



ARCHIVE

ORTHOPAEDIC



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# PEDIATRIC FRACTURES

According to Salter- Harris classification, what is the type of this fracture?

**type 4**



according to salter harris classification whats the type of this fracture

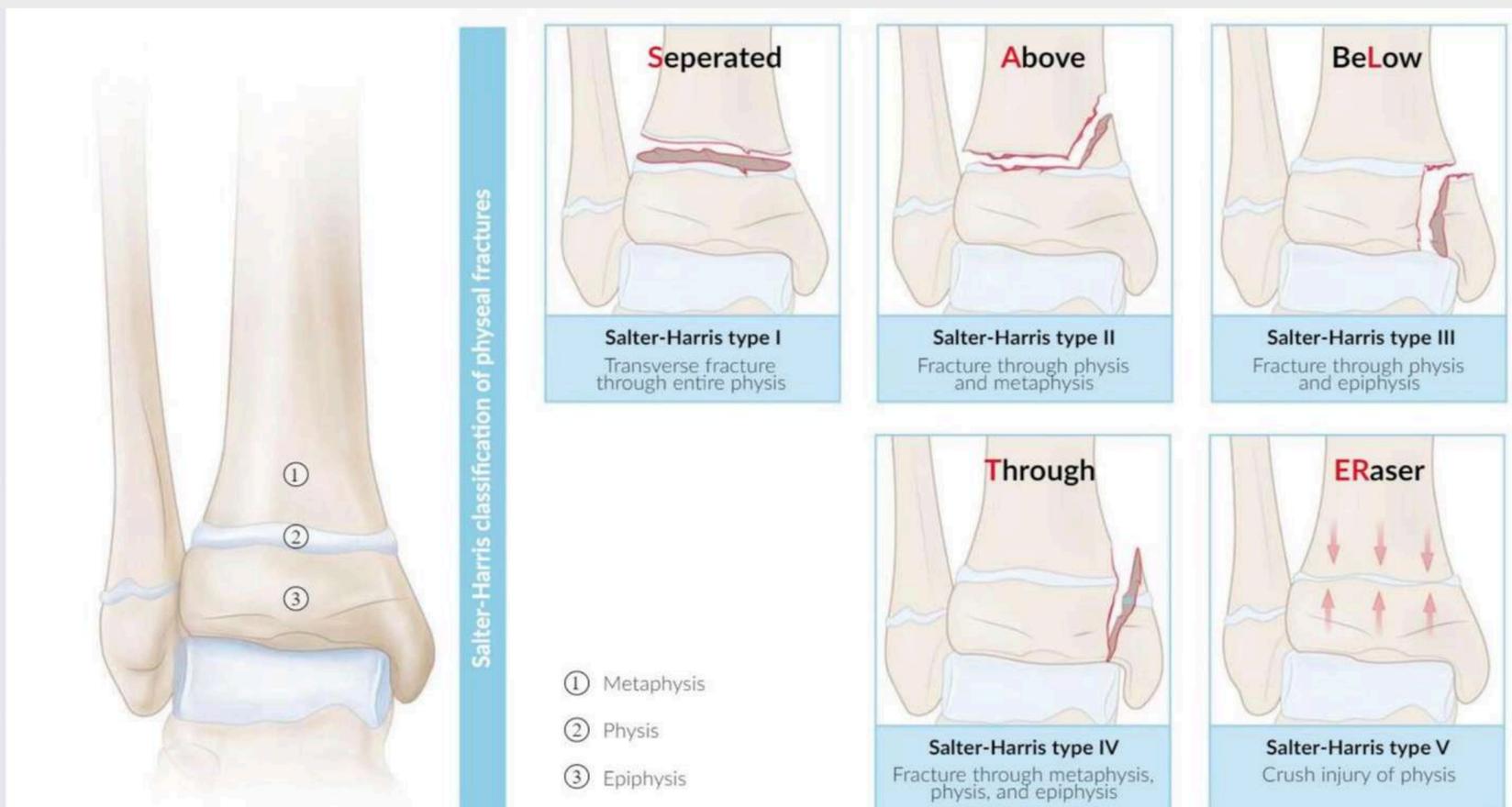
- A.1
- b.2
- c.3
- d.4
- e.5

**ans:c**



according to salter harris classification whats the type of this fracture

**Type2**



# PEDIATRIC FRACTURES

All are true about this except:  
Best seen with x ray



Type of fracture? (Not the same pic)  
**Buckle fracture**



: 1. Management of the buckle fx  
**Cast only for 2-3 w**  
2. What is the deformity in this fracture?  
**translation**



Fracture type

- A. Buckle
- B. greenstick
- C. Plastic deformity

**Answer :b**



X ray of toddler fracture, management?  
Above knee cast or long cast

. Manegment

- A. Short cast
- B. Long cast
- C. closed reduction And cast

**Answer;b**



What type of fracture is this and what is the appropriate management?

**A: Supracondylar fracture, type 2, closed reduction and fixation**



# PEDIATRIC FRACTURES

what is the function of the injured nerve

- A-extension of wrist
- B-flexion of wrist
- c-elbow supination
- D-MCP joint extension



ans:a

How do you test the nerve most probably injured in this fracture ?

- A.Sensation above the deltoid
- B.Flexion and supination of the elbow
- C.Dorsiflexion of the wrist



Ans:c

What is the management for this fracture ?

**Close reduction and fixation using wires**

(case senario)

Pt came with supracondylar fracture, and then he couldn't oppose his thumb with little finger, what is the affected nerve?

**Median n.**

Which nerve is most common likely to be affected in this fracture ?

- a. Anterior interosseous nerve
- b. Posterior interosseous nerve
- c. Ulnar nerve
- d. Radial nerve
- e. Median nerv



Supracondylar Fracture



Ans:a

# PEDIATRIC FRACTURES

**To examine what nerve ?**

**Anterior interosseous nerve -**

**In which fx it could be injured**

This image is assessing the **anterior interosseous nerve (AIN)**, a branch of the median nerve. The "OK sign" test is used to evaluate the function of this nerve.

**Key points:**

**1. Anterior Interosseous Nerve Function:**

The AIN supplies:

- **Flexor pollicis longus (FPL):** Flexes the thumb at the interphalangeal joint.
- **Flexor digitorum profundus (FDP) (lateral half):** Flexes the index and middle fingers at the distal interphalangeal joints.
- **Pronator quadratus:** Assists in pronation of the forearm.

**2. Injury and Clinical Signs:**

- An AIN injury results in the **inability to form a proper "OK sign"**. Instead of a rounded "O," the patient will produce a pinched or flattened shape due to weakened FPL and FDP.

**3. Common Causes of Injury:**

- **Fractures:**
  - **Supracondylar fracture of the humerus** (common in children).
  - Forearm fractures or trauma.
- **Compression:** Due to fascial bands, hematoma, or soft tissue injuries.



**decripe what you see**

**2- - Dx**

**1-ape hand**

**2- anterior interosseous nerve**



**What is the nerve affected by this fracture:**

- **Posterior interosseous nerve.**
- **(It is radial neck fracture)**



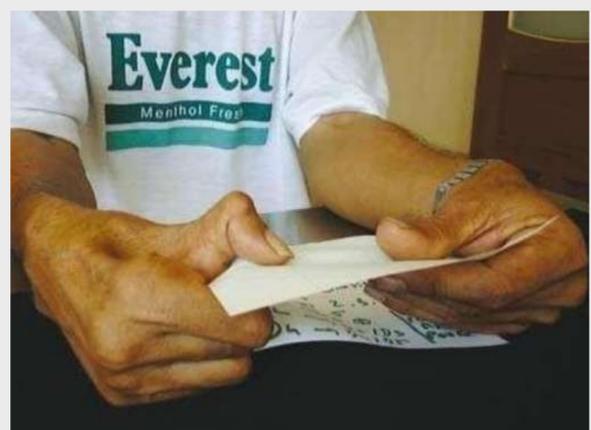
**What is the injured nerve?**

**Posterior interosseus nerve**



**This test used for ?**

**Ulnar nerve**



# PEDIATRIC FRACTURES

1 what is the name of this deformity ?

**Claw hand**

2 what is the nerve affected ? **Ulnar**



Which nerve affected ?

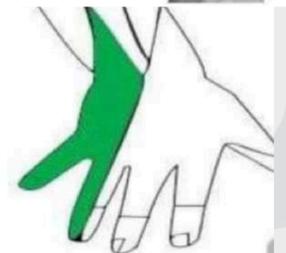
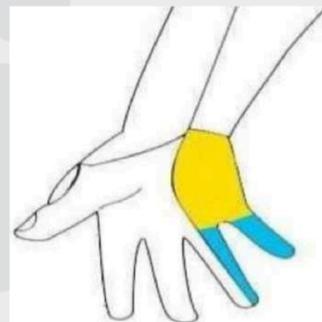
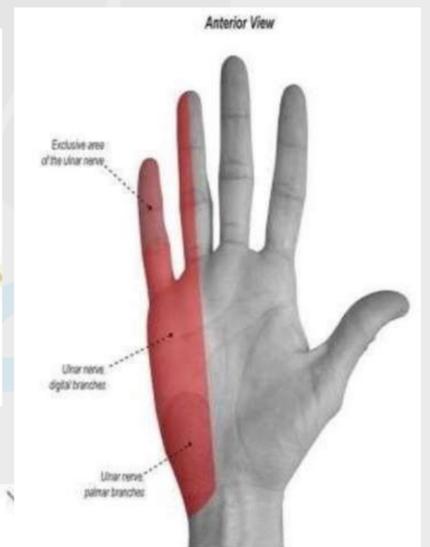
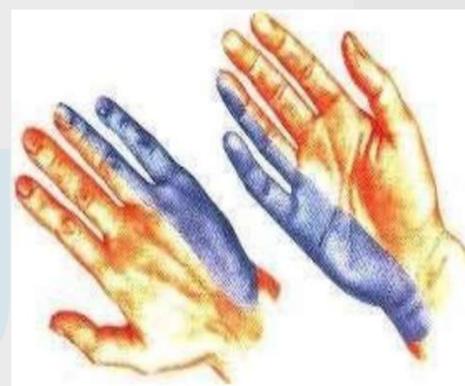
**Posterior interosseous nerve**



one of these muscle is supplied by nerve which highlighted with green color:

- A. Adductor pollicis
- B. 1st lumbrical
- C. Second lumbrical
- D. Oppones policis
- E. Flexor pollicis brevis

**Answer : A.(ulnar nerve)**



The sensory innervation for the colored area with arrow is from

Select one:

- a Median nerve
- b. Lateral cutaneous nerve of the hand
- c. Superficial radial nerve
- d.Ulnar nerve
- e.Musculocutaneous nerve



**Ans:c**

-This fracture is named.....

**Lateral condylar fracture of the humerus**

-Mention one complication of this fracture.....

**non-union**



# PEDIATRIC FRACTURES

The most likely diagnosis is: Select one:

- a. Suprachondyler fracture type one
- b. Lateral chondyle Fracture
- c. Medial chondyle fracture
- d. pulled Elbow
- e. Normal X-Ray

**Ans:b**



**simple dislocation  
, posteriolateral**



**Plastic deformity ,  
management :  
• manipulation then  
osteotomy**



**your management?**

- A. Manipulation, i f failed osteotomy**
- B. ORIF**
- C. Internal fixation and wires**
- D. Internal fixation and plates**
- E. Cast and x ray after 10 days**

**What is the first step in  
management ?**

- a. Open reduction**
- b. Closed reduction**
- c. Cast only**
- d. Cast and X-ray after 10 day**

**Hx of falling on elbow Diagnosis?  
Supracondylar Fx of humerus**



- a cast ADove knee**
- b. Cast Bellow knee**
- c Closed reduction and wires**
- d. nail fixation**
- e plate fixation**

**ans:a**



**history and X-ray??????????????  
Pulled elbow arm**



# DDH

4 week baby with sign of DDH Positive barlow test and galeazzi sign what next step ?

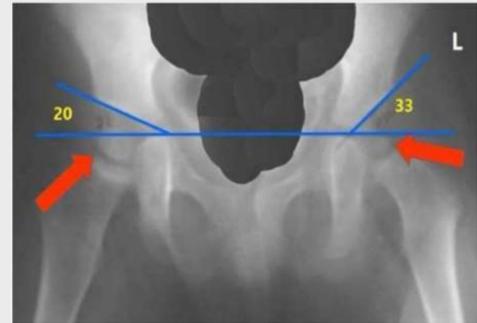
- A-hip ultrasound
- B-pelvis X-RAY
- C- observation
- E-follow up after 6 week

ans:a

5th months old baby come for DDH screen : what is your management ?

1. Pavlik harness
2. Hip spica

Ans:1



What is the disease that can be seen in this X-ray

- DDH.



One of the following is true :

- a. Alpha Angle is bigger than 60
- B. Alpha Angle is less than 55
- C. Beta angle is bigger than 60
- D. Beta angle is less than 55

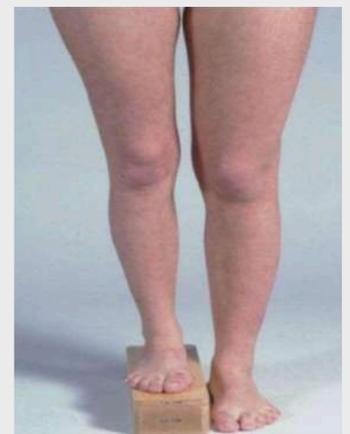
Ans : a



:What your dx lower limb discrepancy (shortening)\*

:what possible causes

- a, DDH
- B, SCFE
- C, Neck of femur fx

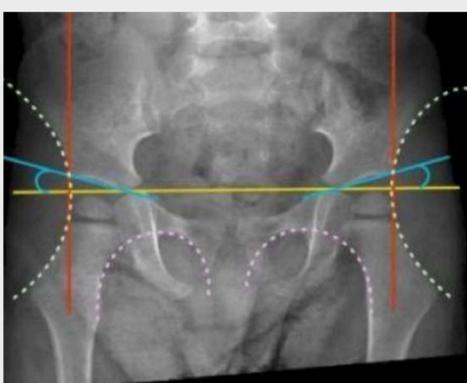


The red line is:  
Perkin line

The name of this line is:  
Shento's line

Identify H line Tx:  
pavlic harness

DDX ::  
DDH



# DDH

5th months old baby come for DDH screen :

1- what is your DDx?

