



TOURO COLLEGE  
OF OSTEOPATHIC MEDICINE

**CLASSES OF 2017 AND 2014**

**Gross and General Anatomy**

**Laboratory Manual**

**2014**

## **INTRODUCTION TO GENERAL ANATOMY LAB**

A team-based approach is an essential component of the general anatomy lab experience and, more importantly, for the practice of medicine. Appropriate care of patients requires constant interaction between numerous health care professionals. Most of us learn best when we share our knowledge with others and good teachers learn from those they teach. Consequently, you will be working at a dissection table with other students in a small-group environment. Your groups will be assigned to you and you will be expected to work together as a team to complete the assigned dissection in the lab. Additionally, you need to be aware of anatomic radiology and bones. Finally, this course will introduce you to anatomic terminology commonly used in medicine today. The anatomic knowledge gained during this course will be used as a framework for future courses in the curriculum and throughout your career as a practicing clinician.

## **WHAT TO BRING TO GENERAL ANATOMY LAB**

1. Each lab session covers an extraordinary amount of material. The amount of information you are expected to master is voluminous. As a result, you are well advised to come prepared to begin dissection from the first day of lab. You must utilize all of your time in all the labs.
2. Grant's Dissector, 15th edition by Patrick W. Tank, Lippincott Williams & Wilkins: Baltimore, MD. ISBN: 978-1-60913-606-2
3. Each lab table group should consider "chipping-in" to buy a used atlas ([www.amazon.com](http://www.amazon.com)) that will be used exclusively in the lab. This atlas will inevitably become dirty throughout the semester and will only be used for lab study.
4. Gloves (latex or non-latex depending on preference).
5. Neat, clean lab coat or apron that is long enough to protect your clothing. It is highly recommended that you wear scrubs in lab. NB: Sandals and other footwear that exposes any portion of the ankle, foot, or toes are prohibited in the lab. In addition, "Crocs" or other footwear with any type of hole, or holes, is strictly forbidden in the lab.

## **OTHER INFORMATION**

1. No one will be allowed to enter the lab or take a practical exam without wearing a lab coat.
2. It is strongly advised that you wear scrubs during lab.
3. During lab you are expected to look at the dissection of other groups so that you appreciate the diversity of bodies and note any anatomic variations. Each cadaver is different and each group dissects in a different manner. Thus, anatomic structures may

look differently in color, consistency, and appearance. This will help you during practical exams because the specimens on which you will be tested are often not the same as the ones you dissected.

4. Many anatomic structures are long. You are responsible for identifying structures at different levels-do not assume that visualizing a structure at one level and in one cadaver is adequate preparation for your practical exam.

5. There is no cleaning staff for the lab. Each group is responsible for maintaining cleanliness. At the end of each lab, clean up your own table and floor area with materials provided for this task.

6. Remember, at the end of each lab you will be assessed.

7. Anyone judged by the faculty to not have performed an adequate dissection will not pass the course.

8. Your lab instructors are present to help and guide you. They are not there to "profess" information, but rather, to facilitate your learning in a controlled lab setting. Each group is responsible for the performance of the assigned dissection.

9. Identification of your cadaver and each organ you remove from it is extremely important. Bag each organ that you remove, Do not mix up your table cadaver organs with cadavers of other tables. In case the cadaver number is missing notify the lab manager.

## **LAB SAFETY AND INJURY PROTOCOL**

Any injury that occurs in the lab must be immediately reported to the nearest lab instructor and the appropriate paperwork (2 forms: Incident Report and Anatomy Lab Acknowledgement) must be completed by the injured student-laminated copies of these forms are posted on the Anatomy notice board and also in the lab manual.



## TOURO COLLEGE OF OSTEOPATHIC MEDICINE

### Incident Report

Report/Case#

0-13

Date of Report -

Time -

Place of Occurrence-

Nature of Incident /Offense - Details

Students Name -

Address-

Phone No -

Reporting Faculty sign -

Referred to Clinic /Hospital-



## TOURO COLLEGE OF OSTEOPATHIC MEDICINE CLINIC

### ANATOMY LAB ACKNOWLEDGEMENT FORM

I,-----, acknowledge being informed of the injury protocol, the acceptance of the first aid initiative and the assistance rendered to me as a result of the injury I sustained . Further, I acknowledge that I have the right to refuse said first aid or any other medical attention proposed by policy, and or Lab instructor

☐

I refuse

☐

I accept

Date: -----

-----

Print Name / student

-----

Print Name/Instructor

## **INSTRUCTIONS FOR PRACTICAL EXAMS**

1. Follow the instructions of the faculty
2. You are not allowed to touch any part of the specimen, pins, tags or structures, including bones. Failure to adhere to this rule may result in a zero on the exam.
3. Answer sheets must be kept in a closed folder or attached to a writing board except when recording an answer.
4. Read the questions carefully as some of them may not be asking for straight identification of a structure i.e., they may be asking function , innervations , clinical innervations , clinical information, etc
5. You must attend the practical exam scheduled for your lab section. In those few cases in which unforeseen circumstances prevent you from doing so, it is your responsibility to arrange a swap with someone from different section and submit the appropriate form. ( see “ Form for switching of Practical exam assignment)

**THERE ARE NO MAKE –UPS FOR PRACTICAL EXAMS  
WITHOUT A REASONABLE EXCUSED ABSENCE APPROVED BY  
DEAN CAMMARATA**

## APPLICATION FOR SWITCHING PRACTICAL EXAM ASSIGNMENT

We, the undersigned, request permission to exchange our respective practical exam assigned times for the reasons stated below. This exchange is mutually acceptable to both parties.

Date of Practical Exam -----

1. Student Name ----- Test from-----to -----

2. Student Name-----Test from-----to -----

Reason

-----  
-----  
-----  
-----

Approved by

-----

Sushama Rich

Chairman of Anatomy

## **ATTENDANCE POLICY**

There will be attendance taken for every lab session towards the end. If any student misses three labs without an excused absence he or she , they would lose 5% of their final practical grade



## **BONE BOXES**

During the first lab session, your table will be given a bone box, containing a fully disarticulated, plastic skeleton. Your group will keep the bone box throughout the semester and share it so that all group members have time to study the bones. The purpose of the bone box is to enable you to study all of the bony features of the human skeleton in great detail.

Each bone is numbered. The numbers correspond with the number on the outside of the bone box. Realize that your group is collectively responsible for all of the bones in the bone box. Missing bones at the end of the semester are associated with a fee that must be paid by the group. The fee must be paid in cash and is dependent upon which bones are missing. A complete list of the bones with individual prices is available with the Lab Manager, (For example, a plastic hyoid bone costs \$30.00 whereas a Plastic skull costs \$274.00.) The bone boxes will be collected prior to the final exam.

