPENSATED METABOLIC ALKALOSIS WITH MILD HYPOXEMIA DO NOT INTUBATE/VENTILATE POSSIBLY A COPD PATIENT</b>
7.11	49	15	77	<b>.LAB ERROR; pH ISN'T POSSIBLE FOR THAT PCO<sub>2</sub>/HCO<sub>3</sub><sup>-</sup> COMBINATION</b>

7.35	67	57	36	<b>FULLY COMPENSATED RESPIRATORY ACIDOSIS WITH MODERATE HYPOXEMIA DO NOT INTUBATE/VENTILATE PROBABLY A COPD PATIENT</b>
7.60	55	88	36	<b>PARTIALLY COMPENSATED METABOLIC ALKALOSIS WITH NORMOXEMIA DO NOT INTUBATE/VENTILATE POSSIBLY A COPD PATIENT</b>
7.72	23	67	29	<b>MIXED ALKALOSIS WITH MILD HYPOXEMIA DO NOT INTUBATE/VENTILATE PROBABLY NOT A COPD PATIENT</b>
7.68	30	63	34	<b>MIXED ALKALOSIS WITH MILD HYPOXEMIA DO NOT INTUBATE/VENTILATE POSSIBLY A COPD PATIENT</b>
7.43	34	88	22	<b>PARTIALLY COMPENSATED RESPIRATORY ALKALOSIS (BARELY) WITH NORMOXEMIA DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>
7.44	47	35	31	<b>FULLY COMPENSATED METABOLIC ALKALOSIS WITH SEVERE HYPOXEMIA DO NOT INTUBATE/VENTILATE POSSIBLY A COPD PATIENT</b>

pH	PaCO <sub>2</sub>	PaO <sub>2</sub>	HCO <sub>3</sub> <sup>-</sup>	Interpretation
7.06	55	111	15	<b>LAB ERROR (PO<sub>2</sub> + PCO<sub>2</sub> ≥ 150)</b>
7.33	57	45	29	<b>PARTIALLY COMPENSATED RESPIRATORY ACIDOSIS WITH MODERATE HYPOXEMIA DO NOT INTUBATE/VENTILATE (BUT GET READY!) PROBABLY NOT A COPD PATIENT</b>
7.55	38	59	22	<b>LAB ERROR (pH INCOMPATIBILITY)</b>
7.90	20	70	38	<b>MIXED ALKALOSIS WITH MILD HYPOXEMIA DO NOT INTUBATE/VENTILATE POSSIBLY A COPD PATIENT</b>
7.52	20	105	16	<b>PARTIALLY COMPENSATED RESPIRATORY ALKALOSIS WITH HYPEROXEMIA DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>
7.38	28	88	16	<b>FULLY COMPENSATED METABOLIC ACIDOSIS WITH NORMOXEMIA DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>
7.02	12	125	3	<b>PARTIALLY COMPENSATED METABOLIC ACIDOSIS WITH HYPEROXEMIA DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>
7.59	32	45	30	<b>MIXED ALKALOSIS WITH MODERATE HYPOXEMIA DO NOT INTUBATE/VENTILATE POSSIBLY A COPD PATIENT</b>
7.14	73	78	24	<b>LAB ERROR (PO<sub>2</sub> + PCO<sub>2</sub> ≥ 150)</b>
7.57	44	34	39	<b>UNCOMPENSATED METABOLIC ALKALOSIS WITH SEVERE HYPOXEMIA DO NOT INTUBATE/VENTILATE POSSIBLY A COPD PATIENT</b>
7.51	31	57	24	<b>UNCOMPENSATED RESPIRATORY ALKALOSIS WITH MODERATE HYPOXEMIA DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>
7.37	63	52	35	<b>FULLY COMPENSATED RESPIRATORY ACIDOSIS WITH MODERATE HYPOXEMIA.</b>

				<b>DO NOT INTUBATE/VENTILATE PROBABLY A COPD PATIENT</b>
7.14	30	105	10	<b>PARITALLY COMPENSATED METABOLIC ACIDOSIS WITH HYPEROXEMIA DO NOT INTUBATE/VENTILATE NOT A COPD PATIENT</b>