



TRAUMATOLOGIA DELL'APPARATO LOCOMOTORE

Dott. Guilherme Carpeggiani

TRAUMATOLOGIA DELL'APPARATO LOCOMOTORE

- **FRATTURA: INTERRUZIONE TRAUMATICA O PATOLOGICA DELLA CONTINUITA' DI UN SEGMENTO SCHELETRICO**

LUSSAZIONE: PERDITA DEI NORMALI RAPPORTI ANATOMICI FRA I CAPI ARTICOLARI

DISTORSIONE: LESIONE LIGAMENTOSA TRAUMATICA CON EVENTUALE COMPARSA DI INSTABILITA' ARTICOLARE

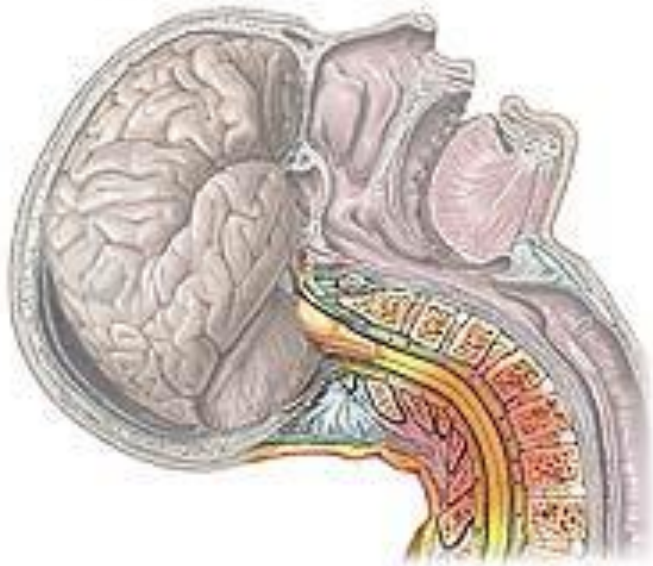


LESIONI DELLA COLONNA



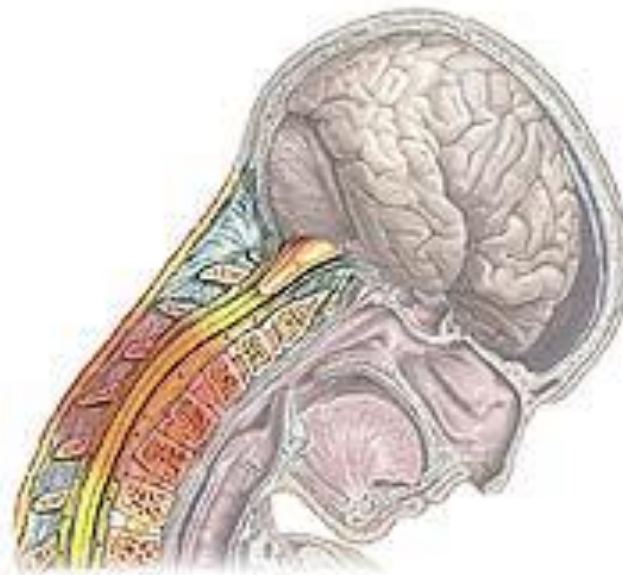
MECCANISMI DI TRAUMA

Hyperextension



Sprain or strain of cervical tissues

Hyperflexion



COLPO DI FRUSTA

The Phases of a Rear-End Collision

1. Normal Position



2. Spine Straightens



3. Head Extension



4. Rebound



ARTICOLAZIONE

The Cervical Facet Joints



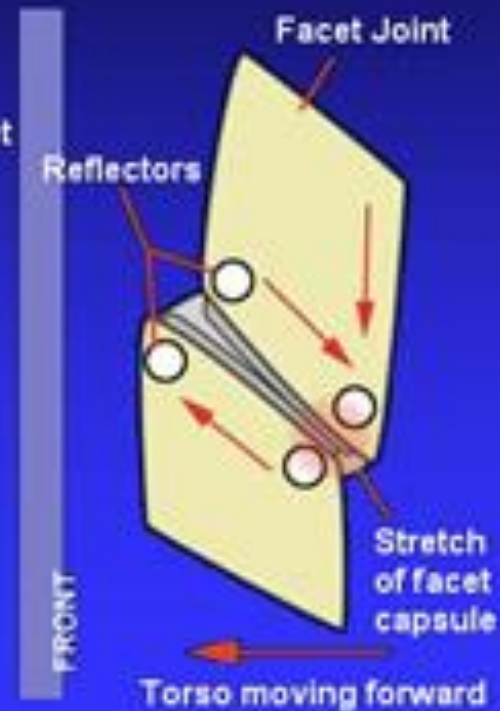
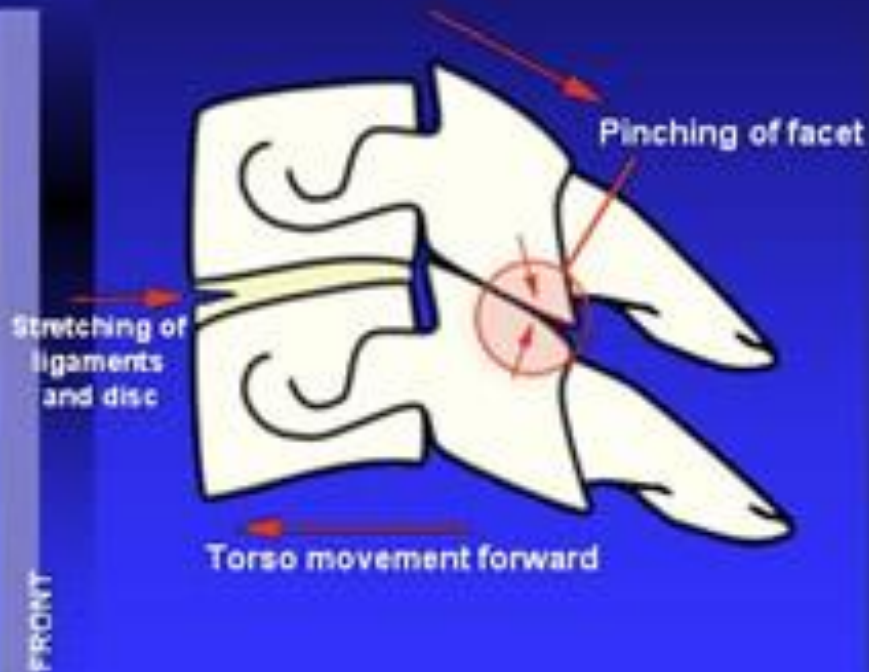
Normal Gliding Motion



click to zoom

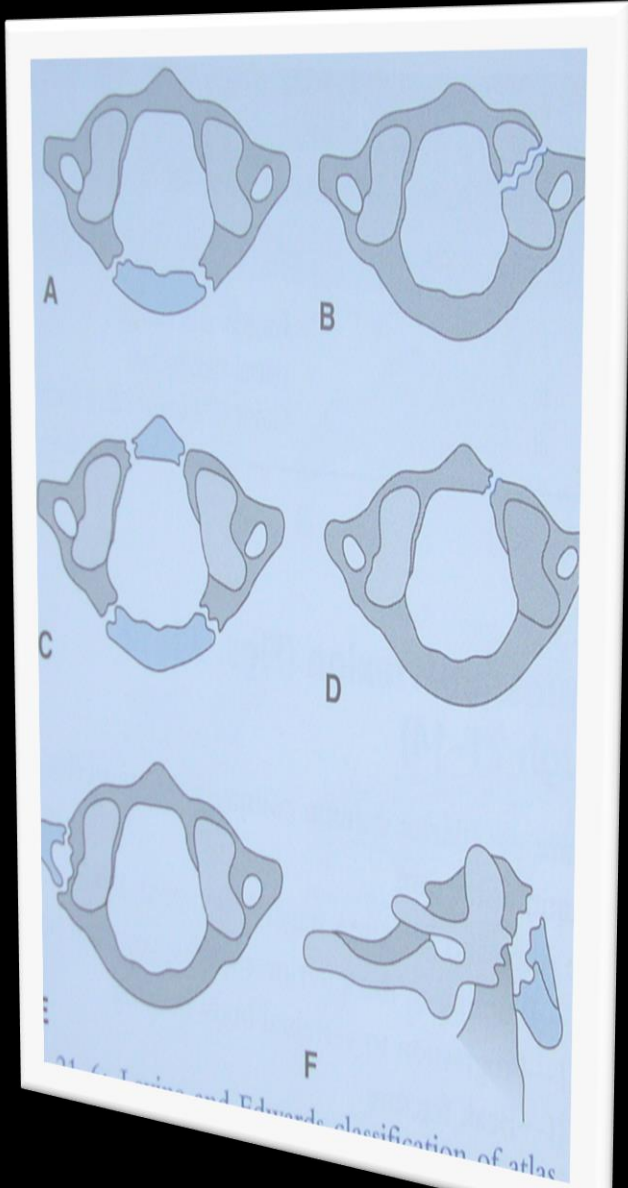
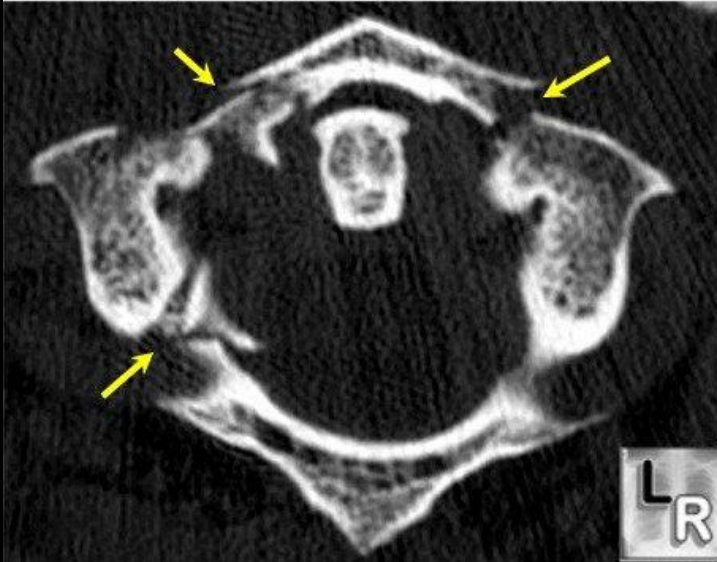
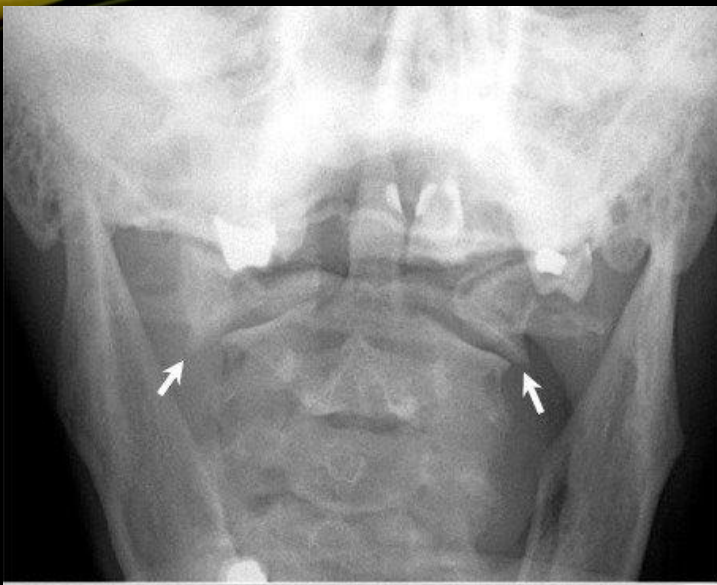
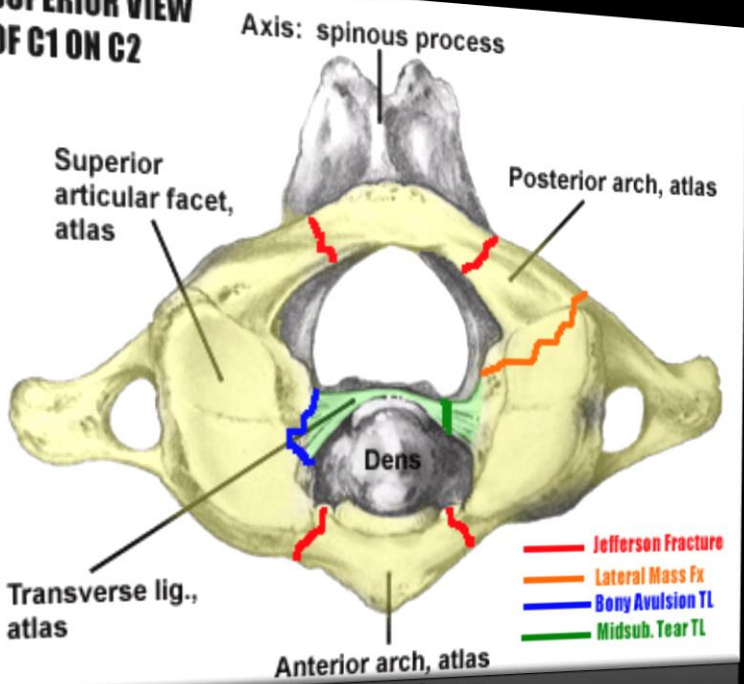
COLPO DI FRUSTA

Abnormal Facet Motion



click to zoom

SUPERIOR VIEW OF C1 ON C2



FRATTURA DELL'ATLANTE Trauma in compressione



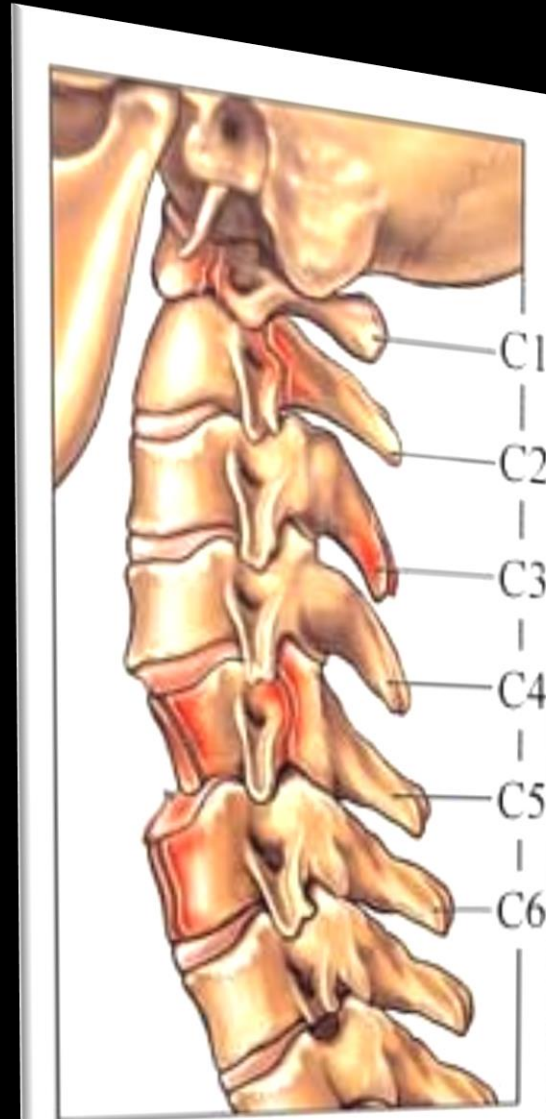
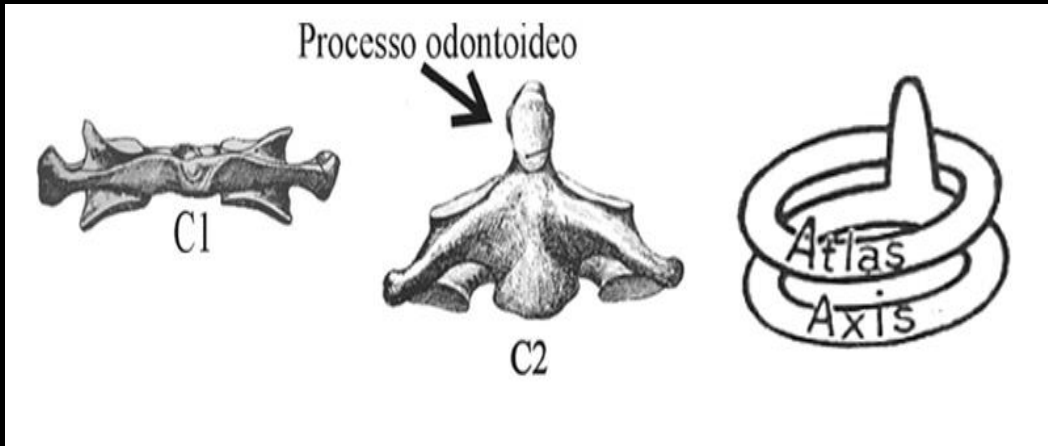
FRATTURA DELL'EPISTROFEO