By accepting the bone box, you agree to the terms of the TOUROCOM'S Bone Box Policy below

### **TOUROCOM BONE BOX POLICY**

**This bone box is property of TOUROCOM. Your group has been loaned this bone box to aid in your studying of Osteology during the semester.**

**Please make note the following:**

- **Do not mark any bones with any type of writing instrument and do not remove the black numbers on the bones.**
- **At the end of the semester you must return ALL of the bones in the original box. Do not damage or destroy the original box**
- **Missing bones will result in a replacement fee. The cost of each bone differs and the price list is available from the Lab Manager**

During the semester, you and your partners will be responsible for complete dissection of the back, upper limbs, thorax, abdomen, pelvis, perineum, head, and neck. For the cadaver to remain useful and provide you with information throughout the entire semester, you will have to take proper care of it. Pursuant to this, the following procedures must be followed

1. While you are dissecting, unwrap only as much of the cadaver as necessary. When you are not using it, ensure that it is well wrapped with both terry cloth and plastic
2. Do not allow the cadaver to dry. Periodically wet it with preservative solution while you are working, as necessary. Always wet the cadaver down at the end of the lab session.
3. If you think you have a preservation problem, see lab manager immediately. This can be remedied if early action is taken. Be sure to check the wrapped parts regularly.
4. At the end of every lab session, see that all instruments are in your trays, ensure that your cadaver is wrapped, and the floor near your table is clean and dry. Wash, dry, and return any heavy instruments you have used.

Finally, the cadavers are on-loan from other medical institutions and must be returned to them. Therefore, by law, the following information must be kept on tags around the plastic bag: cadaver identifying number, your dissection group number, and at least some of the names in the group. Never remove the tags from the cadavers.

## **CARE OF THE LAB**

The following rules are intended to keep the lab as safe and comfortable as possible:

1. Keep the floor dry. Do not put the cloth and plastic wrappers on the floor, or let fluid drip onto the floor. Do not allow the buckets under the tables to overflow. Immediately mop-up any spills.
2. Put all human tissue waste such as skin and larger tissue in the container under your table. Never put paper, plastic, or anything other than human tissue in that container. Smaller human tissue maybe discarded in large red bins labeled "TISSUE DISPOSAL".
3. Used scalpel blades, suture needles, and other sharp objects are to be placed in the red, plastic containers labeled sharp disposals.

4. There are several large gray containers in the lab for all other trash. Please do not dispose gloves into these containers. All containers are labeled for easy disposal.

## **TOURO COLLEGE OF OSTEOPATHIC MEDICINE LAB RULES**

1. NEVER DISPOSE OF SCALPELS OR ANY OTHER SHARP OBJECTS INTO THE SMALL CONTAINERS UNDER THE DISSECTION TABLES. THESE OBJECTS SHOULD ONLY BE PLACED IN THE RED, PLASTIC CONTAINERS LOCATED NEAR WASHING AREA.
2. EATING, DRINKING, GUM CHEWING, AND SMOKING ARE PROHIBITED IN THE LAB
3. CLEAN YOUR WORK AREA BEFORE YOU LEAVE THE LAB.
4. KEEP YOUR CADAVER WRAPPED UP TO PREVENT DRYING.
5. LAB COATS ARE TO BE USED ONLY IN THE ANATOMY LAB. YOU MAY PUT YOUR COAT IN YOUR LOCKER, BUT LAB COATS SHOULD NOT BE WORN IN ANY OTHER PARTS OF THE COLLEGE AFTER BEING CONTAMINATED.
6. GLOVES ARE TO BE USED ONLY IN THE LAB AND DISPOSED OF IN THE LAB. STUDENTS LEAVING THE LAB WITH CONTAMINATED GLOVES ARE VIOLATING PUBLIC HEALTH LAWS AND BREAKING COLLEGE RULES
7. SAFETY GLASSES AND/OR GOGGLES MUST BE WORN WHEN IN THE LAB

NO CELL PHONES OR OTHER ELECTRONIC DEVICES ARE PERMITTED IN THE LAB. NO PHOTOS OF CADAVERS, TISSUE, SPECIMENS, OR THE LAB ARE PERMITTED.

**NEW YORK STATE DEPARTMENT OF HEALTH LAWS, ADMINISTRATIVE RULES,  
AND REGULATIONS**

**#4216 BODY STEALING**

A person who removes the dead body of a human being, or any part thereof from a grave, vault or other place, where the same has been buried, or from a place where the same has been deposited while awaiting burial, without authority of law, with intent to sell the same, or for the purpose of procuring a reward for the return of the same, or from malice or wantonness, is guilty of a felony.

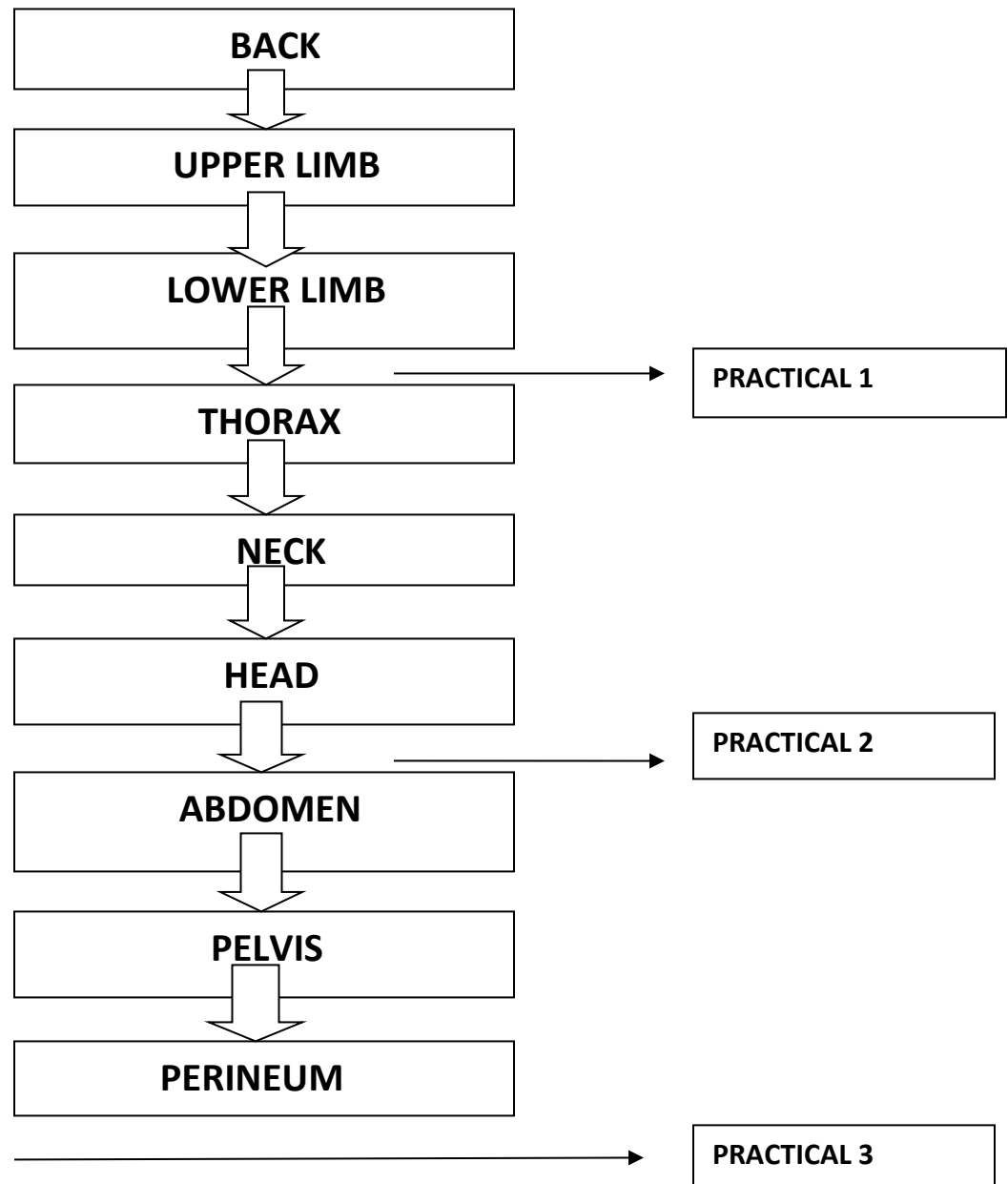
**#4217 RECEIVING STOLEN BODY OF A HUMAN BEING**

