

KEMİKLER HAKKINDA GENEL BİLGİLER

Dr. Selçuk TUNALI
TOBB ETÜ, 25 Eylül 2014

MOORE

Clinically Oriented ANATOMY

Seventh Edition

Keith L. Moore
Arthur F. Dalley
Anne M.R. Agur

Wolters Kluwer | Lippincott Williams & Wilkins





Fonksiyonel

ANATOMİ

Ekstremiteler ve Sırt Bölgesi

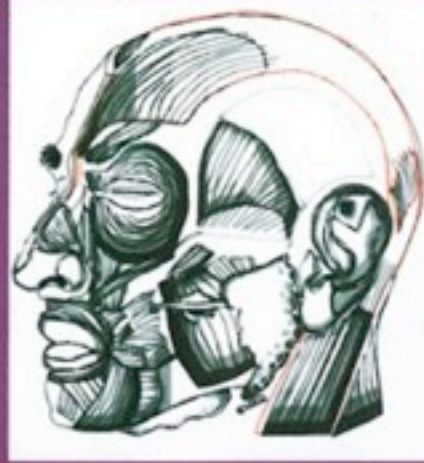
Altıncı Baskı

Editor
Prof. Dr. Dogan Taner



FONKSİYONEL

ANATOMİ

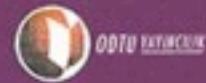
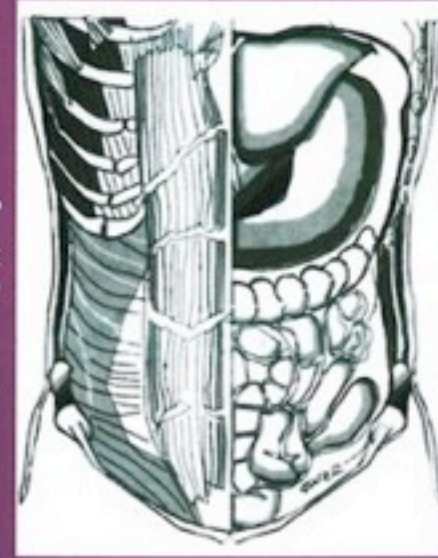


Baş-Boyun
ve
İç Organlar

DÖRDÜNCÜ BASKI

Editörler

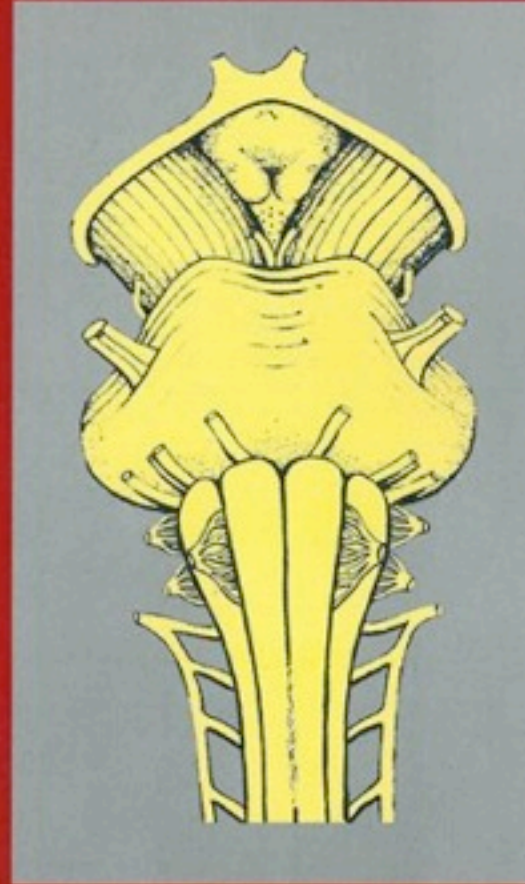
Prof. Dr. Bedi Sancak
Prof. Dr. Meserret Cumhur



