Mastery Series: Cardiac Cycle

1. What are the three phases of the cardiac cycle?
2. During which phase(s) is the ventricle in systole the whole time?
3. During which phase(s) is the ventricle in diastole the whole time?
4. Does the heart generally spend more time in systole or in diastole?
5. Why would it be dangerous for perfusion (blood reaching tissues) if the heart pumped too fast?
6. During which phase(s) does the ventricle push open the semilunar valve?
7. During which phase(s) does the ventricle hold shut the AV valve?
8. EDV stands for:
9. In a heart at rest, EDV = ?
10. ESV stands for:
11. In a heart at rest, ESV = ?
12. The heart achieves EDV at the end of which phase?
13. The heart achieves ESV at the end of which phase?
14. The equation for stroke volume is:
15. In a heart at rest, SV =
16. The equation for ejection fraction is:
17. In a heart at rest, the ejection fraction should be:
18. In an average healthy body, what is the pressure the left ventricle must achieve to open the SL valve?
19. If the systemic arteries are constricted (as in hypertension), would the pressure to open the aortic SL valve be higher or lower?
20. Why would a slow heart rate potentially increase EDV?

Cardiac Cycle   Mastery Series Answers

1. Ventricular Filling; Ventricular Systole; Isovolumetric Relaxation
2. Ventricular systole
3. ventricular filling and isovolumetric relaxation
4. diastole
5. If it pumped too fast, it wouldn't have time to fill with blood. Pumping would be inefficient.
6. Ventricular systole
7. ventricular systole and isovolumetric relaxation
8. end diastolic volume
9. 120mL
10. end systolic volume
11. 50mL
12. ventricular filling
13. ventricular systole
14. SV=EDV-ESV
15. 70mL
16. SV/EDV
17. 58%
18. 120mmHg
19. higher
20. more time to fill with blood