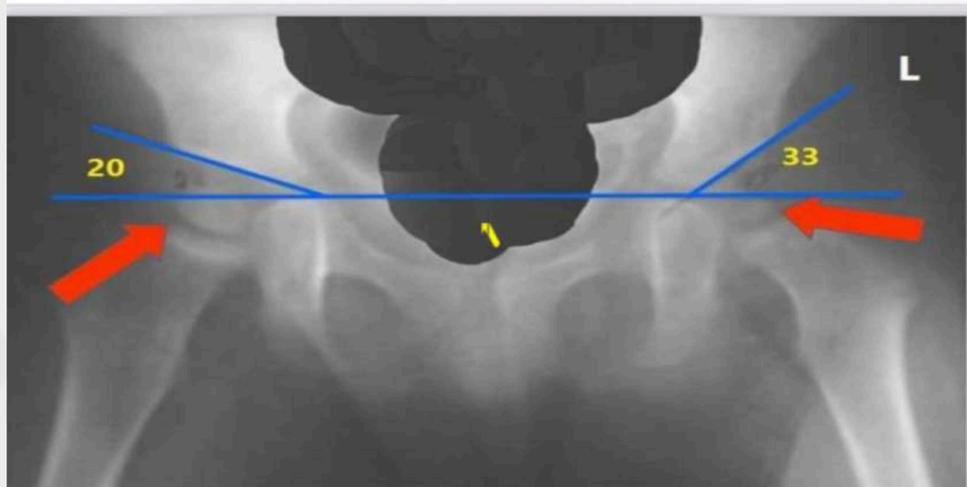
- **Developmental dysplasia of the hip (DDH)**

2-what is the name of line that is indicated by thin arrow ?

- **Hilgenreiner line ( H-Line )Or acetabular index**

3-what is your management?

- **pavlik harness or abduction bar (5 months )**



## SCFE AND PERTHES

7. What is this deformity?

- a) Coxa vara
- b) Coxa magna
- c) Coxa plana
- d) Fragmented femur head



Answer: a

# SCFE AND PERTHES

1. In slipped capital femoral epiphysis (SCFE), how does the left hip typically present on an AP pelvic view?

Options:

- a) Internal rotation + abduction
- b) External rotation + adduction
- c) External rotation + abduction
- d) Internal rotation + adduction
- e) Neutral rotation + flexion



Answer: b

2. In a patient with suspected slipped capital femoral epiphysis (SCFE), what is the most important initial lab test to perform?

- a) CBC
- b) Thyroid function tests
- c) Kidney Function Tests
- d) Liver Function Tests
- e) ESR



Answer: b

3. What is the diagnosis

- a) SCFE
- b) Perthe's
- c) Irritable hip
- d) Hip dislocation



Answer: a

4. What is the the pathology in this x-ray and what is the most appropriate management?

- a) SCFE, Hip fixation
- b) SCFE, Resting and NSAIDs
- c) SCFE, Manual reduction
- d) Perthe's, Bisphosphanates



Answer: a

5. What is the affected layer in this deformity?

- a) Resting zone
- b) Proliferating zone
- c) Pre-hypertrophic zone
- d) Hypertrophic zone



Answer: d

6. What is the diagnosis

- a) SCFE
- b) Perthe's
- c) Irritable hip
- d) Hip dislocation



Answer: b

7. What is the diagnosis?

- a) Distortion perthes
- b) Remodelling Perthes
- c) Fragmentation perthes
- d) SCFE



Answer: a

7. What is the diagnosis?

- a) DDH
- b) Hip dislocation
- c) perthes
- d) SCFE



Answer: c

# PRINCIPLES OF FRACTURES

This fracture is :  
**multifragmentary fracture**



Pic of tibial and fibular fx , pattern of  
fx : **multifragmentary**

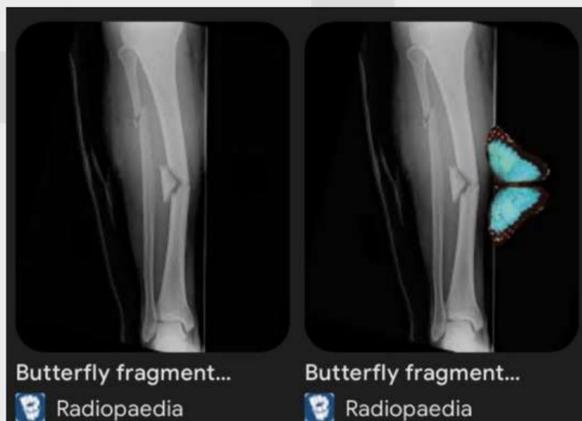


Diagnosis?

- a. **pilon fx**
- b. **Tuft fx**
- c. **Tibial plattu fx**



Butterfly fracture



What is the type of this fracture?  
**Oblique fracture.**



What Muscle cause this fracture:

- a. **Gastrocnemius**
- b. **Hamstring**
- c. **Sartorius**
- d. **Quadriceps**



# PRINCIPLES OF FRACTURES

What is the finding on x ray?

- Buckle fracture
- Greenstick fracture
- Normal (no fracture)
- Nondisplaced fracture**



The most obvious deformity in this xray is ?

- A-angulation**
- B-translation
- C-rotation
- D-shortening

Not the same picture  
the angulation was more clear in the exam



Which of the following is wrong about this fracture:

**Rotational deformity of the index finger**



Case of RTA :

- 1-what is your DDx ? **Open Frx**
  - 2-what is your management in ER ?
- 4 As ( anti-biotic , anti-tetanus , analgesia, adequate irrigation )**



Best ttt and mangment:

- Surgical intervention**
- Advanced image
- Pain killer



# PRINCIPLES OF FRACTURES



**All questions about this picture**

**# According to Gustilo-Anderson classification what is the type of this fracture? Note that the question mentioned that the vasculature is intact.**

**Type IIIB.**

**# This patient came to ER after RTA, vasculature is intact, according to the management of this type of injury all of the following are true except:**

**Anti-tetanus**

**Intravenous 1st & 2nd generation cephalosporine**

**Irrigation by normal saline**

**Acute suturing & repair**

**Analgesia**

**# All of the following are emergency management except:  
( other Picture for open fx )**

**-internal fixation**

**-dressing and casting**

**This patient came to ER after RTA, and the pulse is absent,  
According to Gustilo-Anderson classification what is the type of  
this fracture?**

**Grade I**

**Grade IIIA**

**Grade IIIB**

**Grade II**

**Grade IIIC**

# PRINCIPLES OF FRACTURES



Type of fracture?  
**Segmental fx**



Type of fracture?  
**Segmental fx**



Treatment ?  
**Close or open reduction and Fixation and wires**

What is the finding on x ray

- A. Normal x ray
- B. **Non displaced fracture**
- C. Buckel fracture
- D. Greenstick fracture



in ER do AP x-ray with the next step?

- A- lateral X-RAY
- B- CAST
- C- ask for MRI
- D-Surgery
- E-**reduction**



Treatment:

**Closed reduction with wires and cast**



what type of fracture is this ?

**Avulsion**



# PRINCIPLES OF FRACTURES



**Type of fracture?**  
**Segmental fx**

**Mechanism of this fracture:**  
**4 point bend**

**Mechanism of this fracture:**  
**Twisting**

**Management?**

- Short cast
- Long cast
- Closed reduction and cast
- Closed reduction and wires
- Closed reduction, wires and cast**



**The best management?**

- 1- cast only
- 2 closed reduction
- 3-**open reduction and screw**



**What is the most obvious deformity in this x-ray?**

**Lateral Translation**

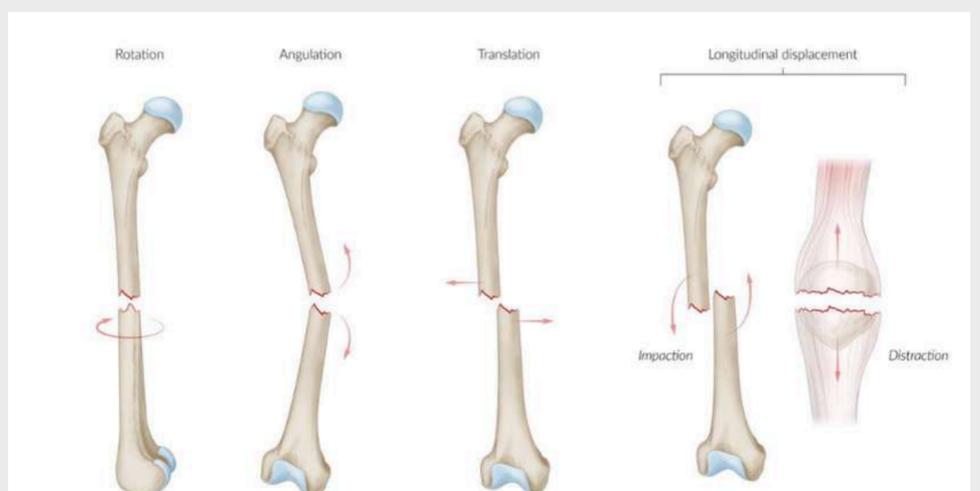


**What is the most obvious deformity in this x-ray?**

**Translation**



**mechanism transvers fracture?**  
**Direct trauma**



# Pelvic And Acetabular Fx

The name of this structure and the muscle attached to it:

**ASIS ..... sartorius**



The best easy initial management in suspected pelvic fracture?

**Pelvic binder**



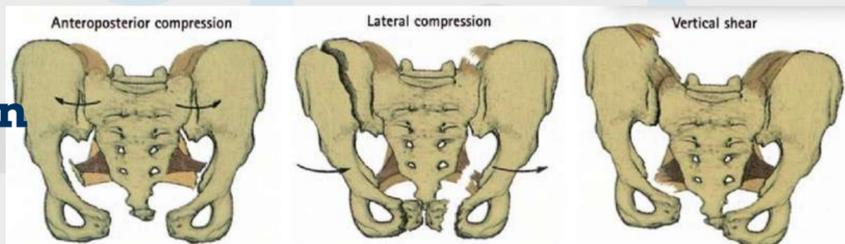
75 year old patient with right hip fracture Your management

**Hip replacement**

**NO PHOTO**

What is the mechanism of fracture?

- a. Anteroposterior compression
- b. Vertical compression
- c. Stress fracture
- d. lat. compression
- e. avulsion



**ans:b**

Patient come to ER after RTA, what is mechanism of fracture?

**Lateral shear**



one of these sentences is wrong about this case :

- A. Blood at the pubic area
- B. Shortening of the right leg
- C. Anteroposterior compression
- D. Weak upper and lower extremity pulse
- E. Absent ankle reflex



**ans:b**

# Pelvic And Acetabular Fx

Mention the muscle attached to these points

- 1-sartorius •
- 2-hamstring muscle •
- 3-hip rotator muscle



75 years old male complain of pain and decrease range of motion after acetabular fx (caused by RTA)..WHAT IS Ddx

**heterotopic ossification**



6 -What is the most common affected nerve?  
**sciatic nerve**

-If This patient was hemodynamically stable What is the next step management of this patient

The X-ray and CT scan show a pelvic fracture, likely involving the acetabulum or sacroiliac joint.

1. Most Commonly Affected Nerve:

Sciatic nerve

- The sciatic nerve is the most frequently injured in posterior hip dislocations and acetabular fractures.
- Can result in foot drop (if peroneal division is affected) or weak plantar flexion (if tibial division is affected).

Other possible nerve injuries:

- Femoral nerve (anterior pelvic fractures)
- Obturator nerve (pubic rami fractures)

2. Next Step in Management (If Hemodynamically Stable):

CT scan of the pelvis

- Even if an X-ray suggests a fracture, a CT scan provides a detailed assessment of fracture pattern and displacement.
- Helps in surgical planning if the fracture requires fixation.

General Management Approach for Pelvic Fractures:

- If hemodynamically unstable → Pelvic binder + Resuscitation + Angiography (if arterial bleed suspected).
- If hemodynamically stable → CT pelvis → Conservative vs. Surgical fixation based on fracture stability.



# HIP FX

1) An old age patient with history of falling down, Your diagnosis :



Answer: Posterior hip dislocation

2) Your diagnosis:



Answer: Posterior hip dislocation

3) The name and management of this fracture:

Select one:

- a. Femur Neck Fracture, Hip replacement
- b. Femur Neck Fracture, Fixation with plate and screws
- c. Inter-trochanteric fracture, partial hip replacement
- d. Inter-trochanteric fracture, Fixation with plate and screws
- e. Sub-trochanteric fracture, Nail fixation



Answer: d

4) Hip position that produce the least compression on the joint capsule :



Answer: External rotation and flexion

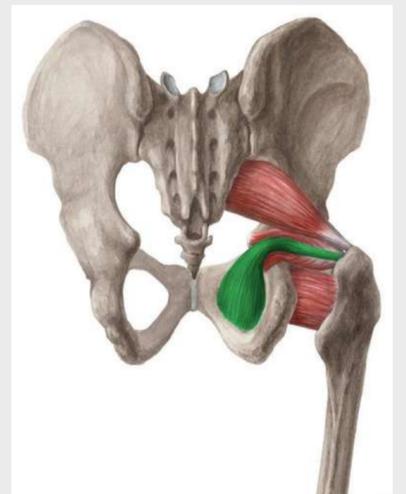
5) X-ray of the hip:



Answer: Femur neck fracture

6) what is true about this muscle ?

- A- it is supplied by the nerve to obturator internus
- B- the action of this muscle is internal rotation
- C- the insertion of this muscle is on the lateral side of the inter-trochanteric area
- D-The muscle position is in the lesser sciatic foramen



7) For the same picture, the correct answer is:

- a. supplied by the nerve to obturator internus L1-L2 .
- b. action is internal rotation with hip flexion.
- c. the insertion is on the lateral side of the greater tubercle
- d. origin from lesser sciatic foramen.
- e. blood supply from external pudendal artery.

(L5-S2)  
(lateral rotation)

(the medial surface of the greater trochanter)  
(origin from obturator membrane)  
(internal pudendal artery)

Answer: All of them are false 🧑🏻♂️

# HIP FX

8) What is true about this muscle?

