Lab 4: Circulation

Circulatory pathways pp. 173-184, p. 186 **questions** 1-12, 15, 17-18
Vessel maps pp. C57-59 & Hepatic portal system p. 213
Blood pp. 188 – 189, p.198 **questions** 1-5, 16

GOALS:
-Describe the flow of blood through the systemic and pulmonary circuits (adult & fetus)
-Locate the major veins and arteries of the thoracic cavity; know their function.
-Locate the major veins and arteries of the abdominal cavity; know their function.
-Explain the function of the hepatic portal system and how blood flows through it.
-Identify the differences in appearance and function of erythrocytes, leukocytes, and platelets.
-Understand how blood flows from artery → arteriole → capillary → venule → vein

KEY TERMS:
Erythrocytes leukocytes platelets

MAJOR THORACIC VEINS:
Anterior Vena Cava
Right/Left Brachiocephalic Veins
Right/Left Subclavian Veins
Right/Left Internal Jugular
Right/Left External Jugular

MAJOR ABDOMINAL VEINS:
Posterior Vena Cava
Hepatic Portal Vein
Right/ Left Renal Vein
Right/ Left Common Iliac
Umbilical Vein

MAJOR THORACIC ARTERIES:
Aorta
Brachiocephalic trunk
Right/Left Subclavian Arteries
Right/Left Carotid Arteries

MAJOR ABDOMINAL ARTERIES:
Dorsal Aorta
Celiac Artery
Right/ Left Renal Arteries
Mesenteric Artery
Right/ Left Iliac
Umbilical Artery

I. Path of Blood Flow (REVIEW):
pp. 173-178: Read, follow directions and answer questions if not done last week.

II. Thoracic Cavity: Major Veins & Arteries:
DO NOT REMOVE ORGANS!
pp. 178-181: Become familiar with the *veins and arteries* in Figures 14.4 & 14.6. Then, use it to find the major veins and arteries of the thoracic cavity (listed above).
-Be able to state where blood is coming from and where it is going to!

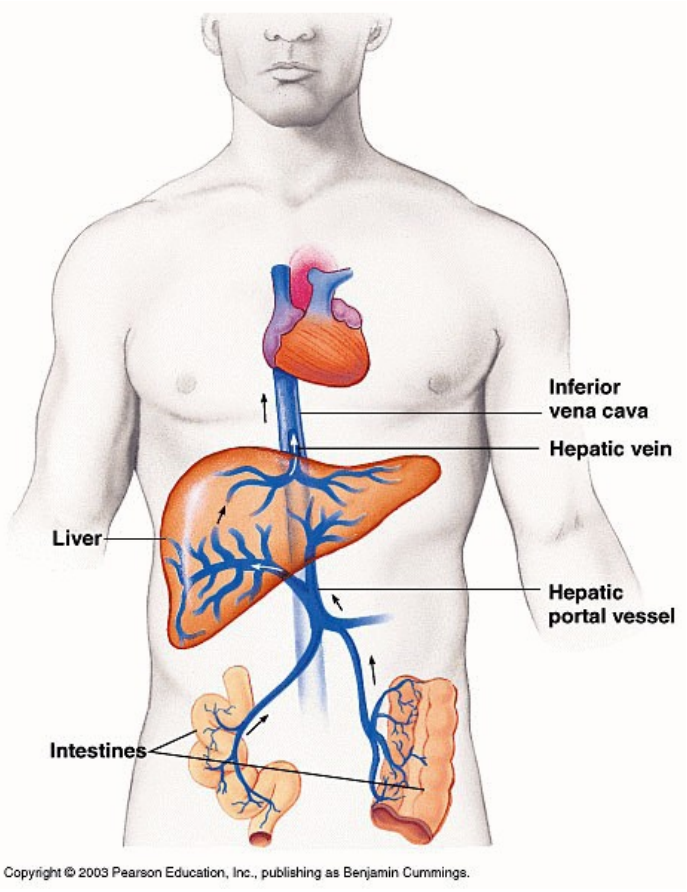
III. Abdominal Cavity: Major Veins & Arteries:
DO NOT REMOVE ORGANS!
pp. 182-top of 184: Become familiar with diagrams and then use the procedures to find the major veins and arteries of the abdominal cavity (listed above). Be able to state where the blood is coming from and where it is going to!

NOTE: Use pp. C-57 & C-59 if you need a simpler diagram to locate major vessels of both thoracic and abdominal cavities. Use my handout to quiz yourself.

IV. Review:
p. 186: Answer questions 1-12, 15 & 16

V. Hepatic Portal System:
DO NOT REMOVE ORGANS!
p. 213: Read section about hepatic portal system and associated vessels and use figure 16.13 to help you locate it in your pig.
• The liver performs several important functions that are important to the maintenance of blood. Two important functions include helping the kidneys remove toxins (like drugs or alcohol) from our blood and regulating the amount of glucose in our blood by converting it to glycogen.
• So, after blood travels through the lower digestive tract and its associated organs, it must make its way through the liver to be processed.
• The vein that connects all of these organs to the liver is the **hepatic portal vessel**.
After passing through the liver, blood travels out the liver via the **hepatic vein**, then into the inferior vena cava to the heart.

VI. The Blood:



pp. 188-189: Read, follow procedures (USE DEMO SCOPES), and fill out Table 15.1

VII. Review:
p. 198: Answer questions 1-5 &15