

PAL Worksheet
Week 7 Problem Set 1

OXYGEN-HEMOGLOBIN DISSOCIATION CURVE

- 1) What is the most important factor that determines the % saturation of hemoglobin (Hb) with O₂?
- 2) What does it mean when an individual Hb molecule is fully saturated? How is this different from 100% HB saturation?
- 3) On your white board, draw the Oxygen-hemoglobin dissociation curve. Label the X and Y axes properly. Also, include numbers corresponding to the lungs, tissues at rest and highly metabolically active tissues.
- 4) What does it mean when the O₂-Hb dissociation curve is shifted to the right? Please show this on your graph.
- 5) List several factors that right-shift the curve:
 - 1)
 - 2)
 - 3)
 - 4)
- 6) Does right shifting the O₂-Hb dissociation curve make it harder or easier for O₂ to come off of Hb?
- 7) Does right shifting the O₂-Hb dissociation curve increase or decrease Hb % saturation?
- 8) Hb has a 210X higher affinity for carbon monoxide than it does for O₂. Additionally, CO left shifts the O₂-Hb dissociation curve. Please show this change on your graph and also describe how CO poisoning kills an individual:
 - How can CO poisoning be treated (if caught early)?
- 9) An individual has a severe case of iron deficiency anemia. How will this affect the oxygen-hemoglobin dissociation curve?
- 10) What is the major form of CO₂ transport? How is this chemical generated? (Please write out the equation).