- a. Supplied by external pudendal nerve
- b. Supplied by obturator internus L1-L2
- c. It medially rotates the femur



[Key facts about the obturator internus muscle](#) [Table](#) [quiz](#)

**Origin**  
Posterior surface of the obturator membrane; bony boundaries of the obturator foramen

**Insertion**  
Medial surface of greater trochanter of femur

**Action**  
External rotation of extended thigh;  
Abduction of flexed thigh;  
Stabilization of hip joint

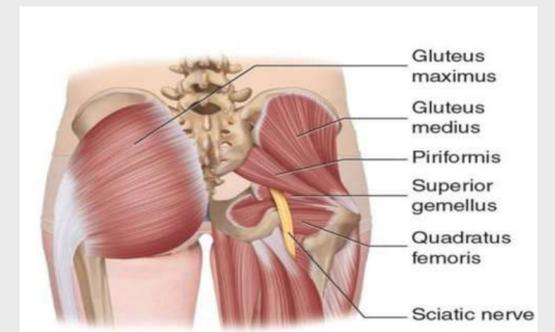
**Innervation**  
Nerve to obturator internus (L5 and S1)

**Blood supply**  
Obturator artery; internal pudendal artery

**Answer: No true answer from this options**

9) piriformis Muscle, choose the incorrect answer:

- a. originates from the posterior sacrum and Gluteal surface of ilium at level of lesser sciatic notch
- b. Inserts on the greater trochanter
- c. muscle receives its vascular supply from Superior gluteal artery, inferior gluteal artery, gemellar branches of the internal pudendal
- d. Help in hip rotation
- e. innervated by the piriform nerve



[Key facts about the piriformis muscle](#) [Table](#) [quiz](#)

<b>Origin</b>	Anterior surface of the sacrum (between the S2 and S4); Gluteal surface of ilium (near posterior inferior iliac spine), <a href="#">Sacrotuberous ligament</a>
<b>Insertion</b>	(Apex of) Greater trochanter of the femur
<b>Action</b>	<b>Hip joint:</b> Thigh external rotation, Thigh abduction (from flexed hip); Stabilizes head of femur in acetabulum
<b>Innervation</b>	Nerve to piriformis (S1-S2)
<b>Blood supply</b>	Superior gluteal artery, inferior gluteal artery, gemellar branches of the internal pudendal
<b>Mnemonic</b>	Structures passing through the greater sciatic foramen inferior to piriformis muscle: <b>PIN &amp; PINS</b> (standing for: <b>P</b> osterior cutaneous nerve of thigh, <b>I</b> nferior gluteal vessels and nerves, <b>N</b> erve to quadratus femoris, <b>P</b> udendal nerve, <b>I</b> nternal pudendal vessels, <b>N</b> erve to obturator internus, <b>S</b> ciatic nerve)

**Answer: a**

10) Wrong about this muscle:



[Key facts about gluteus maximus muscle](#) [Table](#) [quiz](#)

**Origin**  
Lateroposterior surface of sacrum and coccyx, gluteal surface of ilium (behind posterior gluteal line), thoracolumbar fascia, Sacrotuberous ligament

**Insertion**  
Iliotibial tract, gluteal tuberosity of femur

**Action**  
Hip joint: Thigh extension, thigh external rotation, thigh abduction (superior part), thigh adduction (inferior part)

**Innervation**  
Inferior gluteal nerve (L5, S1, S2)

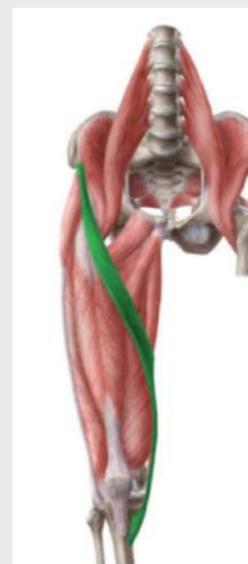
**Blood supply**  
Inferior gluteal and superior gluteal arteries

**Answer: its action is internal rotation and extension**

11) Which of the following is true about the muscle:

- a. Supplied by femoral artery
- b-Does hip flexion and knee flexion
- c. Origin of ASIS and inserted in the proximal tibia in the pes anserinus
- d. Synergistically work with hamstring
- e. Most superficial in the anterior compartment

**Answer: All choices are true**



[Key facts about sartorius muscle](#) [Table](#) [quiz](#)

**Origin**  
Anterior superior iliac spine (ASIS)

**Insertion**  
Proximal end of tibia below medial condyle (via pes anserinus)

**Innervation**  
Femoral nerve (L2-L3)

**Blood supply**  
**Proximal third:** branches of femoral artery, deep femoral artery, artery of quadriceps, lateral circumflex femoral artery  
**Middle third:** branches of femoral artery  
**Distal third:** branches of femoral and descending genicular arteries

**Function**  
**Hip joint:** thigh flexion, thigh abduction, thigh external rotation  
**Knee joint:** leg flexion, leg internal rotation

1 Question ONLY on Mini-OSCE about compartment syndrome

After RTA ,BP:107/80, the pressure on the compartments of the leg are as follows (anterior 27,lateral 53, posterior superficial 22, posterior deep 27)

What is the most likely function loss the pt will complaint from:

- a-loss of sensation on the dorsum of the foot including the first webspace
- b-loss of sensation on the 1st ,3rd, 4th fingers
- c-loss of ankle dorsiflexion
- d-loss of adduction
- e-loss of ankle plantarflexion

**Answer: b/c ; Intracompartment pressure-diastolic BP if<30 it's compartment syndrome, and the nerve that supplies the lateral compartment is superficial peroneal nerve so the answer is b or c**

# lower limb fx

Patient had posterior hip dislocation how he hold his limb ?

**Slight flexion , adduction ,  
internal rotation**



What is the position in which there is the least compression on the joint capsule?

**Flexion, abduction, external rotation**



Garden's classification of femur neck fracture ?

- a. Type 1
- b. Type 2
- c. **Type 3**
- d. Type 4
- e. Type 5



All of these are late complications except

**Nerve injury  
(sciatic nerve injury)**

**note : You should know nerve injury is an  
early complication**



A 65 yrs old pt with Rt hip pain after falling down.

1. Whats your diagnosis?

2. management?

**1- RIGHT intertrochantric fracture**

**2- open reduction internal fixation**



# lower limb fx

Picture of pelvic dislocation and blood at external genitalia of a female , you suspect injury of ?

**Urethra**

23 yr old male fall of 3 meters and had hip dislocation .. One of the following is a complication in his case :

- a. Osteoarthritis
- b. **Osteonecrosis**
- c. Focal femoral degeneration



A 45yrs old male had a distal femur fx since 9 months and underwent an open reduction internal fixation

Diagnosis?

**distal femur fracture**

Risk factors ?

**smoking , diabetes , poor nutrition , alcohol abuse , medication , poor blood supply to the distal femur , comminuted fracture , infection**



Patient come to • clinic after 9 M from surgery suffering from pain

**Nonunion supracondyle fracture**

Picture of proximal femur fx

**DX subtrochanteric fx**

Mention one muscle lead to the deformity

**Iliopsoas muscle**

**Tx surgery (open reduction and internal fixation)**



# lower limb fx

A 64 yrs old osteoporotic women after falling down

Dx? **Proximal femur shaft fx**

Management? **Open reduction internal fixation**



Hx of trauma

Dx? **Mid shaft femur fx**

Management **Surgery**



**supracondyle fracture**



**deltoid ligament injury**

A photo for proximal tibial fracture,,what is the used classification and its management?

**Schatzker and ORIF**

What Muscle cause this fracture?

- a- **Gastrocnemius**
- b- Hamstring
- c- Sartorius
- d- Quadriceps



Most important factor to detect the mechanism of fracture

❖ **Intact extensor mechanism**



# lower limb fx

Type of this fracture

**Tibial Pilon fracture**

mechanism of injury

**axial loading**



Management ?

**History, physical examination and follow up X-ray**



**a- Pilon fracture**

Where is lesion in this picture ?

- A- syndesmosis
- B- anterior talofibular ligament
- C- posterior talofibular ligament
- D- anterior tibiofibular ligament
- E- Calcaneofibular ligament

**answer : A**



What is the management of this deformity?

**ORIF .**



The nerve supply the deformed structure?

- Common Peroneal
- Superficial peroneal
- Deep peroneal
- **Tibial**
- Saphenous

Note tibial nerve innervate most of ms of soles and provid sensation for planter surface. That is crucial for maintain structure



# lower limb fx

Name of the classification of this type of fracture

- A. Schatzker Classification
- B. Weber Classification
- C. Ruedi and Allgower Classification
- D. Sanders Classification
- E. Hawkins classification

**answer : b**

the most common ligament to be injured in this type of injury is ?

**anterior talofibular ligament**



Name of the classification of this type of fracture

**weber classification**

history of falling down from 2nd floor  
diagnosis?

**tibial plateau fracture**

mechanism of fracture

**.if lateral condyl fx >>>valgus falling down  
medial condyl fx >>>varus both condyle fx  
>>>straight legs so in this case mech. of fx  
is valgu**



What type of fracture is shown in this image?

**Talus neck fracture**



# lower limb fx

Which of the following muscles is responsible for this avulsion fracture

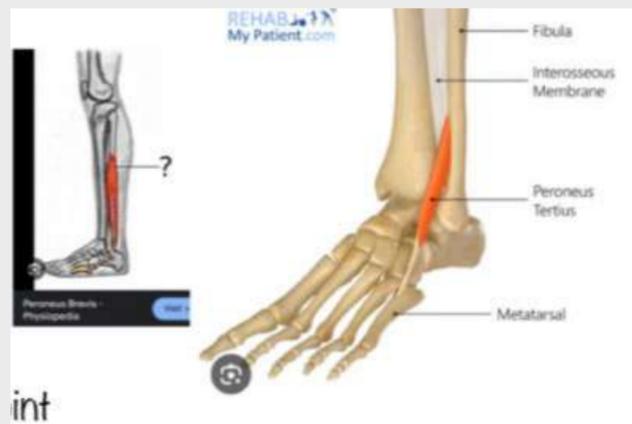
- a. Posterior tibialis muscle
- b. Peroneus brevis
- c. Peroneus longus
- d. Planter fascia
- e. Anterior tibialis muscl



**Answer : b**

Choose the correct answare about this muscel ?

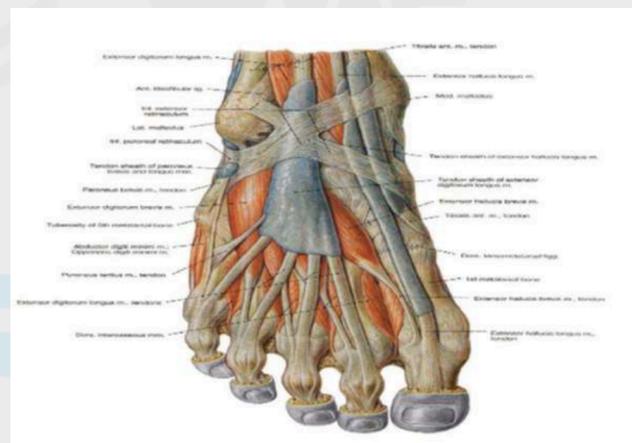
- A. Normally absent in 35%of peopel
- B. supply by the superficial peroneal nerve
- C. Insert in the shaft of fifth metatarsal bone
- D. work synergistically with pernoues longus on ankel joi



**Answer : c**

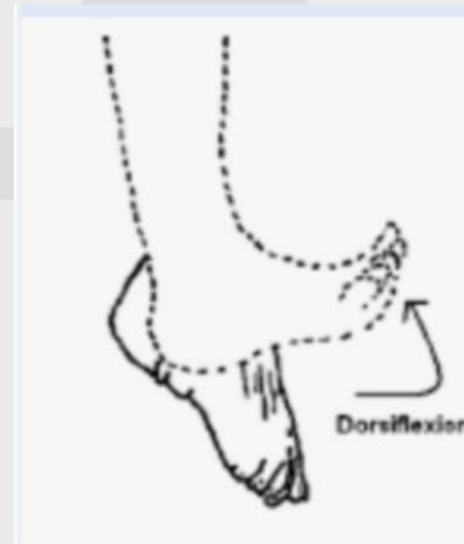
From medial to lateral, the structures in the anterior compartment of the leg are:

**Tibialis Anterior, Extensor Digitorum Longus, Extensor Hallucis Longus, Fibularis Tertius, Deep Fibular Nerve, Anterior Tibial Artery**



All of the following muscles do this action except

- A. Extensor hallucis longus
- B. Peroneus tertius
- C. Pollicis longus
- D. Extensor digitorum longu



**Answer : c**

what is the most common delayed function loss with this fracture ?

- A. Planter flexion
- B. Supination and adduction
- C. Dorsiflexion
- D. Inversion and Eversion
- E. Abduction



**Answer : D (from Doctor**

# lower limb fx

All these muscles contributes to foot dorsiflexion except:

- peroneus tertus
- Tibialis anterior
- plantaris**
- extensor hallucis
- extensor digitorum profundus

Which of the following injury

- Soft tissue injury**
- Ligamintous
- Osteochondral



Nerve injury ass. with this fx will result in the loss of

- loss of ankle dorsiflexion**

Which nerve is affected in this injury ?

- Common peroneal nerve**

All of the following are supplied by the affected nerve except:

**Tibialis posterior**

after knee surgery pt came with this condition, whats your diagnosis?

**Drop foot**

2. name of injured nerve ?

**common peroneal nerve**



Which of the following, nerve that supply this muscle?

**superficial peroneal nerve**



# lower limb fx

wrong about this muscle:

a- The origin of the muscle is: Proximal postero-medial aspect of the tibia. Proximal postero-medial aspect of the fibula and the interosseous membrane

b- The major insertion is onto the navicular and the plantar slip attaches to the medial cuneiform bone.

c- innervation: tibial nerve

d- main function is to support the medial arch of the foot.

e- Located between flexor digitorum longus and flexor hallucis, tibialis posterior is the deepest muscle in the posterior compartment.