A person who purchases, or receives except for the purpose of burial, the dead body of a human being or any part thereof, knowing that the same has been removed contrary to the last section, is guilty of a misdemeanor.

# General Anatomy Lab Outlines - 2014



## ORDER OF TOPICS FOR GENERAL and GROSS ANATOMY LAB



## LAB – 1:2

### Introduction, Superficial, Intermediate and Deep muscles of the Back, Suboccipital , Scapular , and Deltoid Region

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Date                      See lab schedule

Topics :

1. Introduction to the lab (policies and procedures).
2. Review of surgical instruments.
3. Review anatomic terminology (Terminologia Anatomica).
4. Review of sections, planes, and views.
5. Superficial, intermediate, and deep muscles of the back.
6. Arrangement of thoracolumbar fascia.
7. Identification of the bony features of the occiput, scapula, vertebrae and sacrum.
8. Identification of the vertebral ligaments.
9. Laminectomy.
- 10 Study of the spinal cord.
11. Myology of the deep back.
12. Suboccipital region (boundaries, functions, and content).
13. Vertebral artery.
14. Scapular region
- 15.Deltoid region

Osteology: Occiput, scapula, clavicle, vertebral column (characteristics of the cervical, thoracic, and lumbar vertebrae), and typical, atypical, vertebrae of the 3 regions of the vertebral column.

Dissector: Introduction pages 1-4 and Chapter 1, pages 5-19 and 21-26  
Netter

Atlas:

The following plates, taken from the atlas by Netter, 5th ed (2011), are especially important and should be studied prior to the lab session: Plates **149, 150, 151, 152, 153, 154, 155, 156, 158, 159, 160, 161, 162, 163, 164, 165, 166, 168, 169, 170, 171, 172, 173, 174, 248, 408, 409, 411, 413, 414, 415,**

The following anatomic structures should be observed during the lab session. Check off each structure as you identify it.

- Trapezius m
- Latissimus Dorsi m
- Rhomboid major m
- Rhomboid minor m
- Serratus posterior superior m
- Serratus posterior inferior m
- Erector Spinae (3 divisions) m
- Splenius cervicis m
- Levator scapulae m
- Splenius capitis m
- Semispinalis Capitis m
- Multifidus m
- Rotatores m
- Thoracolumbar fascia
- Superior nuchal line
- External occipital protuberance
- Nuchal ligament
- Scapula and its features
- Cervical vertebrae ( all features)
- Thoracic vertebrae ( all features)
- Lumbar vertebrae(all features)
- Sacrum (all features)
- Coccyx , all features
- Iliac crest
- Posterior superior iliac spine
- Clavicle (all features)
- Ribs
- Vertebral foramen
- Deltoid m
- Teres minor m
- Teres major m
- Infraspinatus m
- Supraspinatus m
- Suprascapular n &a
- Superior transverse scapular ligament
- Axillary nerve
- Quadrangular space
- Triangular Space
- Triangular Interval
- Profunda brachii a
- Radial nerve
- Circumflex scapular artery
- CN XI
- Triangle of auscultation
- Intervertebral disc (NP & AF)
- Transverse cervical a (superficial branch)
- Dorsal scapular n
- Posterior rami of spinal nerve
- Triangle of auscultation
- Lumbar triangle
- Supraspinous ligament
- Interspinous ligament
- Intertransverse ligament
- Ligamentum flava
- Anterior longitudinal ligament
- Posterior longitudinal ligament
- Rectus capitis posterior major m
- Rectus capitis posterior minor m
- Obliquus capitis superior m
- Obliquus capitis inferior m
- Posterior ramus of C1
- Greater occipital nerve
- Vertebral artery
- Conus medullaris
- Denticulate ligaments
- Filum terminale internum
- Filum terminale externum
- Cauda equina
- Meninges of spinal cord
- Anterior and Posterior roots and rootlets
- Regional enlargements of spinal cord
- Dorsal root ganglia
- Anterior rami
- Posterior rami
- Spinal nerve



- Posterior Circumflex humeral a

## Lab 1:3 and 1:4

### Upper Limb

### Osteology of Upper limb, Structures of Pectoral region, Arm, Forearm, Cubital fossa , Hand , and Joints of upper limb

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Date      See Lab schedule

#### Topics :

1. Osteology of the upper limb
2. Superficial structures of upper limb
3. Fascia of Upper limb including clinically important veins
4. Brachial Plexus
5. Axillary region
6. Myology of the anterior and posterior compartments of arm and forearm
7. Terminal branches of brachial plexus
8. Vasculature of Hand
9. Tendons and muscles of Hand
10. Nerves of Hand
11. Boundaries and content of the anatomical snuff box
12. Joints of shoulder , elbow , wrist , hands and digits
13. Identify contents of carpal tunnel

Osteology: All the bony features of the following: clavicle, scapula, humerus, radius, ulna, and hand.

Dissector: Pages 26 to 62

Atlas: Netter

The following plates, taken from the atlas by Netter, 5th ed (2011), are especially important and should be studied prior to the lab session: **Plates 400, 401, 402,403, 404,405,406, 407, 408,409, 410, 411, 412, 413, 414, 415, 476, 417, 418, 419, 420, 421, 422, 423, 424,425,426, 427, 428,429,430, 431, 432 , 433 , 434,437,438,439,440,441,**

**442,443,444,445,446,448,449,450,451,452,453,454,455,456,457,458,459,460,461,462,463,464,465,466**

The following anatomic structures should be observed during the lab session. Check off each structure as you identify it.