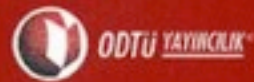
FONKSİYONEL

NÖROANATOMİ

ON İKİNCİ BASKI



Editör
Prof. Dr. Doğan Taner



ANATOMİ

1. Cilt

- Kemikler
- Eklemler
- Kaslar
- İç Organlar

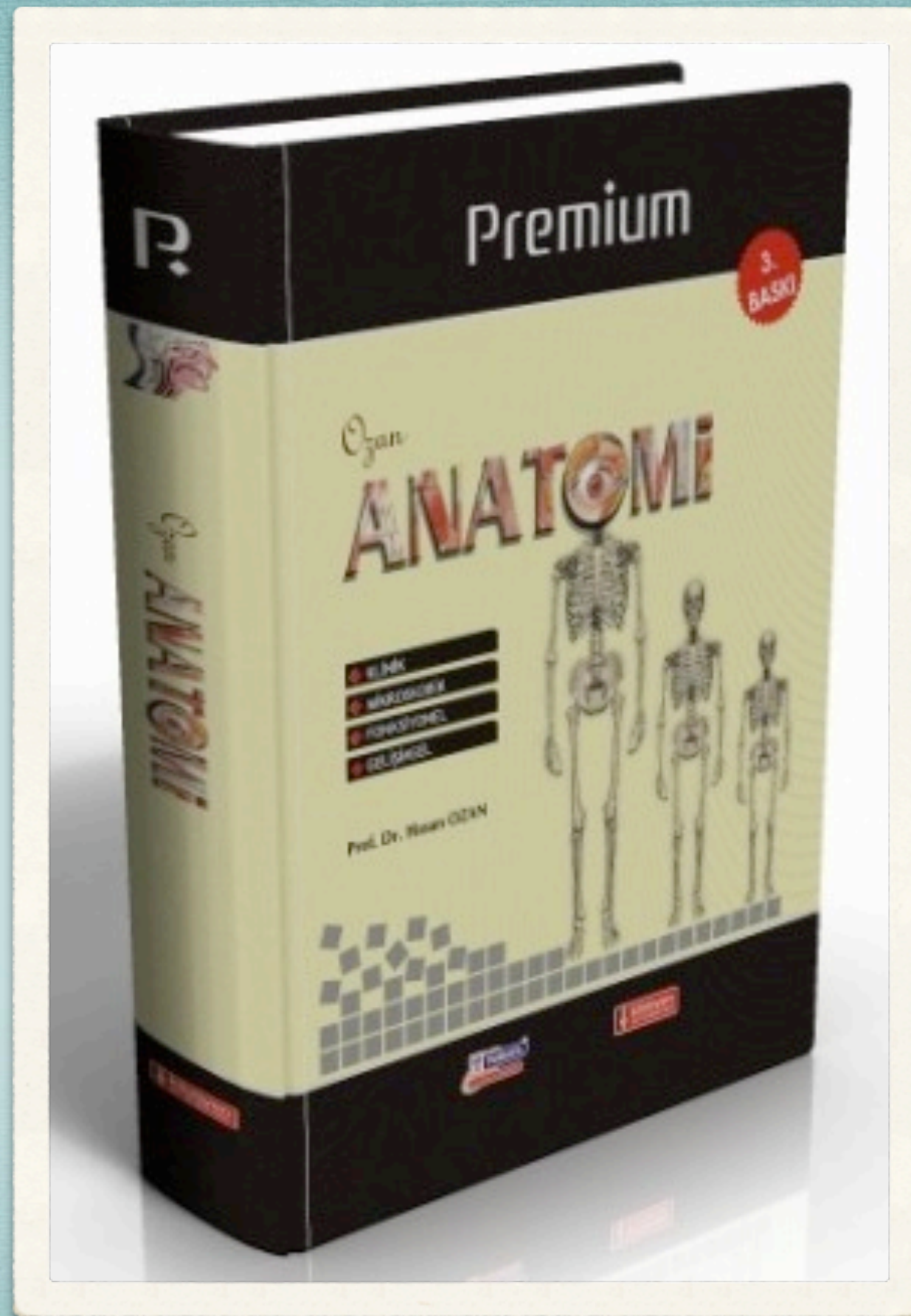


Prof. Dr. Kaplan ARINCI