Trauma in

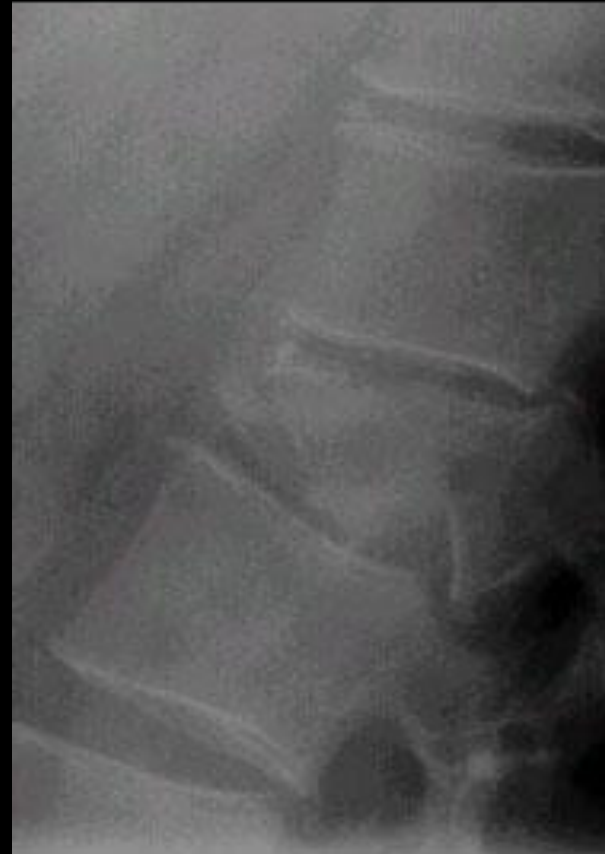
distrazione

LUSSAZIONE ATLO-EPISTROFEA

FRATTURE LUSSAZIONI C3 - C7

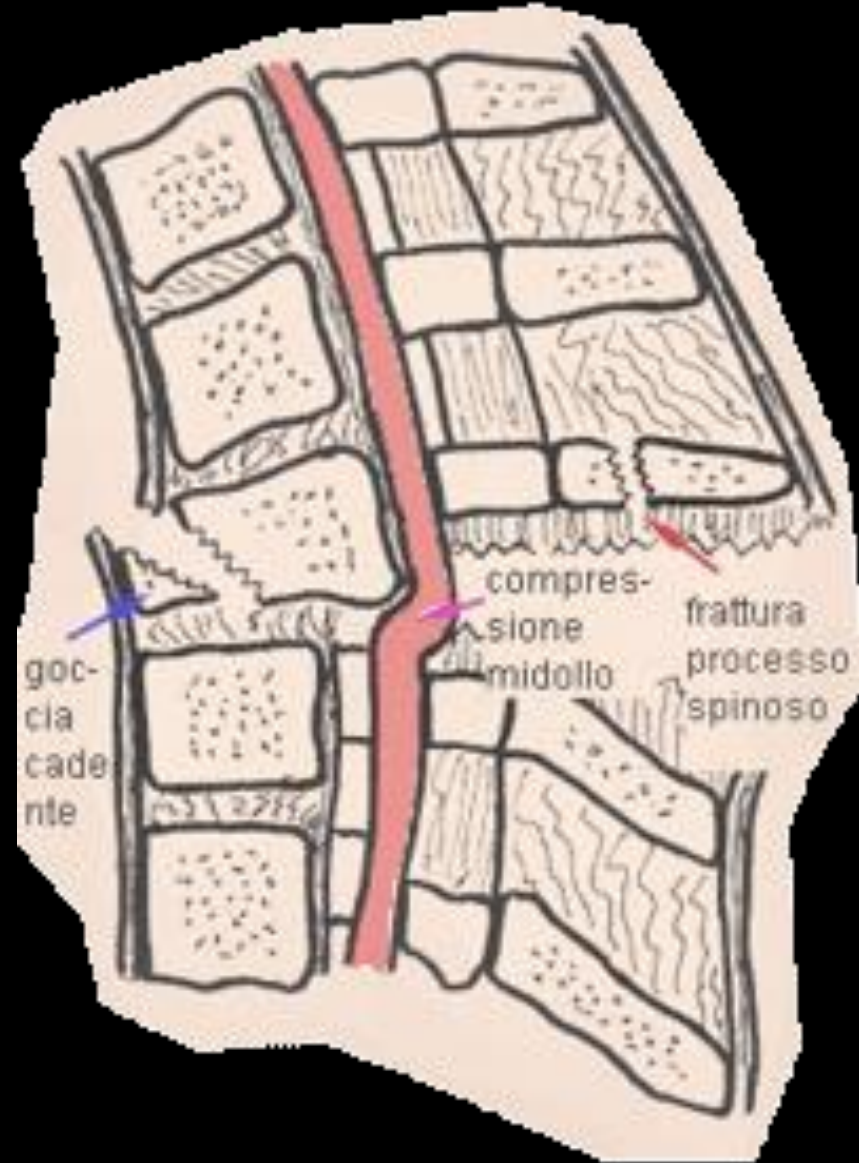


FRATTURE TORACOLOMBARI

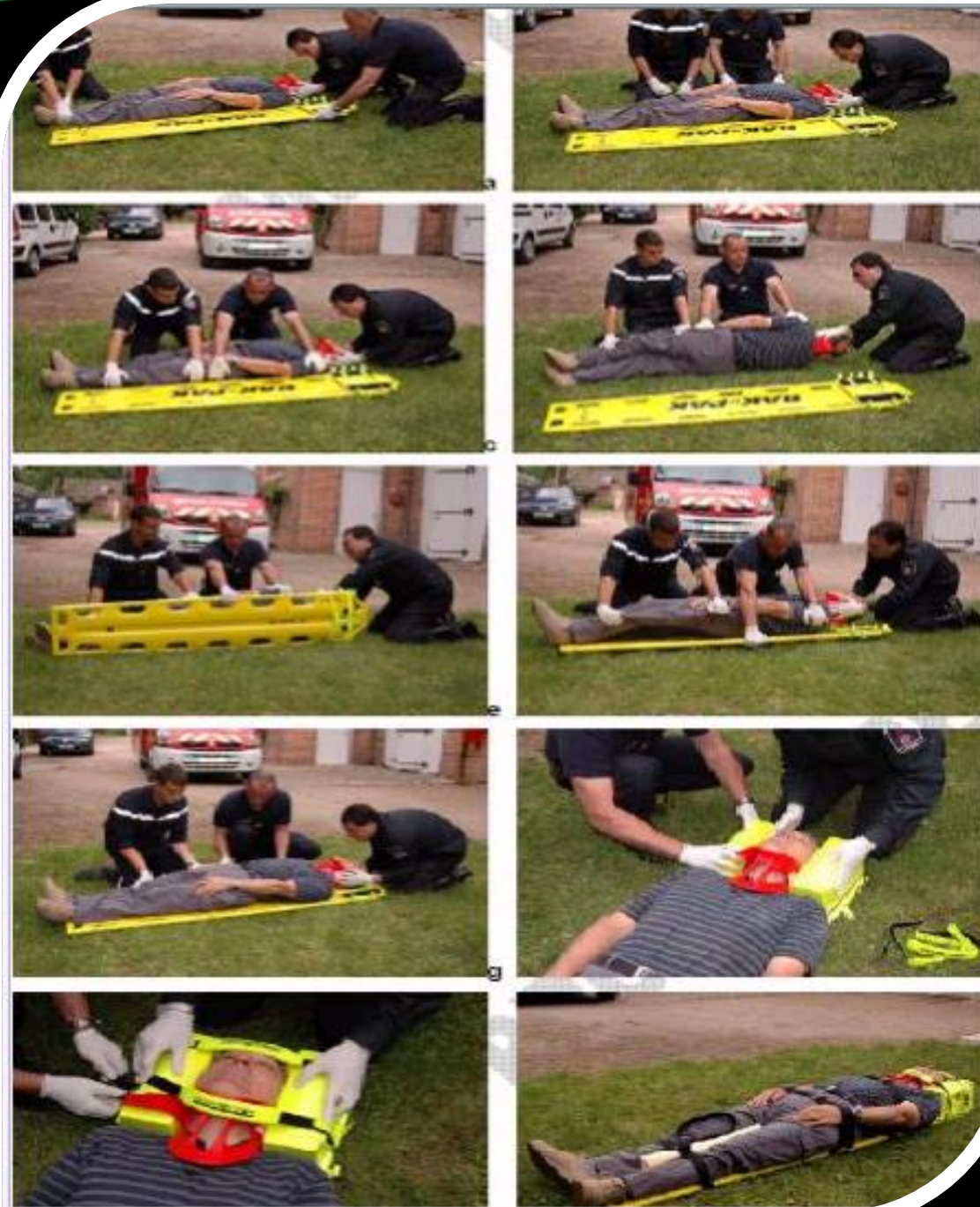


LESIONI VERTEBRALI

INTERESSAMENTO
NEUROLOGICO



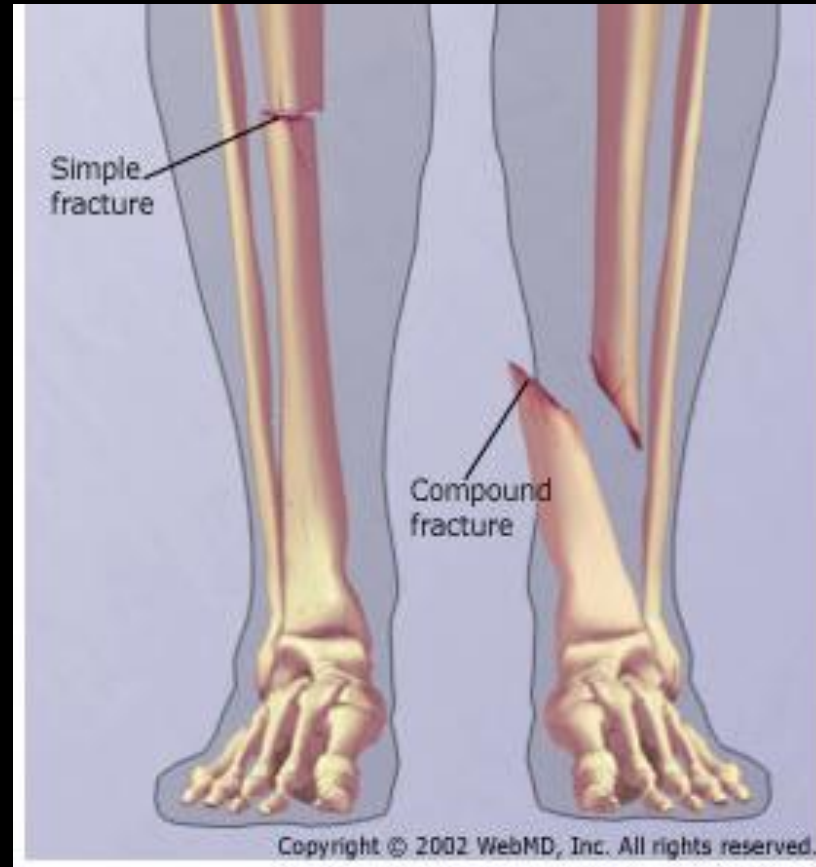
1° SOCCORSO RACHIDE ALLINEATO



FRATTURE - 1



CHIUSA



ESPOSTA

FRATTURE - 2

COMPOSTA

Senza dislocazione dei frammenti



SCOMPOSTA

Con dislocazione dei frammenti



FRATTURE - 3

COMPLETA

La fx interessa tutto lo spessore dell'osso



INSTABILE
Forze deformanti

INCOMPLETA

La fx interessa una sola corticale o parte di entrambe



STABILE

FRATTURE - 4

SEMPLICE - PLURIFRAMMENTARIA- COMMINUTA



FRATTURE - 5

Extra-ARTICOLARE



ARTICOLARE



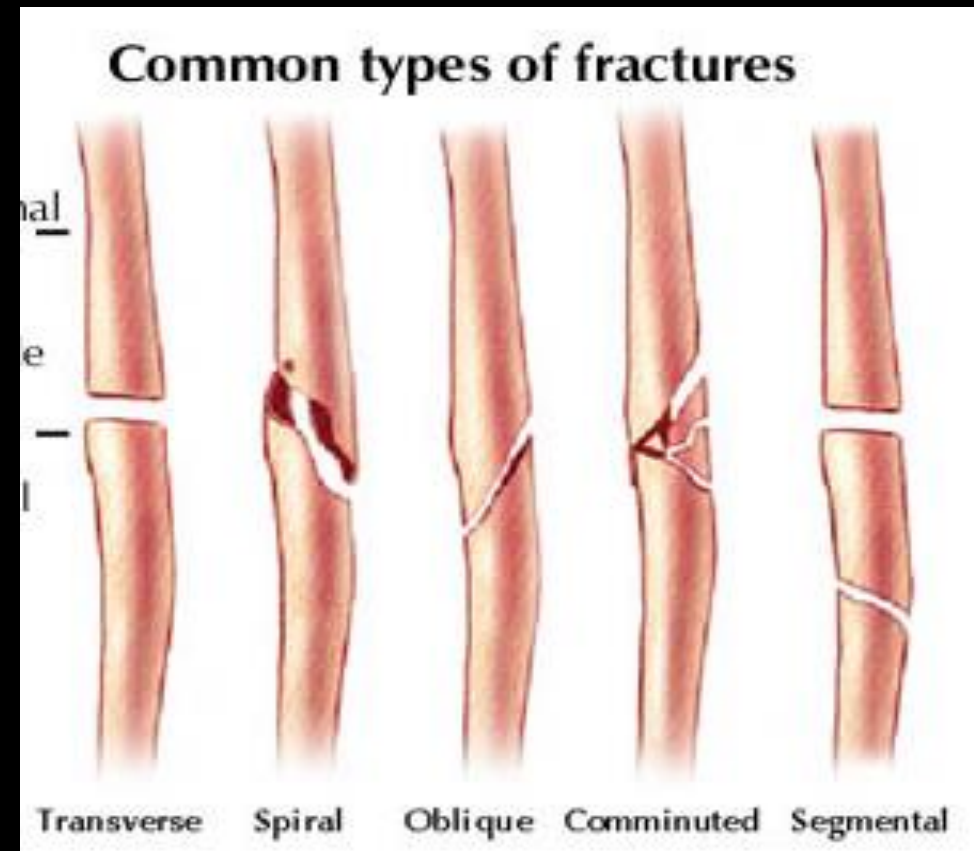
FRATTURE - 6

TRASVERSE la rima di frattura è disposta ad angolo retto rispetto all'asse longitudinale dell'osso.

OBLIQUE: la rima di frattura forma un angolo inferiore a 90° rispetto all'asse longitudinale dell'osso (fratture a becco di flauto).

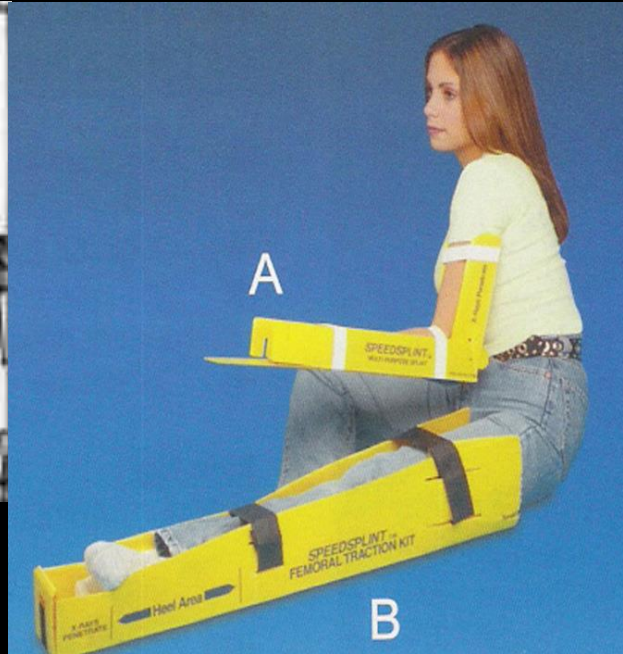
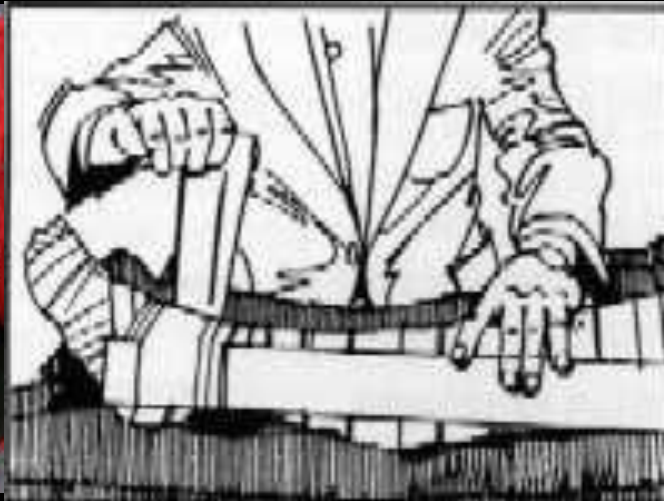
SPIROIDI la rima di frattura compie un decorso a spirale lungo il segmento osseo, avvolgendosi ad esso

LONGITUDINALI la rima di frattura è parallela all'asse longitudinale dell'osso



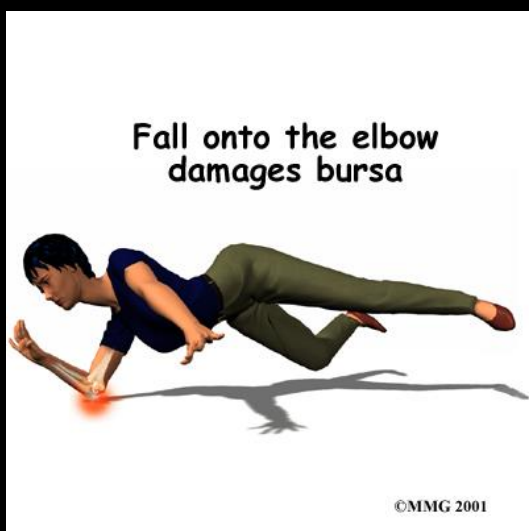
Trattamento Immediato

- Riallineamento • Immobilizzazione • Crioterapia

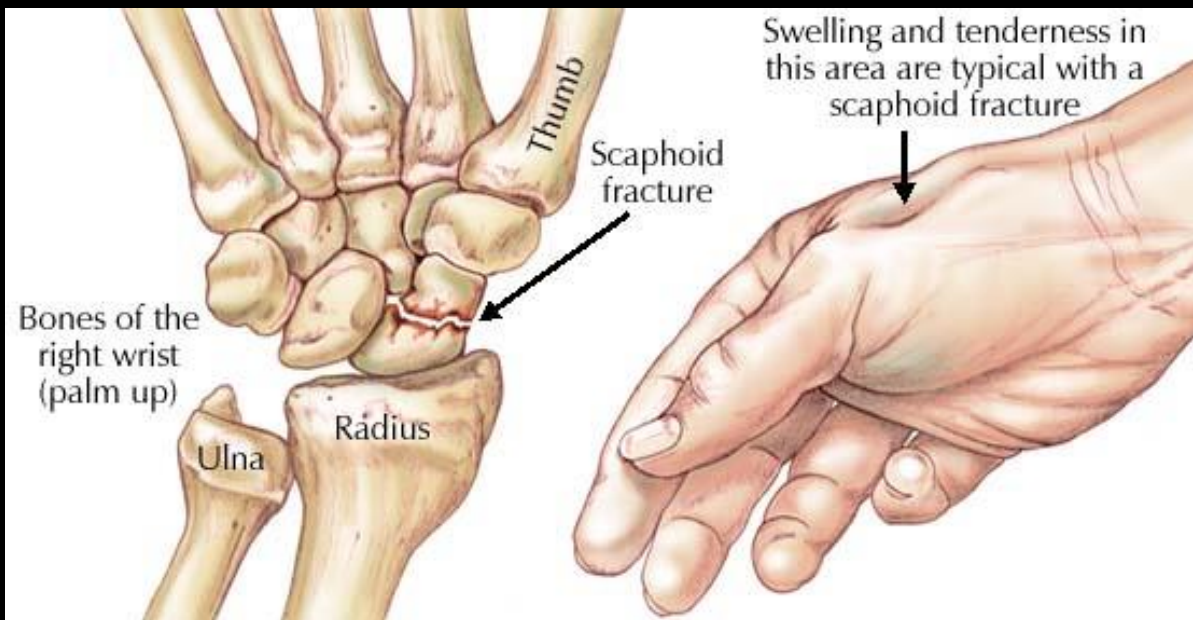
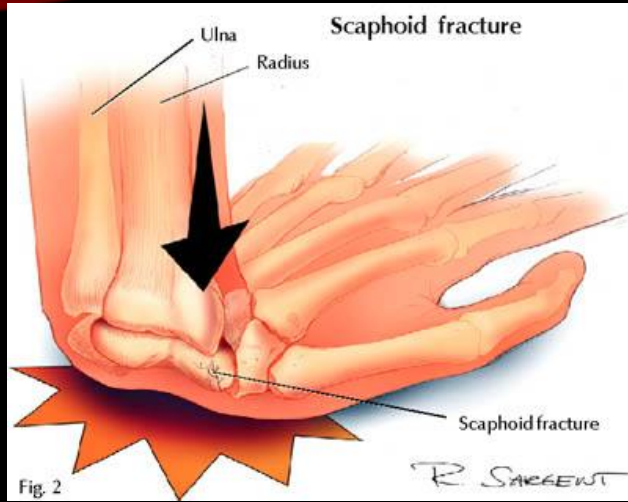