- Cephalic vein
- Basilic vein
- Median cubital vein
- Deltopectoral triangle
- Medial cutaneous nerve of arm
- Medial cutaneous nerve of forearm
- Lateral cutaneous nerve of forearm
- Superficial branch of radial nerve
- Intercostobrachial nerve
- Pectoralis major
- Pectoralis minor
- Subclavius m
- Medial pectoral n&a
- Lateral pectoral n & a
- Thoracoacromial a& n
- Lateral thoracic artery
- Serratus anterior m
- Axillary vein
- Axillary artery
- Subscapular artery
- Posterior circumflex humeral a
- Anterior circumflex humeral a
- Circumflex scapular a
- Thoracodorsal a
- Lateral ,medial and posterior cords
- Musculocutaneous n
- Axillary nerve
- Radial nerve
- Upper Subscapular n
- Lower Subscapular n
- Median nerve
- Long thoracic nerve
- Serratus anterior m
- Lateral & medial intermuscular septum
- Coracobrachialis
- Supinator
- Triceps brachii all heads
- Anconeus
- Flexor carpi radialis
- Palmaris longus
- Flexor carpi ulnaris
- Flexor digitorum superficialis
- Flexor digitorum profundus
- Flexor pollicis longus
- Common flexor tendon
- Brachioradialis
- Superficial branch of radial n
- Radial recurrent artery
- Common introsseous artery
- Anterior & posterior introsseous a,n
- Anterior & posterior ulnar recurrences
- Pronator quadrates
- Palmaris brevis
- Palmar aponeurosis
- Fibrous digital sheath
- Ulnar artery superficial & deep br
- Superficial palmar arch
- Common palmar digital arteries
- Proper palmar digital arteries
- Flexor retinaculum
- Recurrent br median nerve
- Lumbricals
- Abductor pollicis brevis
- Flexor pollicis brevis
- Opponens pollicis
- Abductor digit minimi
- Flexor digiti minimi
- Opponens digiti minimi
- Deep palmar arch
- Adductor pollicis both heads
- Palmar introsseous muscles

- Brachialis
- Biceps brachii all heads
- Transverse humeral ligament
- Bicipital aponeurosis
- Ulnar nerve
- Superior ulnar collateral a
- Inferior ulnar collateral a
- Pronator teres
- Posterior introsseous a & n
- Brachial artery
- Ulnar artery
- Radial artery
- Deep artery of arm
- Brachioradialis
- Dorsal introsseous muscles
- Extensor carpi radialis longus
- Extensor carpi radialis brevis
- Extensor digitorum
- Extensor digiti minimi
- Extensor carpi ulnaris
- Coracoclavicular ligament 2 parts
- Coracoacromial ligament
- Ulnar collateral ligament
- Radial collateral ligament
- Annular ligament
- Introsseous membrane

## **Lab 1:4 and 1:5**

### **Osteology of lower limb, Structures of Gluteal region and Gluteal region, Thigh, Leg and Foot**

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Date See Lab schedule

#### Topics

1. Osteology of lower limb and pelvic girdle
2. Superficial structures of lower limb
3. Fascia of lower limb including clinically important veins
4. Lumbar and sacral plexus
5. Gluteal region
6. Myology of the anterior posterior and medial compartments of thigh
7. Cutaneous branches of gluteal region and lower limb
8. Vascualture of foot
9. Tendons and muscles of foot and leg
10. Nerves of lower limb
11. Boundaries and contents of femoral triangle and adductor canal
12. Joints of Hip, Knee. ligaments of foot

Osteology : All the bony features of the following: Pelvic bones , sacrum , coccyx , femur , fibula , tibia , and foot , lumbar vertebrae

Atlas: Netter

The following plates from the atlas by Netter, 5<sup>th</sup> ed (2011) are especially important and should be studied prior to the lab session.

**Plates:**

**471,472,473,474,475,476,477,478,479,480,481,482,483,484,484,486,487,488,489, 490,491,492, 493,494,495,496,497,498,499,500,501,502,503,504,505,506,507,508,509,511,512 514,515,516,517,518,519,520,521,524,525,526,527,528,529,530,531.**

The following anatomic structures should be observed during the lab session.  
Check off each structure as you identify it

- |   |   |
|---|---|
| <ul style="list-style-type: none"><li>○ Small saphenous vein</li><li>○ Dorsal venous arch</li><li>○ Sural nerve</li><li>○ Posterior cutaneous nerve of thigh</li><li>○ Great saphenous vein</li><li>○ Superficial external pudendal v , a</li><li>○ Superficial epigastric v, a</li><li>○ Superficial circumflex iliac v , a</li><li>○ Saphenous nerve</li><li>○ Superficial fibular nerve</li><li>○ Dorsal digital nerves</li><li>○ Deep fibular nerve</li><li>○ Superficial inguinal groups lymph nodes</li><li>○ Iliotibial tract</li><li>○ Saphenous opening</li><li>○ Inguinal ligament</li><li>○ Sartorius muscle</li><li>○ Adductor longus m</li></ul> | <ul style="list-style-type: none"><li>○ Sciatic nerve</li><li>○ Nerve to obturator internus</li><li>○ Internal pudendal a ,v</li><li>○ Pudendal n</li><li>○ Obturator internus</li><li>○ Gemelli superior , &amp; inferior m</li><li>○ Quadratus femoris</li><li>○ Tensor fascia lata</li><li>○ Biceps femoris</li><li>○ Semitendinosus</li><li>○ Semimembranosus</li><li>○ Tibial nerve</li><li>○ Common fibular nerve</li><li>○ Gastrocnemius</li><li>○ Plantaris</li><li>○ Popliteus</li><li>○ Superior medial &amp; lateral genicular a</li><li>○ Inferior medial &amp; lateral</li></ul> |
|---|---|