Prof. Dr. Alaaddin ELHAN



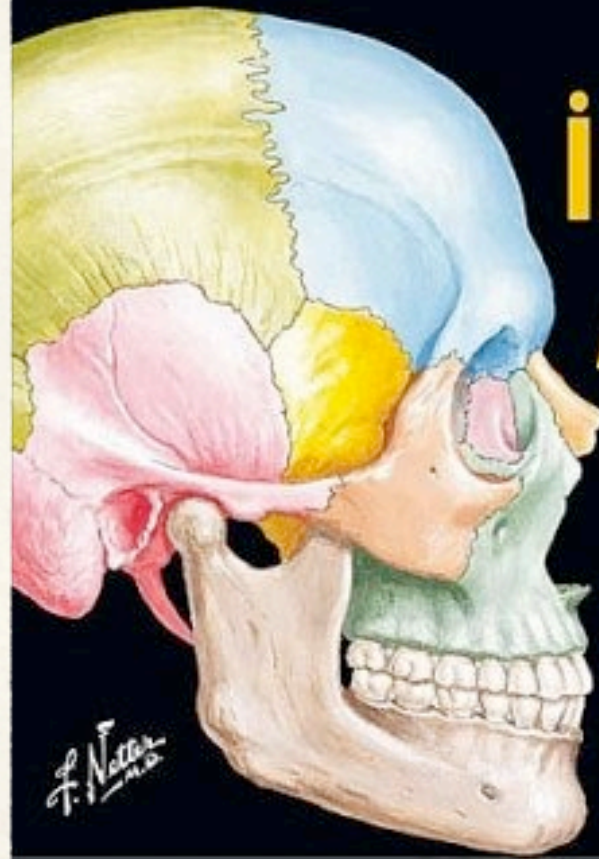
GÜNEŞ TIP
KİTAPEVİ







FRANK H. NETTER, MD



İNSAN ANATOMİSİ ATLASI

5.
BASKI

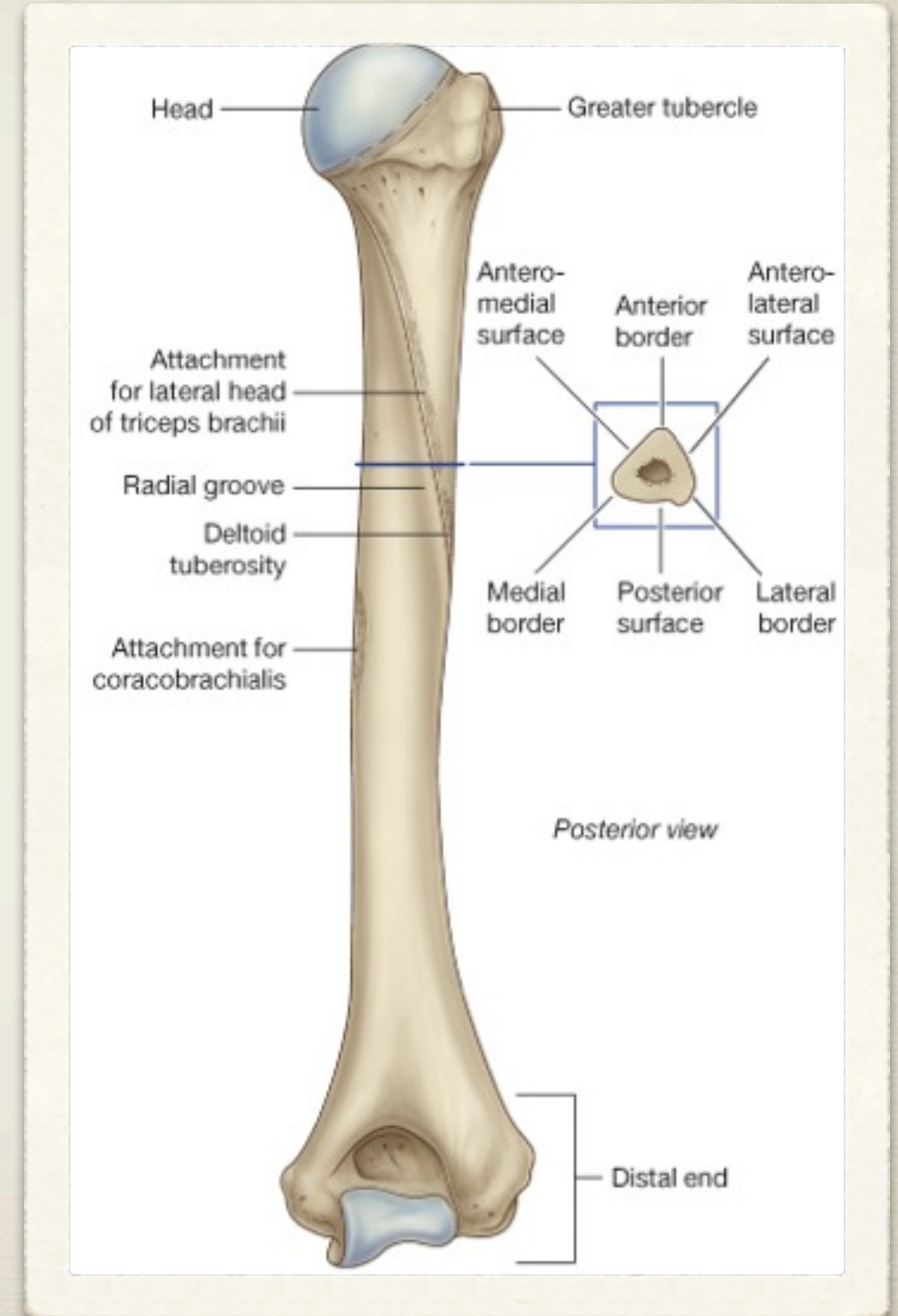
Çeviri Editörü: Prof. Dr. Meserret Cumhur