Trasporto

ARTO SUPERIORE



SCAFOIDE CARPALE



FRATTURA DI POLSO

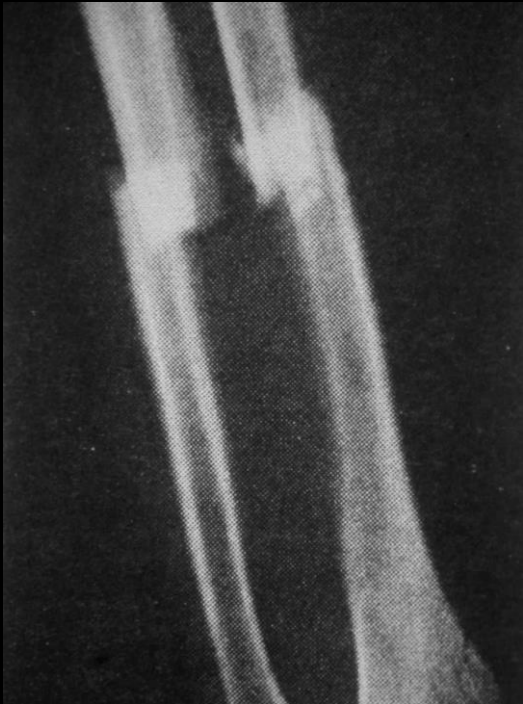


Colles



Goyrand

FRATTURA AVAMBRACCIO



BIOSSEA

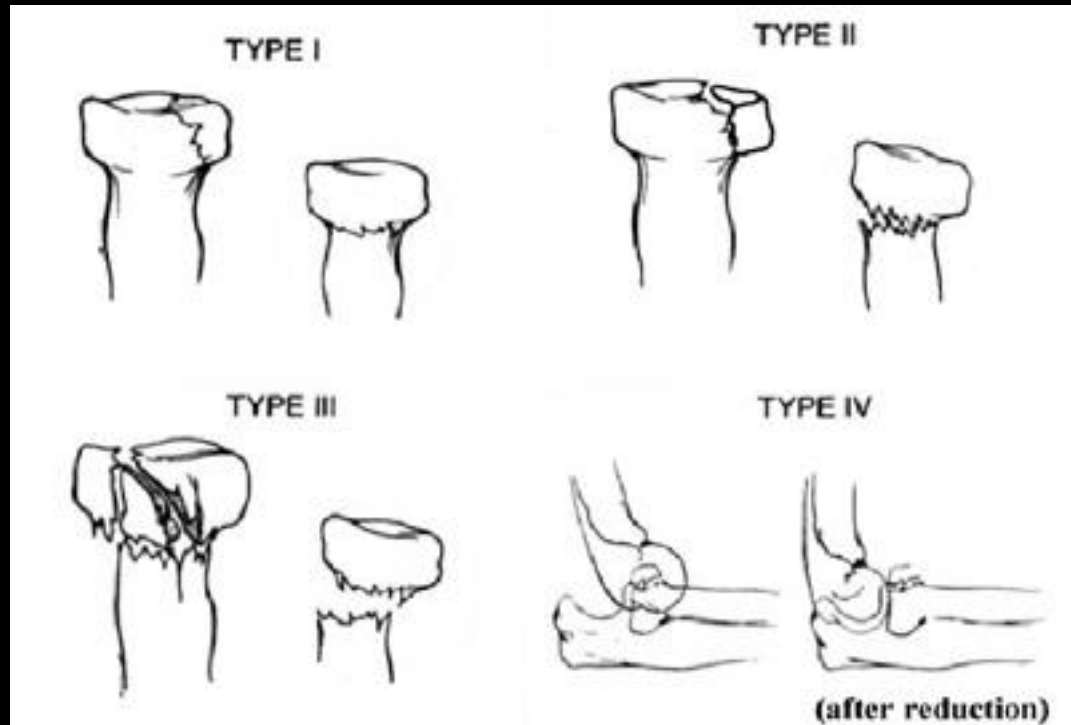


GALEAZZI

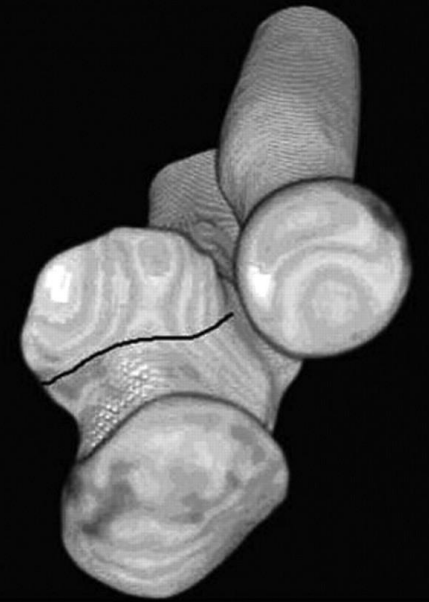


MONTEGGIA

FRATTURA CAPITELLO RADIALE



FRATTURA CORONOIDE



FRATTURA SOVRACONDILOIDEA

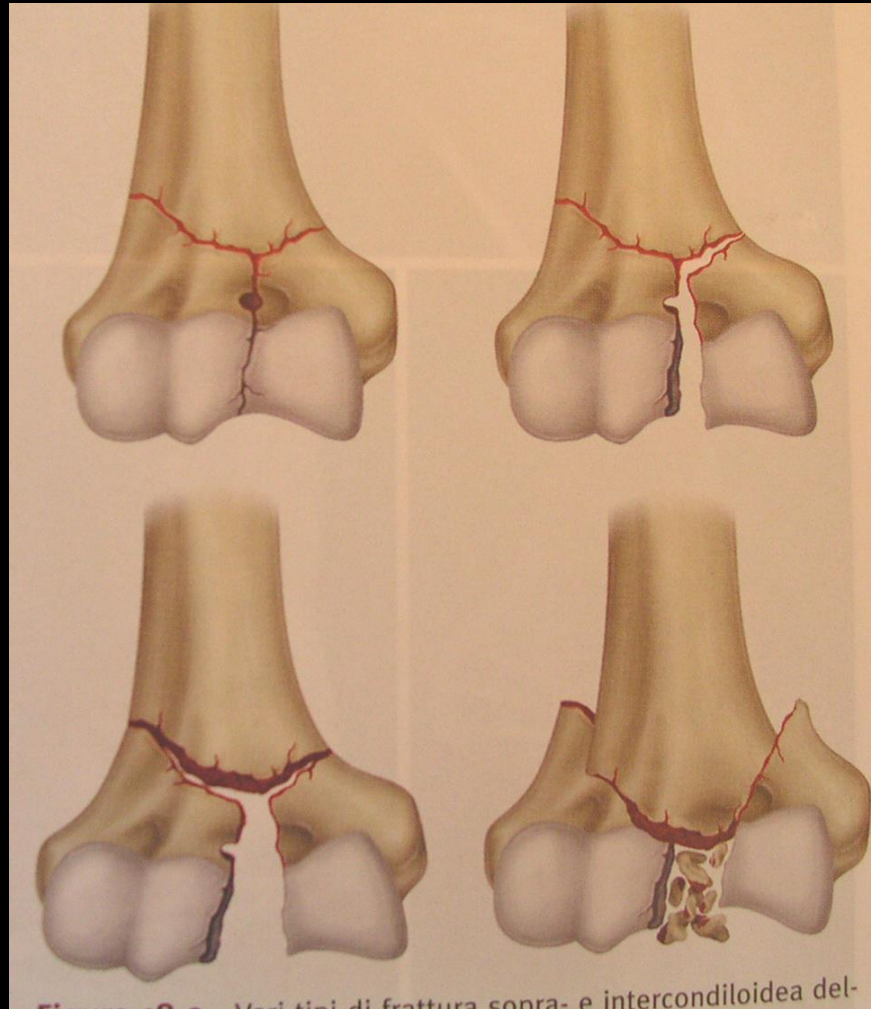
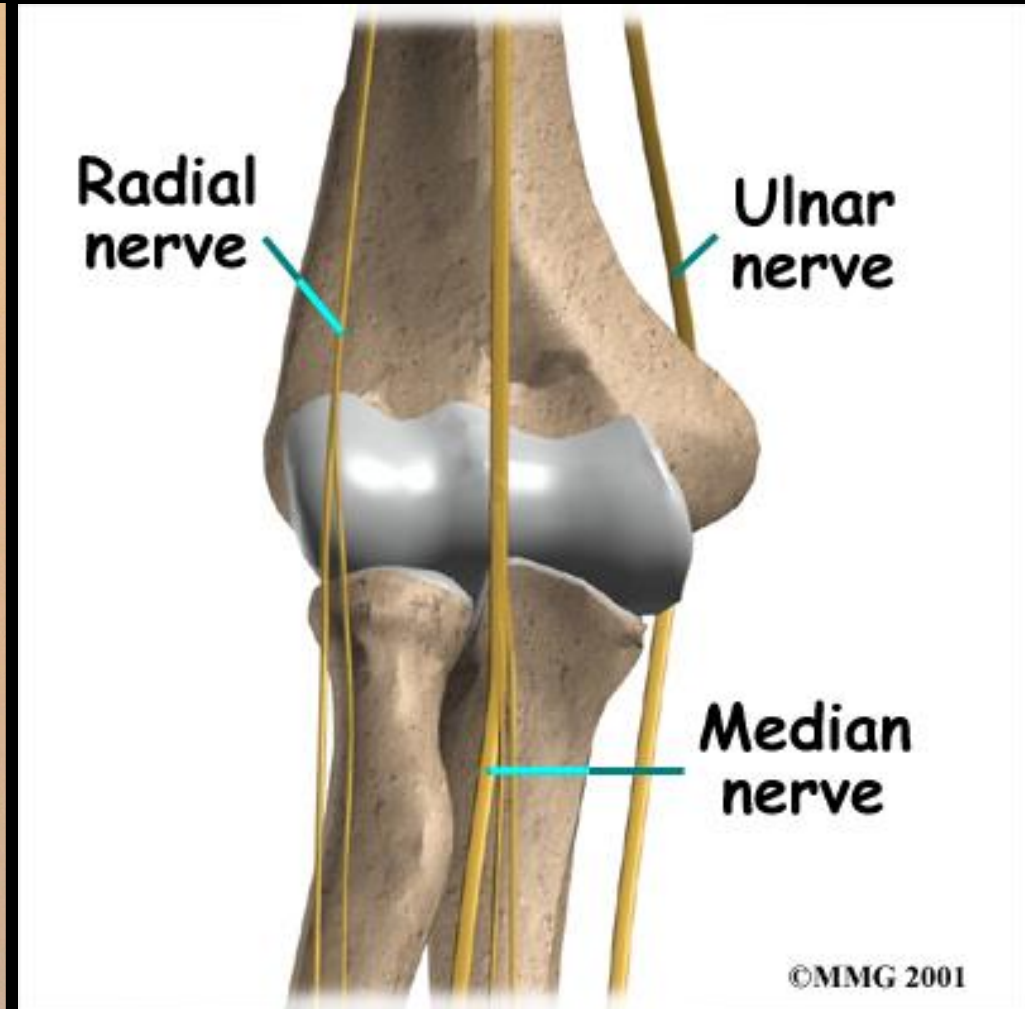


Figure 9.10 Variants of supra- and intercondylar fractures of the elbow.



FRATTURA DEL GOMITO



FRATTURE OMERALI

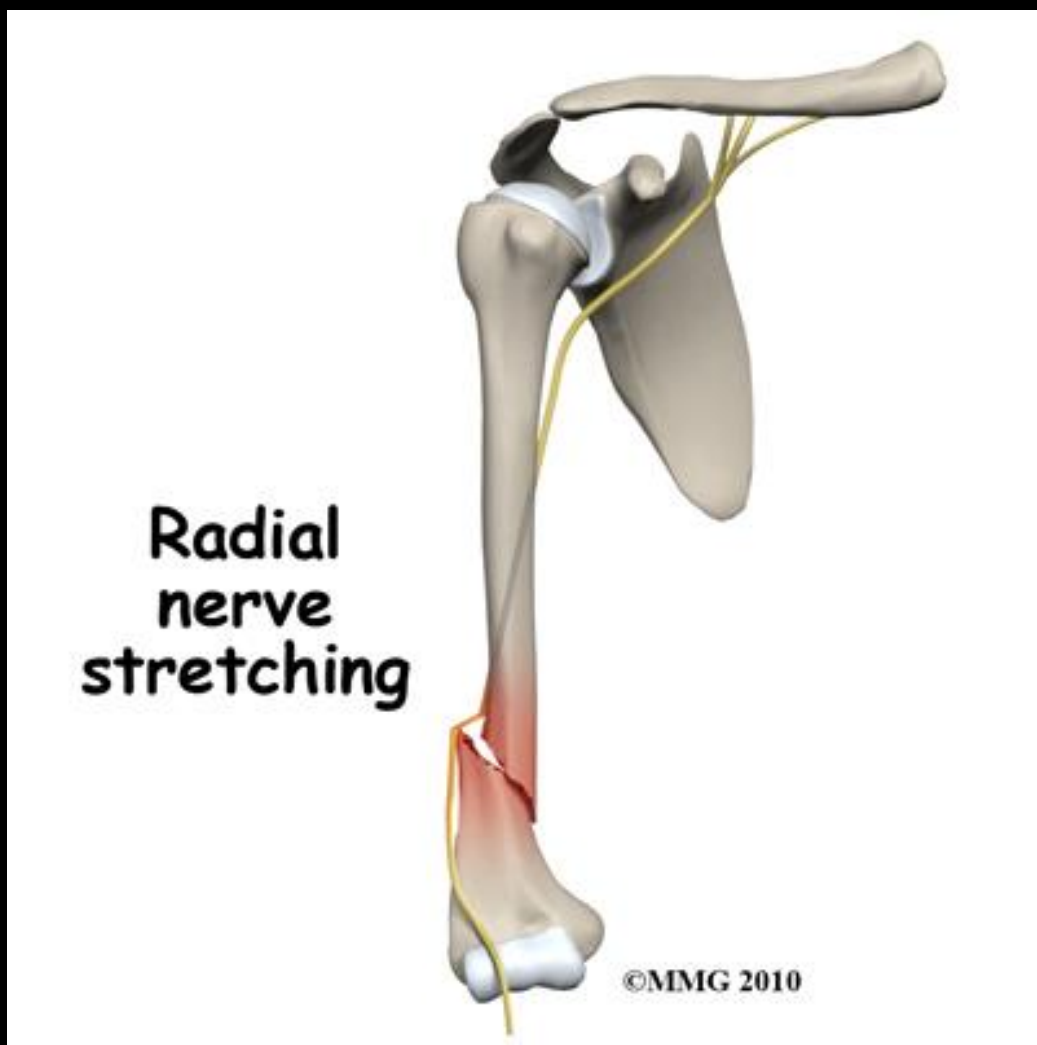
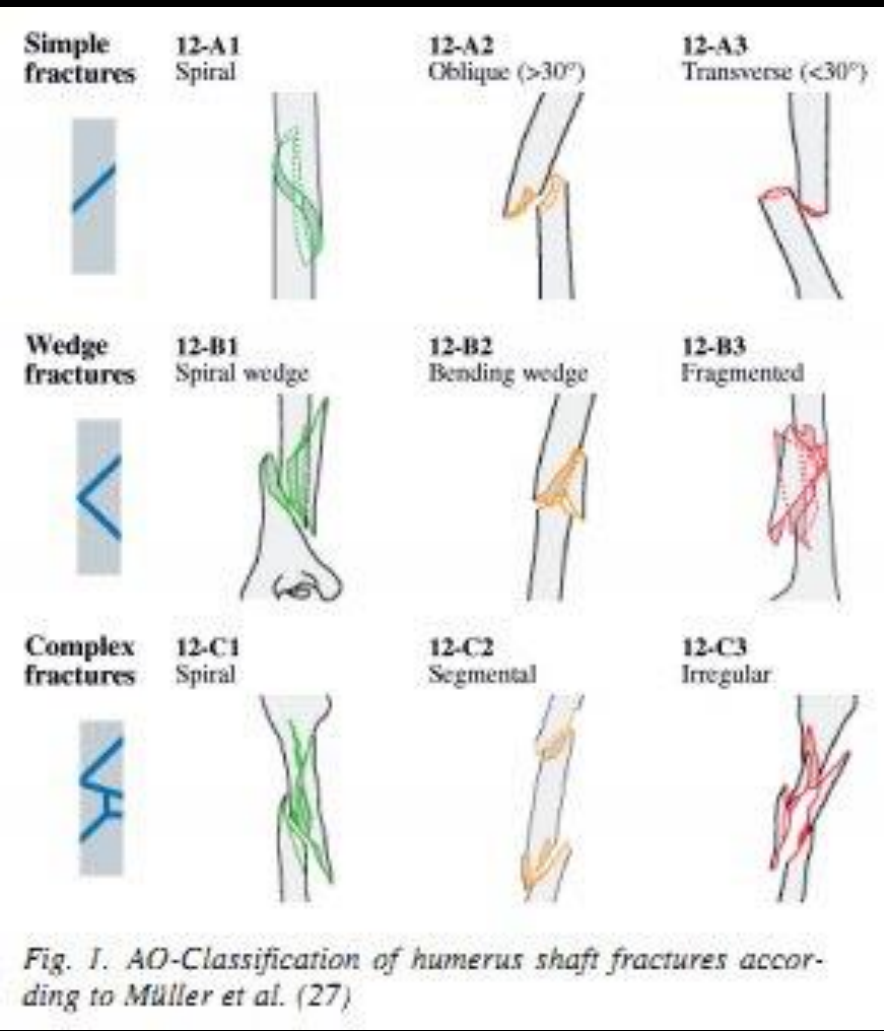
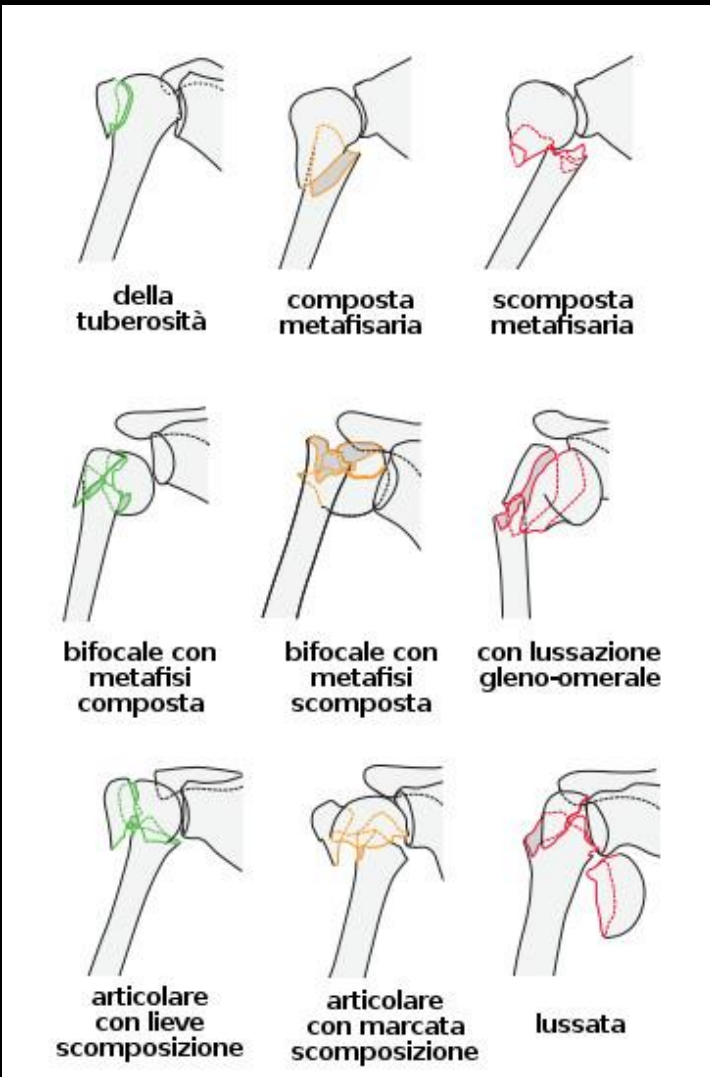
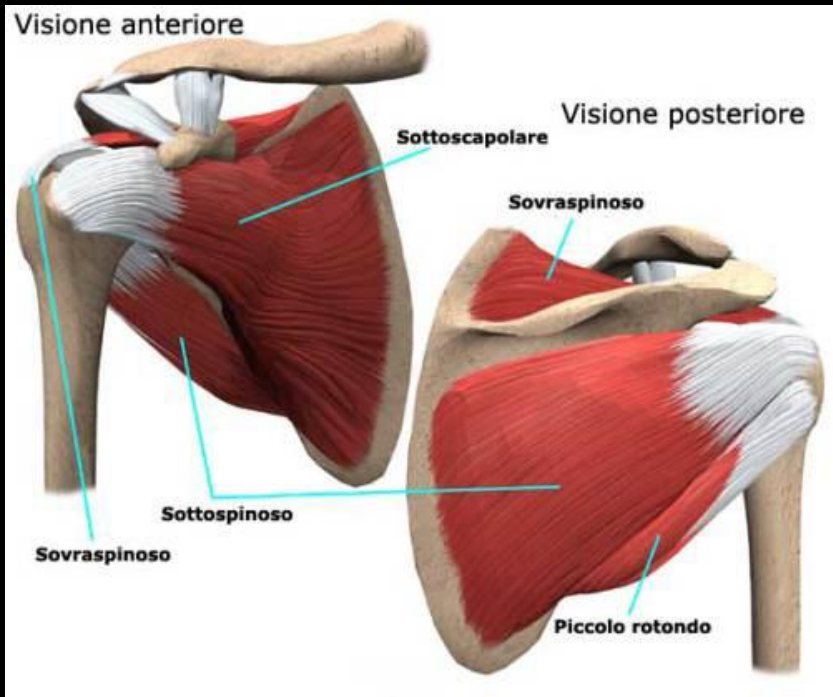
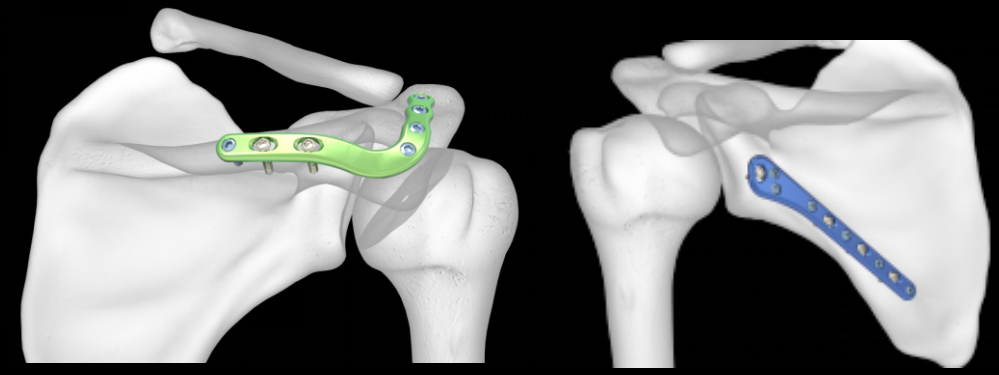
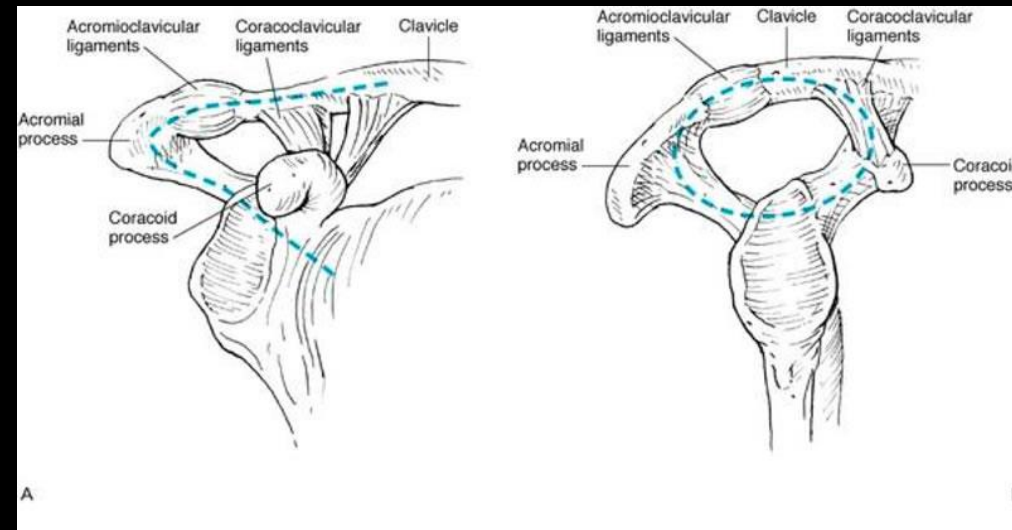
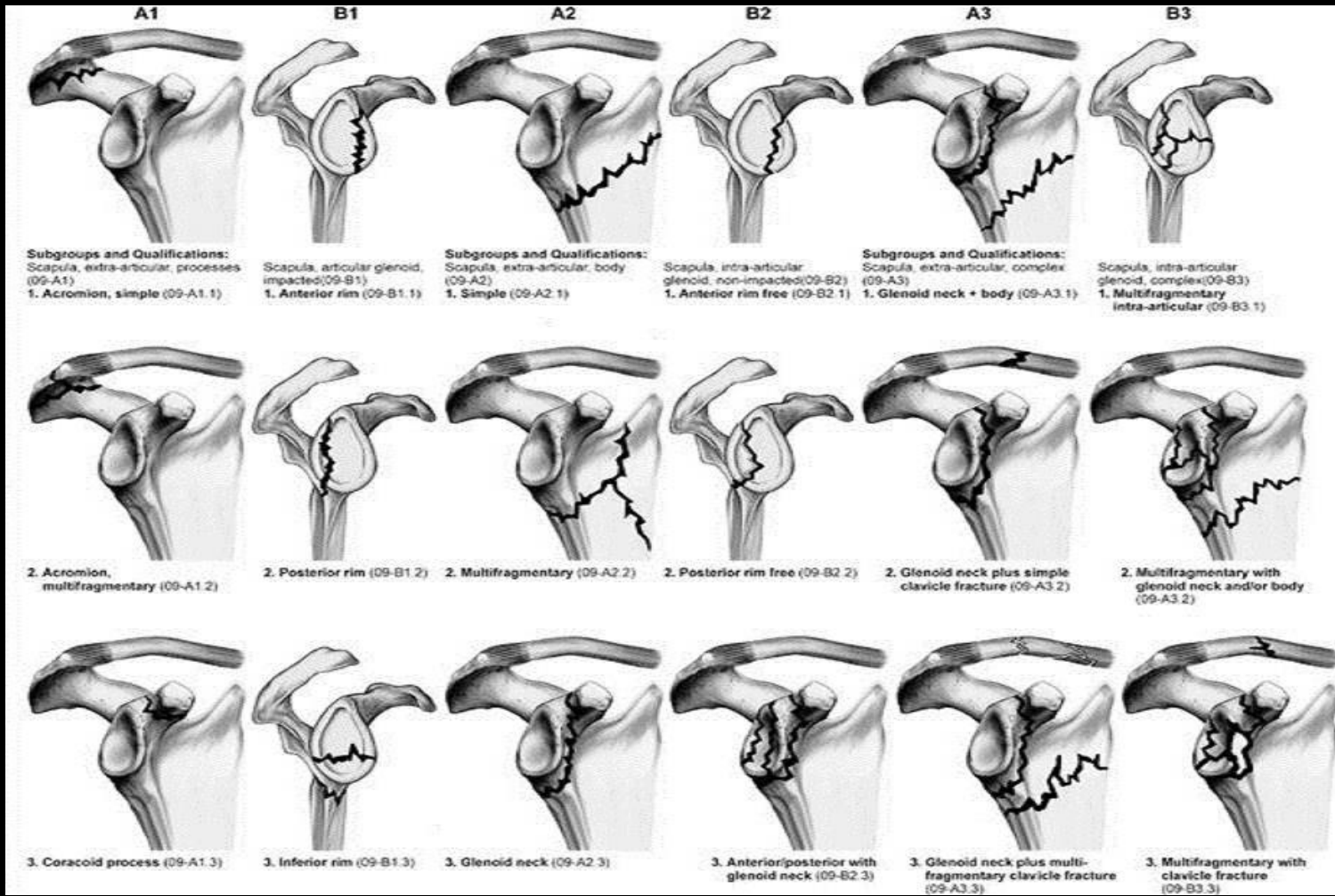