- Iliopsoas m
- Pectineus m
- Femoral n , a v
- Femoral sheath
- Femoral canal
- Femoral ring
- Deep artery of thigh
- Lateral circumflex femoral artery – three branches
- Medial circumflex femoral artery
- Adductor canal
- Adductor hiatus
- Sartorius m
- Popliteal artery
- Nerve to vastus medialis
- Lateral intermuscular septum – thigh
- Quadriceps tendon
- Rectus femoris m
- Vastus m all three
- Patellar ligament
- Gracilis m
- Adductor brevis
- Perforating arteries
- Obturator nerve – ant and post br
- Adductor magnus m
- Adductor hiatus
- Obturator externus m
- Gluteus maximus m
- Gluteus medius m
- Gluteus minimus m
- Inferior gluteal a ,n , v
- Superior Gluteal a, n , v
- Piriformis m
- Sciatic nerve
- Pes anserinus
- Transverse intermuscular septum
- Soleus m
- genicular a
- Tibialis anterior
- Extensor hallucis longus
- Extensor digitorum longus
- Fibularis tertius
- Deep fibular nerve
- Extensor expansions
- Extensor digitorum brevis
- Extensor hallucis brevis
- Dorsalis pedis a
- Arcuate artery
- Dorsal metatarsal a
- Lateral tarsal artery
- Plantar aponeurosis
- Flexor digitorum brevis m
- Abductor hallucis
- Abductor digiti minimi
- Medial plantar n
- Lateral plantar n
- Common & proper plantar digital n
- Quadratus plantae
- Lumbricals
- Flexor hallucis brevis m
- Sesamoid bone
- Adductor hallucis both heads
- Flexor digiti minimi m
- Plantar interosseous m
- Dorsal interosseous muscle
- Iliofemoral ligament
- Ischiofemoral ligament
- Pubofemoral ligament
- Ligament of head of femur
- Transverse acetabular ligament
- Tibial collateral ligament
- Fibular collateral ligament
- Posterior cruciate ligament
- Anterior cruciate ligament

- Tibialis posterior
- Flexor digitorum longus
- Flexor hallucis longus
- Calcaneal tendon
- Posterior tibial artery
- Anterior tibial artery
- Fibular a
- Perforating branch of fibular a
- Fibularis brevis
- Fibularis longus
- Superior fibular retinaculum
- Superficial fibular nerve
- Medial and lateral menisci
- Deltoid ligament
- Lateral ligament of ankle
- Long plantar ligament
- Short plantar ligament
- Plantar calcaneonavicular ligament

## Lab 1:7

### Thorax, Mediastium and Heart

---

Date See Lab Schedule

#### Topics

1. Describe the general organization of the thoracic cage
2. Describe structures in female breast tissue
3. Define the boundaries of the thoracic inlet and outlet
4. Draw the arrangement of the intercostals muscles
5. Describe the mediastium and its division
6. Identify the major pulmonary vessels at the root of the lung
7. Identify all vessels entering and exiting the heart
8. Identify the major features of the heart and lungs outside the cadaver
9. Identify the diaphragm and the structures that traverse it
10. Describe the lungs insitu and outside the thoracic cage
11. Describe the position of the heart in situ
12. Describe the relationship between the heart and pericardium
13. Remove the heart and describe its interior architecture
14. Describe , in detail the blood vessels that comprise the coronary circulation and the walls of the heart they supply
15. Describe aorta and pulmonary trunk
16. Describe the structures and organs located in the posterior mediastium
17. Describe relationships between spinal nerves and sympathetic ganglia
18. Identify the thoracic duct



**Osteology** All the bony features of the following: clavicle, ribs – typical, atypical, sternum, thoracic vertebrae including costovertebral joint.

Dissector: Pages 26, 27, 63-87

Atlas: Netter

The following plates, taken from the atlas by Netter, 5<sup>th</sup> edition (2011) are especially important and should be studied prior to the lab session **Plates:**

**176,177,178,179,180,181,182,183,184,187,189,190,191,192,193,196,197,201,205, 206,207,208,209,211,212,213,214,215,216,217,218,219,220,223,224,225,226,227, 228,230,232,235, 236,237,238,239**

The following anatomic structures should be observed during the lab session. Check off each structure as you identify it.

- |   |                                 |
|---|---------------------------------|
| ○ Cutaneous branches of a typical spinal nerve –lateral and anterior cutaneous branches | ○ Anterior interventricular a   |
| ○ Serratus anterior m   | ○ Circumflex br                 |
| ○ External intercostals m   | ○ Anterior right atrial branch  |
| ○ Internal intercostals m   | ○ Sinoatrial nodal branch       |
| ○ Intercostal nerve   | ○ Rt Marginal br                |
| ○ Inner intercostal m   | ○ Posterior interventricular br |
| ○ Internal thoracic artery , v  | ○ Artery to the AVnode          |
| ○ Costal pleura   | ○ Left marginal br              |
| ○ Transversus thoracis m  | ○ Left ventricle                |
| ○ Costodiaphragmatic recess   | ○ Left atrium                   |
| ○ Pulmonary ligament  | ○ Pectinate muscles             |
| ○ Fissures & Lobes of lungs – rt ,lt  | ○ Crista terminalis             |
| ○ Root of lung  | ○ Fossa ovalis                  |
| ○ Pericardium   | ○ Opening of coronary sinus     |

- Phrenic nerve –rt, lt
- Pericardiophrenic a & v
- Surfaces of lungs
- Cardiac notch
- Lingula
- Impressions on rt lung-cardiac , esophagus, arch of azygos,SVC
- Impression on lt lung-cardiac, aortic arch, thoracic aorta.
- Hilum of lung – bronchus , pulm artery and vein
- Secondary bronchi
- Esophagus
- Thoracic aorta
- Superior vena cava
- Ascending aorta
- Arch of aorta
- Pulmonary tr
- Ligamentum arteriosum
- Left , rt vagus nerve
- Left , rt recurrent laryngeal nerve
- Right atrium
- Right ventricle
- Left ventricle
- Oblique pericardial sinus
- Transverse pericardial sinus
- Inferior vena cava
- Pulmonary veins
- Great cardiac veins
- Small cardiac veins
- Middle cardiac veins
- Anterior cardiac veins
- Semilunar cusps
- Opening of left ,rt coronaries
- Left coronary
- Right coronary
- Suspensory ligament - breast
- Site of SA node , AV node
- Right atrioventricular valve
- Pulmonary valve
- Chordate tendinae
- Three cusps & papillary muscles ,rt
- Trabeculae carneae
- Septomarginal trabecula
- Conus arteriosus
- Auricles
- Thymus
- Left brachiocephalic vein
- Right brachiocephalic vein
- Azygos vein
- Brachiocephalic trunk
- Left common carotid a
- Left subclavian a
- Trachea
- Rt , lt main bronchus
- Tracheobronchial lymph nodes
- Esophagus
- Thoracic aorta
- Anterior vagal trunk
- Posterior vagal trunk
- Posterior intercostal veins
- Thoracic duct
- Hemiazygos vein
- Accessory hemiazygos vein
- Sympathetic trunk
- Rami communicans
- Greater splanchnic nerve
- Lesser splanchnic nerve
- Lactiferous sinus

- Lactiferous ducts

## **Lab 1:9, 1:10a and 1:10b**

**Neck – Posterior and Anterior triangles of neck, Root of neck, viscera of neck**

**Scalp, Brain, Base of skull, Orbit, Nose, Oral cavity, Pyterigopalatine fossa, Prevertebral region, Larynx, Pharynx**

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Date See Lab schedule

Topics:

1. Describe the triangles of neck and their contents
2. Demonstrate the boundaries of the neck
3. Identify the muscles of the neck
4. Identify deep cervical fascia and spaces
5. Identify structures of the neck on contiguous sections
6. Describe the course of the major arteries and veins found in the neck
7. Identify all of the nerves that comprise the cervical plexus
8. Describe the organization of the cervical plexus