 **nobel**
tıp kitapları



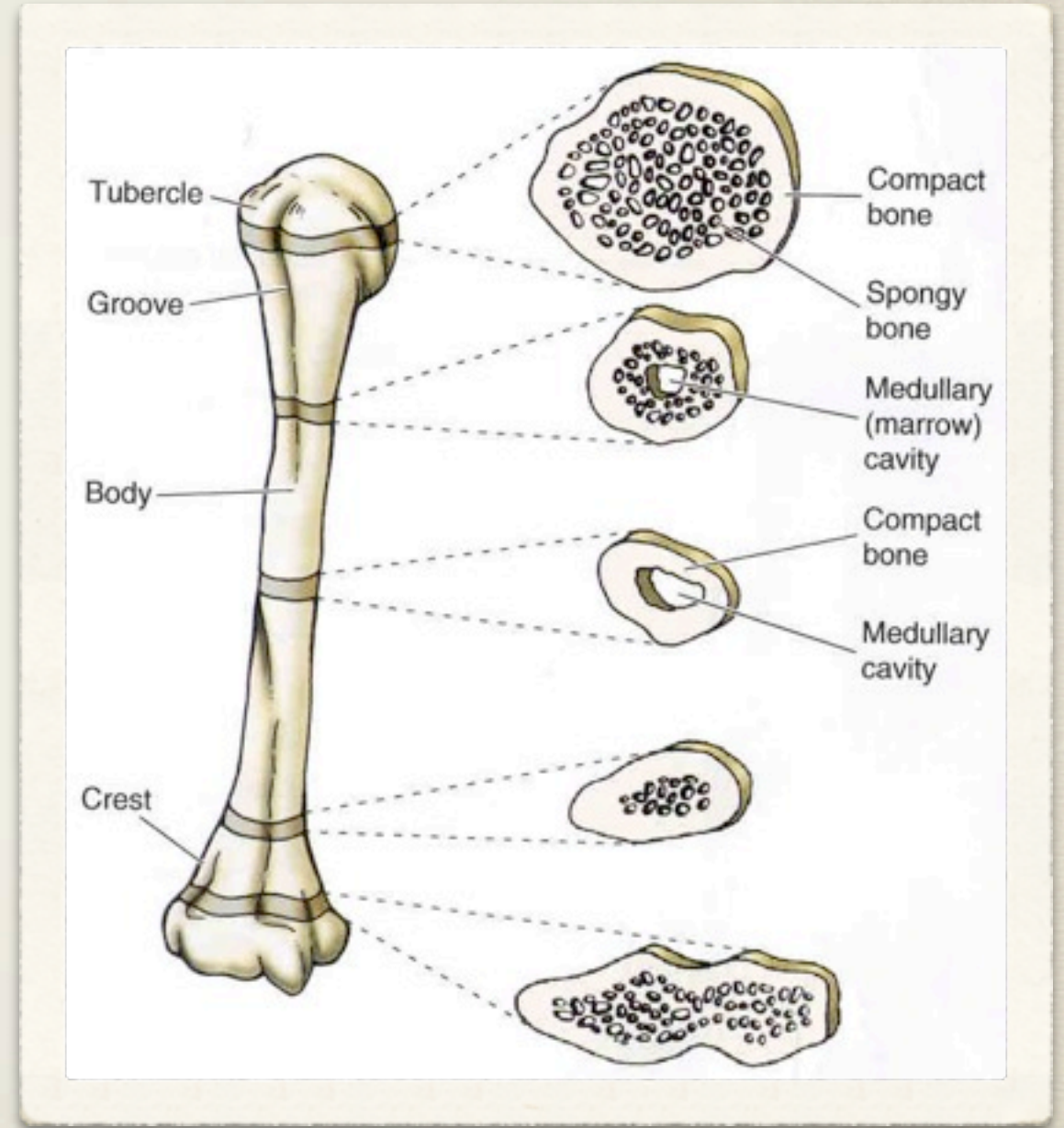
Osteoloji

- * İskelet ve kemik yapıların
- * Yapısı
- * Fonksiyonları
- * *osteo* – kemik
- * *loji* – bilim



