

# Practical Anatomy Checklist

**Session No: (1)**

**1st week:** Jan 31- Feb 4, 2016

**Topics:** Bones of the upper limb.

A. Divisions of bony Skeleton.

A. Axial (Parts).

B. Appendicular

a. Upper appendicular skeleton.

b. Lower appendicular skeleton.

B. Upper appendicular skeleton.

a. Shoulder girdle.

**1. CLAVICLE:**

- S-Shape, has

- Two ends.

- Two surfaces.

- Two borders.

**2. SCAPULA:**

- Triangular in shape, has

- Three triangles.

- Three borders.

- Three surfaces.

- Three processes.

b. Bones of the upper limb.

**1. HUMERUS:**

- Long bone, has

- Proximal end (parts).

- Shaft (parts).

- Distal end (parts).

**2. RADIUS:**

- Lateral.

- Long bone, has

- Proximal end

- Shaft

- Distal end

**3. ULNA:**

- Medial.

- Long bone, has

- Proximal end

- Shaft

- Distal end

**4. CARPAL bones** (wrist bones).

- 8 in number arranged in two rows, Proximal 4 & Distal 4 bones.

- Named from lateral to medial (Names).

**5. Metacarpals.** 5 in number, named from lateral to medial (**Parts**).

# Practical Anatomy Checklist

**Session No: (2)**

**2nd week:** Feb 7- Feb 11, 2016

**Topics:** Pectoral and Scapular regions.

## **A. Pectoral region:**

- Skin
- Superficial fascia (Breast).
- Deep fascia.
  - 1- **Pectoralis major** muscle [Origin, Insertion, Nerve Supply and Action].
  - 2- **Pectoralis minor** muscle [Origin, Insertion, Nerve Supply and Action].
  - 3- **Subclavius** muscle [Origin, Insertion, Nerve Supply and Action].
- Clavipectoral fascia.

## **B. Scapular muscles.**

1. **Trapezius** muscle [Origin, Insertion, Nerve Supply and Action].
  2. **Deltoid** muscle
  3. **Supraspinatus** muscle
  4. **Infraspinatus** muscle
  5. **Teres minor** muscle
  6. **Teres major** muscle
  7. **Latissimus dorsi** muscle
  8. **Serratus anterior** muscle
  9. **Subscapularis** muscle
- Suprascapular artery and vein.
  - Suprascapular nerve.
  - Boundaries and contents spaces.

# Practical Anatomy Checklist

**Session No: (3)**

**3rd week:** Feb 14- Feb 18, 2016

**Topics:** Axilla.

A pyramidal-shaped passageway for vessels and nerves between upper limb and the root of the neck.

Has apex, base, 4 walls and contents.

A. Apex → (borders).

B. Base → (borders).

C. Anterior wall. → (Contents= 3M →P. major, P. minor and Subclavius).

D. Posterior wall. (Contents= 3M→Subscapularis, Latissimus dorsi and T. major).

E. Medial wall →Serratus anterior, upper 4 ribs and their spaces.

**F. Contents:**

1. Axillary artery. → (Start, End, Divisions and Branches).

2. Axillary vein. → (Start, End and Tributary →Cephalic vein).

3. Axillary sheath. → (Description and Contents)

4. Axillary lymph nodes. → (Names and Locations)

5. Brachial plexus. →**NEXT WEEK!**

# Practical Anatomy Checklist

**Session No: (4)**

**4th week:** Feb 21- Feb 25, 2016

**Topics:** Brachial Plexus.

A network of nerves within the axilla, supplies the upper limb and related structures.

- **Origin:** Ventral rami (anterior limbs) of C5-T1 Mixed (M&S) spinal nerves.
- Loves number 5 and 3.

## **Parts:**

- **5 Roots:** (Roots of brachial plexus) →ventral rami of C5 - T1 spinal nerves.

- **3 Trunks:**

A- **Upper Trunk** →Union of ventral rami of C5 and C6 nerves.

B- **Middle Trunk** →Ventral ramus (limb) of C7 nerve.

C- **Lower Trunk** →Union of ventral rami of C8 and T1 nerves.

- **Divisions:**

Since the trunks are intended to supply FLEXOR and EXTENSOR muscles, each trunk divides into anterior division for Flexors and posterior division for Extensors.

This occurs before they pass below the clavicle.

A- **3 Anterior divisions** →for Flexor muscles.

B- **3 Posterior divisions** → for Extensor muscles.

- **3 Cords:**

Cords are named according to their relation to the 2nd part of the axillary artery.