9. Identify the location of the thyroid gland
10. Describe the sensory innervations of the face and scalp
11. Identify muscles of facial expression
12. Identify the facial nerve and its branches
13. Identify the parotid gland
14. Identify the muscles of mastication
15. Identify the muscles of mastication
16. Identify all of the bones and features of the mandible, skull, and calvarium
17. Describe the anatomy of the cranial cavity
18. Describe the layers of the scalp
19. Identify the lobes of the brain
20. Follow the cranial nerves as they course through the base of the skull
21. Identify dural folds and venous sinuses
22. Identify structures occupying the orbital cavity
23. Identify structures found in the median section of the brain
24. Describe the boundaries of the nasal cavity
25. Describe the boundaries of the oral cavity
26. Identify the pharynx and describe its relations with the nasal cavity, oral cavity and larynx.
27. Describe the features of the larynx
28. Identify the prevertebral region

Osteology : 1. Review osteology of the cervical spine , Additionally study bony features of the manubrium , clavicle ,scapula ,hyoid bone and mandible.

2. Osteology of the skull

Dissector: Pages 204-214, 216-218, 228-259, 263-274

Atlas: Netter

The following plates, taken from the atlas by Netter, 5<sup>th</sup> ed (2011), are especially important and should be studied prior to the lab sessions **Plates**

**1,4,5,6,7,8,9,10,11,12,13,14,15,16,17,18,19,20,21,22,23,25,26,27,28,29,30,31,32, 33,34,35, 36,37,38,39, 40 ,41, 42, 43, 44, 47, 48, 49, 50, 51, 52, 53, 58, 59, 60, 61, 62, 63,64, 65,66,67,68,69,70,71,72,73,74,75,76,77,78,79,80,81, 82, 83, 84, 85, 86, 87, 88 89, 90, 91, 99, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112 , 113 ,114, 117, 118, 119, 120, 121, 122, 123, 124, 125,126,127, 128,129,135, 136, 148**

The following anatomic structures should be observed during the lab session.  
Check off each structure as you identify it

- Platysma
- Facial nerve and its 5 branches
- External jugular vein
- Lesser occipital nerve
- Great auricular nerve
- Transverse cervical nerve
- Supraclavicular nerve
- Accessory nerve
- Retromandibular vein
- Posterior auricular vein
- Anterior jugular vein
- Sternohyoid m
- Omohyoid (two bellies)
- Sternothyroid
- Thyrohyoid
- Ansa cervicalis (two roots)
- Nerve to thyrohyoid
- Digastric muscle (two bellies)
- Tendon of stylohyoid m
- Hypoglossal nerve
- Mylohyoid m
- Thyrohyoid membrane
- Superior laryngeal nerve - external and internal branches
- Cricothyroid m
- Carotid sheath
- Common carotid artery
- Internal carotid artery
- Internal jugular vein
- Common facial vein
- Superior thyroid vein
- Middle thyroid vein
- External carotid artery
- Superior thyroid artery
- Superior laryngeal artery
- Posterior superior alveolar artery
- Superior sagittal sinus
- Arachnoid granulations
- Arachnoid mater
- Cerebral veins
- Pia mater
- Cerebellar tentorium
- Cerebral falx
- Confluence of sinuses
- Inferior sagittal sinus
- Straight sinus
- Great cerebral vein
- Transverse sinus
- Sigmoid sinus
- Internal jugular vein
- Posterior inferior cerebellar a
- Basilar a
- Anterior inferior cerebellar a
- Superior cerebellar a
- Pontine branches
- Posterior cerebral artery
- Posterior communicating a
- Middle cerebral
- Anterior cerebral
- Anterior communicating a
- Twelve cranial nerves on inferior surface of brain
- Twelve cranial nerves passing in cranial fossae
- Internal carotid artery
- Cavernous sinus

- Lingual artery
- Facial artery
- Occipital artery
- Posterior auricular artery
- Carotid sinus
- Carotid body
- Ascending pharyngeal artery
- Vagus nerve
- Thyroid gland
- Pyramidal lobe
- Inferior thyroid vein
- Thyroid ima artery
- Recurrent laryngeal nerve
- Parathyroid glands
- Inferior thyroid artery
- Subclavian vein
- Brachiocephalic vein
- Subclavian artery
- Vertebral artery
- Internal thoracic artery
- Thyrocervical trunk
- Transverse cervical artery
- Suprascapular artery
- Inferior thyroid artery
- Cervical sympathetic trunk
- Ascending cervical artery
- Costocervical trunk
- Deep cervical artery
- Supreme intercostal artery
- Dorsal scapular artery
- Right lymphatic duct
- Phrenic nerve
- Splenius capitis
- Levator scapulae
- Scalene muscles
- Subclavian artery
- Roots, trunks of brachial plexus
- Suprascapular n
- Lacrimal gland
- Periorbital
- Frontal nerve and its division
- Lacrimal nerve
- Trochlear nerve
- Superior oblique muscle
- Levator palpebrae superioris
- Superior rectus muscle
- Lateral rectus m
- Common tendinous ring
- Oculomotor , abducent , trochlear nerve- eye
- Nasociliary n
- Long ciliary n
- Anterior ethmoidal n
- Ciliary ganglion
- Superior orbital vein
- Optic n
- Ophthalmic a
- Inferior oblique m
- Trochlea
- Sympathetic trunk
- Superior , middle , inferior pharyngeal constrictor
- Pharyngeal raphe
- Stylopharyngeus muscle
- Cr n –glossopharyngeal , vagus, accessory hypoglossal in prevertebral region
- Nasopharynx laryngopharynx , oropharynx
- Opening of pharyngotympanic tube
- Torus tubarius
- Salpingopharyngeal fold
- Pharyngeal recess
- Palatal glossal fold
- Fauces

- Parotid duct, gland
- Parotid plexus
- Masseter muscle
- Buccal fat pad
- Buccinator m
- Buccal br of facial nerve
- Buccal nerve
- Inferior & superior labial a
- Angular a
- Facial vein
- Orbicularis oculi muscle- orbital and palpebral part
- Levator labii superioris
- Zygomaticus major
- Orbicularis oris
- Buccinators
- Depressor anguli oris
- Supraorbital n
- Infraorbital n
- Mental n,a v
- Auriculotemporal n
- External jugular vein
- Maxillary vein
- Superficial temporal vein
- Maxillary artery
- Stylohyoid m
- Sternocleidomastoid m
- Occipitofrontalis muscle
- Epicarinal aponeurosis
- Supraorbital n
- Temporalis m
- Masseteric n
- Deep temporal artery
- Inferior alveolar n,a v
- Mandibular canal
- Lingual nerve
- Middle meningeal a
- Buccal artery
- Palatine tonsil
- Epiglottis
- Piriform recess
- Nasopalatine n
- Sphenopalatine a
- Sphenoethmoidal recess
- Superior concha
- Superior meatus
- Middle concha & meatus
- Vestibule
- Atrium
- Nasolacrimal duct opening
- Semilunar hiatus
- Ethmoidal bulla
- Opening of middle ethmoidal sinus
- Opening of posterior ethmoidal sinus
- Sphenoidal sinus
- Ethmoidal cells
- Maxillary sinus
- Soft palate , hard palate
- Palatoglossus muscle
- Palatopharyngeus m
- Salpingopharyngeus m
- Levator veli palatine m
- Tensor veli palatini m
- Greater palatine n , a
- Glossopharyngeal n at tonsils
- Lesser palatine n , a
- Pteryopalatine ganglion
- Nerve of the pterygoid canal
- Infraorbital artery , n
- Terminal sulcus
- Median glossoepiglottic fold
- Lateral glossoepiglottic fold
- Epiglottic vallecula
- Mylohyoid m