Note : The origin of the muscle is: Proximal postero-lateral aspect of the tibia. Proximal postero-medial aspect of the fibula and the interosseous membra



**Answer : A**

All of the are true

following about this muscle,  
except :

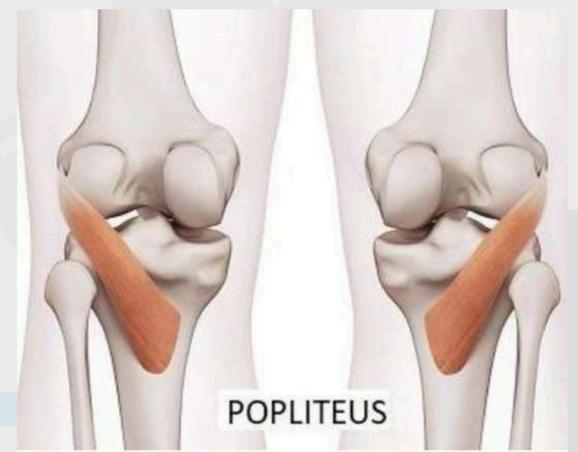
A. Originate from the lateral aspect of the lateral femoral condyle

B. Supplied By tibial nerve

C. supplied by popliteal artery

D. one of the main stabilizers of the Posterior aspect of knee

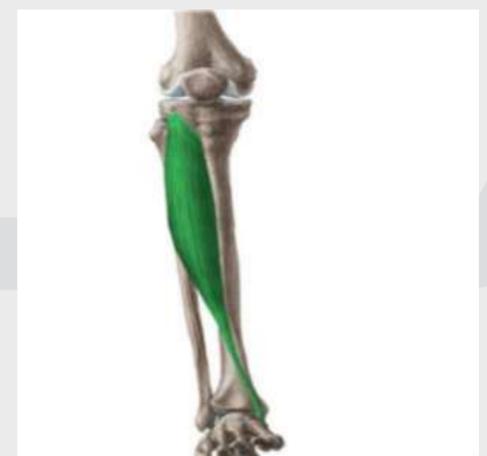
E. it "unlock" the knee joint by flexion and medial rotation of femur over tibia.



**Answer : E**

Which of the following is false?

**Its insert to second metatarsal bone**



One is wrong?

**1 Inervated by s4-s5**

**2 inserted in base of proximal phalnx 2-5 toe**

**3 originated from tendon of flexor digitoru**



# lower limb fx

What is the pointed muscle ?

- a. Biceps femoris
- b. Semimembranosus
- c. Semitendinosus**
- d. Gastrocnemius
- e. Vastus lateralis

One of the following is wrong about the muscle indicated by brown color?

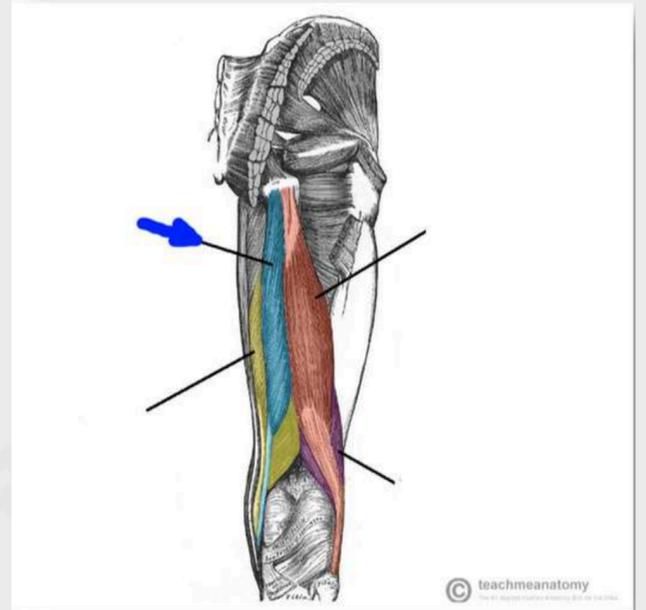
- a long head that originates from the ischial tuberosity and a short head that originates at the aspera of the femur**

Which of the following statements is incorrect?

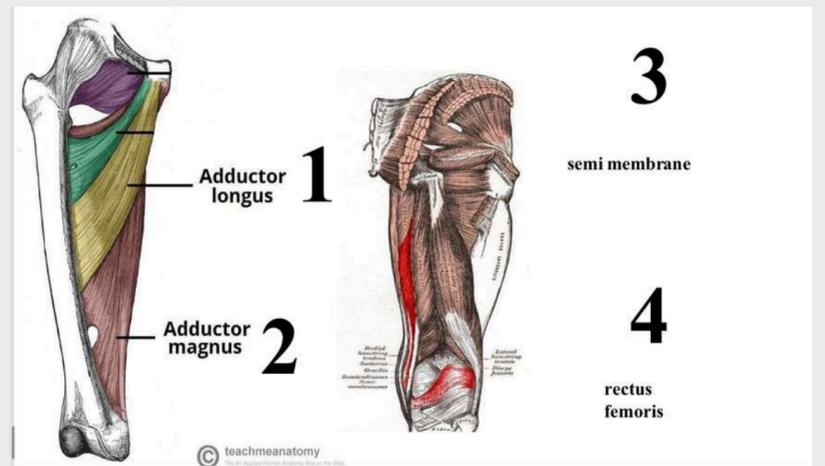
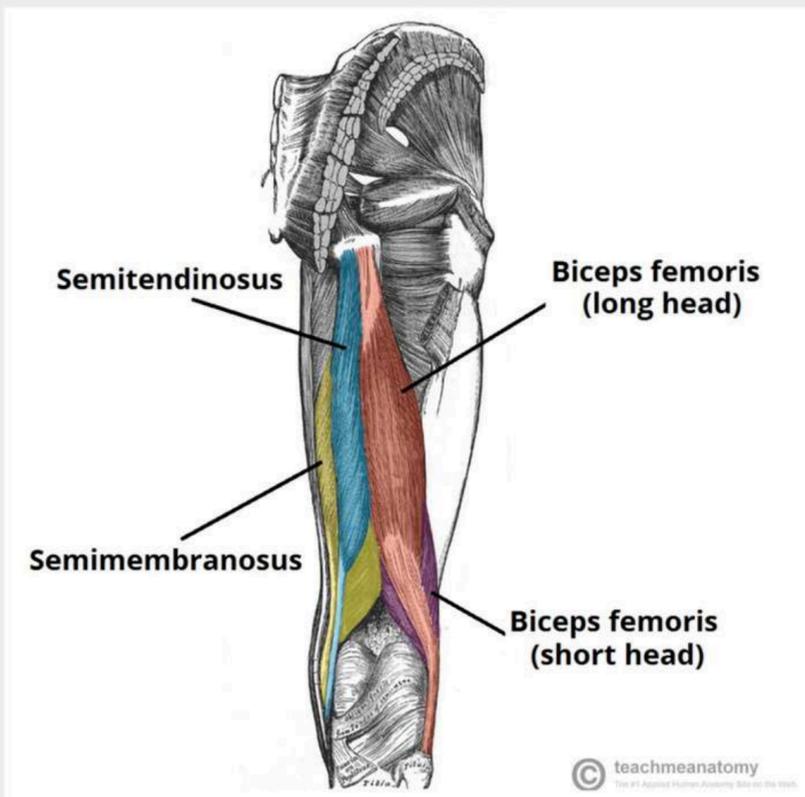
- The function of this muscle is flexion and external rotation, in association with the popliteus muscle.**

One of the following statements regarding the illustrated muscle is incorrect. Which one?

- A. It is innervated by S4–S5
- B. It is inserted into the base of the proximal phalanx of toes 2–5
- C. It originates from the tendon of flexor digitorum longus
- D. It laterally rotates the femur during the closed-chain phase and medially rotates the tibia during the open-chain phase of the gait cycle**



# lower limb fx



Key facts about the tibialis anterior muscle [Table quiz](#)

<b>Origin</b>	Lateral surface of tibia, interosseous membrane
<b>Insertion</b>	Medial cuneiform bone, base of metatarsal bone 1
<b>Action</b>	Talocrural joint: <u>foot dorsiflexion</u> ; subtalar joint: <u>foot inversion</u>
<b>Innervation</b>	Deep fibular nerve (L4, L5)
<b>Blood supply</b>	Branches of <u>anterior tibial artery</u> : Anterior and medial muscular branches; anterior tibial recurrent, dorsalis pedis and anterior medial malleolar arteries Branches of <u>posterior tibial artery</u> : Medial malleolar and calcaneal arteries

Key facts about the tibialis posterior muscle [Table quiz](#)

<b>Origin</b>	Posterior surface of tibia, posterior surface of fibula and interosseous membrane
<b>Insertion</b>	Tuberosity of navicular bone, all cuneiform bones, cuboid bone, bases of metatarsal bones 2-4
<b>Actions</b>	Talocrural joint: Foot plantarflexion Subtalar joint: Foot inversion Supports medial longitudinal arch of foot
<b>Innervation</b>	Tibial nerve (L4, L5)
<b>Blood supply</b>	Branches of the posterior tibial artery

# KNEE

All are examination of ACL injury except :

- a) Lachman
- b) McMurray
- c) Pivot
- d) KT -1000
- e) Ant drawer test



**Answer : b**

Patient came with this injury after 6 months what's mean complain ?

- A. pain
- B. Swelling
- C. Felt a POP
- D. Giving away



**Answer : D**

14. All These tests are used in examination of this injury except :

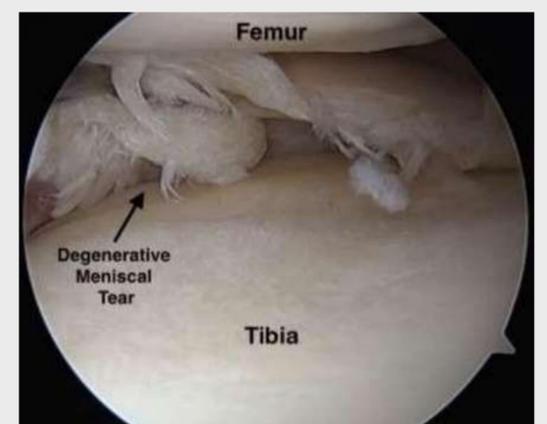
- A. Lachman test
- B. pivot shifting Test
- C. anterior drawer test
- D. Lever (Lelli's) test
- E. McMurray's test



**Answer : E**

One of these is the most accurate Physical examination test to this case (meniscal tear):

- A. apley's distraction test
- b. Joint Line tenderness
- c. Lachman test



**Answer : B**

-Most common age for Osgood schlatter is :

- 1-6
- 2-10
- 3-14

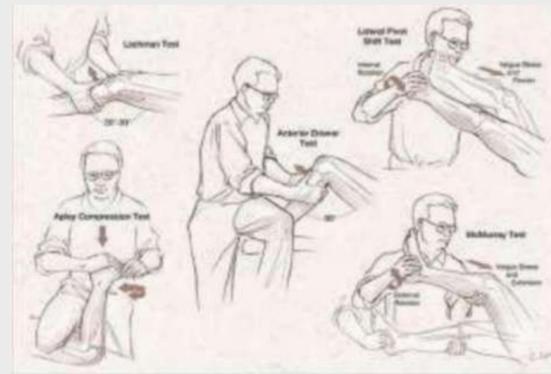


**Answer : c**

# KNEE

All of the following test done in supine position except ?

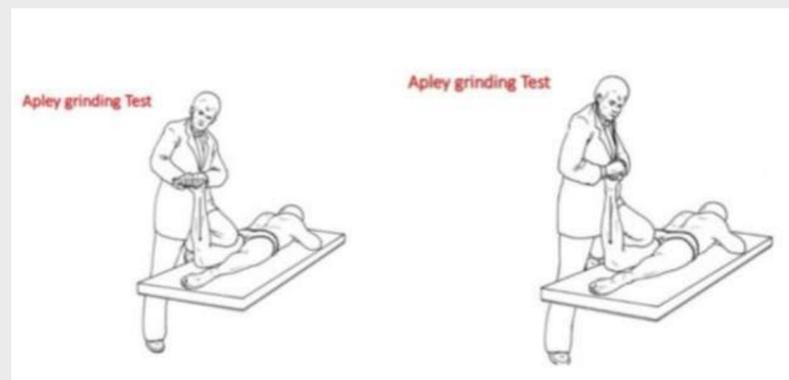
- A. apley's test
- B. Lachman test
- C. Anterior drawer test
- D. Macmurry test



**Answer : A**

According to meniscal injury examination which test done in prone position :

- A. McMurray test
- B. Thessaly test
- C. Joint line tenderness
- D. Apley's compression test



**Answer : D**

Diagnosis

1. Osteosarcoma
2. Chondrosarcoma
3. Chondroblastoma
4. Osteochondroma
5. Osteoid osteoma



**Answer : 4**

The most sensitive test for this :

- A. McMurray test
- B. Lachman test
- C. Posterior drawer test
- D. Apley's test
- E. tibial tuberosity tenderness



**Answer : E**

14 years old boy, no history of trauma, what is the most likely diagnosis:

**Osgood-Schlatter disease**

Where is the abnormality ?

**Secondary tibial tuberosity ossification center**

the most sensitive test for this patient 14 Year old , hyperactive pt is?

- A-Lachman test
- B-Posterior drawer test
- C-Joint Line tenderness
- D-McMurray's test
- E-Provocative test



**Answer : E**

# KNEE

All the following can cause this except:

**Infrapatellar bursitis (CLERGYMAN'S KNEE)**



Post swelling of knee joint all of the following can cause it except:

**Clergyman bursa**

Patient's suspected to have ACL fracture what is not true about this fracture :

**Mcmurray**



The sign shown in the red circle indicates what?

**ACL tear (Segond fracture, pathognomonic) (avulsion)**

most common sensitive one test:

**Lachman**



patient came to ER With knee pain 1 day duration and the TM Was 39

Aspiration from joint show

Write two possible causes :

**Hemarthrosis**

**ACL tear**



Patient with recurrent patellar dislocation how do you test it:

**Patellar apprehension**



# KNEE

Test used for diagnosis of this injury

:

**Lachman test**



what is the examined ligament;

**ACL**

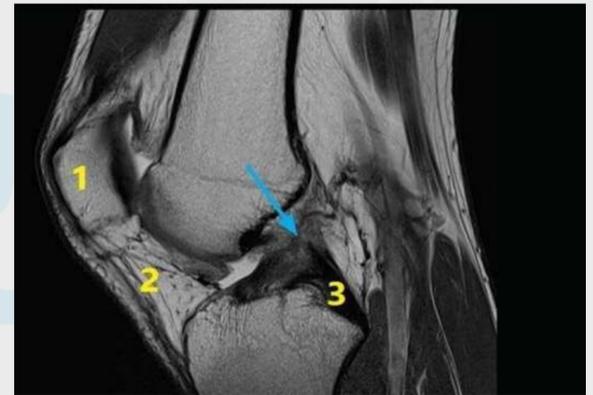


What is the name of these structure ?