Fig. 1. AO-Classification of humerus shaft fractures according to Müller et al. (27)

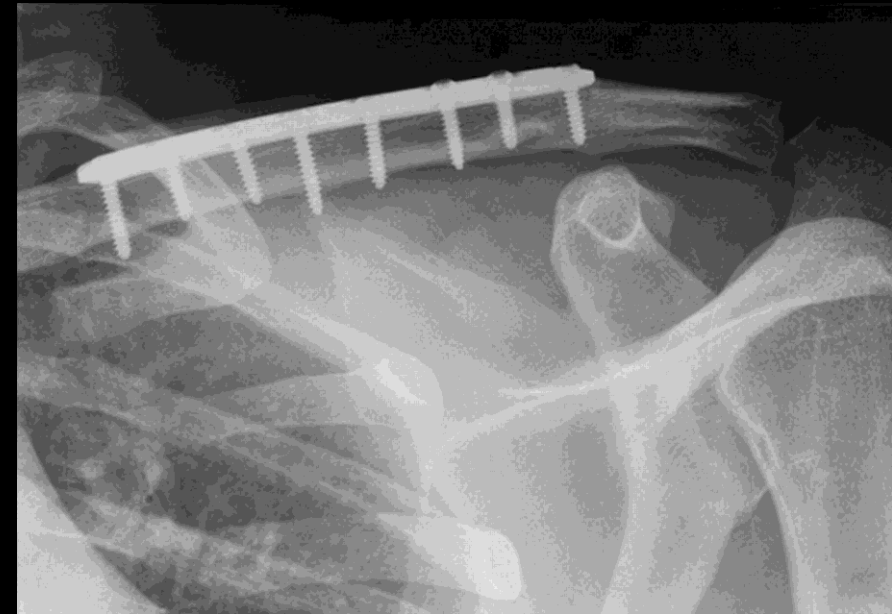
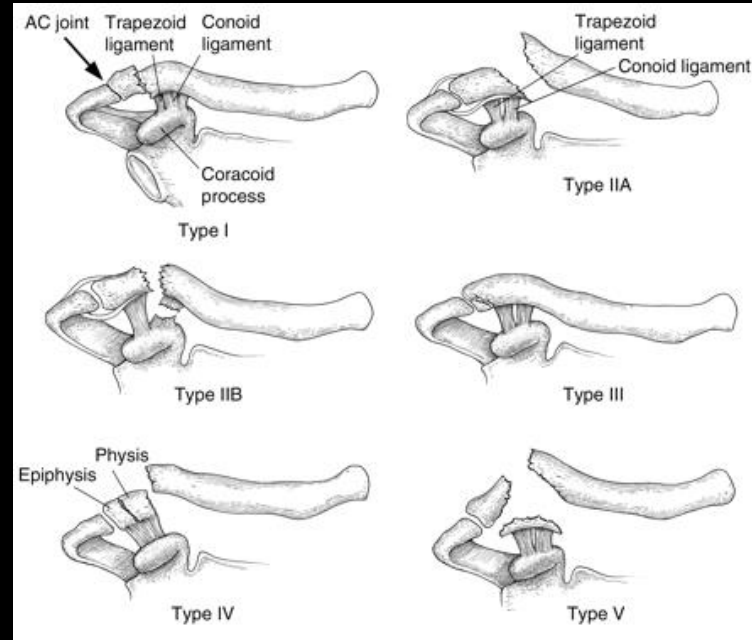
FRATTURE OMERO PROSSIMALE



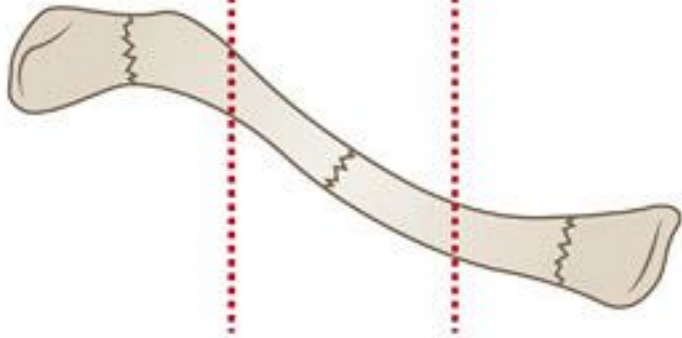
FRATTURE SCAPOLA



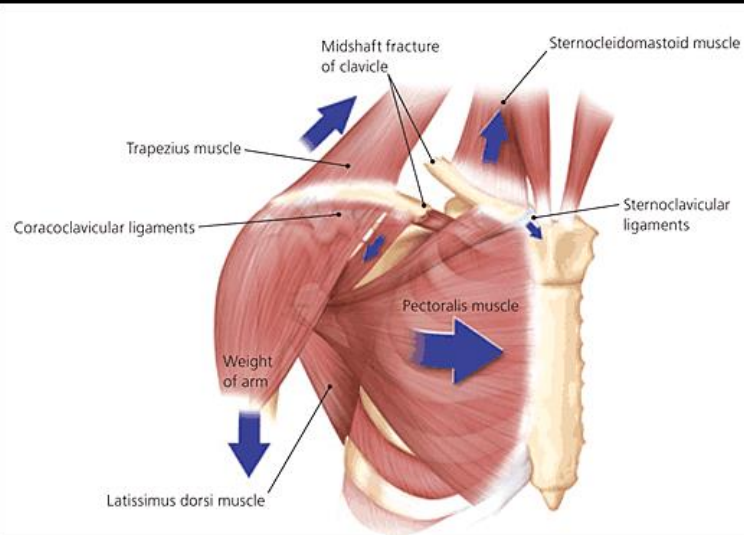
FRATTURE CLAVICOLA



Lateral 1/3 15%
 Middle 1/3 80%
 Medial 1/3 5%



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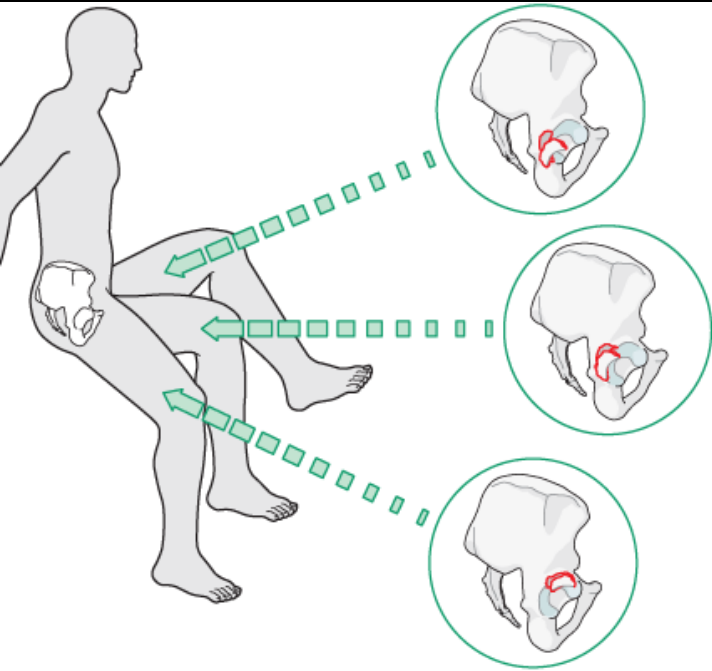
FRATTURE TORACICHE

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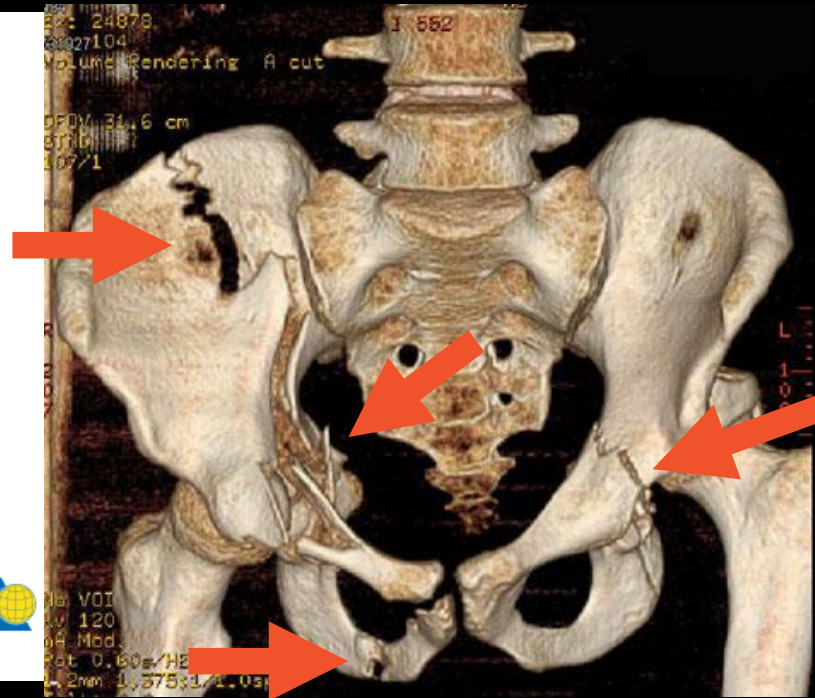


DISPNEA? OSSIGENO + OSPEDALE!

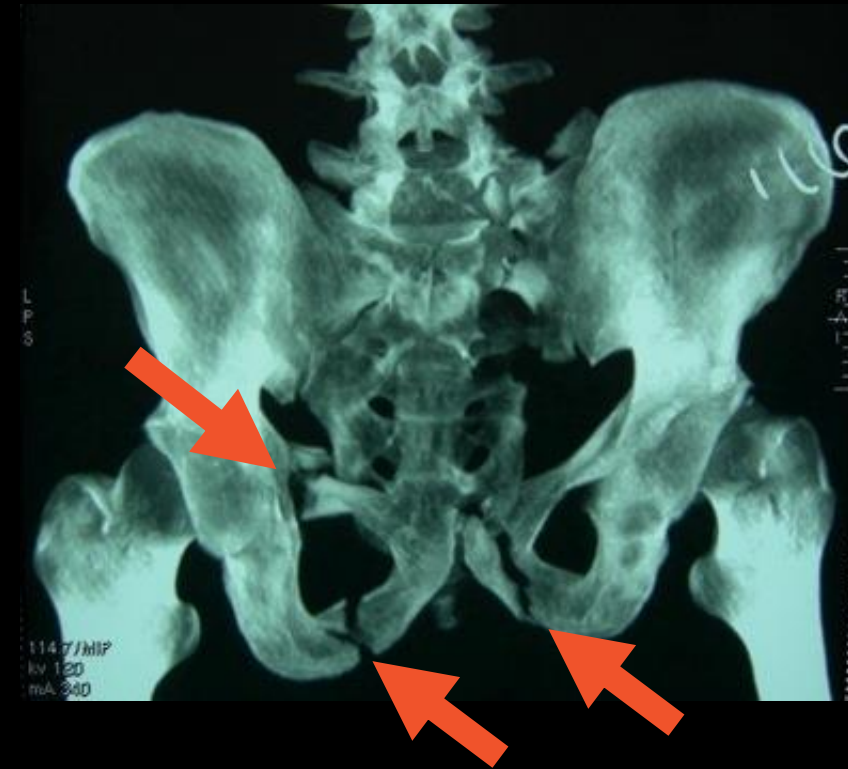
FRATTURE DEL BACINO



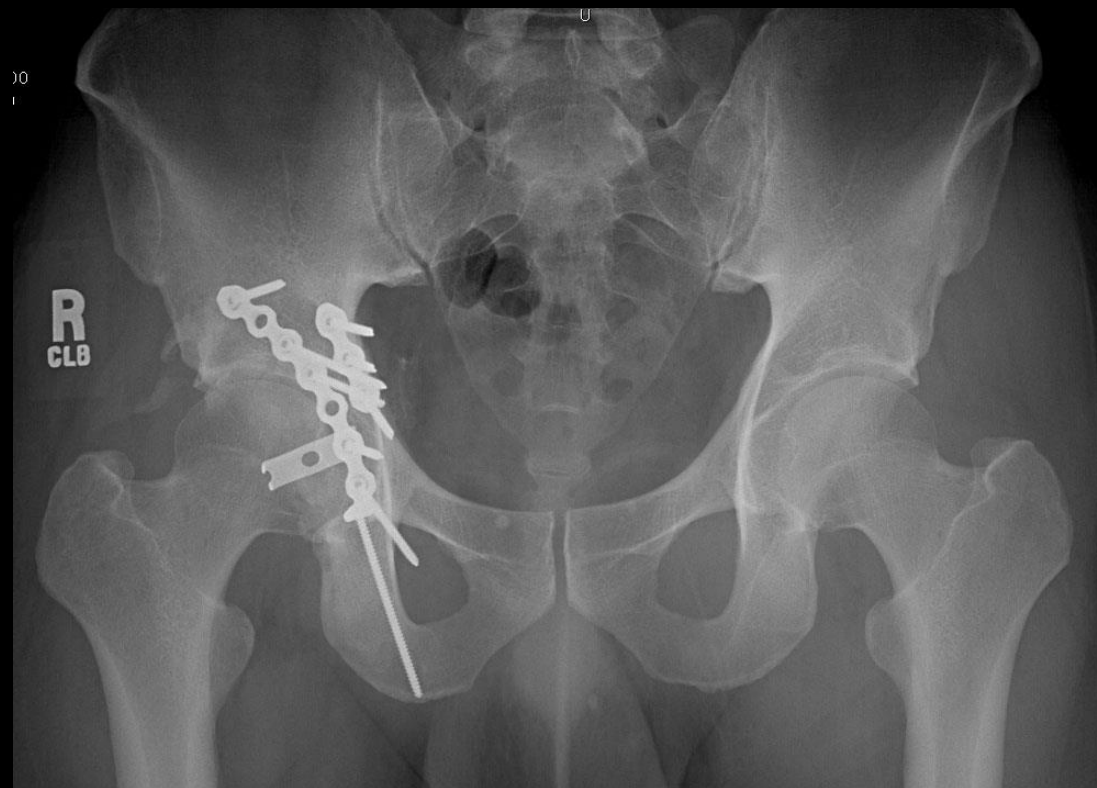
TRAUMA STRADALE



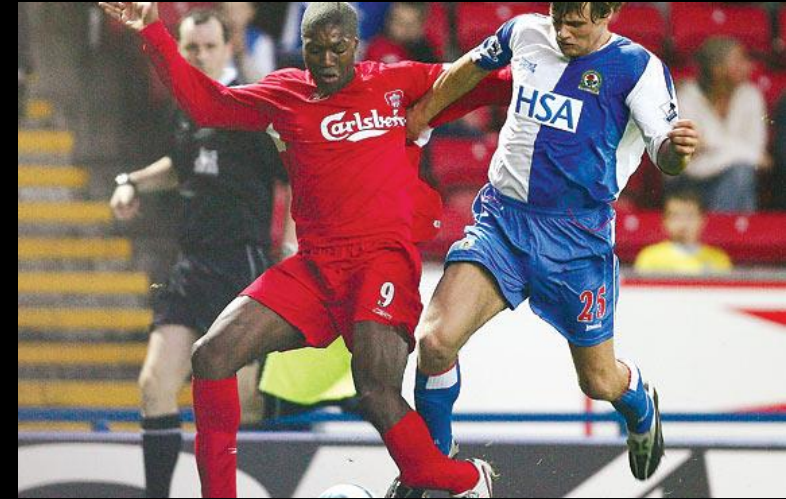
ALTISSIMA ENERGIA – SANGUINAMENTO VENOSO (18 MM HG)