- Posterior divisions of the 3 trunks unite to give→ **Posterior cord.**
- Anterior divisions of Upper trunk and Middle trunks unite→ **Lateral cord.**
- Anterior division of the lower trunk continues as →**Medial cord.**

- **Terminal branches:**

**A- From roots:**

1- C5 and C6 →Nerve to subclavius muscle.

2- C5, C6 and C7 →Long thoracic nerve →Serratus anterior muscle.

**B- From trunks:**

- Upper trunk →Suprascapular n. →Supraspinatus and Infraspinatus ms.

**C- From cords:**

**1- Posterior cord.**

- a- Upper subscapular n. →Subscapularis muscle.
- b- Lower subscapular n. →Subscapularis and Teres Major ms.
- c- Thorachodorsal n. →Latissimus dorsi muscle.
- d- Axillary n. →Deltoid and Teres Minor muscles.
- e- Radial n. →To extensors of the upper arm and forearm.

**2- Lateral cord.**

- a- Lateral pectoral n. →Pectoralis major muscle.
- b- Lateral root of **median nerve**.
- c- Musculocutaneous n. →3 anterior upper arm ms + Skin.

**3- Medial cord.**

- a- Medial pectoral n. →Pectoralis major and Minor muscles.
- b- Medial cutaneous nerve of the upper arm→ Skin.
- c- Medial cutaneous nerve of the forearm →Skin.
- d- Medial root of **median nerve**.
- e- Ulnar nerve

**Session No: (5)**

**5th week:** Feb 28- Mar 03, 2016

**Topics:** Upper Arm.

**Bones of the forearm.**

- Radius.
- Ulna.

**Layers: Skin, superficial fascia, deep fascia, muscles.**

**(Anterior Compartment)**

**A- 3 muscles.**

1. **Biceps muscle.** Origin, Insertion, NS, Action→ Prime supinator of elbow.
2. **Coracobrachialis.** Origin, Insertion, NS, Action.
3. **Brachialis.** Origin, Insertion, NS, Action→ Prime flexor of elbow.

**B- Brachial artery.** (Supply all anterior compartment)

**Begin:** Lower border of teres major.

**End:** Opposite Neck of radius inside cubital fossa.

**Branches:** 3 (Profunda, superior and inferior ulnar collateral arteries).

**C- Musculocutaneous nerve.** (Supply all 3 muscles of this compartment)

**From** →Lateral cord of brachial plexus.

**Supply** →3 muscles & continue as lateral cutaneous nerve of the forearm.

**D- Ulnar nerve:**

**From** →Medial cord of brachial plexus.

**Supply** →Nothing in the upper arm.

**Course** →Medial to brachial artery →pierce medial septum to reach posterior compartment →behind medial epicondyle.

**E- Median nerve:**

**From** →Medial & Lateral cords of brachial plexus.

**Supply** →Nothing in the upper arm.

**Course to brachial artery:** Lateral in the upper part →Anterior at middle →Medial at lower part →Enter cubital fossa medially.

**(Posterior compartment)**

**Muscles:** One muscle with 3 heads.

**Artery:** Profunda brachii artery.

**Triceps muscle:** Origin, Insertion, NS, Action→ Prime extensor of elbow.

**Radial nerve:**

**From** posterior cord→ medial to humerus →behind humerus inside radial groove with profunda artery between medial and lateral heads of triceps→ pierce lateral septum → reach anterior compartment →Enter cubital fossa laterally.

**Session No: (7)**

**7th week:** March 13-17, 2016

**Topics:** Posterior Compartment of Forearm and HAND.

**Posterior compartment of the forearm.**

Muscles arranged in 3 groups:

A. Lateral group, 2 muscles.

Origin: Both from Lat. supracondylar ridge.

Nerve supply: All by Radial N.

1. **Brachioradialis** (Origin, Insertion, NS, Action→ Restore midprone position).

2. **Extensor carpi radialis longus** (Origin, Insertion→ 2MC bone).

B. Superficial group, 5 muscles.

Origin: All from lateral epicondyle.

Nerve supply: All by Radial N.

1. Extensor carpi radialis brevis (Origin, Insertion→ 3MC bone).

2. Extensor digitorum (Origin, Insertion→ By extensor expansion, into middle and distal phalanges of the medial 4 fingers, NS, Action).

3. Extensor digiti minimi (insert into extensor expansion of little finger).

4. Extensor carpi ulnaris (Origin, Insertion→ 5MC bone).

5. Anconeus.

C. Deep group (Outgrowing ms), 5 muscles.

O: Radius and Ulna and either Radius or Ulna.

NS: All by deep branch of Radial N. (posterior interosseous nerve).