1- patella

2- patellar tendon

3- posterior cruciate ligament



According to the picture, Lachman test procedure (flexion 30 degrees and pulling the tibia anteriorly)



all of the following are true except

a. **Genu Valgus**



This test is ....

**valgus stress test**

-And the ligament examined is....

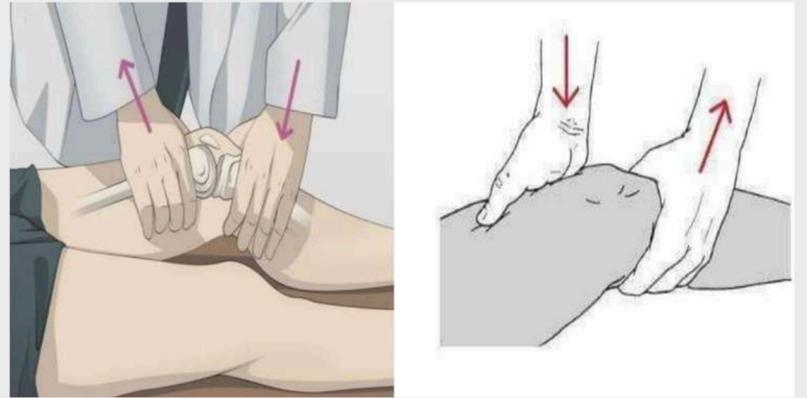
**Medial collateral ligament**



# KNEE

What is the attachment of the structure examined?

**Medial border of lateral femoral condyle**



What is of the following not a test for this injury :

**Lachman**

Patient with meniscal tear ,the most sensitive test is:

**Mcmurray test**



Name of this sign?

• **Sag sign**

2. whats the injured•

**PCL**

Test for this injury:

**Posterior drawer test**



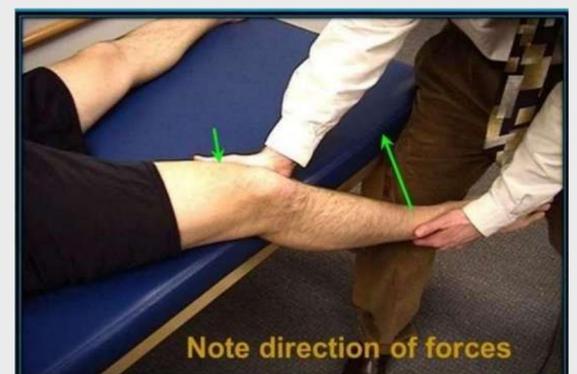
What pathology can you see in this image?

**Meniscal tear (double PCL sign)**



Varus stress test:

**lateral collateral ligament**



1) patient with recurrent patellar dislocation how do you test it:

**Patellar apprehension**

2) All of the following are risk factors for this condition Except:

**Genu varus**



# KNEE

## Testing the Medial Meniscus:

- **Movement:** The examiner **externally rotates** the tibia and slowly extends the knee while applying a **valgus (inward) stress** to the knee.
- **Positive Sign:** A painful **click, pop, or locking sensation** along the **medial joint line** suggests a **medial meniscus tear**.

## Testing the Lateral Meniscus:

- **Movement:** The examiner **internally rotates** the tibia and slowly extends the knee while applying a **varus (outward) stress** to the knee.
- **Positive Sign:** A painful **click, pop, or locking sensation** along the **lateral joint line** suggests a **lateral meniscus tear**.

# ANKLE AND FOOT

1- One of the following is wrong regarding this deformity:

- a) Usually unilateral
- b) Mostly women affected
- c) Big toe is deviated laterally
- d) Intermetatarsal angle is less than 10



Answer: a

2- Management of the following affected structure

- a) Achilles tendon rupture repair



Answer: a

3- all of the following regarding this deformity is correct except:

- A) last step of management is varus correction



Answer: a

4-What is the type of fracture:

- a) Pilon fracture
- b) Fibula fracture
- c) Tibial plateau fracture



Answer: a

5-What is the deformity in the forefoot?

- a) Cavus
- b) varus
- c) Equinus
- d) adductus



Answer: d

6-Which of the following is not a cause of this deformity?

- a) Posterior Tibial Tendon Dysfunction
- b) Talocalcaneal
- c) Claw foot
- d) Calcaneonavicular
- e) Congenital vertical talus



Answer: c

7-Which of the following muscles is responsible for this avulsion fracture?

- a) Posterior tibialis muscle
- b) Peroneus brevis
- c) Peroneus longus
- d) Plantar fascia
- e) Anterior tibialis muscle



Answer: b

8-What is the most common delayed function loss with this fracture ?

- a) Planter flexion
- b) Supination and adduction
- c) Dorsiflexion
- d) Inversion and Eversion
- e) Abduction



Answer: d

9-name of this bone? (Not the same pic)

- a) Talus
- b) Navicular
- c) Calcaneus
- d) Cuboid
- e) Lateral cuneiform



Answer: d

10- According to this deformity which of the following is false:

- a) 1st metatarsal is in valgus



Answer: a

11- What is the nerve affected in this injury:

- a) Common peroneal nerve



Answer: a

# ANKLE AND FOOT

12-Most common injured ligament?

- a) Anterior tibiofibular
- b) Posterior talofibular
- c) Anterior talofibular
- d) Calcaneonavicular
- e) Tibionavicular



Answer: c

13-The muscle affected in this case:

- a) Posterior tibialis muscle
- b) Anterior tibialis muscle
- c) Peroneus longus muscle



Answer: a

الطبيب والجراحة

لجنتنة

# UPPER LIMB FX

1) A seven year old boy came to the ER with this fracture.  
What is the management?

- a) Arm splint
- b) Closed reduction
- c) Open reduction
- d) ORIF
- e) Casting



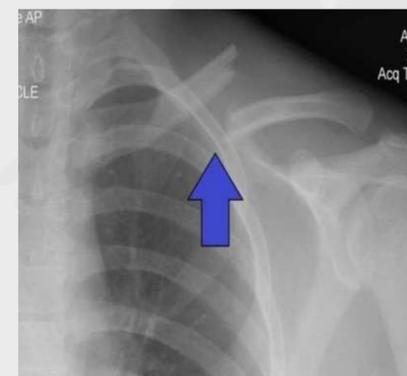
Answer : a

2) What is the management?



Answer: Arm sling

3) Hx of falling down on outstretched hand, What is your Diagnosis?



Answer: clavicle fracture

What is the muscle that exerts action on the medial side of the fractured bone?

- a. Sternocleidomastoid
- b. Trapezius
- c. Deltoid muscles

Answer: a

4) What is the diagnosis?



Answer: Humerus shaft fracture; movement will be lost at the wrist extension

5) what is the function of the injured nerve?



Answer: Dorsiflexion of wrist

6) The Most likely nerve to be injured in this fracture

Select one:

- a) Median nerve
- b) Radial nerve
- c) Ulnar nerve
- d) Axillary nerve
- e) Musculocutaneous nerve



Answer: b

# UPPER LIMB FX

7) What's the movement affected with this fracture:

- A- wrist extension
- B- wrist flexion
- C- elbow supination
- D- MCP extension



Answer: A

8) what is the nerve injury in this fx ?



Answer: radial nerve

what wrist movement is affected ?

Answer: wrist extension

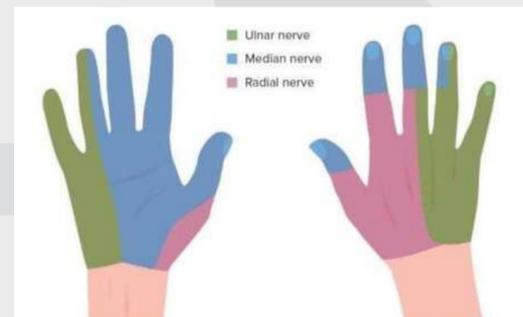
9) Picture of wrist drop, what is the nerve injury?



Answer: Radial N. injury

10) Which of the following muscles is not supplied by the nerve that supplies the blue area?

- a) Adductor pollicis muscle
- b) Flexor pollicis brevis
- c) 1<sup>st</sup> thenar
- d) 2<sup>nd</sup> thenar



Answer: a

11) The nerve not affected in this fracture ?



Answer: Axillary nerve

12) What is the appropriate management for this patient?



Answer: Tension wire banding (this is an olecranon fx)

What is the management of this fracture?



Answer: ORIF

# UPPER LIMB FX

13) What is the type of the fracture?

- a. Galeazzi fracture
- b. Colles fracture
- c. Monteggia fracture
- d. Radius fracture
- e. Ulnar fracture

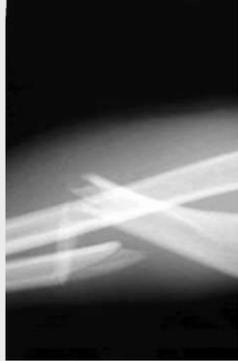


Answer: c

function of the nerve injured in this fx:

Answer: extension of MCP joint

14) how to test this fracture?



Answer: by Extension of MCP

15) Your ddx:

**Gelazzi fracture** (fracture of radius and dislocation of ulna)

TTT:

**surgery**



16) Treatment of this fracture is:

- a) closed reduction and casting at ER
- b) closed reduction and casting at operation room
- c) open reduction and fixation with plate
- d) open reduction and fixation with cast
- e) total wrist replacement



Answer: c

17) Type of this fracture and its complications:

Answer:

**Scaphoid fracture**

**AVN, carpal tunnel, osteoarthritis**



Most common complication for this fracture?

**Avascular necrosis**

Management:

• Pain management:

– Over-the-counter analgesics and strengthening exercises

• Nondisplaced fractures or displaced fractures < 1 mm:

– Wrist immobilization via thumb spica cast for a minimum of 6–8 weeks with x-ray re-evaluation in 2 weeks

• Surgical treatment

– Usually, internal fixation

– Indications are complicated cases that include:

• Displaced fractures > 1 mm

• Open fractures

• Proximal pole fractures high risk of AVN

Scaphoid fracture

a) Wrist splint with pain killer

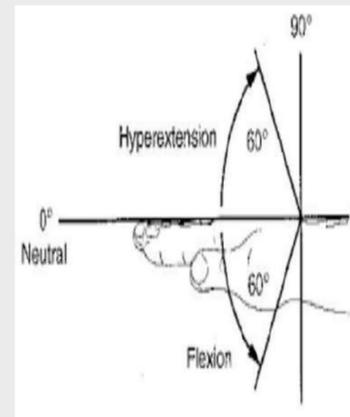
b) Fixation with plate and screws

Answer: a

# UPPER LIMB FX

18) In a fall on an outstretched hand, what position of the hand makes it more likely to transmit the most energy (or damage) throughout the hand ?

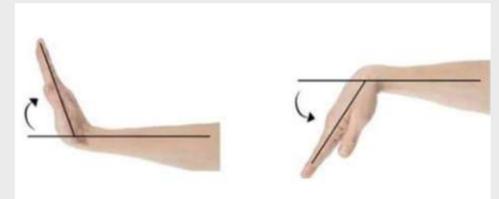
- A-fall on the lunate bone in a neutral hand position
- B-fall on the lunate bone in an extended hand position
- C-fall on the scaphoid bone in a neutral hand position
- D-fall on the scaphoid bone in an extended hand position
- E- the position of the hand does not matter in the fall



Answer: D

19) Regarding the force transmission on the wrist joint, one is true:

- a. wrist has no role in force transmission
- b. Extended wrist increase the force transmission on the lunate fossa.
- c. Extended wrist increase the force transmission on the scaphoid fossa .
- d. Normal wrist position decrease force transmission



Answer: c

20) Nerve of this muscle is ?

- A- ulnar
- B- median
- c-radial
- d-axillary
- e-musculocutaneous nerve



Answer: c

21) What is true about this muscle?

- a-Supplied by ulnar artery
- b-Originated from lateral condole
- c-Inserted in lateral aspect of ulnar bone
- d- Innervated by median nerve
- e-function is pronation and extension



Answer: D

22) This pt. is presented to ER, Mention 4 structure may be injured (2 tendons, 1 artery, 1 nerve):  
What is the medico-legal importance ?



Answer:

- oPalmaris longus, Flexor carpi radialis tendons
- o Median nerve
- o Ulnar artery, radial artery

o Suicidal attempt

# SHOULDER & ELBOW

The examined muscle

- **subscapularis**

This test is ?

- **Lift off test used for subscapularis muscle**

All of the following are true except

- A. Internally rotates the shoulder
- B. supplied by upper and lower Subscapular nerves
- C. Insert in the lesser tubercle of humerus
- D. One of the static stabilizers of the shoulder joint
- E. Supplied by Subscapular artery

**Ans:D**

where is the insertion of the muscle doing this movement ?

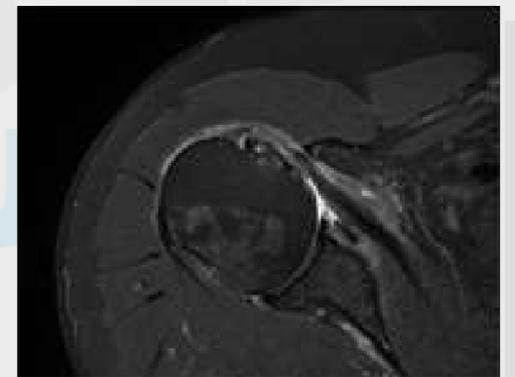
**-lesser tubercle-**

what is the action of this muscle ?

**- internal rotation with adduction**

Patient with subscapularis tendon complete tear which of the following describes the physical findings ?

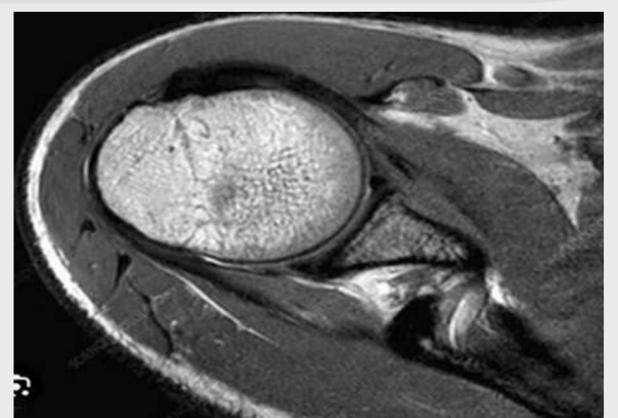
- a. Passive flexion of the left arm is more than right arm
- B. Passive extension of the left arm is more than right arm
- C. Passive external rotation of the left arm is more than right arm
- D. Active extension of the left arm is more than right arm
- E. Passive extension of the right arm is more than left arm



(c) Passive external rotation of the left arm is more than the right arm.  
Why?  
• Since the subscapularis is torn, there is no resistance to external rotation, making the passive external rotation greater on the affected side (left arm in this case).  
• Passive movements do not require muscle contraction, so external rotation will be exaggerated due to lack of internal rotator resistance.

