

Lab 6: Blood
Unit 12: Blood and Lymphatics

Ex. 12-1: Formed Elements (Cells) of Blood, p. 313-316

1. Blood Characteristics

Volume –

Functions –

Composition -

2. Leukocytes (WBCs)

a. WBC count – normal

b. Differential count - % of each type

Granulocytes:

Neutrophils

Eosinophils

Basophils

Agranulocytes:

Monocytes

Lymphocytes

3. Erythrocytes (RBCs)

a. RBC count – normal value =

b. Hematocrit (equipment: _____)

normal range:

abnormal values: anemia

polycythemia

c. Hemoglobin (equipment: _____)

normal range:

abnormal values: anemia

polycythemia

Ex. 12-2: ABO and Rh Blood Groups, p. 317-318

4. Blood Typing

a. Simulated blood typing kit

antigen (agglutinogen) -

antibody (agglutinin) -

agglutination -

Unknown Blood sample	Reacted w/ Anti-A (Y/N)	Reacted w/ Anti-B (Y/N)	Reacted w/ Anti-Rh (Y/N)	Surface Anitgens present
Smith				
Jones				
Green				
Brown				

Lab 7: HEART and VEINS
Unit 11: Cardiovascular System
Cat Dissection of Veins: Photo Atlas, Chapter 19

Human heart - locate **all** of the structures listed below on human heart models and chart
Sheep Heart - locate the * structures on sheep heart specimens

<i>Ex. 11-1: Anatomy of the Heart, p. 271-279</i>

*Left Atrium

*Right Atrium

*Right Ventricle

*Left Ventricle

*Interventricular Sulcus or Groove (contains coronary vessels)

*Pulmonary Trunk

*Aorta

*Brachiocephalic Artery

Superior Vena Cava

Pulmonary Veins

*Tricuspid (Right Atrioventricular) Valve

*Bicuspid or Mitral (Left Atrioventricular) Valve

Pulmonary Semilunar Valve

Aortic Semilunar Valve

*Papillary Muscles

*Chordae Tendineae

Coronary Sinus

Interatrial Septum

*Interventricular Septum

*Endocardium, *Myocardium, and *Epicardium

VEINS

Cat Dissection of Veins: Photo Atlas, Ch. 19 (p. 177-183)
Ex. 11-3: Major Veins of the Body, p. 284-288

Superior (anterior) vena cava

Inferior (posterior) vena cava

Brachiocephalic (right & left)

External jugular

Internal jugular

Anterior facial

Posterior facial

Transverse jugular

Subclavian

Axillary

Brachial

Internal mammary (thoracic)

Azygous

Intercostal

Adrenolumbar

Renal

Genital or Gonadal (right & left)

[Spermatic/Ovarian]

Iliolumbar

Common Iliac

Internal Iliac

External Iliac

Femoral

Deep Femoral

Great Saphenous

Hepatic Veins

Hepatic portal circulation:

Hepatic Portal Vein

Gastrosplenic V.

Superior Mesenteric V.

Lab 8: ARTERIES

Cat Dissection of Arteries: Photo Atlas, Ch.19 (p. 177-183)
Ex. 11-2: Major Arteries of the Body, p.280-283

Aortic Arch

(Branches off Aorta in CAT)

1. Brachiocephalic
2. Left Subclavian

(Branches off Aorta in HUMAN)

1. Brachiocephalic
2. Left Common Carotid
3. Left Subclavian

Right Subclavian

Right Common Carotid

Left Common Carotid

Axillary

Brachial

Internal Mammary

Vertebral

Descending (Thoracic) Aorta

Intercostals

Abdominal Aorta:

Celiac Trunk:

Hepatic

Left Gastric

Splenic

Superior Mesenteric

Adrenolumbar

Renal

Genital or Gonadal (right & left) [Spermatic/Ovarian]