1. Abductor pollicis longus (Insertion→ 1MC, Action→ Abduct and extend thumb).

2. Extensor pollicis brevis (Insertion→ proximal phalanx, Action→ Extend thumb).

3. Extensor pollicis longus (Insertion→ distal phalanx, Action→ Extend thumb).

4. Extensor indicis (ins.→ Extensor expansion, Action→ extend index joints).

5. Supinator (O: CEO+ Ulna + annular ligament, Ins: → Proximal 1/4 of radius).

**SNUFF BOX:** (Borders, Floor, Content).

# HAND

1. Flexor retinaculum. → 6 structures above, 10 structures below.
2. Palmar aponeurosis. Apex → Flexor retinaculum, Base → base of medial 4 fingers.

Lateral septum → 1st MC bone, Medial Septum → 5th MC.

The 2 septums divide palm into 3 compartments: Thenar, Hypothenar and central.

## **A. Thenar compartment.** (3 muscles, NS: median nerve, all move thumb).

1. Flexor pollicis brevis → Medial.
3. Abductor pollicis brevis → Lateral.
2. Opponens pollicis → Deep.

## **B. Hypothenar compartment.** (3 muscles, NS: Deep Ulnar nerve).

1. Flexor digiti minimi → Medial.
3. Abductor digiti minimi → Lateral.
2. Opponens digiti minimi → Deep.

## **C. Lumbrical muscles** (4 muscles).

- NS: 1st, 2nd → Median nerve, 3rd, 4th → Deep ulnar nerve.
- Action: Writing position.

## **D. Palmar interossei** (4 muscles).

- NS: Deep ulnar nerve.
- Action: Adduct all fingers toward the Middle finger (axis).

## **E. Dorsal interossei** (4 muscles).

- NS: Deep Ulnar nerve.
- Action: Abduct index and ring fingers from the Middle finger (axis).

## **F. Adductor pollicis** (NS: Deep ulnar, Action: Adduct the thumb).

**Radial artery** → Pass within Snuffbox, → Superficial branch, Deep branch.

**Ulnar artery** → Above flexor retinaculum, → Superficial branch, Deep branch.

**Median nerve** → Below flexor retinaculum → 5 muscles, Palmar branch → Skin.

**Ulnar nerve** → Above flexor retinaculum, Superficial → Skin, Deep → All ms except 5.

**Session No: (8)**

**1st week: Mar 20- Mar 24, 2016**

**Topics: Thoracic wall.**

Thoracic wall form of:

- A. Thoracic cage.
- B. Coverings and lining.

### **A. Thoracic cage.**

1. **Sternum**, anterior → (parts, sternal angle, sternum in Male and female).
2. **Thoracic vertebra**, posterior.
  - 12 in number.
  - Parts (body, pedicles, laminae and spinous process).
  - **Three main parts:**
    - a. Body →for weight bearing → (Facets).
    - b. Vertebral arch →for protection (2 pedicles+ 2 Lamina+ Body).
    - c. Vertebral foramen →contains Spinal cord and 3 meninges.
  - **Special features of thoracic vertebra,**
    1. Body →Heart shape.
    2. Vertebral foramen →Circular.
    3. Spinous process →Long and oblique.
    4. Transverse process →has facet for the rib of the same number.
    5. Body with 2 superior facets →Same rib.
    6. Body with 2 inferior facets →Next rib.
3. **Ribs.**
  - 12 pairs.
  - Flat bones.
  - True ribs →1-7.
  - False ribs →8-12.
  - Floating ribs 11 and 12.
  - Typical ribs →3-10. Each has →head with 2 facets, 2 tubercles, Angle, 2 surfaces and 2 borders.
  - Atypical ribs → (1, 2, 11 and 12).
4. **Costal cartilages.** →Bars of hyaline cartilage at the anterior end of each rib.

**Session No: (9)**

**9th week: Mar 27- Mar 31, 2016**

**Topics: Thoracic Cavity (Lungs).**

Extends between the thoracic inlet and thoracic outlet → borders of each.

**Thoracic Cavity form of:**

- A. Two pleural sacs, each surround his own Lung → lateral.
- B. Mediastinum → central.

**Pleura:**

Form of 2 parts with pleural cavity in-between:

1. Visceral.
2. Parietal → 4 parts that cover 4 regions.

**Trachea:**

- Extend from lower end of larynx to sternal angle.
- About 13 cm long.
- Form of about 20 C-shaped tracheal rings.
- Divide into Right and Left main bronchi (Characteristic of each).