75 year old female complaining of shoulder pain and limitation of active movement, she underwent physical therapy and there was minimal improvement, on examination, she can't do full forward extension and there was pain on external rotation, press belly test was negative, how do you prove that there is no real weakness in the muscles?

**Active forward flexion of 100 degrees after intraarticular local anesthesia injection**



**Acromioclavicular joint dislocation**



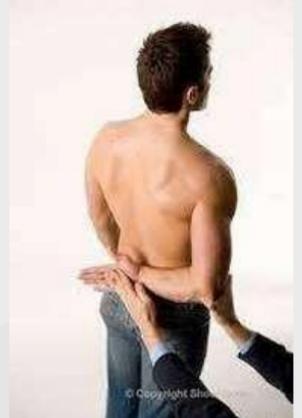
Which muscles insert in this area?

**Pectoralis major**



**Identify these muscles :**

- 1- deltoid**
- 2- biceps**
- 3- brachialis**
- 4- triceps**



# SHOULDER & ELBOW

-What is the lesion that will form at the glenoid labrum.....

**Bankart lesion**



what is this lesion ?

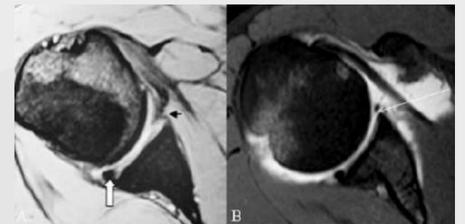
**Bankart lesion**

- what is the best management ? ?! ?!

**patient presented with shoulder dislocation 4 time**

- what's the management

**surgery(open reduction,internal fixation) ORIF**



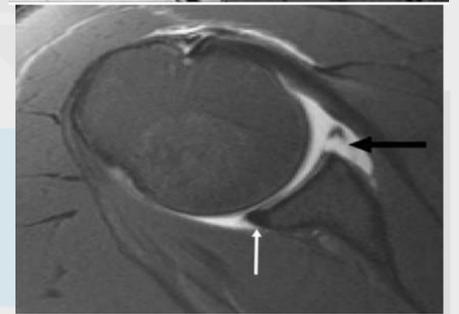
**Bankart lesion :**

1. anterior inferior glenoid labrum injury
2. anterior superior glenoid labrum injury

**Ans:1**

**On of the ilumin true abor this lesion**

1. Anterior inferior labrum, bankart lesion
2. Anterior inferior labrum, hill sach lesion
3. Anterior superior labrum, bankart lesion



**Ans: 1**

**MRI-Arthrogram of Bankart Lesion (black arrow). Labrum is dark triangular structure at edge of socket (white arrow shows normal labrum in back).**

**Bankart lesion: injury of the anterior inferior lip of the glenoid labrum due to traumatic anterior shoulder dislocation**

what is the function of the injured nerve

**A-extension of wrist**

**B-flexion of wrist**

**c-elbow supination**

**D-MCP joint extension**

**ans:a**



**How do you test the nerve most probably injured in this fracture ?**

**a.Sensation above the deltoid.**

**B.Flexion and supination of the elbow**

**.c. Dorsiflexion of the wrist .**

**Ans:c**

**Testing for Radial Nerve Injury:**

- The radial nerve is responsible for wrist and finger extension and provides sensation to the dorsum of the hand.
- The correct answer here is **C: Dorsiflexion of the wrist** because wrist drop (inability to dorsiflex the wrist) is a common sign of radial nerve injury.

**Special Test used for this muscle:**

**a. Empty bear can test , Drop arm test**

**b. Lift-off Test , Drop arm test**

**c. Yergason's Test , Speed's Test**

- Supraspinatus muscle
- Insertion; greater tubercle
- Action; abduction 0-30



# SHOULDER & ELBOW

## Acromioclavicular joint dislocation

Q) Condition associated With recurrent shoulder Dislocation ?

- Hill sachs lesion



Q) The expected inability is:

Loss of lateral arm sensation

In what position is the shoulder locked in this picture ?

- A-adduction
- B-abduction
- C-external rotation
- D-internal rotation
- E-extension



Ans: B

- The humeral head is displaced inferiorly below the glenoid.
- The arm is usually held in an abducted position, and the patient is unable to lower it.
- Shoulder locked in abduction → Correct answer: (B) Abduction.

wrong about this case ?

- A . Most common type is anterior
- B . Most common subtype is sub-coracoid
- C. Common in middle age
- D. Patient presents with external rotation and abduction
- E. Radial nerve injury is the most common one

Ans:E



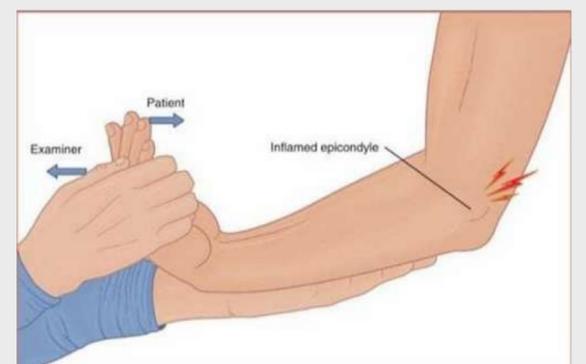
What is the damaged nerve in this test?

- Tennis elbow



Active resisted extention of wrist examination for ?

Nerve compression in • golfer's elbow: ulnar nerve.



This examination used for ? i

- Lateral epicondylitis



# SHOULDER & ELBOW

Q) picture of speed's test and yergeson's test

A- Used for examination of biceps muscle



What is true about the Muscle tested by this tests ?

it has the same nerve supply of brachialis

Nerve supply to the muscle which examined • by these test :

**Musculocutaneous**

Flexion and supination of elbow ,

**Musculocutaneous nerve**



Q) Musculocutaneous nerve injury

- Loss of sensation on lateral forearm

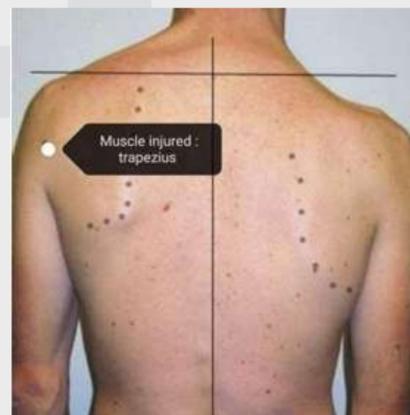


What is the name of the affected muscle and its associated deformity?

- **Trapezius muscle, winging • of scapula**

Winged scapula

- affected nerve : **Long thoracic nerve**
- affected muscle : **Serratus anterior**



What is the management for this patient?

A: **Closed reduction under anesthesia**



pt after electrical shock or seizure (posterior dislocation)  
on what position the shoulder will be:

- a- abduction
- b adduction
- c- external rotation
- d- internal rotation
- e- extension

Ans: D

- Humeral head appears internally rotated (lightbulb sign).
- The head is displaced posteriorly relative to the glenoid.
- Shoulder locked in internal rotation → Correct answer: (D) Internal Rotation.



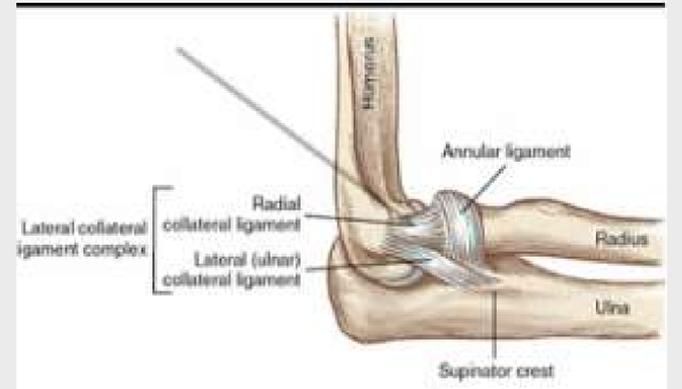
# SHOULDER & ELBOW

Elbow pain exacerbated by hand movement and resisted wrist extension Dx : lateral epicondylitis  
Affected tendon : ECRB



Name this structure ?

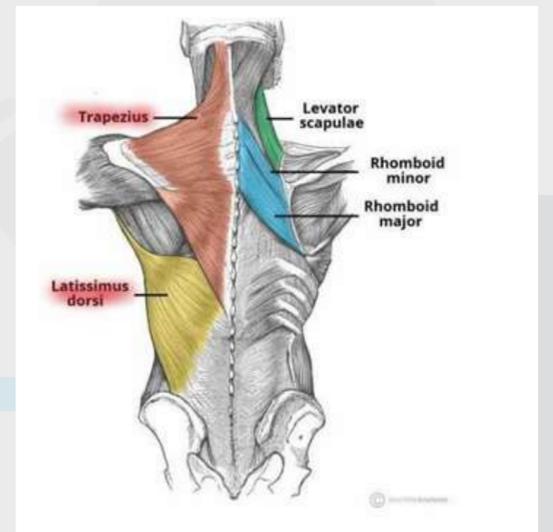
- Radial collateral lig.



Which nerve supplies the blue muscle ?

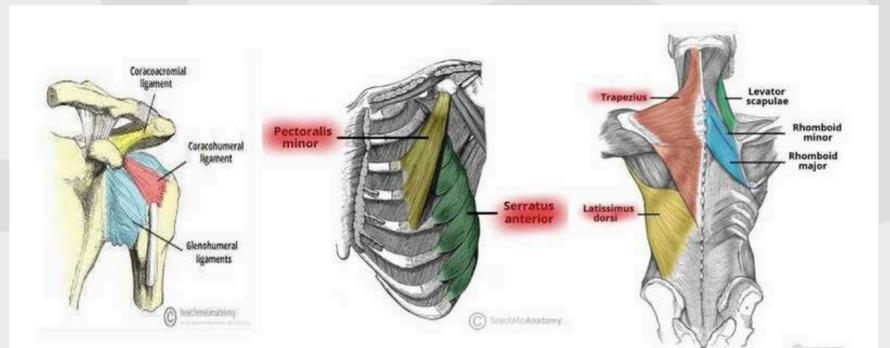
- Axillary nerve
- Dorsal scapular nerve
- Long thoracic nerve
- Spinal accessory nerve
- Suprascapular nerve

Ans:B



Identify the marked muscles

سنوات 2



# HAND DISORDERS

1-What is false about the condition in this picture?

- a-flexed posturing of the involved digit
- b-tenderness to palpation over the tendon sheath
- c-marked pain with passive extension of the digit
- d-fusiform swelling of the digit
- e-presence of superficial tender nodules on the palm of the hand



Answer: e

2-This test is used to diagnose :

- a-Dequervain's disease
- b-Dupuytren's Contracture
- c-Trigger finger
- d-Cellulitis
- e-Infective tenosynovitis



Answer: a

3-Which extensor compartment of the wrist is affected?

- a- 1st compartment
- b- 2<sup>nd</sup> compartment
- c- 6<sup>th</sup> compartment
- d- 5<sup>th</sup> compartment
- e- 4<sup>th</sup> compartment



Answer: a

4- What is the name of this deformity?

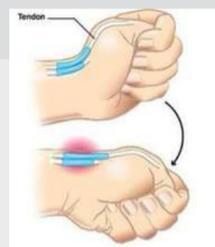
- a- Claw hand
- b- Waiter's tip
- c- Hand of benediction



Answer: a

5- what is the most likely affected?

- a- Abductor pollicis longus, extensor pollicis longus
- b- Abductor pollicis brevis, extensor pollicis brevis
- c- Abductor pollicis longus, extensor pollicis brevis
- d- Adductor pollicis longus, extensor pollicis brevis



Answer: c

mallet finger in the middle finger.. What is the cause ?

- flexor digitorum profundus
- flexor digitorum superficialis
- extensor pollicis brevis
- terminal extensor tendon



The deformity shown in this picture:

**Mallet finger**

What is the diagnosis?

**Dupuytren's contraction**



# OSTEOMYELITIS, SEPTIC ARTHRITIS

1) Pt present with sinus discharging ,What is the most common organism causing this condition :

**Answer: Staph**



2) This patient had a high fever and elevated ESR, and on doing synovial fluid analysis, had a WBC count of 140000. What is the best next step of management?

**Answer: Arthrotomy (NOT ANTIBIOTICS FOR 6 weeks)**



3) Patient came to ER., with knee pain 1 day duration and the TM was 39.

1. whats your diagnosis?

**Answer: septic arthritis**

2.your management?

**Answer: Surgery**



4) patient presents with high fever , knee swelling and tenderness. What is your next step in management

A- antibiotics

B-surgery

C-knee aspiration

D-CBC and ESR

E-conservative



**Answer: C**

5) Child came to the ER with his parents complaining of hip pain since 24 hours, he is stable , he has slightly high temperature, wbc:120000,ESR:80 , what is the first thing you will do?

a-admission

b-antibiotic

c-admission and observation

d-arthrotomy and wash out

e-analgesia



**Answer: d**

6) Child feverish 39.5

1. What is the most common emergent DDx ?

2. your management?



**Answer: Septic hip**

**Answer: Surgery**

1 Question ONLY on MINI-OSCE about open fx and compartment syndrome

RTA patient, complains of pressure sensation around the leg and pain that doesn't resolve with narcotics, what's your next step in management of this patient ?



**Answer: Fasciotomy and fixation**

# BENIGN AND MALIGNANT BONE TUMORS

What is the most probable diagnosis?

- a. Osteochondroma
- b. ewing sarcoma
- c. chondrosarcoma
- d. Giant cell tumor
- e. osteosarcoma



Answer: E

2) mention two radiological features in this x ray?

- a. Sun breast appears
- b. Codman's triangle

What Possible diagnosis of this lesio ?

**Chondrosarcoma**



What is the most probable diagnosis?

- a. Chondrosarcoma
- b. Chondroblastoma
- c. Osteoid osteoma
- d. Fibrous cortical defect ( non ossifying fibroma )
- e. osteosarcoma



Answer: d

2) what is your management ?

**Conservative**

What is the most probable diagnosis?