- Lateral pterygoid m
- Medial pterygoid m
- Chorda tympani
- cervical sympathetic ganglia
- Longus colli
- Longus capitis
- 3<sup>rd</sup> ventricle
- Aqueduct of sylvius
- Geniohyoid m
- Genioglossus m
- Sublingual gland
- Submandibular duct
- Hypoglossal n – oral cavity
- Hyoglossus muscle
- Styloglossus muscle
- Intrinsic m of tongue
- Thyroid cartilage
- Laryngeal prominence
- Cricoid cartilage
- Inferior laryngeal n
- Vestibular fold
- Vocal fold
- Mamillary bodies
- Corpus callosum
- Septum Pellucidum
- Lateral ventricles
- Trigeminal ganglion
- Infundibulum of pituitary
- Tentorium cerebelli
- Diaphragm sellae
- Optic chiasma
- Pons, midbrain, medulla oblongata
- Thalamus
- Hypothalamus
- Anterior commissure
- Posterior commissure
- Intermediate mass
- 4<sup>th</sup> ventricle
- Interventricular foramen
- Pineal body

## **Lab 1:13, 1:14,1:15**

**Abdomen – anterolateral abdomen wall , scrotum , peritoneal reflections, stomach , celiac trunk, small intestines , Superior mesenteric artery ,portal vein,large intestines , Inferior mesenteric artery , liver , gall bladderkidneys , ureter , suprarenal glands , posterior abdominal wall , lumbar plexus.**

---

Date    See lab schedule

1. Describe the boundaries and contents of anterior abdominal wall
2. Describe the contents of inguinal canal
3. Identify intraperitoneal and retroperitoneal organs
4. Describe the intraperitoneal and retroperitoneal structures and organs
5. Describe the abdominal viscera in situ
6. Identify the greater and lesser peritoneal sacs
7. Describe the preaortic ganglion and its connections
8. Describe the relationship between the pancreas and surrounding viscera
9. Identify the parts of the pancreas and its functions
10. Describe the portal circulation
11. Identify the branches of the celiac trunk
12. Identify the branches of the superior and inferior mesenteric arteries
13. Identify all tributaries of the inferior vena cava

14. Describe the posterior abdominal wall
15. Identify the kidney and suprarenal glands
16. Identify all parts of the colon

Osteology: Review osteology of thoracic and lumbar spine

Dissector Pages 89-114,129-140

Atlas: The following plates, taken from the atlas by Netter, 5<sup>th</sup> ed (2011) are especially important and should be studied prior to lab session. **Plates :**

**240,241,242,243,244,245,246,247,248,250,251,252,253,254,255,256,257,258,259, 260,261,262,263,264,265,266,267,268,269,270,271,272,273,274,275,276,277,278, 279,280,281,282,283,284,285,286,287,288,289,290,291,292,293,294,295,296,297, 298,299,300,301,302,303,304,305,306,307,308,309,310,311,312,313,314,315,316, 317,318,319,320,321,322,323,324,325,327,328,329,330,393**

The following anatomic structures should be observed during the lab session.  
Check off each structure as you identify it

- |   |                                       |
|---|---------------------------------------|
| ○ External oblique m                        | ○ Cystic duct                         |
| ○ Internal oblique m                        | ○ Jejunum                             |
| ○ Transverses abdominis m                   | ○ Ileum                               |
| ○ Rectus abdominis m                        | ○ Superior mesenteric artery          |
| ○ Pyramidalis m                             | ○ Inferior pancreaticoduodenal artery |
| ○ Superficial inguinal ring                 | ○ Intestinal arteries                 |
| ○ Inguinal ligament                         | ○ Arteriar rectae                     |
| ○ Lateral , medial crus of superficial ring | ○ Arterial arcades                    |
| ○ Intercrural fibers                        |                                       |

- Ilioinguinal nerve
- Cremaster muscle and fascia
- Transversalis fascia
- Inferior epigastric artery
- Superior epigastric artery
- Rectus sheath – anterior & posterior
- Tendinous intersections of rectus abdominis
- Anterior cutaneous branches of thoracoabdominal nerves
- Arcuate line
- Linea alba
- Parietal peritoneum
- Falciform ligament
- Median umbilical fold
- Medial umbilical fold
- Lateral umbilical fold
- Liver ,rt ,lt lobes
- Gall bladder
- Greater omentum
- Cecum
- Ascending colon
- Transverse colon
- Descending colon
- Sigmoid
- Rectum
- Appendix
- Spleen
- Stomach
- Lacunar ligament
- Hepatogastric ligament
- Hepatoduodenal ligament
- Round ligament of liver
- Coronary ligaments
- Left /right triangular ligament
- Gastrophrenic ligaments
- Gastrosplenic ligament
- Ileocolic artery
- Appendicular artery
- Right colic artery
- Middle colic artery
- Superior mesenteric vein
- Ileocecal junction
- Root of the mesentery
- Inferior mesenteric artery
- Left colic artery
- Sigmoid artery
- Superior rectal artery
- Inferior mesenteric vein
- Splenic vein
- Appendicular artery
- Right colic flexure
- Left colic flexure
- Teniae coli
- Haustra
- Omental appendices
- Ampulla of duodenum
- Pancreas – head , uncinata process , neck , body , tail
- Main pancreatic duct
- Dorsal pancreatic artery
- Greater pancreatic artery
- Stomach- rugae , pyloric antrum, pyloric canal,pyloric sphincter, pyloric orifice
- Plica circularis
- Major duodenal papilla
- Minor duodenal papilla
- Ileum – superior /inferior lips of ileocecal valve, ileocecal orifice
- Kidneys