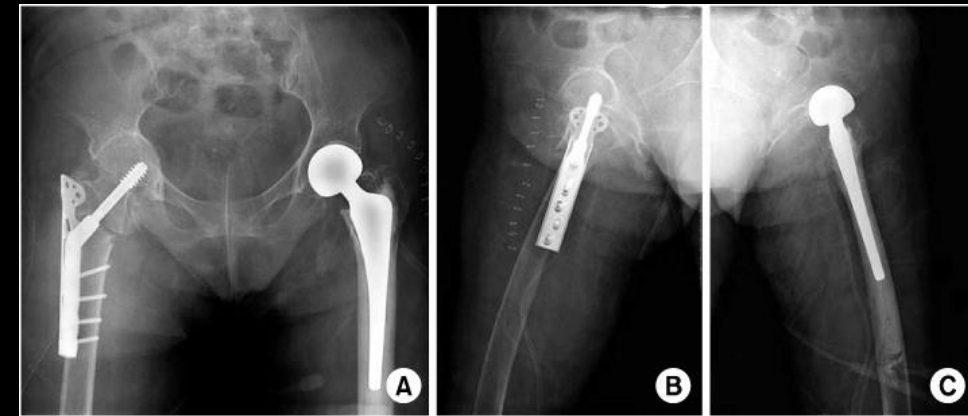
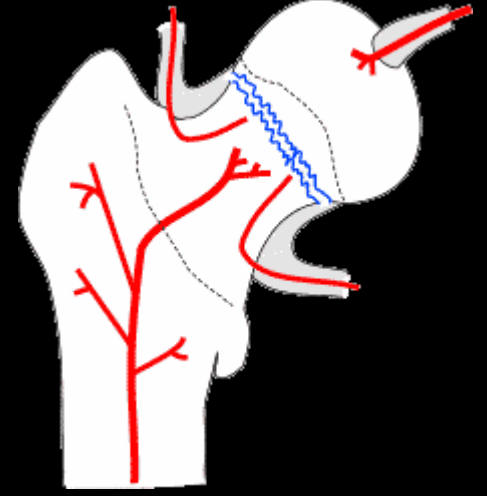
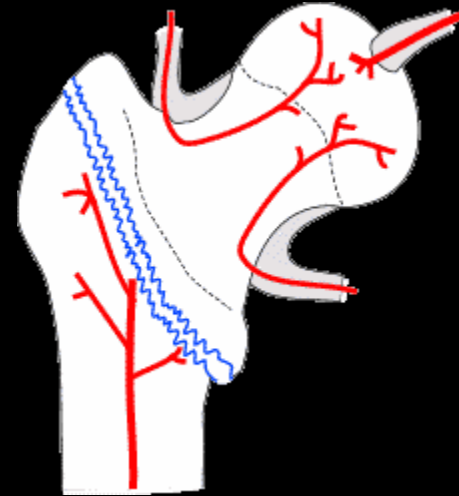
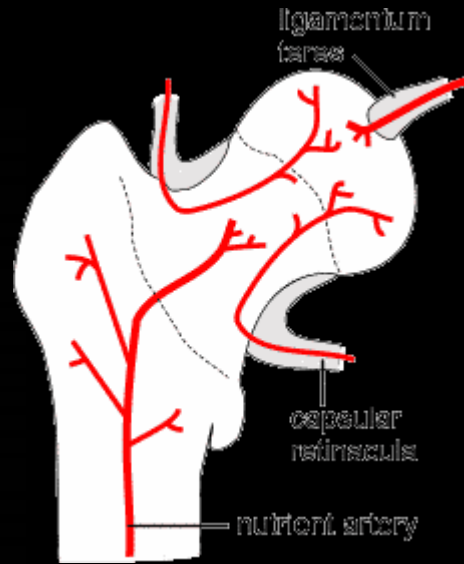
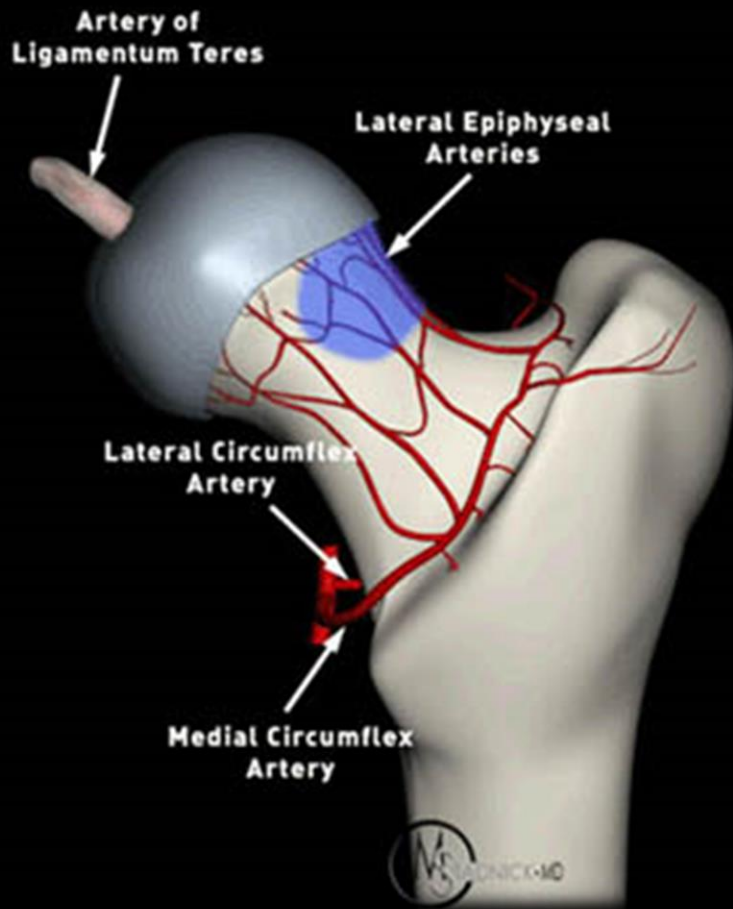
FRATTURE DEL BACINO



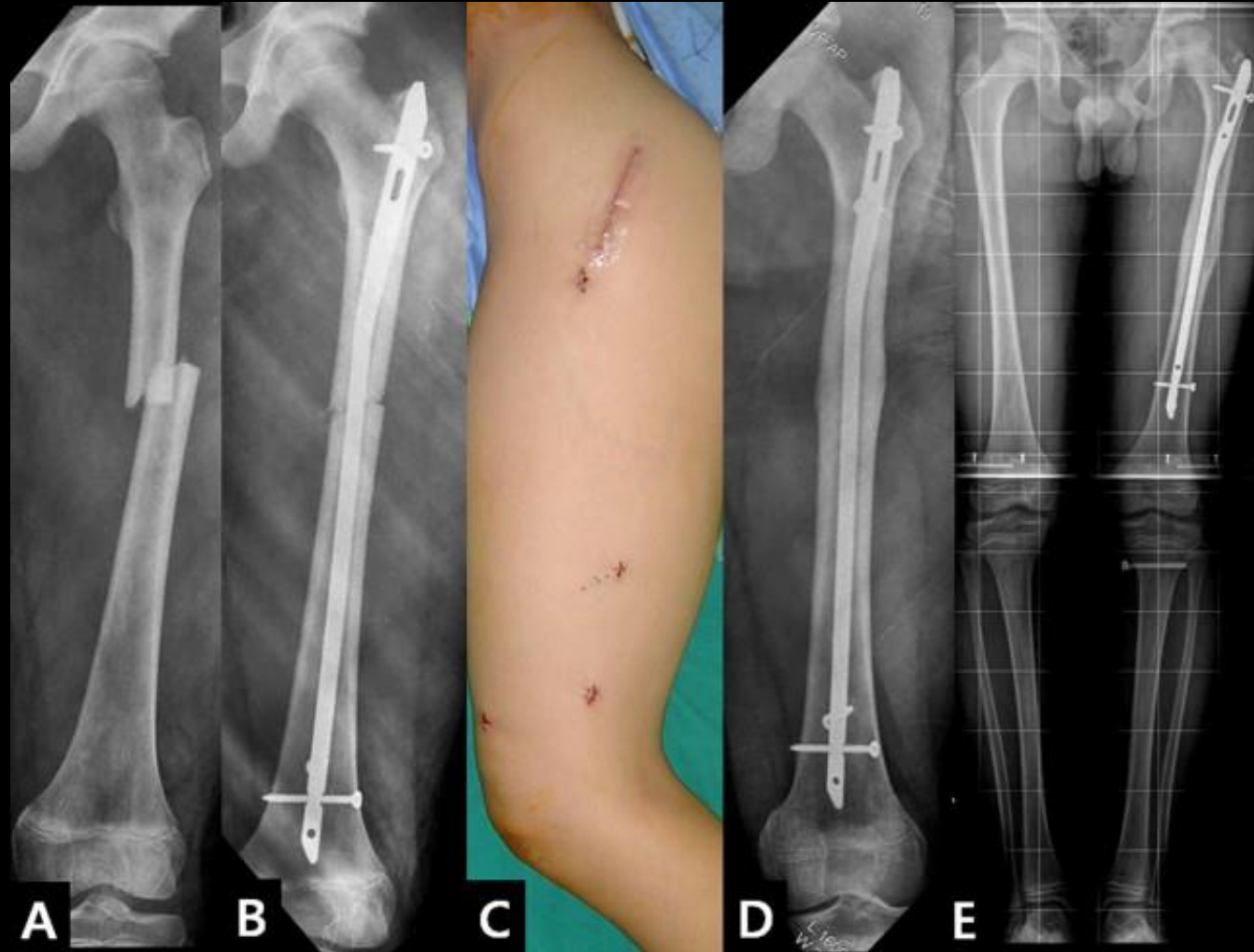
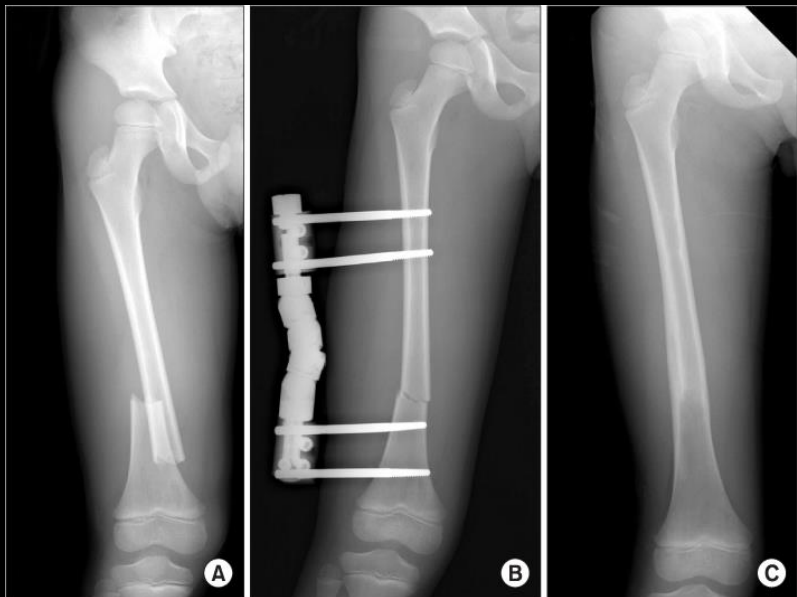
ARTO INFERIORE



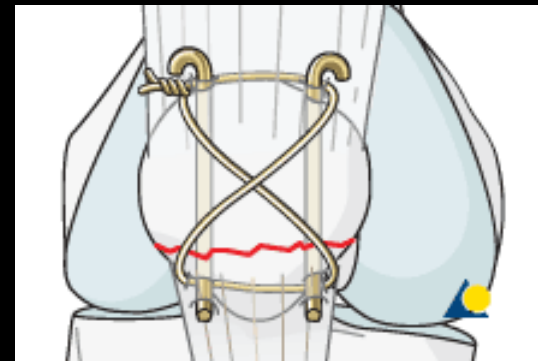
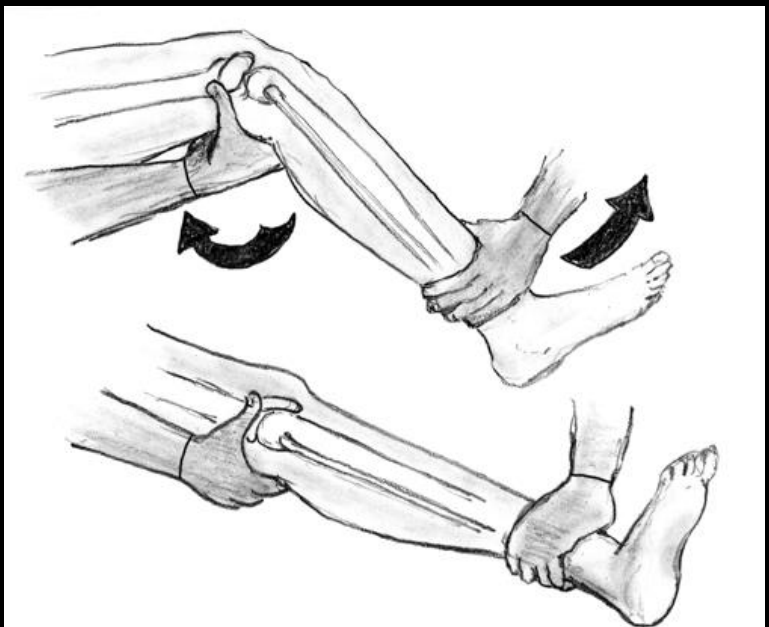
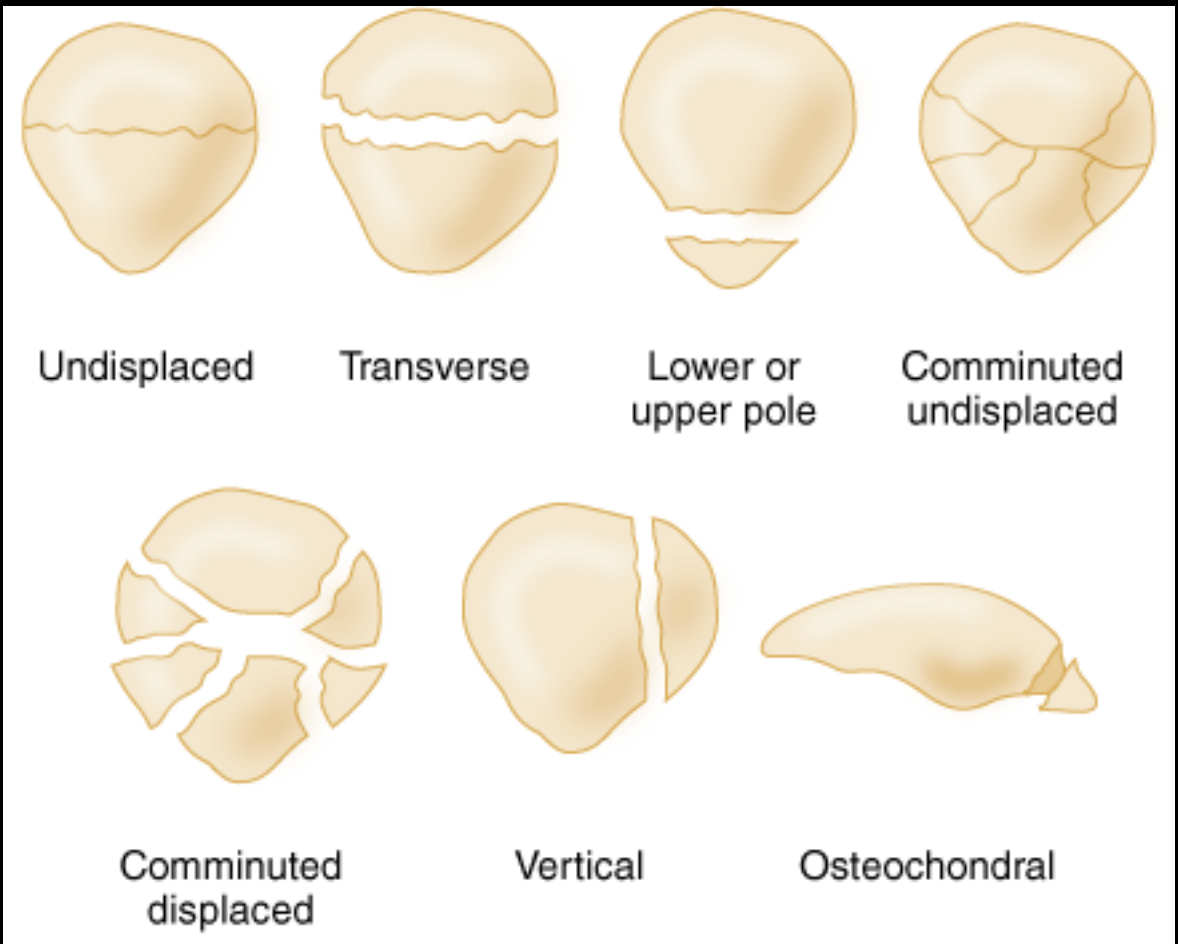
FRATTURE DEL FEMORE PROSSIMALE



FRATTURE DIAFISARIE DI FEMORE

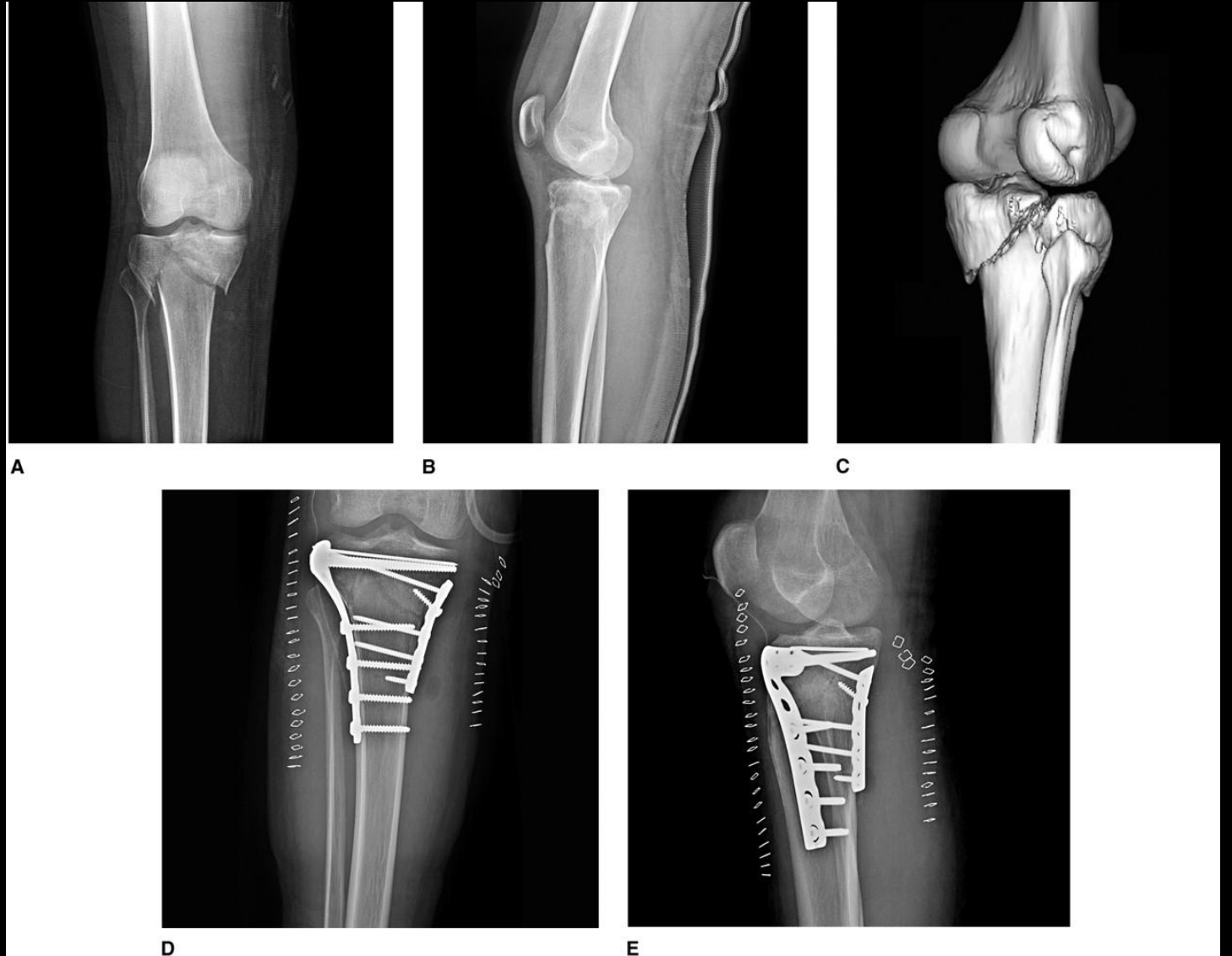


FRATTURE ROTULA



FRATTURE GINOCCHIO

- TRAUMA AD ALTA ENERGIA
- MECCANISMO IN VARO-VALGO
- LESIONI ASSOCIATE:
 - LCA – LCP
 - LCL – LCM
 - MENISCHI



FRATTURE TIBIA E PERONE

- Rischio di esposizione
- Parti molli a rischio
- Ghiaccio in spray?
Anche no!
- Perone non va trattato




FRATTURE CAVIGLIA

Bimalleolar Right Ankle Fractures

Sample Use Only - Copyrighted

X-Ray film print

Film interpretation



Area of injury

Anterior view of right lower leg and foot

R

Fibula

Tibia

Talus

Displaced and mildly comminuted fracture of the lateral malleolus (fibula)

Fracture of the medial malleolus (tibia)

Subluxation of the talus

Detailed description: This block contains an anatomical illustration and an X-ray film print. The anatomical illustration on the left shows the anterior view of the right lower leg and foot, with a box highlighting the ankle area labeled 'Area of injury'. The X-ray film print in the center shows a lateral view of the ankle with a white 'R' marker. Arrows point to the fibula and tibia. The film interpretation on the right shows a 3D reconstruction of the ankle, with labels for 'Displaced and mildly comminuted fracture of the lateral malleolus (fibula)', 'Fracture of the medial malleolus (tibia)', and 'Subluxation of the talus'. The bones are labeled 'Fibula', 'Tibia', and 'Talus'.