- a. Chondrosarcoma
- b. Chondroblastoma
- c. Osteoid osteoma
- d. Fibrous cortical defect ( non ossifying fibroma )
- e. osteosarcoma



ANSWER: C

2) what is your management ?

**Radiofrequency ablation**

3) mention two features of pain?

**relieved by NSAIDs Exacerbated by alcohol and at night.**

4) The predominant tissue in the lesion is :

- A) BONE. B) fibrous. C) Cartilage. Answer: A

All of the following are feature of bone malignancy except:

**thinning of cortex**

# BENIGN AND MALIGNANT BONE TUMORS

1) What is dx?

**Fibrous dysplasia**

2) what associated hormone abnormality:

**Precocious Puberty**



1) What is dx?

**Giant cell tumor**

**Chondroblastoma**

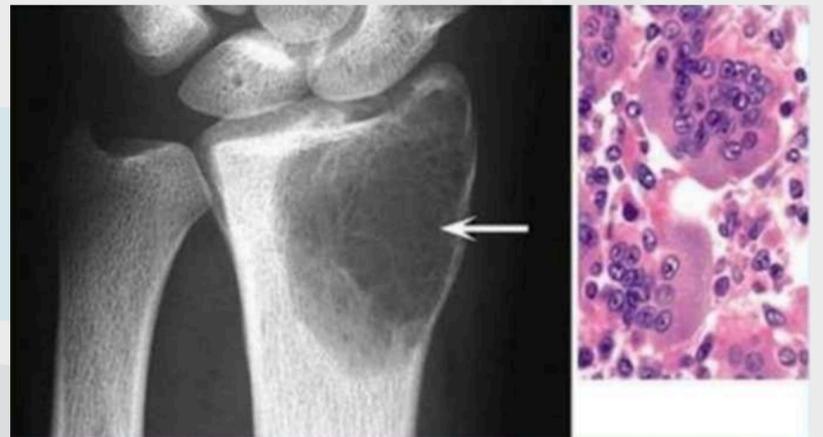


What is the most probable diagnosis?

**Giant cell tumor**

2) what is your management?

**curettage and grafting**



What is the most probable diagnosis?

**Enchondroma**

2) what is your management?

**follow up but if repetitive fx >> curettage and graft**



3) The predominant tissue in the lesion is:

A) BONE. B) fibrous. C) Cartilage. **Answer: c**

4) All of the following are features of bone malignancy except:

- A) The predominant tissue is fibrous
- B) Most common benign primary lesion
- C) It has risk to transform to malignant
- D) it causes pain but relieves by aspirin

**Answer: c**

What is the most probable diagnosis?

- A) Simple bone cyst
- B) Giant cell tumor
- C) chondrosarcoma
- D) condroma

**Answer: A**



# BENIGN AND MALIGNANT BONE TUMORS

1) What is dx?

**Aneurysmal bone cyst**



What is dx?

**Osteochondroma**

2) which is true?

**there is small risk to malignancy**



What is the most probable diagnosis?

**Ganglion cyst**



How would you describe this lesion?

**A: Eccentric, well-defined, metaphyseal lesion, no disruption to the cortex, mostly benign**



Non ossifying fibroma. **FIBROUS TISSUE**

What is your management?

- A) chemotherapy
- B) Excisional surgery
- C) Detail history, physical exam, follow up x rays
- D) Detail history, physical exam, biopsy E, radiotherapy

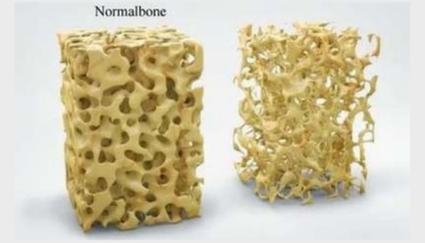
**Answer: c**



# OSTEOPOROSIS & RICKETS & OSTEOMALACIA

What is the pathology:

- a) osteomalacia
- b) Osteomyelitis
- c) Rickets
- d) Osteoporosis



**Answer: d**

65 years old patient felt a back pain from leaning forward presented with shown image, What investigation we should do for follow up?

- a. DEXA scan
- b. SPECT scan
- c. Tumor markers
- d. MRI



**Answer: a**

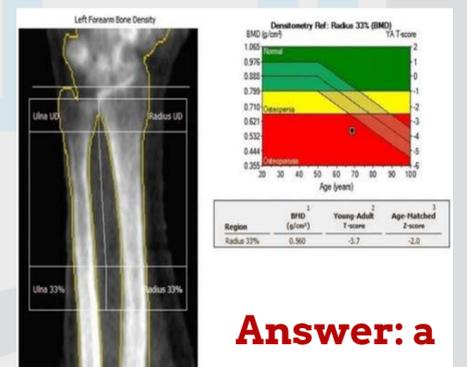
40 years old female patient comes to the clinic with a DEXA scan, her mean z score = -0.5 t score = -1.5

- a) normal study
- b) Osteoporosis
- c) osteomalacia
- d) osteoarthritis

**Answer: a**

34 female come with dexa scan what next step ?

- A-History and physical examination
- B-send to gynecologist
- c-send to endocrinologist



**Answer: a**

مش نفس الصورة بس نفس المبدأ  
Answer from doctor

Q: What is shown in the picture?

**Loser's zone fracture**



Q: All of the following can be seen in this patient except:

- A-normal calcium
- B-thick cortex
- C-wide epiphysis



**Answer: b**

Q: One of these sentences is wrong about this case:

- A. Ca<sup>+2</sup> level is normal or low
- B. Bowing of long bone
- C. Normal or high vit D level
- D. Thickening of physis and cortex
- E. Serum alkaline phosphate is high



**Answer: d**

# OSTEOPOROSIS & RICKETS & OSTEOMALACIA

Q: Nutritional lab finding in rickets children :

**High parathyroid hormone**

Q: One of these is not feature of Rickets ?

**Narrowing of physis**

Q: mention two investigations:

**Vitamin D level, PTH level , KFT**

Q: What is shown in the picture?

**Rachitic Rosary**



Q: rickets associated with:

- a) High vit D
- b) Normal phosphate
- c) Looser fracture
- d) Haigh calcium



**Answer: c**  
(fracture in osteomalacia not in rickets)

Q: The most likely cause of this fracture is:

- a. Significant trauma
- b. Malignancy
- c. over activity
- d. benign tumor
- e. Vit D deficiency



**Answer: e**

Q: What is incorrect about the disease shown in this X-ray?

**Ca levels are elevated.**



Q: Which on of the folouing is false regarding this findng:

- A. Wide physis
- B. Thick cortex
- C. low vit D
- D. Low ealcium



**Answer: b**

Q: In the choices all cherectors of riket EXEPT?

**Cortex thickening**



**This sign is:**  
**Harrison sulcus**

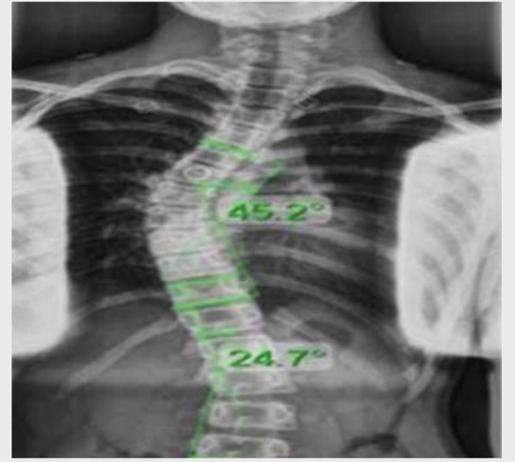


**Q: What is the deformity ?**  
**Coxa vara**

# Spinal cord. (محاضرات د علاء)

1- 23 Years old Female patient , incident finding , Your diagnosis?

- A . Idiopathic
- B . Infantile
- C . Syndromatic
- D . Congenital
- E . Neuropathic



**Answer : A**

Female has lower back pain 1 month duration, X Ray was done ,what type of spondylolisthesis she is at risk to have ?

- A . Post-traumatic spondylolisthesis
- B . Isthmic spondylolisthesis
- C . Degenerative spondylolisthesis
- D . Pathological spondylolisthesis
- E . Post - Surgical spondylolisthesis



**Answer : B**

What is your diagnosis

- a. L4-L5 spondylolisthesis
- b. L5-S1 spondylolisthesis
- c. L5-S1 spondylolysis
- d. S1-S2 spondylolisthesis
- e. S1-S2 spondylolysis



**Answer : B**

What is your diagnosis

- a. L4-L5 spondylolisthesis
- b. L5-S1 spondylolisthesis
- c. L5-S1 spondylolysis
- d. S1-S2 spondylolisthesis
- e. S1-S2 spondylolysis



**Answer : A**

What test should we do?

- a. Leg hyperextension test
- b. Straight leg raise test



Answer : A

the pointer resembles :

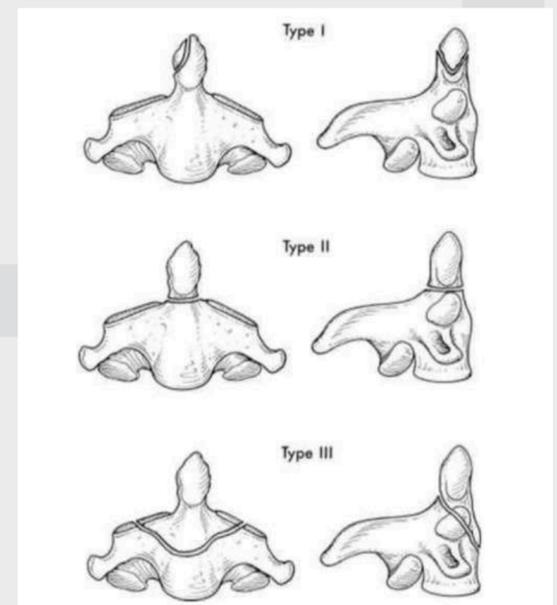
- A. Li burst fracture
- B. L5 vertebral compressive fracture
- C. L1 vertebral compression
- D. Spondylosis
- E. L1 disk prolapse



Answer : C

Which type is more ass with **non-union** :

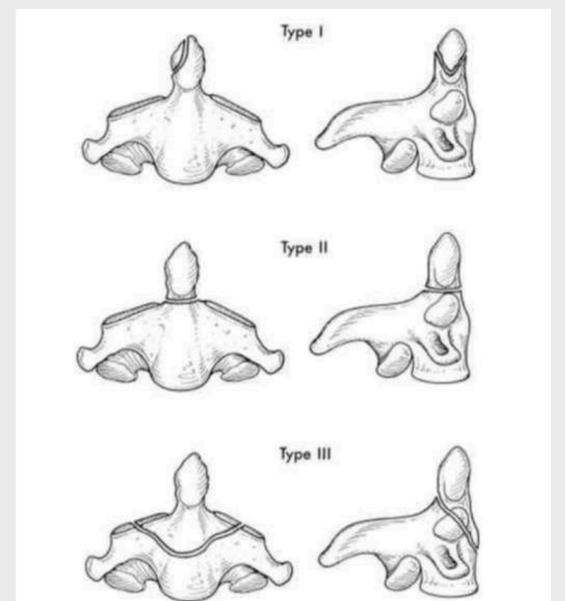
- a) type 1
- b) Type 2
- c) Type 3
- d) All of the above
- e) Non of the abov



Answer : B

Which type is more ass with **AVN** :

- a) type 1
- b) Type 2
- c) Type 3
- d) All of the above
- e) Non of the abov



Answer : B

What is the dermatome indicated by the arrow :

- A. Ankle jerk
- B. Dorsiflexion
- C. Knee jerk

One of the following jerks is related to an injury of the dermatome indicated by the arrow ?

**Knee jerk L3**



**Answer : C**

In a 19 year old this was an incidental finding, how is it managed ?

- A-Conservative without follow up
- B-Bracing
- C-Arthrodesis
- D-Complete spine MRI
- E-Conservative + follow up every 6 months for the second two years

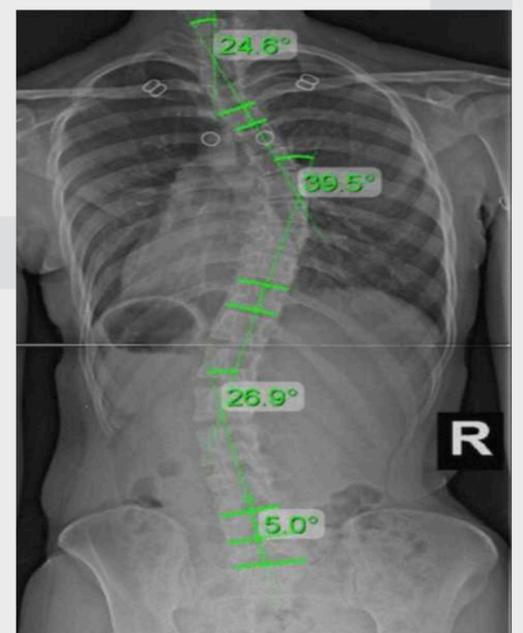
if the angle was 40 also answer ( E ) bec age the bracing not benifite after complet growth. more than 50 angle go with surgery



**Answer : E**

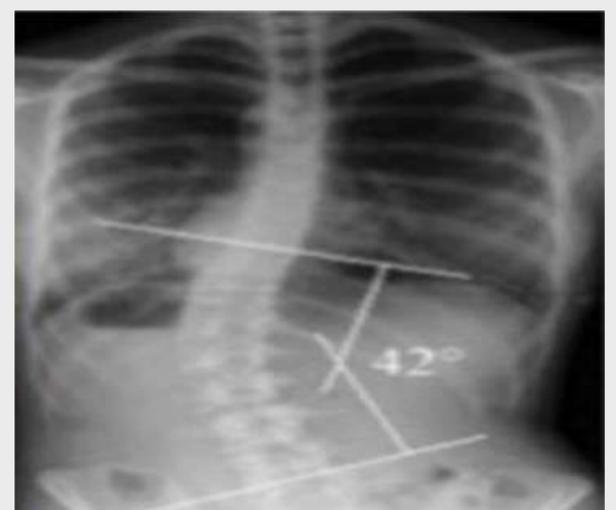
19 year old female complaining of spinal deformity, counseling for this patient?

- conservative with no follow up
- conservative with follow up every 6 months for 2 years
- Boston brace 16 hours a day for 2 year**



In a 19 year old this was an incidental finding, how is it managed ?