Inferior Mesenteric

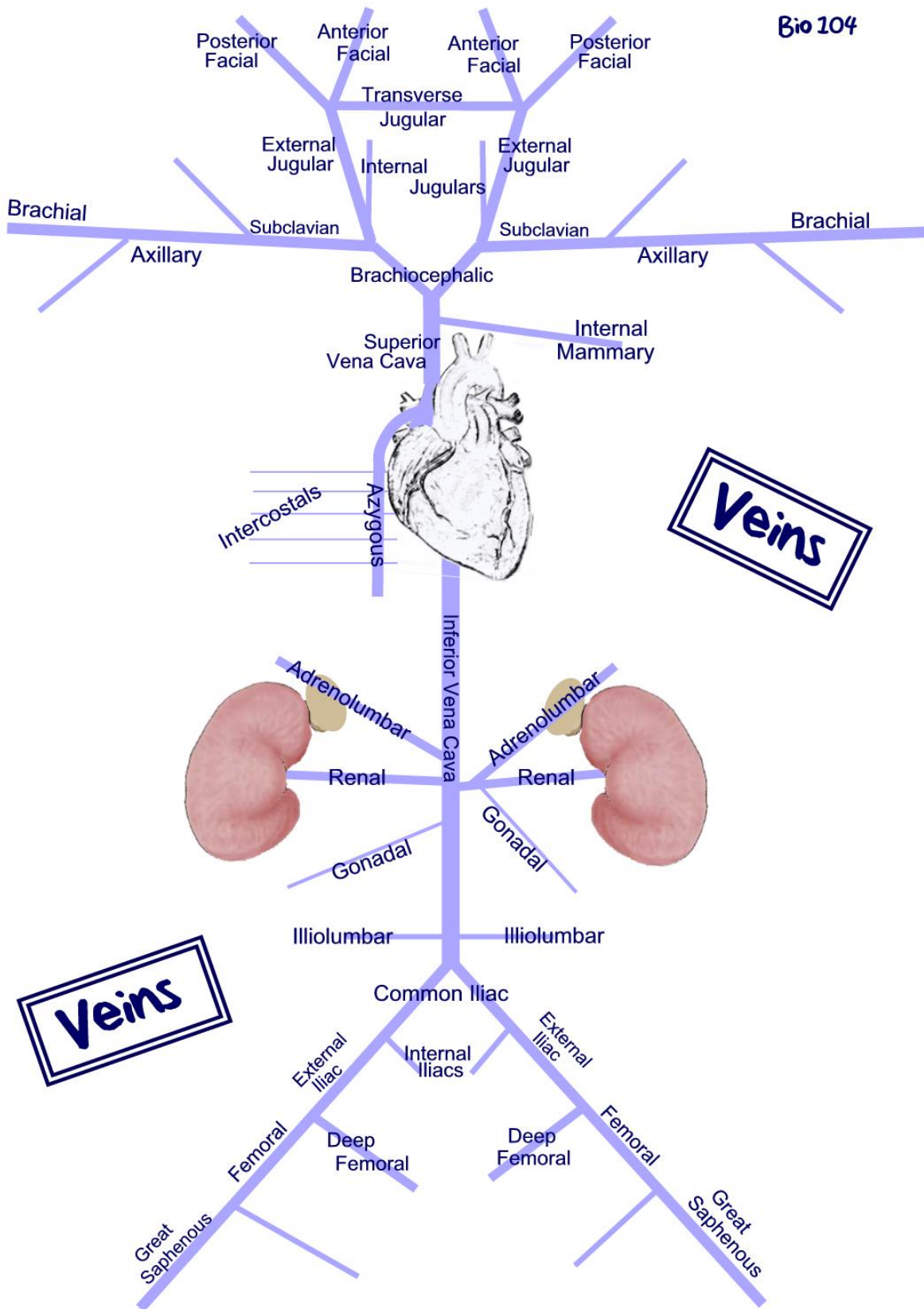
Iliolumbar

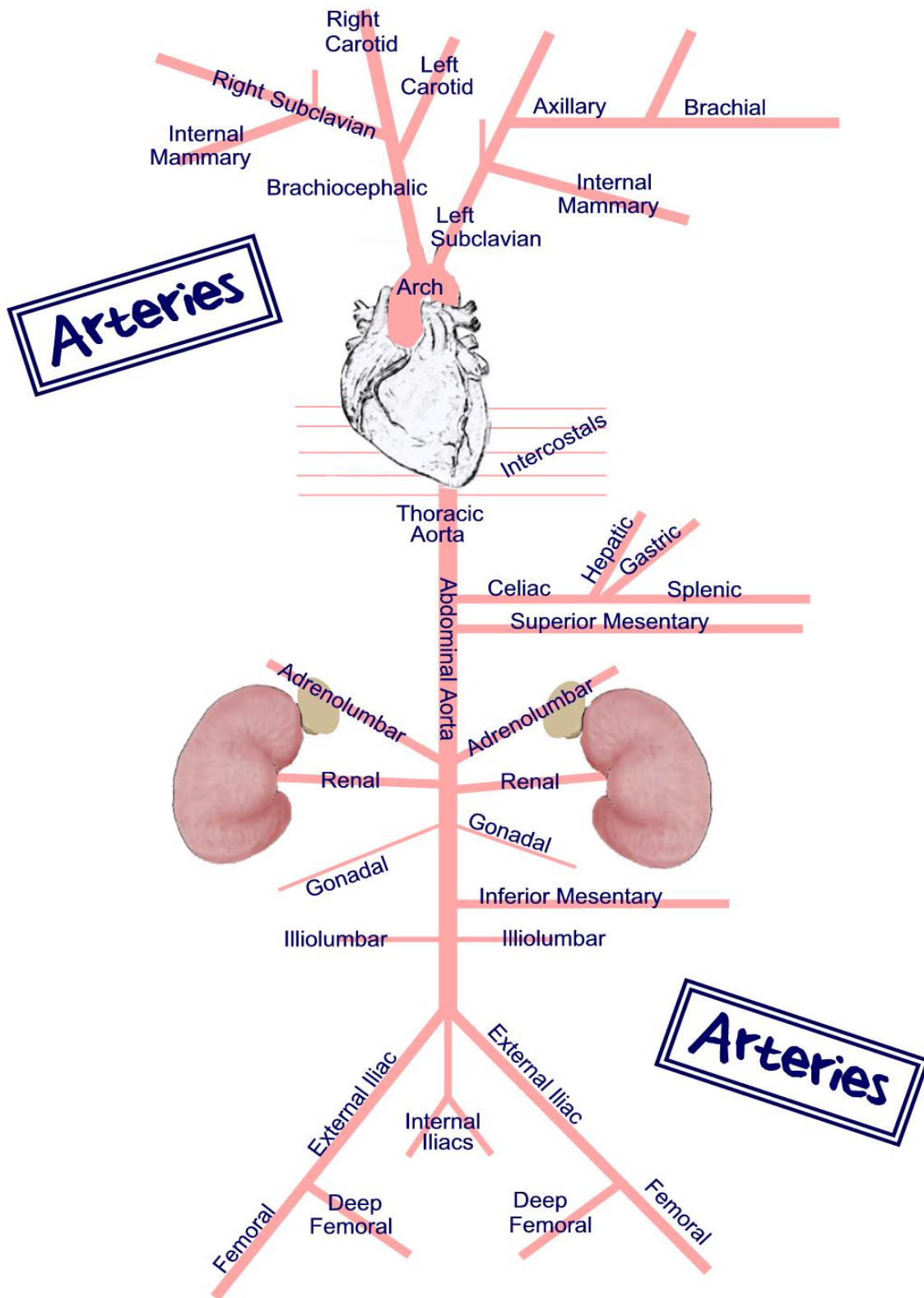
Internal Iliac

External Iliac

Deep Femoral

Femoral





Bio 104: Computer Exercise - Anatomy & Physiology Revealed (APR)

Cardiovascular System

- A. See Lab Instructor to sign logbook for use of laptop and CD in the lab room.
- B. Insert Anatomy & Physiology Revealed (APR) cd into cd drive and allow it to autoplay.
- C. Select System → **Cardiovascular**. Select **Dissection** (scalpel icon) → Select Topic → **Head and Neck**. Select View → **Lateral**. Click the green **Go** button.

From the structure list, select: **Vasculature-Arteries**.

Click on **Layer 4** and identify the following vessels:

1. Common Carotid Artery
2. External Carotid Artery
3. Internal Carotid Artery

Question:

1. Identify the difference in the origin of the Left and Right Carotid Arteries.

From the structure list, select: **Vasculature-Veins**.