FRATTURE DEL PIEDE



FRATTURE DA STRESS



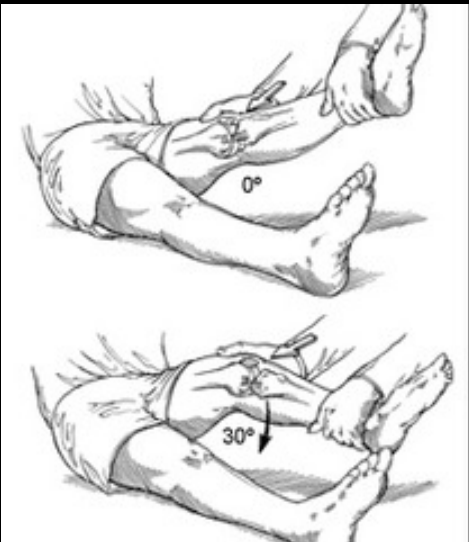
TRAUMA DELLE PARTI MOLLI

- **Contusioni**: conseguenza di un trauma diretto non sufficienti per rompere l'integrità dei tessuti
- **Ecchimosi**: rottura di piccoli capillari, modesto stravaso ematico, superficie integra;
- **Ematoma**: lesione in cui si ha la rottura di vasi sanguigni più grandi con conseguente emorragia significativa. La raccolta di sangue può rimanere circoscritta o infiltrare i tessuti circostanti;
- **Abrasione**: micro rotture degli strati più superficiali dell'epidermide;
- **Escoriazione**: quando la discontinuità interessa gli strati più profondi e si accompagna a modeste lesioni vascolari;

TRAUMA DELLE PARTI MOLLI

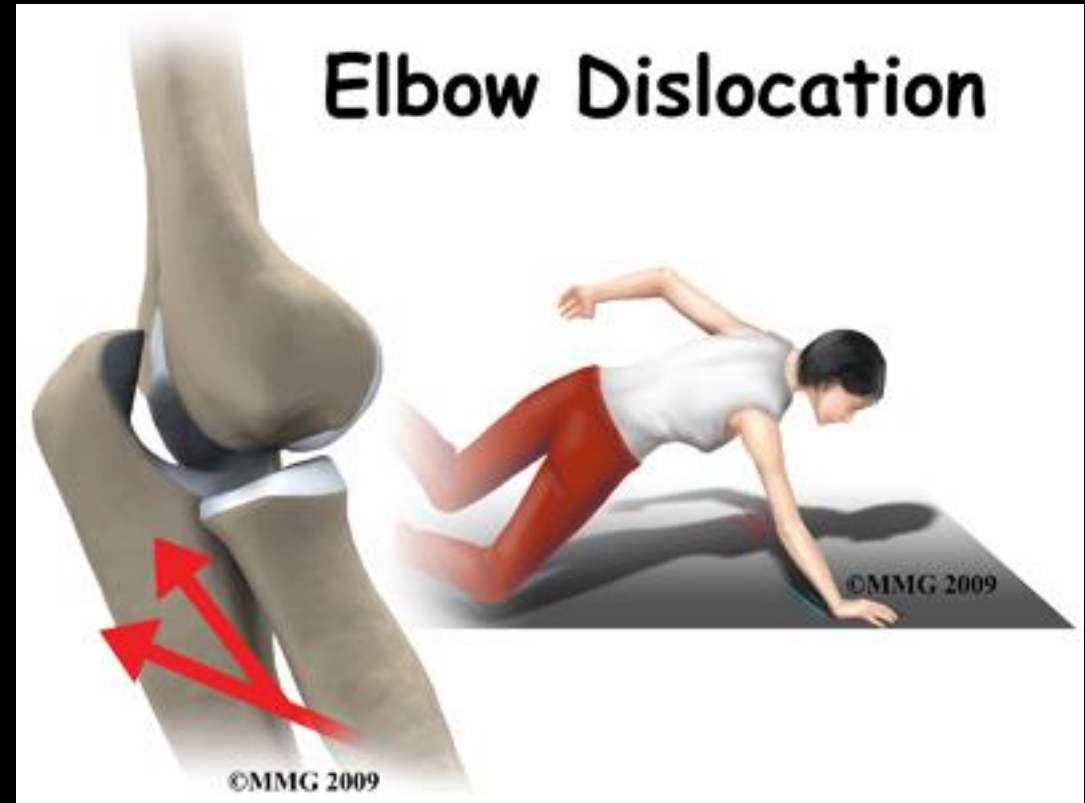
- **Distorsione**: trauma da movimento innaturale di parte del corpo il quale può ledere i tessuti ma non comporta la completa perdita dell'integrità dei tessuti. Capsula – ligamenti – tendini.
 - I grado: dolore ligamentare
 - II grado: lassità
 - III grado: rottura

- **Lussazione**: perdita completa dei rapporti articolari
 - **Traumatica**: in seguito a un trauma violento che sposta le estremità delle ossa.
 - Recenti
 - Recidivanti
 - **Congenita**: legate ad una malformazione delle estremità ossee
 - **Degenerativa** (patologica): legate a lesioni capsulo-ligamentose (come nella mano della poliartrite reumatoide).



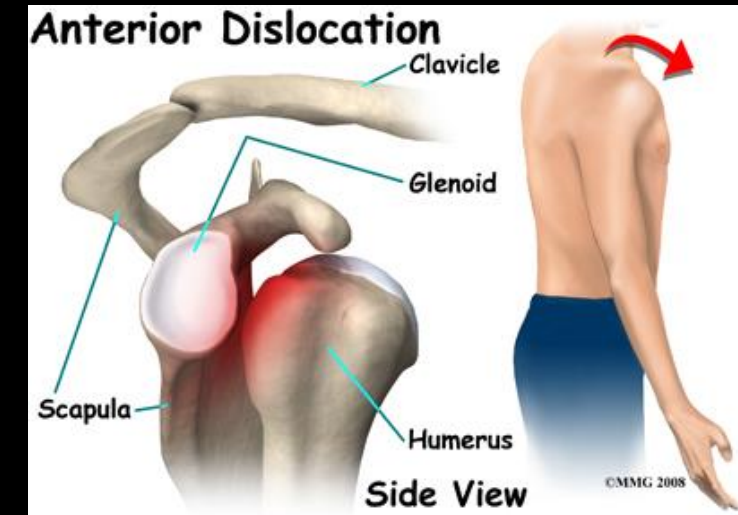
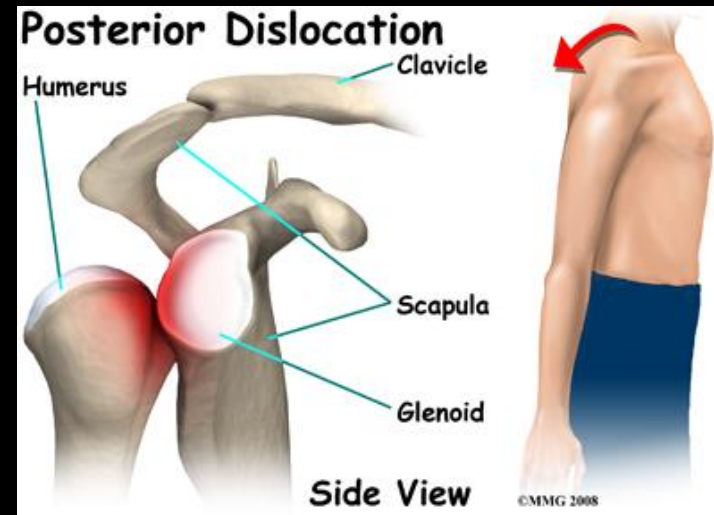
Lussazione di Gomito

- Trauma alla mano
- Caduta
- Difficile riduzione

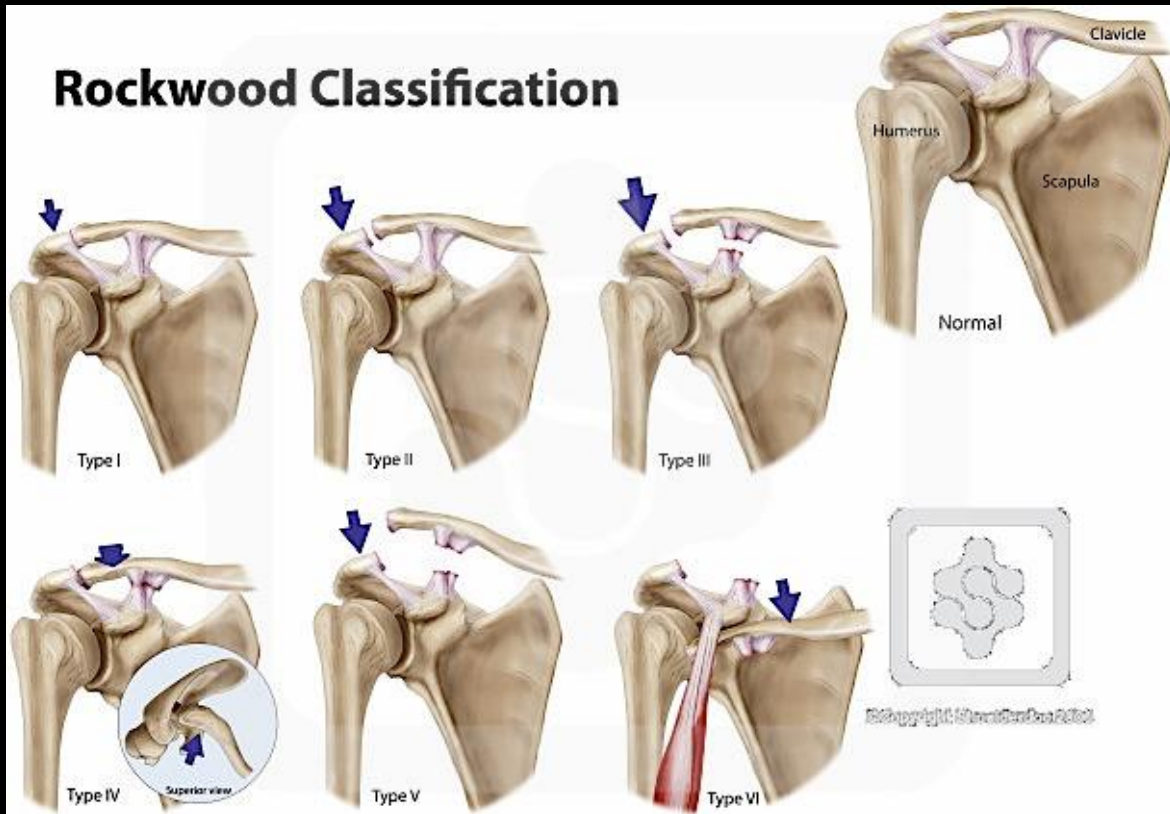


Lussazione di Spalla

- Trauma alla mano / gomito
- Riduzione agevole se ben rilassati
- Ridurre solo le abituali – Traumatiche solo dopo RX



Lussazione Acromion - Claveare



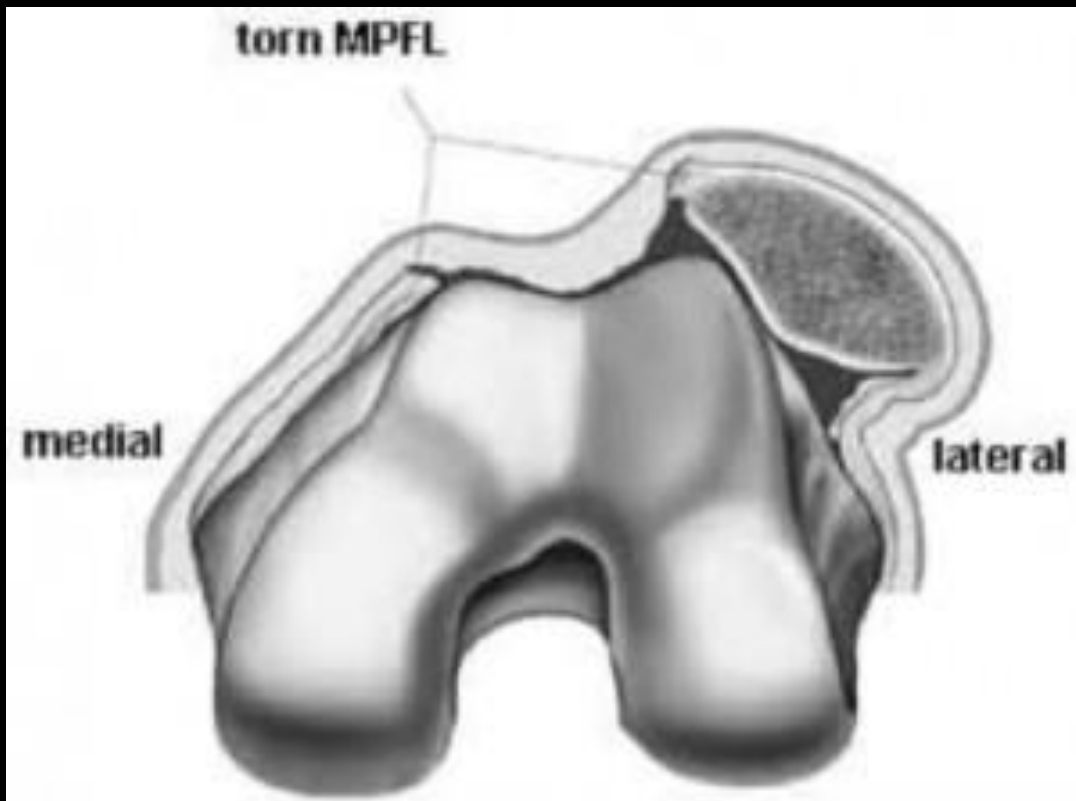
- Trauma alla mano / gomito / spalla
- Irriducibili
- Buoni risultati funzionali senza interventi
- Casi selezionati vanno operati

Lussazione D'Anca e Ginocchio



- Trauma ad alta energia
- Emergenza medica
 - Vascolare
 - Necrosi

Lussazione Rotulea



- Facile riduzione
- Spesso lesioni cartilaginee associate
- Lesione del MPFL
- 6 settimane in estensione

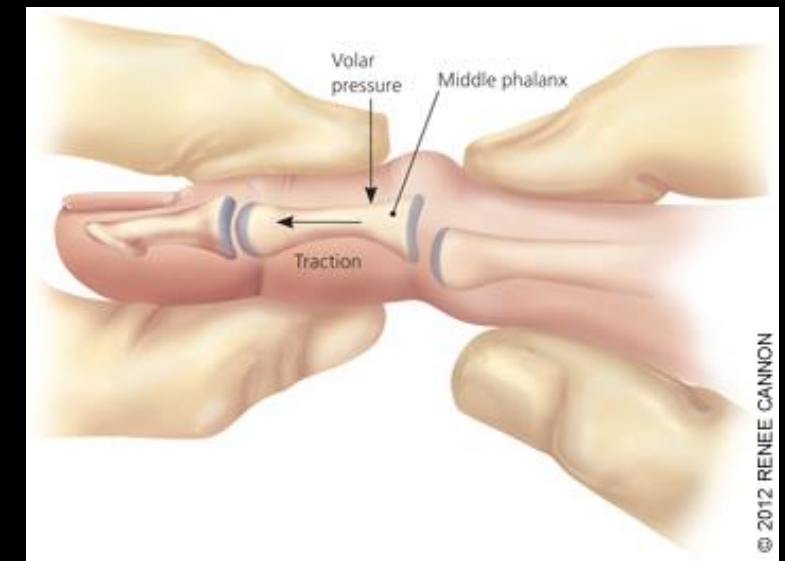
Lussazione di Caviglia

- Difficile riduzione
- Spesso instabili e associate a fratture



Lussazione delle Dita

- Acute
 - facile alla mano
 - RX sempre
 - piede – fratture
- Croniche - irriducibili



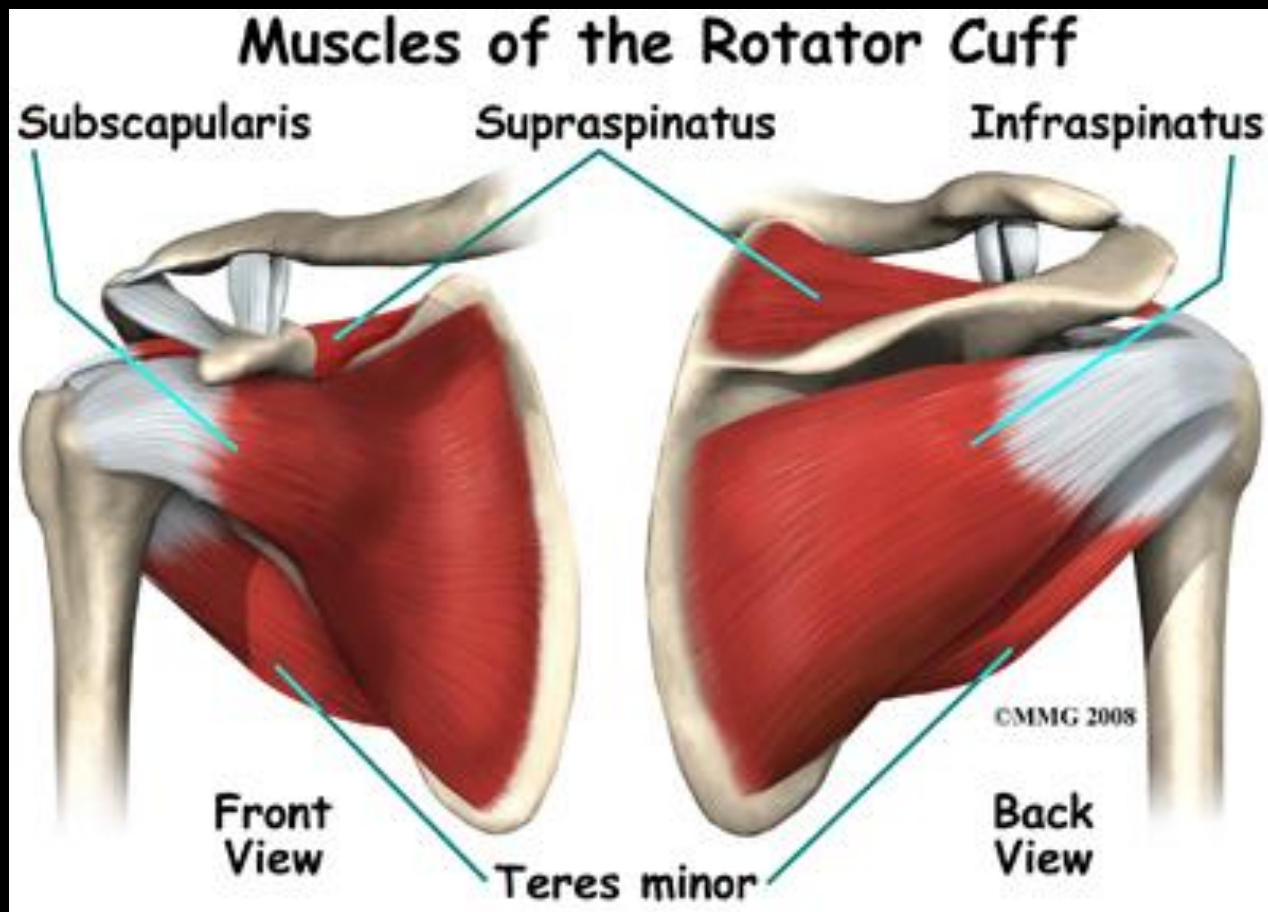
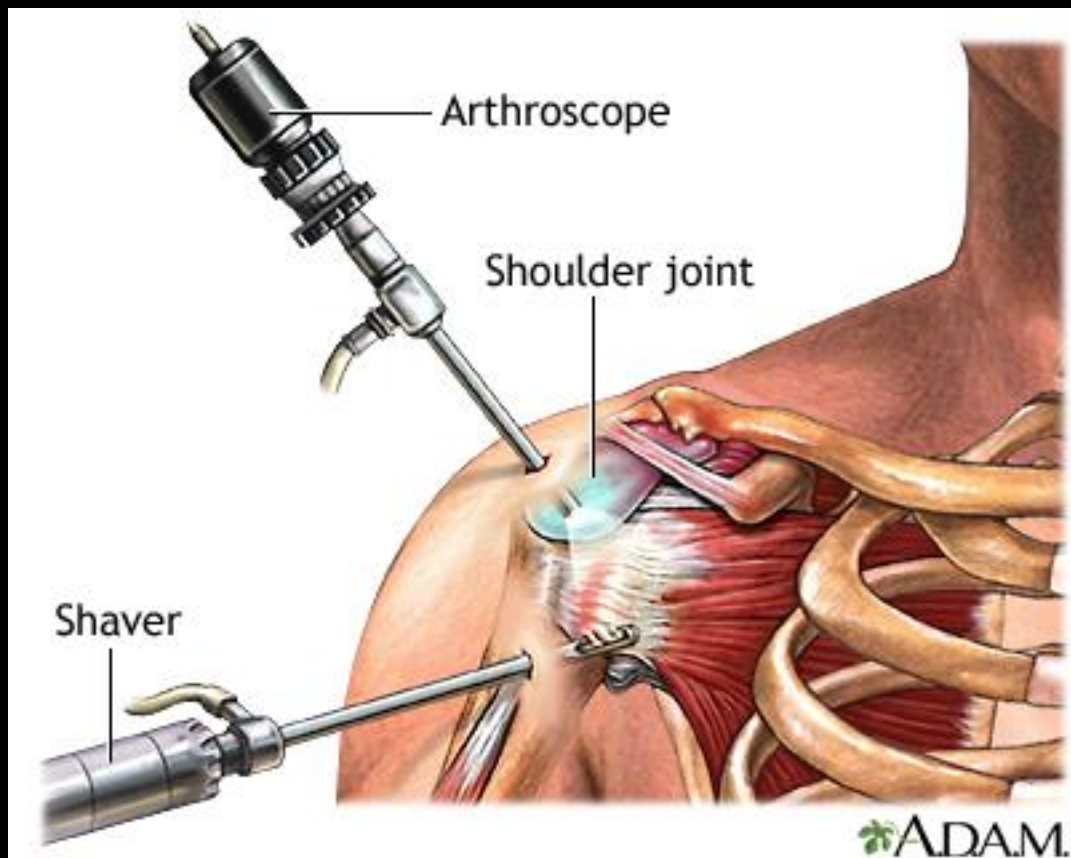
Tendinopatie