- A-Conservative without follow up
- B-Bracing
- C-Arthrodesis
- D-Complete spine MRI
- E-Conservative + follow up every 6 months for the second two years



**Answer : E**

## Lumbar canal

stenosis a case of patient had lumbar canal stenosis (this information was not written in the question), according to difference between vascular and neurological claudication

choose the true answer:

a. Downhill more painful

(the other choices were the

features of vascular claudication



**spondylolisthesis**



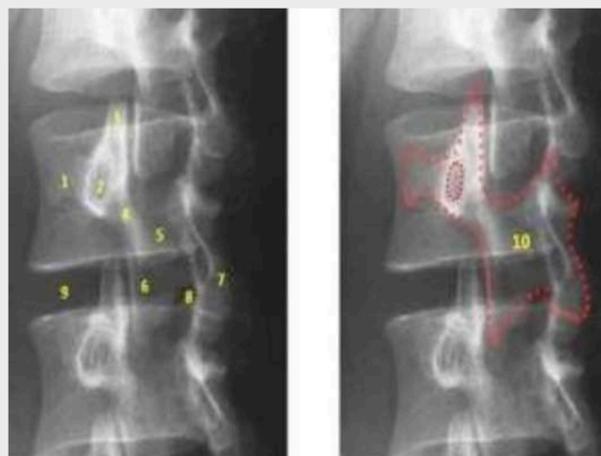
**spondylolisthesis**



**L5-S1  
Spondylolisthesis**



**spondylolisthesis**



**spondylolisthesis**



**Burst fracture**

What is diagnosis?  
**spondylolysis**

what the test should we do?  
**leg hyperextension test**

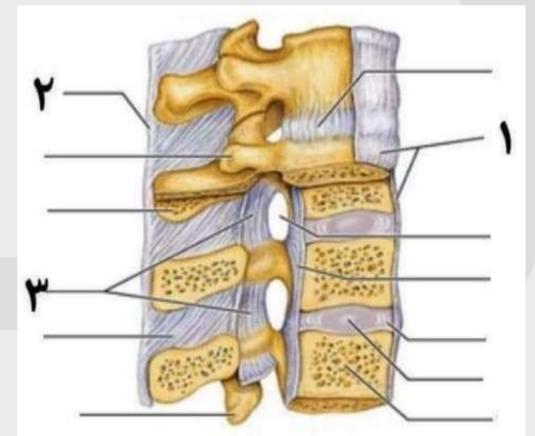


Scottie dog with a collar sign

What test should we do?  
a. **Leg hyperextension test**  
b. Straight leg raise test

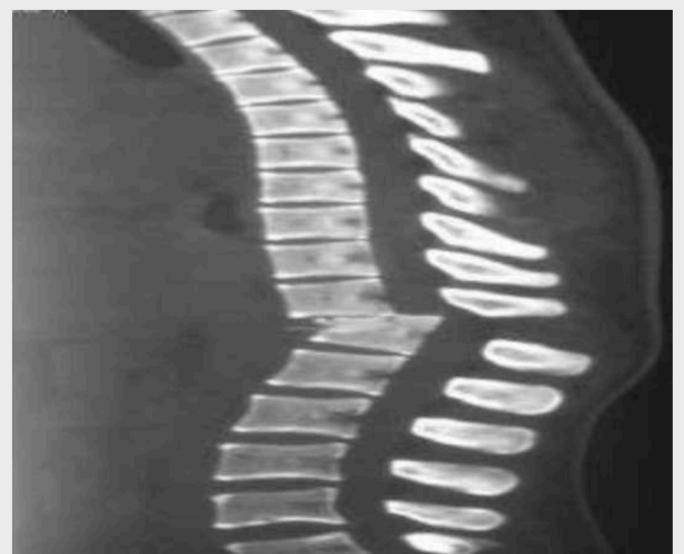


Identify these tendons :  
• 1- anterior longitudinal ligament  
• 2- supraspinous ligament  
• 3- ligamentum flavu



A patient with the following image presented with severe hypotension and bradycardia. What type of shock is this?

**Neurogenic shoc**



## L5 Compression fracture

You have to determine number of the



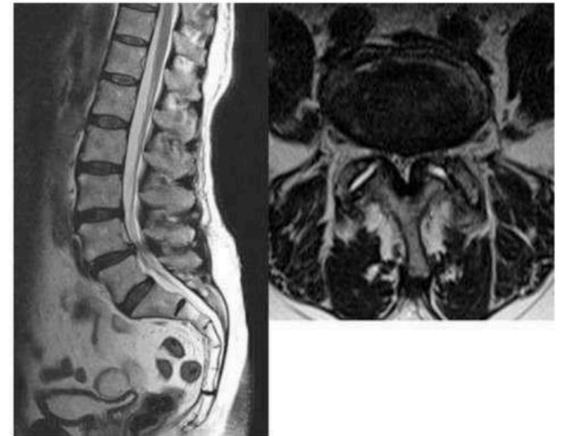
Type of fracture ?

Compression fracture



Diagnosis is:  
Canal stenosis.

N.B. symptoms were given



4-Herniation of which disc will cause this test to be negative:

C5-C6

\*\*Note: biceps reflex is controlled by C5  
Herniation of C5-C6 intervertebral disc would affect C5  
(Any disc herniation affects the upper segment except for far lateral lumbar disc herniation affects the lower segment)



A case of female pt had a history of spondylolysis .....

Isthmic Spondylolisthesis

What investigation we should do for follow up?( Picture of MRI compressive fracture).

A. Dexa scan

B. Spect scan

C. Tumor markers

1 what is this deformity ?

**Scoliosis**

2 what is the name of this test ?

**Bending forward test ( Adams test)**



Picture of spine scoliosis; Mention 2 prognostic factors;

1. Cobbs angle
2. Risser's stagi



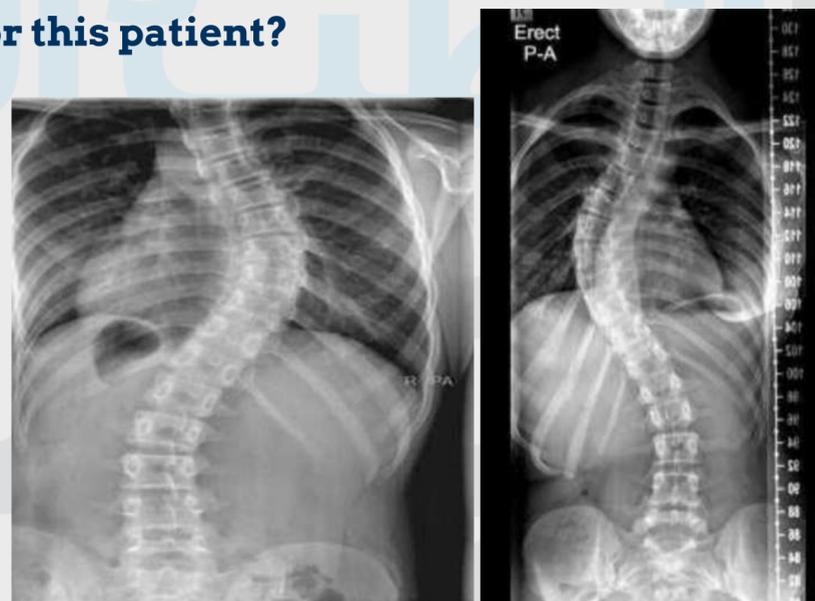
What is the name of this classification?

- **Risser's zone**



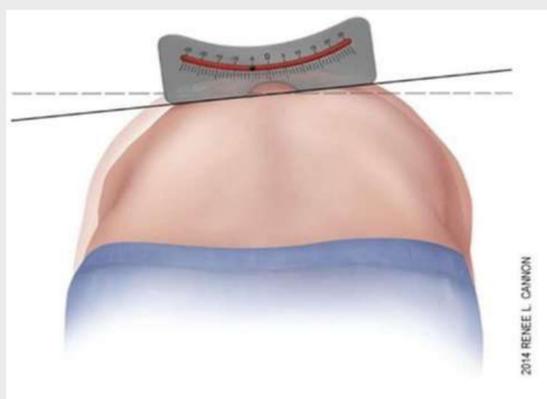
What is the most important prognostic factor for this patient?

**A: Iliac apophysis calcification**



What is the cause of this case:

**Idiopathic scoliosis**



This test is for : •  
**screening and diagnosis**



Pt presented with sciatica pain ,which reflex is affected:  
**Ankle jerk**

- L4 myotome function?
- Ankle jerk reflex
- **Dorsiflexion**
- Non of the abov



In a 23 year old this was an incidental finding, how is it managed ? ( Picture of scoliosis of 40 degrees and compensatory scoliosis above it)

- A. Conservatively
- B. Bracing
- C. Arthrodesis
- D. Complete spine MRI
- E. **Conservative + follow up every 6 months for the second two years**

Most important prognostic factor for scoliosis

- **Iliac apophysis ossificatio**

patient presented with spinal canal stenosis?

**Downhill more difficult than cycle or uphill**

You have to know the concept of the canal stenosis + the differences between neurological claudication and vascular on

## Neurogenic Vs Vascular claudication

Symptoms	<b>Neurogenic</b>	<b>Vascular</b>
Back Pain	Common	Uncommon
Pain Relief	Sitting or flexed posture Standing and resting usually insufficient Often slow (>5 mins)	Not positional Pain relief while standing Almost immediate
Ambulatory tolerance	Variable	Fixed
Uphill vs. Downhill	Downhill more painful (extended posture)	Uphill more painful
Bicycle ride	No pain	Pain

# Osteoarthritis

1 your DDX ? **osteoarthritis**

2 mention 4 findings ?

**1- Loss of joint space 2- osteophyte 3- subchondral sclerosis 4 subchondral cyst 5- bone fusion**



A case of Osteoarthritis, the pathophysiology of the marked change :

- a. Progressive softening and disintegration of articular cartilage
- b. due to increased water permeability of synovial fluid
- c. deposition Of bone to increase the surface area
- d. New bone and cartilage formation
- e. Increase water content in cartilage



**Ans:a**

A case of Osteoarthritis, the pathophysiology of the marked change :

- a. Progressive softening and disintegration of articular cartilage??
- b. due to increased water permeability of synovial fluid
- c. deposition Of new bone in subarticular cartilage ??
- d. New bone and cartilage formation
- e. Increase water content in cartilage



Sclerosis كان مباشر على

**ans:c**

What is the pathophysiology of this feature

- a. Progressive softening and disintegration of articular cartilage
- b. due to increased water permeability of synovial fluid
- c. Increase the surface area
- d. Tear in the cartilage
- e. Increase water content in cartilage



**ans: c**

What you see in this picture ? ( similar pic )

**Osteophyte**



# Osteoarthritis

The initial management for this patient who presented with right intermittent dull hip pain:  
Select one:

- a. Hip arthrodesis
- b. Hip Osteotomy
- c. Hip replacement
- d. Analgesia and lifestyle modification
- e. Open reduction and internal fixation



ans:d

Long case history of old man 65 years with 2 years history of pain in the hip not responding to analgesia and interfering with his daily life, management ?

- a. Hip arthrodesis
- b. Hip Osteotomy
- c. Hip replacement
- d. Analgesia and lifestyle modification
- e. Open reduction and internal fixation



Ans:b

Hallux valgus one is wrong about this deformity ?

Usually unilateral or In severe cases the nail will face laterall

mention one risk factor :

wearing high-heeled shoes./ genatic

one is true about this deformity?

Varus angulation of the first metatarsal

One of the following is true:

- A. First metatarsal is i n valgus position
- B. big toe is i n varus
- C. Intermetatarsal angle is less than 10
- D. History o f rheumatoid arthritis
- E. Usualy unilateral



ans:e

All false except

- a. Unilateral
- b. No recurrence after surgery
- c. When the valgus deformity exceeds 30 or 40 degrees The great toe rotates into pronation so that the nail faces medially.

Ans:c

Wrong about this deformity ? •

- 1-the big toe in valgus •
- 2.first mt bone in varus •
- 3.prominence caused by head of first MT and bursa
- 4. talocalcaneousangle is used for diagnosi

Ans:4

# Osteoarthritis

**Mechanisms of this feature**

**A-( osteophytes): Progressive softening and disintegration of articular cartilage**

**B- (osteophytes ) new growth of cartilage and bone at the joint margins**

**C-Subchondral cyst formation ( due to increased water permeability of synovial fluid).**

**D-Sclerosis in the sub-chondral bone ( to lessen the load on bone to avoid fracture)**

**ans:b**



**pathophysiology of the defect seen in the picture is**

**Progressive softening and disintegration of articular cartilage**

**B. Disintegration ( increase ) water permeability DROIT**

**C. Increase surface area**

**D. Bone sclerosing to empower the bone**

**ans:b**



**Not feature of the disease ?**

**Widening of joint space**

**Subchondral cyst**



**All presentations are true for this case, except**

**a. Joint line tenderness**

**b. Genu Valgus**

**c. Narrowing of joint space**

**d. Swelling and effusion**

**e. Osteophyte and stiffness**

**Ans:b**



**all of theses presentations are true for this case, except :**

**A. Joint line tenderness**

**B. Genu Varus**

**C. Loss o f sensation on the medial leg**

**D. Swelling and effusion**

**E. Osteophyte and stiffness**

**ans:c**

# Osteoarthritis

Which of these symptoms won't be associated with this picture ?

- A. Genu Varus.
- B. Loss of sensation on the medial leg
- C. Joint line tenderness



Ans:b

-65 patient with osteoarthritis ,the chief complain is :

- (1) deformity
- (2) loss of joint movement
- (3) mechanical pain

ans:3

DX??

**New bone formation**  
**>>osteoarthritis**

In osteoarthritis,  
 the pointed arrow  
 resembles:  
**Subchondral cyst**

Pt with osteoarthritis , what  
 is the deformity  
 shown in the x ray  
**Joint space narrowing**



Cause of the subchondrial cyst i n osteoarthritis

- 1. • Increased water permeability
- 2. Increase water content in cartilag

ans:1



Treatment ?

a.Arthroplasty

B.Arthrodesis

C.Joint replacement

pain medication and shoe  
 modificatio

ans:b



"وَلَسَوْفَ يَفْتَكُمُهَا إِلَهِمُ فَاَیْقِنُوا  
 مَا كَانَتْ صَعْبًا بِالشَّوْكَلِ یَسْهُلُ!"

نتمنن لكم التوفيق والتيسير  
 ولا تنسوا الفريق الاكاديمي من دعاءكم