- Splenorenal ligament
- Transverse mesocolon
- Phericocolic ligament
- Mesentery
- Mesoappendix
- Omental foramen
- Lesser sac
- Inferior /superior recess of lesser sac
- Porta hepatis
- Bile duct
- Celiac trunk
- Common hepatic artery
- Hepatic artery proper
- Right and left hepatic artery
- Cystic artery
- Right gastric artery
- Hepatic lymph nodes
- Gastroduodenal artery
- Right gastro-omental artery
- Anterior and superior pancreaticoduodenal artery
- Left gastric artery
- Splenic artery
- Short gastric arteries
- Left gastro-omental artery
- Hepatic portal vein
- Right /left portal veins
- Left /right gastric veins
- Diaphragmatic surface of spleen
- Visceral surface of spleen
- Liver- caudate , quadrate lobe
- Ligamentum venosum
- Inferior vena cava
- Hepatic veins
- Celiac lymph nodes
- Gall bladder- cystic artery , fundus , body and neck
- Suprarenal glands
- Rt/lt Testicular artery and vein
- Rt/lt ovarian vessels
- Renal fascia
- Perirenal fat
- Left /right renal veins
- Left suprarenal vein
- Segmental arteries –renals
- Renal pelvis
- Ureter
- Left/right renal artery – inferior suprarenal artery , ureteric branch
- Renal capsule
- Renal cortex
- Renal medulla
- Renal pyramids
- Renal columns
- Renal sinus
- Renal papilla
- Major/ Minor calyx
- Superior , middle suprarenal arteries
- Inferior phrenic arteries
- Lumbar arteries
- Common iliac arteries
- Inferior vena cava
- Psoas major m
- Psoas minor m
- Iliacus m
- Iliopsoas m
- Quadratus lumborum m
- Genitofemoral n –genital , femoral branch
- Subcostal n
- Iliohypogastric , ilioinguinal n
- Lateral cutaneous n of thigh
- Femoral nerve
- Obturator nerve

- Lumbosacral trunk
- Sympathetic trunk
- Diaphragm – central tendon ,  
sterna ,costal lumbar parts
- Right /left crus
- Esophageal hiatus
- Left crus
- Arcuate ligaments
- Lateral arcuate
- Median arcuate
- Medial arcuate ligament
- Aortic hiatus
- Vena caval foramen
- Celiac ganglion

## **Lab 1:17, 1:18**

### **Pelvis and Perineum –Osteology of pelvis, neurovasculature , pelvic diaphragm and viscera, male and female pelvis**

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Date See Lab schedule

Topics:

1. Compare the male and female pelvic girdle
2. Demonstrate the hip bones and sacrum
3. Identify and describe the sacroiliac joint
4. Identify the lateral pelvic wall
5. Identify the pelvic diaphragm
6. Identify male and female urogenital viscera
7. Identify the external iliac artery and branches
8. Identify the internal iliac artery and branches
9. Identify the branches of the lumbosacral plexus
10. Identify the structures on a median section of a male and female pelvis
11. Describe the venous and lymphatic drainage of the pelvis

Osteology : Sacrum and pelvic bones

Dissector: Pages 125-127, 129-145 , 147-159, 161-163.

Atlas: Netter

The following plates, taken from the atlas by Netter, 5<sup>th</sup> ed, (2011), are especially important and should be studied prior to the lab session **Plates:**

**331,332,333,334,335,336,343,344,345,347,352,353,354,355,356,371,372, 373,374,378,379,380,381,382,383.**

The following anatomic structures should be observed during the lab session.  
Check off each structure as you identify it

- |  |   |
|--|---|
| <ul style="list-style-type: none"><li>○ Levator ani m – puborectalis ,</li><li>pubococcygeus , iliococcygeus</li><li>○ Coccygeus m</li><li>○ Obturator internus m</li><li>○ Female -Labium majus , mons</li><li>pubis, labium minus, vestibule of</li><li>the vagina , vaginal orifice ,</li><li>posterior labial commissure,</li><li>frenulum of labia minora, clitoris-</li><li>prepuce , glans , frenulum of</li><li>clitoris</li><li>○ Ischiocavernosus m</li><li>○ Bulbospongiosus m</li><li>○ Superficial transverse perineal m</li><li>○ Crura of clitoris</li><li>○ Bulbs of vestibule</li><li>○ Greater vestibular glands</li><li>○ Posterior labial n and vessels</li><li>○ Urethra</li><li>○ External urethral sphincter</li><li>○ Deep transverse perineal m</li></ul> | <ul style="list-style-type: none"><li>○ Urinary bladder – Apex , body ,</li><li>fundus , neck , internal urethral</li><li>sphincter ,</li><li>○ Detrusor m</li><li>○ Ureteral orifice</li><li>○ Interureteric crest</li><li>○ Ampulla of rectum</li><li>○ Anal columns</li><li>○ Anal valve</li><li>○ Pectinate line</li><li>○ External anal sphincter</li><li>○ Internal anal sphincter</li><li>○ External and internal iliac artery</li><li>○ Umbilical artery</li><li>○ Obturator artery</li><li>○ Uterine artery</li><li>○ Vaginal artery</li><li>○ Middle rectal artery</li><li>○ Internal pudendal artery</li><li>○ Inferior gluteal artery</li><li>○ Iliolumbar artery</li></ul> |
|--|---|



- Paravesical fossa
- Pararectal fossa
- Broad ligaments of uterus – mesosalpinx, mesovarium, mesometrium
- Uterine tube- isthmus , ampulla , infundibulum , fimbriae
- Ovarian ligament
- Suspensory ligament of ovary
- Round ligament
- Uterosacral ligament
- Transverse cervical ligament
- Pubocervical ligament
- External urethral orifice
- Vagina – fornix
- Uterus – fundus , body , isthmus , cervix, uterine cavity
- Lateral sacral artery
- Inferior hypogastric plexus
- Lumbosacral trunk
- Sciatic nerve
- Superior gluteal artery
- Inferior gluteal artery
- Pudendal nerve
- Sympathetic trunk
- Ganglion impar
- Tendinous arch of levator ani
- Sacrotuberous ligament
- Sacrospinous ligament
- Inferior rectal n & vessels
- Pudendal n
- Internal pudendal a &v
- 

- Male -Scrotal ligament
- Ductus deferens
- Pampiniform plexus of veins
- Testicular artery
- Tunica vaginalis – parietal , visceral layer
- Epididymis- head , body tail
- Tunical albuginea
- Ischiocavernosus
- Bulbospongiosus
- Superficial transverse perineal m
- Bulb of penis
- Crus of penis
- Corpus spongiosum & tunica albuginea
- Corpus cavernosus &tunica albuginea

- Deep dorsal vein of penis
- Dorsal artery of penis
- Dorsal nerve of penis
- Penis – root , body , glans , corona, prepuce , frenulum, external urethral orifice
- Superficial dorsal vein
- External urethral orifice
- Male urethra 3 par
- Navicular fossa
- Bulbourethral glands
- Seminal colliculus
- Prostatic sinus
- Prostatic utricle
- Opening of ejaculatory duct
- Deep inguinal ring
- Ampulla of ductus deferens
- Seminal vesicle
- Prostate -