- **Tendinite**: infiammazione
- **Tendinosi**: microlesione da sovraccarico
- Dolore, rigidità e perdita di forza
 - Peggio quando “freddo”
- **Algoritmo di trattamento**
 - Ghiaccio, riposo, antinfiammatori, FKT, immobilizzazione, terapie fisiche, infiltrazioni, chirurgia.
- **Prevenzione:**
 - Stretching
 - Esercizi propriocettivi
 - Calo ponderale

Chinolonic

Cuffia dei Rotatori

- Trauma
- Sovraccarico
- Idiopatica (calcificazioni)



Gomito da Tennista e Golfista

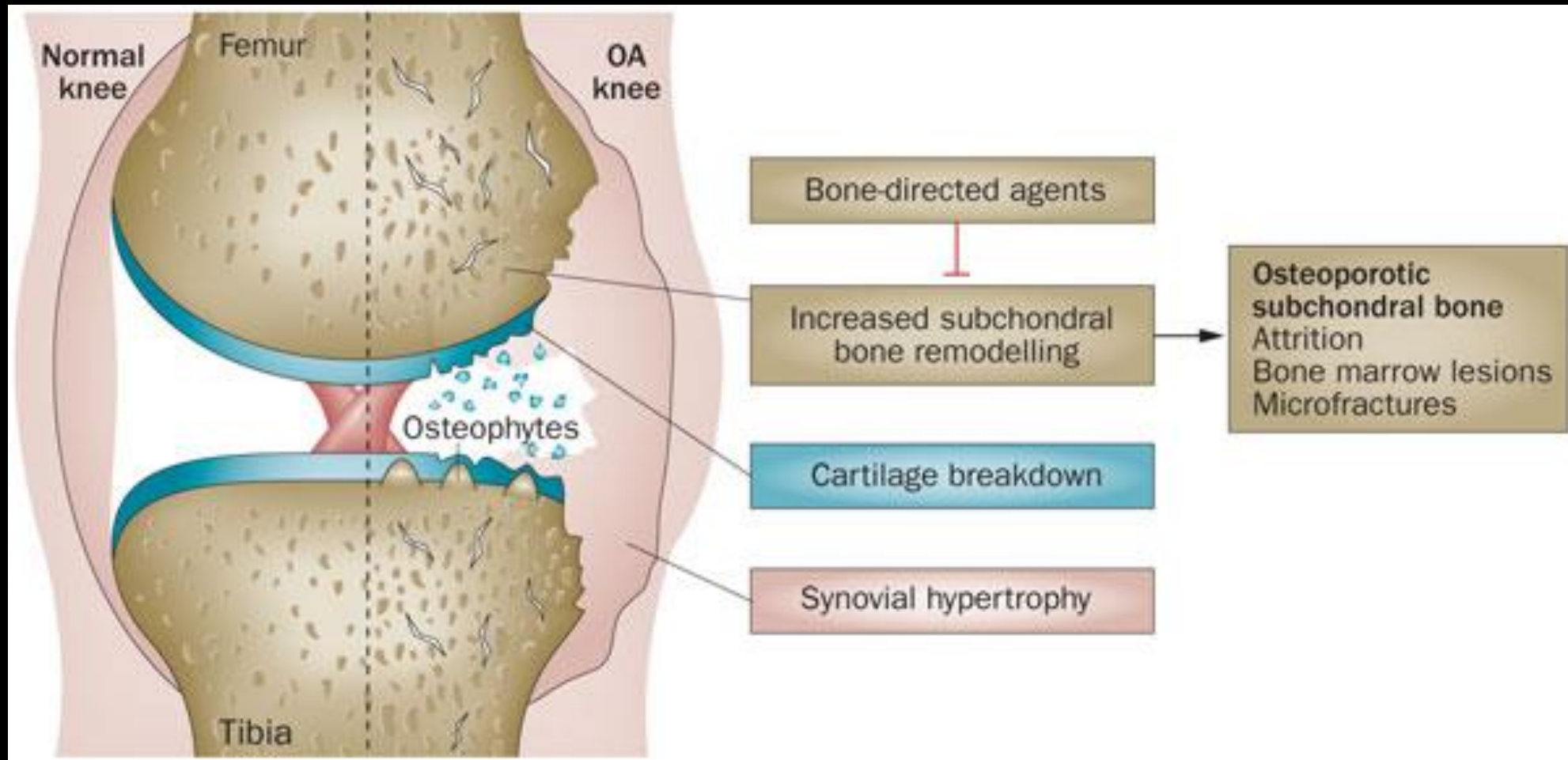


Tendine d'Achille

- Rumore udibile del distacco del tendine
- Gap palpabile
- Insidioso
- Idiopatico – Utilizzo di chinolonici
- Tendinosi visibile con ecografia ma raramente sintomatica
- Lesioni incomplete
trattamento conservativo



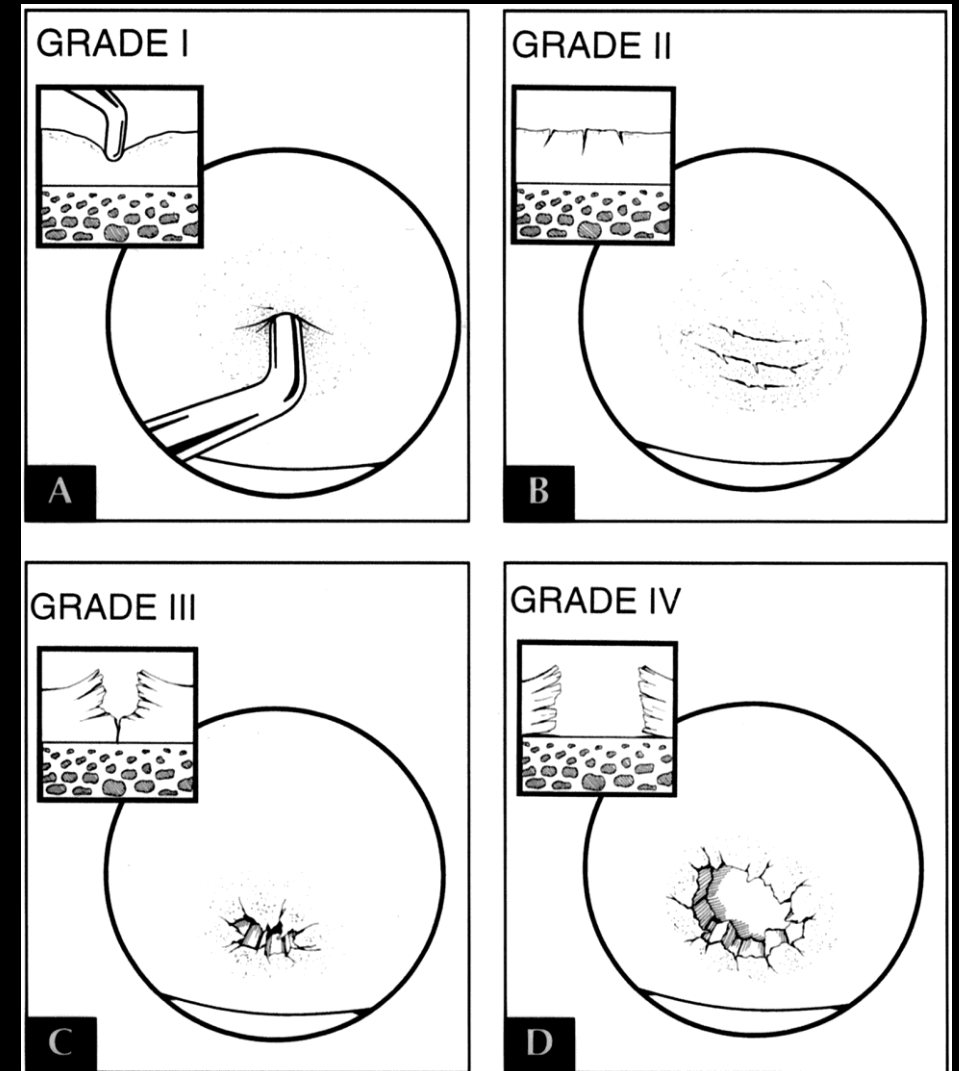
Lesioni Cartilaginee



Lesioni Cartilaginee

Classificazione di Outerbridge:

- grado 1 (condromalacia)
- grado 2 (fibrillazione)
- grado 3 (erosione senza interessamento osseo)
- grado 4 (interessamento osteocondrale)



Lesioni Muscolari

A. Indirect Muscle Disorder/ Injury	Functional Muscle Disorder	Type 1: Overexertion-related Muscle Disorder	Type 1A: Fatigue-induced Muscle Disorder
			Type 1B: DOMS
		Type 2: Neuromuscular Muscle Disorder	Type 2A: Spine-related Muscle Disorder
			Type 2B: Muscle-related Muscle Disorder
	Structural Muscle Injury	Type 3: Partial Muscle Tear	Type 3A: Minor Partial Muscle Tear
			Type 3B: Moderate Partial Muscle Tear
Type 4: (Sub)Total Tear		Subtotal or Complete Muscle Tear Tendinous Avulsion	
B. Direct Muscle Injury		Contusion	
		Laceration	

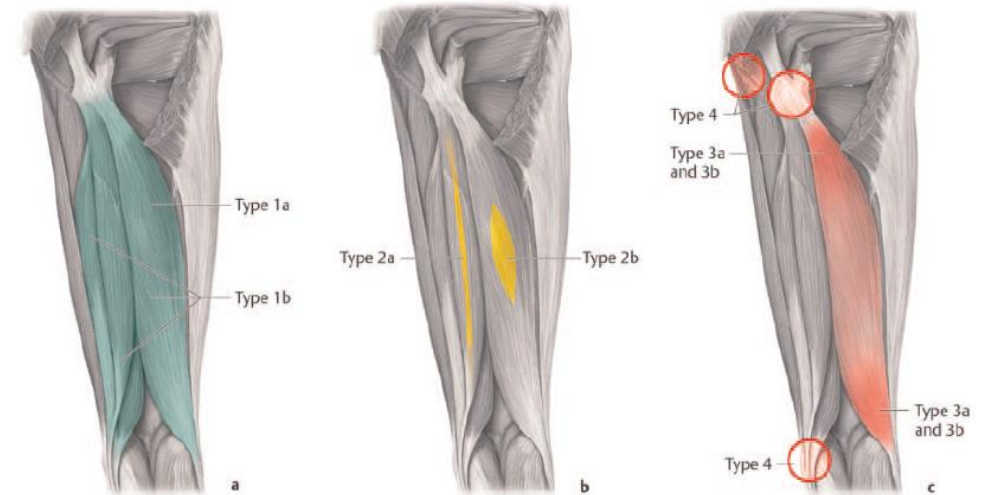
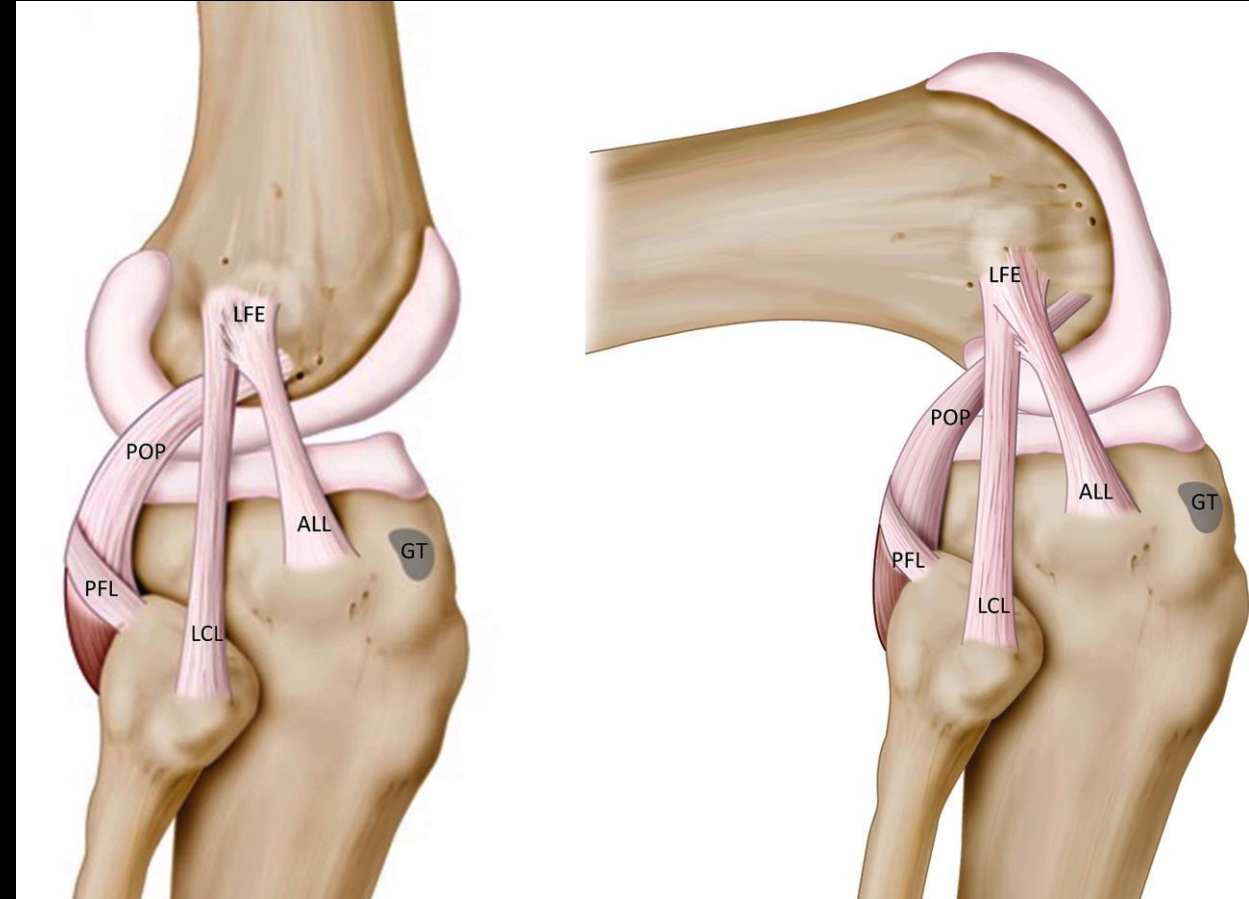
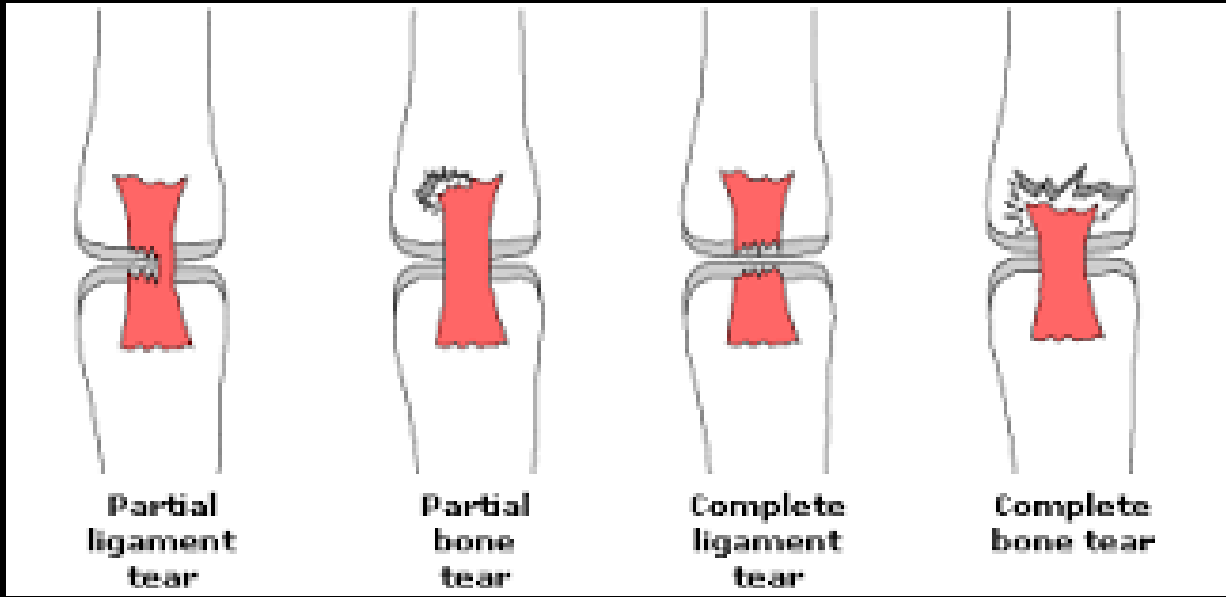
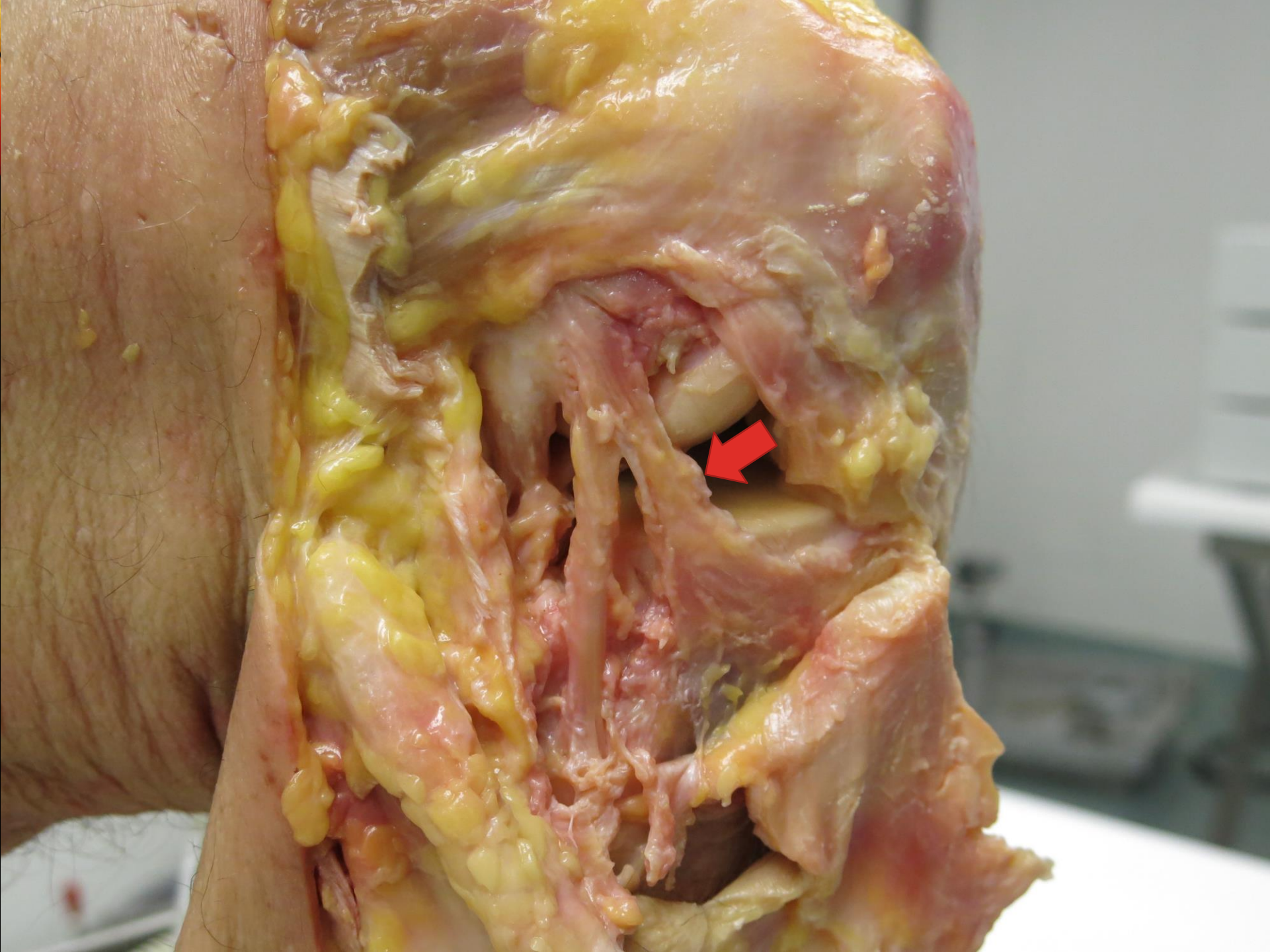
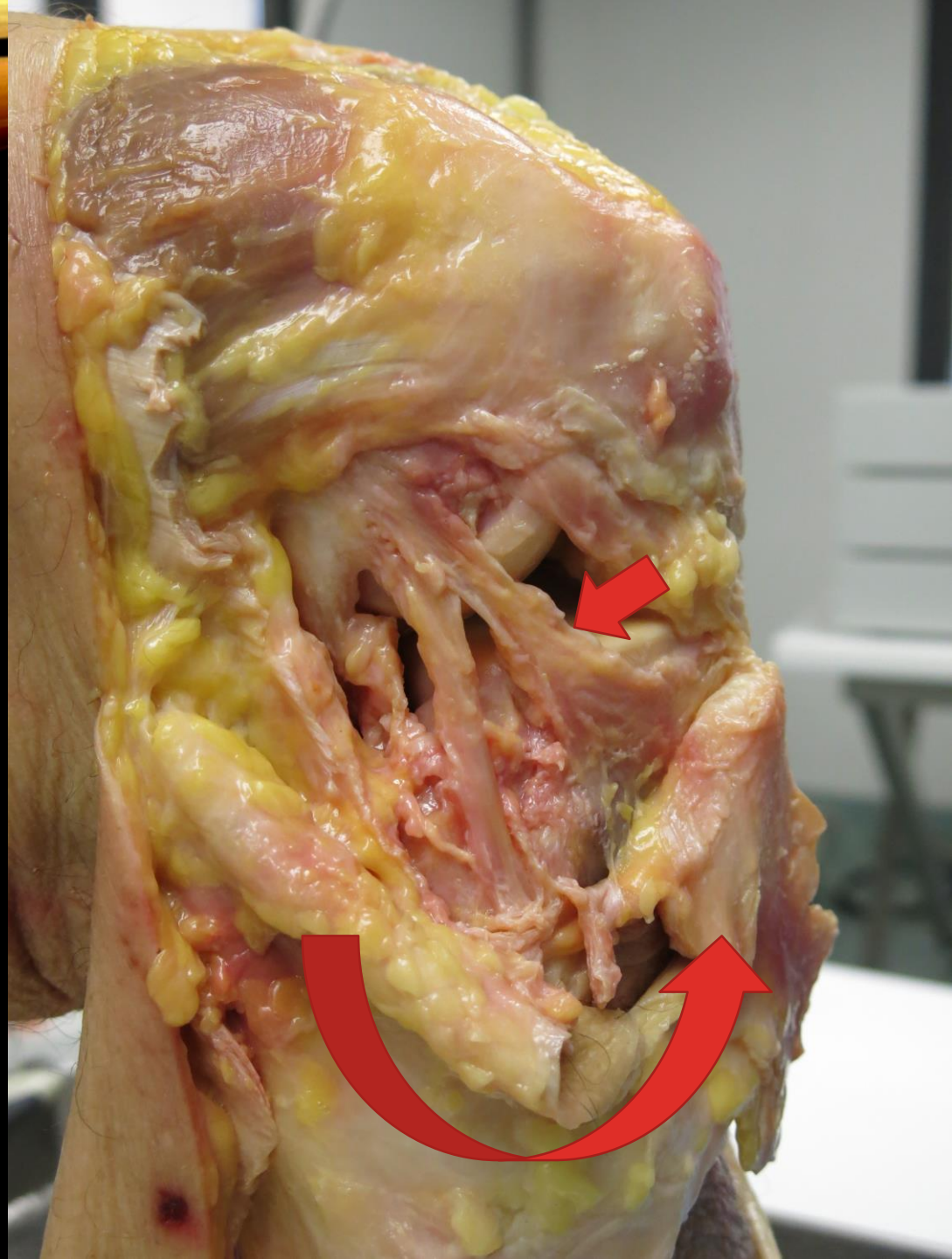


