Chapter 19

The Cardiovascular System: Blood Vessels: Part A

1. Intro
Intro into blood vessels
Three types – ________, ________________ & ________
Cardiac fibers of ________________ contact causing ventricle chamber volume to _______ and blood is “________ “ out into ________. Aorta ________ and those branches also ________ into smaller and ________ arteries – eventually to __________ and finally to __________. The capillaries ________ forming ________ that continue to converge forming ________. This convergence continues with the final formation of the ________ & ________ ________ and empty into the _______________

2. Blood Vessels
• Delivery system of dynamic structures that ________ and ________ at the ________
• ________: carry blood ________ from the ________; ________ except for __________ circulation and umbilical vessels of a fetus
• ________: contact ________________ and directly serve ________ needs
• ________: carry blood ________ the ________

3. Fig. 19.2 pg. 697
4. Structure of Blood Vessel Walls

*Arteries and veins*

- __________, __________, and __________
- __________  Central blood-containing __________
- __________  __________  with sparse basal __________

5. Fig. 19.1  pg. 696

6. Tunics

- __________  __________  Endothelium  __________  the  __________  of all
- In vessels  __________  than  __________, a  __________  __________  __________  __________  ______ ______  __________  membrane is present

7. Tunics

- __________  __________
- __________  and sheets of  __________
- __________  __________  nerve fibers control  __________
- __________  __________  of  __________

8. Tunics

- __________  __________  (tunica adventitia)
- __________  fibers  __________  and  __________
- __________  vessels contain  __________  __________  to nourish
  the external layer

9.  Table 19.1a  pg. 698

10. Table 19.1b  pg. 698
11. Elastic (Conducting) Arteries

• Large thick-walled arteries with _________ in all ________ tunics
  • _________ and its _________ branches
  • _________ lumen offers _________-resistance
  • Act as _________ _________—_________ and _________ as blood is _________ from the heart

12. _________ (__________) Arteries and Arterioles
  • _________ to elastic arteries; _________ blood to _________ _________
  • Have thick _________ _________ with more _________ _________
  • Active in________________

13. _________
  • _________ arteries
  • Lead to _________ beds
  • _________ _________ into___________ beds via _________ and _________

14. _________
  • _________ _________ blood vessels
  • Walls of _________ _________, _________ _________ thick
  • _________ help _________ their _________ and control___________
  • Size _________ only a _________ _________ to _________ at a time

15. _________
  • In _________ _________ for_______, _________, _________ and _________ of eye
  • Functions: _________ of _________, _________, _________, _________, etc.
16. Fig. 19.2

17. ________
• Three _________ types
  1. ___________ s capillaries
  2. ___________ capillaries
  3. ___________ capillaries (sinusoids)

18. ________ Capillaries
• Abundant in the _______ and _____________
  • ______ _______ connect _____________ cells
  • _______ clefts allow the _______ of _______ and small _______
  • ________ capillaries of the _______
  • ______ _______ are complete, forming the ______-_______ _______

19. Fig. 19.3a Pg. 699

20. ________ Capillaries
• Some endothelial cells contain _______ (________________)
• More _________ than _________ capillaries
• Function in _________ or _________ formation (small _________, _________ glands, and _________)

21. Fig. 19.3b Pg. 699
22. __________ Capillaries
• ______ tight junctions, larger _________ ________, large ______
• Usually ________________
• Allow _______ molecules and _______ cells to _______ between the _______ and ______________ _______
• Found in the _______, bone ____________, ________

23. Fig. 19.3c Pg. 699

24. ________________
• _______ networks of ________________ form the ______________ between ___________ and___________
• Consist of_______types of vessels
  1. _______ _______ (metarteriole—_______________ channel): Directly connects the______________ and a ______________

25. ________________
  2. True capillaries
• ______________ exchange vessels per capillary bed
• Branch off the______________ or _________ arteriole

26. Blood Flow Through Capillary Beds
• _______ sphincters regulate _______ _______ into true ___________
• Regulated by local_______ conditions and _________ nerves
28. ________
  • Formed when _________ beds _________
  • Very_________; allow fluids and WBCs into _________
  • Postcapillary venules consist of_________ and a few pericytes
  • _________ venules have _____ or _____ layers of_______ muscle cells

29. ________
  • Formed when _________ _________
  • Have _________ _________, larger_________ compared with corresponding _________
  • _____________ is _________ than in arteries
  • _________ _________ media and a _________ tunica externa consisting of_______ fibers and _________ networks
  • Called_________ vessels (blood_________); contain up to _________ of the _________ supply

30. Fig: Isn’t in your book

31. Fig. 19.5 pg. 701

32. Veins
  • Adaptations that _____________________ to the heart
    1. _____________________ offer little _________
    2. _________ prevent _________ of blood
      • Most _________ in veins of the _________
  • _____________: _________ veins with extremely_______ walls (e.g., coronary sinus of the heart and dural sinuses of the brain)
33. Vascular________
• ____________ of blood vessels
• ____________ provide __________ __________ (collateral channels) to a given body region
  • Common at __________, in abdominal __________, __________, and __________
  • Vascular ________ of capillaries are _________ of arteriovenous anastomoses
• Venous anastomoses are __________