Click on **Layer 2** and identify the following vessels:

1. External Jugular Vein
2. Facial Vein

Click on **Layer 3** and identify the following vessel:

1. Internal Jugular Vein

Questions:

1. Which vein is larger (in diameter) in the human, external or internal jugular?
2. What area of the body does the internal jugular vein drain?

Select **Change Topic/View** → Select **Shoulder and Arm**. Select View → **Arteries anterior**. Click the green **GO** button.

Click on **Layer 3** and identify the following vessels:

1. Left Common Carotid Artery
2. Vertebral Artery
3. Subclavian Artery
4. Axillary Artery
5. Brachial Artery

Question:

1. The vertebral arteries supply blood to what structure?

Select **Change Topic/View**→Select **Shoulder and Arm**. Select View → **Veins anterior**. Click the green **GO** button.

Click on **Layer 4** and identify the following vessels:

- External Jugular Vein
- Internal Jugular Vein
- Subclavian Vein
- Axillary Vein

Select Change Topic/View→Select **Thorax**. Select View → **Arteries anterior**. Click the green **GO** button.

Click on **Layer 4** and identify the following vessels:

1. Superior Vena Cava
2. Left & Right Brachiocephalic Veins
3. Internal Jugular Vein
4. Left Subclavian Vein
5. Ascending Aorta
6. The Aortic Arch

Question: (click on Layer 5)

1. What are the three branches off of the aortic arch in humans?

Select **Dissection** icon. Select Change Topic/View→Select **Abdomen**. Select View → **Veins anterior**. Click the green **GO** button.

Click on **Layer 6** and identify the following vessels:

1. Inferior Vena Cava
2. Left & Right Renal Veins
3. Common Iliac Vein

Select Change Topic/View→Select **Abdomen**. Select View → **Celiac Trunk anterior**. Click the green **GO** button.

Click on **Layer 6** and identify the following vessels:

1. Abdominal Aorta
2. Celiac Artery
3. Superior Mesenteric Artery
4. Inferior Mesenteric Artery
5. Left & Right Renal Artery
6. Suprarenal Artery (Adrenolumbar Artery)

7. Common Iliac Artery
8. Gonadal Artery

Select Change Topic/View→Select **Hip & Thigh**. Select View → **Arteries anterior**. Click the green **GO** button.

Click on **Layer 3** and identify the following vessels:

1. Abdominal Aorta
2. Common Iliac Artery
3. Internal Iliac Artery
4. External Iliac Artery
5. Femoral Artery

Select Change Topic/View→Select **Hip & Thigh**. Select View → **Veins anterior**. Click the green **GO** button.

Click on **Layer 4** and identify the following vessels:

1. Inferior Vena cava
2. Common Iliac Vein
3. Internal Iliac Vein
4. Femoral Vein
5. Great Saphenous Vein

Questions:

1. Blood in the Common Iliac Vein would flow into which vessel?
2. Blood in the External Iliac Vein would flow into which vessel?

Select Change Topic/View→Select **Heart**. Select View → **Internal Features Anterior**. Click the green **GO** button.

Click on **Layer 1** and identify the following structures & Vessels:

1. Right Atrium
2. Right Ventricle
3. Left Auricle (Left Atrium)
4. Left Ventricle
5. Interventricular Sulcus
6. Apex
7. Pulmonary Trunk
8. Ascending Aorta
9. Coronary Artery
10. Superior Vena Cava

Explore the internal structures of the heart by clicking other layers ☺

Click the **Animation** icon (Cardiovascular System Overview / Blood Flow Through the Heart).

Click the **Play** button. After viewing the animation, answer the following questions:

1. The deoxygenated blood from the body is returned to the heart via which two vessels?
2. The right ventricle pumps (oxygenated/deoxygenated) blood toward the _____.
3. The left atrium receives (oxygenated/deoxygenated) blood from the _____.
4. Trace the blood flow from the ascending aorta to the femoral artery:

Ascending Aorta → _____ (aorta) → _____ (aorta) →
_____ (aorta) → _____ → _____ → Femoral Artery.