**Lungs:**

1. Conical-shaped spongy organ.
2. Attach to mediastinum by its root.
3. Suspended free within its own pleural cavity.
4. Each has:
  - Apex.
  - Base.
  - 3 borders.
  - 3 Surfaces.
  - Two or Three Lobes.
  - One or Two fissures.

**Left Lung: has**

- One oblique fissure.
- Two lobes.
- Cardiac notch at anterior border.
- Characteristics:
  1. Longer, narrower and lighter than right.
  2. Less functional than right.
  3. Related to the left arterial side of the heart.

**Right Lung: has**

- Two fissures.
- Three lobes.
- Characteristics:
  1. Shorter, wider and heavier than left.
  2. More functional than left.
  3. Related to the right venous side of the heart.

**Root of the lung** → (Surrounded by pleura) → include 1 bronchus, 1 pulmonary artery, 2 pulmonary veins, nerves and lymphatics.

**Session No: (10)**

**10th week: April 3- 7, 2016**

**Topics: MEDIASTINUM.**

**Borders:**

- Superior →thoracic inlet
- Inferior →diaphragm
- Anterior →sternum
- Posterior →all 12 thoracic vertebrae

**Divisions:**

An imaginary line that extends from the sternal angle to the intervertebral disc divides the mediastinum into two parts:

1. Superior mediastinum (Borders and names of Contents).
2. Inferior mediastinum. Subdivides into:
  - a. Anterior mediastinum (Borders and names of Contents).
  - b. Middle mediastinum (Borders and names of Contents).
  - c. Posterior mediastinum (Borders and names of Contents).

**HEART AND PERICARDIUM**

**Pericardium:** Within middle mediastinum → Parts and Contents.

1. Fibrous pericardium.
2. Serous pericardium →2 layers →Parietal and Visceral.
3. Pericardial cavity.

**HEART:**

Form of four chambers →2 Atria, 2 Ventricles.

Internal partitions →2 atria by interatrial septum,

2 Ventricles by Interventricular septum.

2 atria from 2 ventricles by atrioventricular septum.

Separates external by →Coronary sulcus →Atria from ventricles.

Ant. and post. Intervent. Grooves→ Separate ventricles.

**Borders:**

- Right →Right ventricle.
- Left → Left ventricle.
- Inferior →Right ventricle.

**Surfaces:**

- Anterior. →Rt. ventricle, Rt. atrium.
- Inferior (diaphragmatic) →Both ventricles.
- Base →Left atrium.

**Session No: (11)**

**10th week: April 10- 14, 2016**

**Topics: HEART.**

### **Internal features of the chambers.**

#### **Right atrium.**

Receive blood by →SVC, IVC, and Coronary sinus.

Send blood by Tricuspid valve.

#### Internal features:

- a. Rough anterior surface → (Pectinate muscles, Crista terminalis).
- b. Right auricle→ (rough reserve space).
- c. Smooth posterior surface→ (Fossa ovalis).

#### **Right Ventricle.**

Receive blood by tricuspid valve.

Send blood by pulmonary valve.

- a) Anterior wall→ (Rough with Trabeculae carnea, 3 papillary muscles, Septomarginal band).
- b) Posterior wall→ (Smooth in part →Infundibulum).
- c) Lumen→ crescent-shaped.

#### **Left Atrium.**

Receive 4 pulmonary veins.

Send blood by Bicuspid valve.

Wall→ mostly smooth except the left auricle.

#### **Left ventricle.**

Receive blood by bicuspid valve.

Send blood by aortic valve.

- A. Wall →mainly rough except the smooth aortic vestibule.
- B. 2 papillary muscles → Large anterior and posterior.
- C. Trabeculae carnea, → larger than right ventricle.
- D. Aortic vestibule→ at IV septum.
- E. Wall→ 3 times thicker than the right.
- F. Lumen→ circular.

#### **Coronary arteries.**

1. Right →course and main branches→ Nodal, marginal, post. I.V. arteries.
2. Left→ course and main branches→ Nodal, circumflex, ant. I.V. arteries.

#### **Coronary sinus (vein).**

- Pass from left to right in the inferior part of the coronary sulcus.
- Receives →great cardiac, middle cardiac and small cardiac veins.
- Drains into right atrium.

**Valves**→ locations and descriptions.

**Session No: (12)**

**10th week: April 17- 21, 2016**

**Topics: Anterior Abdominal wall, Peritoneum and Abdominal Aorta.**

**Session No: (13)**

**10th week: April 24- 28, 2016**

**Topics: GI Tube. Esophagus, Stomach, Duodenum, small and large intestines.**

**Session No: (14)**

**10th week: May 1- 5, 2016**

**Topics: Liver, Gallbladder, Spleen, pancreas.**