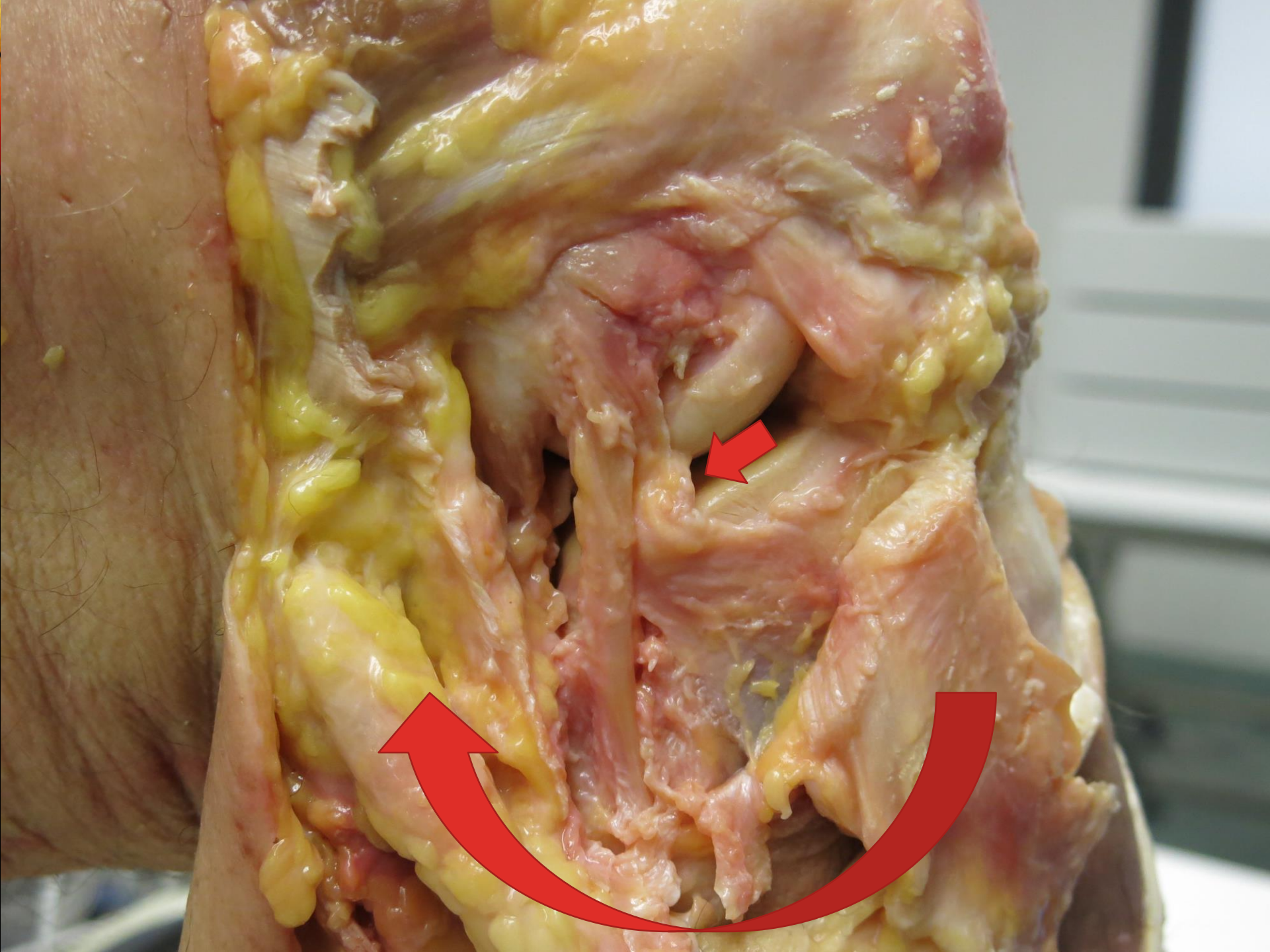
Figure 1 Anatomic illustration of the location and extent of *functional* and *structural muscle injuries* (eg, hamstrings). (A) Overexertion-related muscle disorders, (B) Neuromuscular muscle disorders, (C) Partial and (sub)total muscle tears (from Thieme Publishers, Stuttgart; planned to be published. Reproduced with permission.). This figure is only reproduced in colour in the online version.

Lesioni Legamentose del Ginocchio



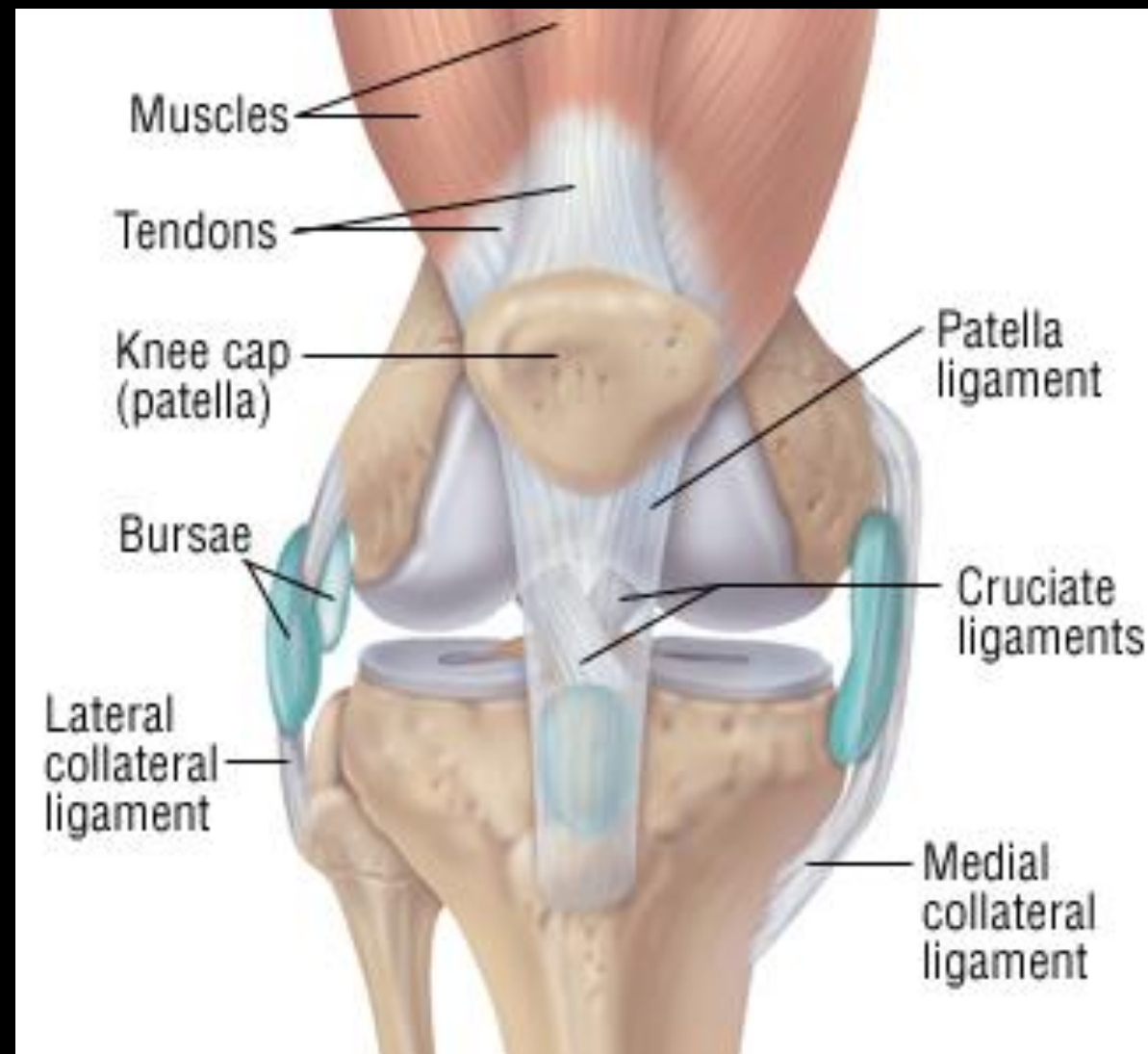




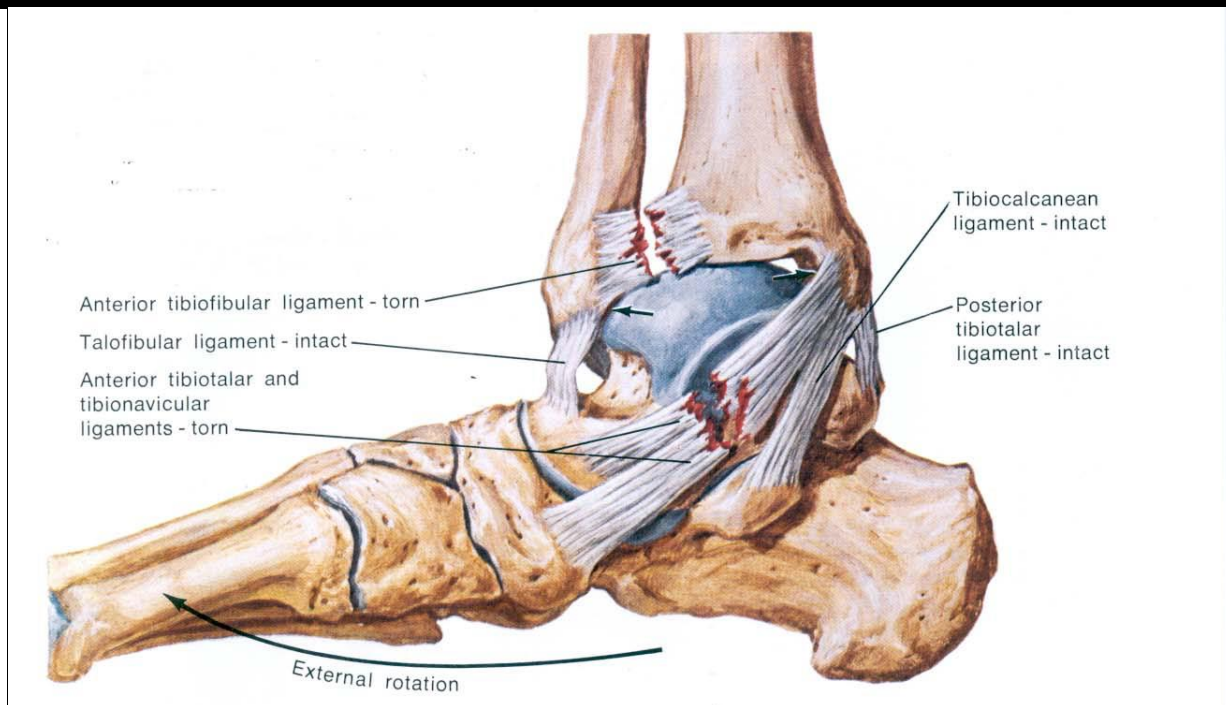
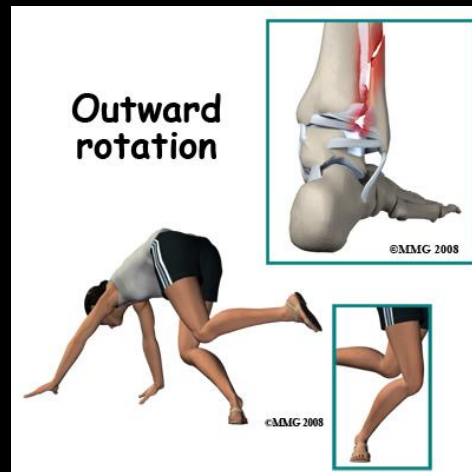
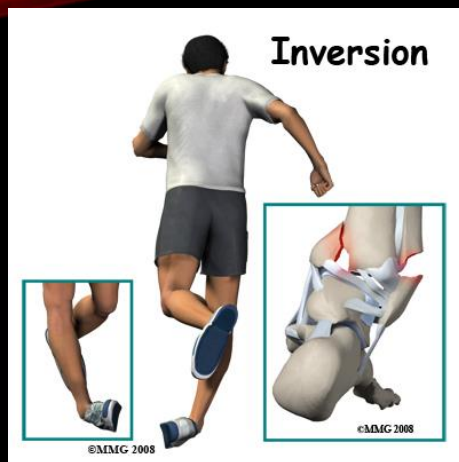


Lesioni Legamentose del Ginocchio

- **LCL** – TRAUMA IN VARO
- **LCM** – TRAUMA IN VALGO
- **LCA** + ALL – TRAUMA A GINOCCHIO FLESSO E INTRAROTAZIONE
- **LCP** – TRAUMA IN IPERESTENSIONE



Lesioni Legamentose della Caviglia

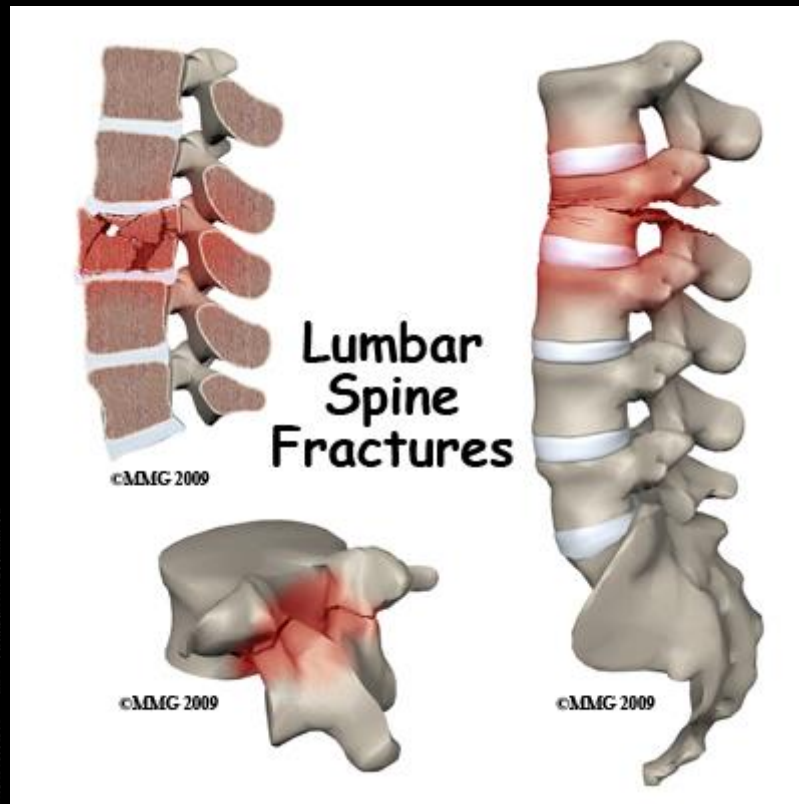


Lombalgia

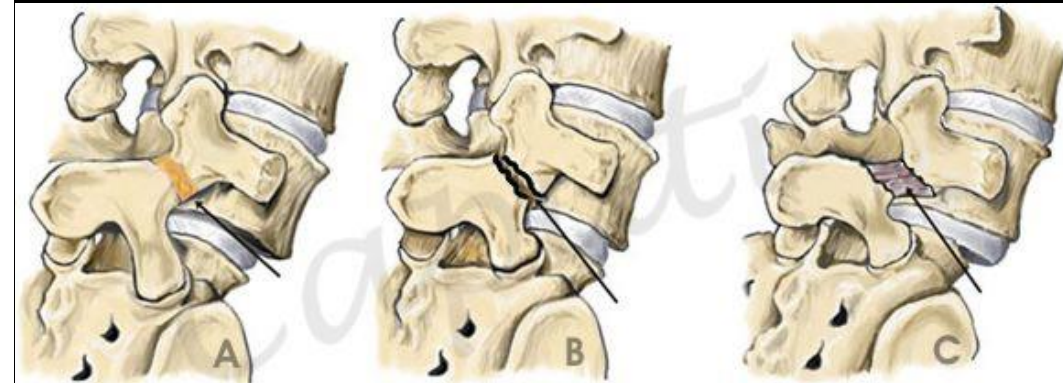
Compressione nervosa



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Spondilolisi - Spondilolistesi



Tensione Muscolare?



Grazie per l'attenzione!!

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