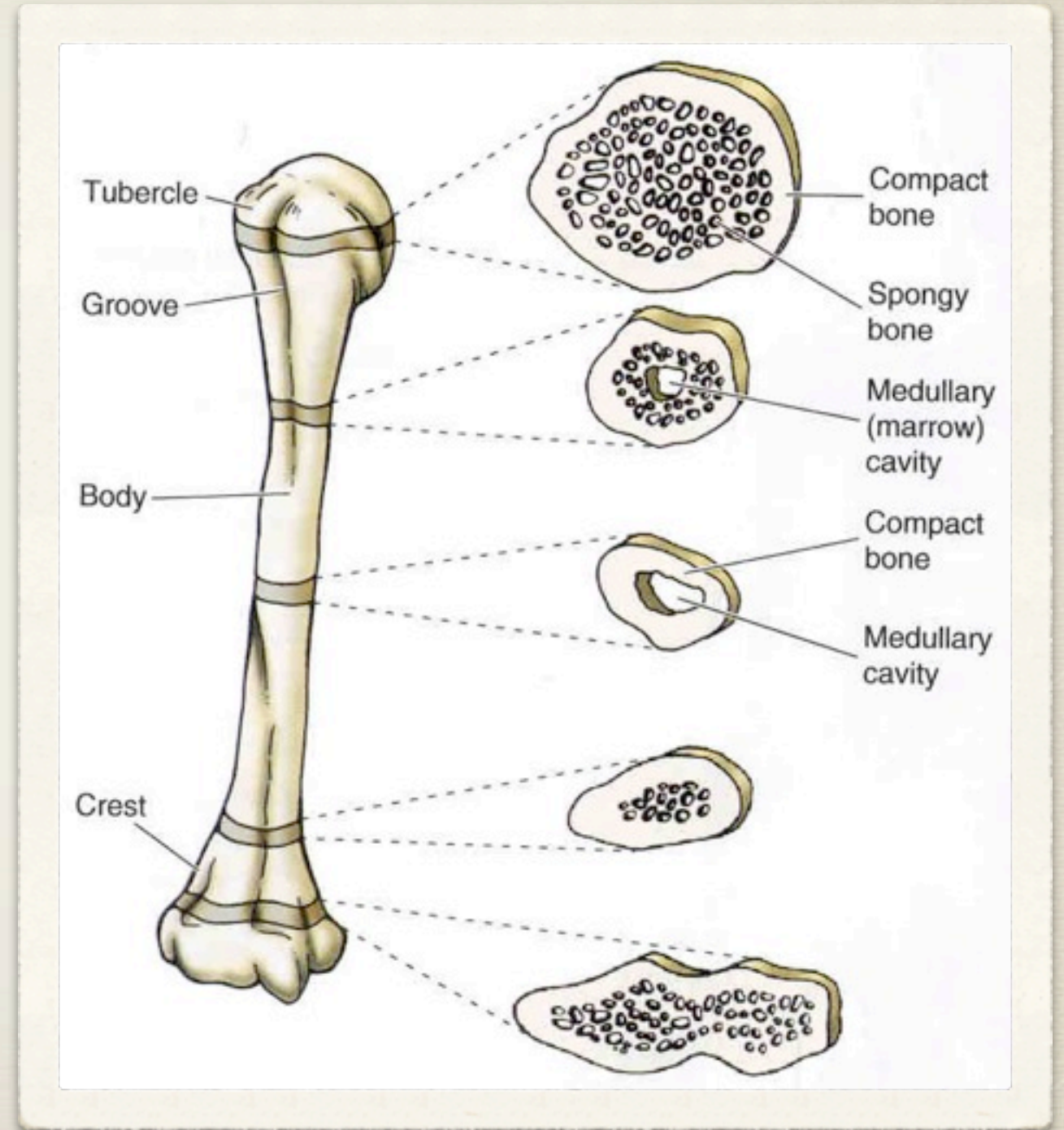
Kemiklerin Fonksiyonları

- * Vücuttaki en önemli destek dokusu
- * Vital yapıların korunması
- * Hareketin mekanik temeli
- * Mineral deposu
- * Kan hücresi üretimi



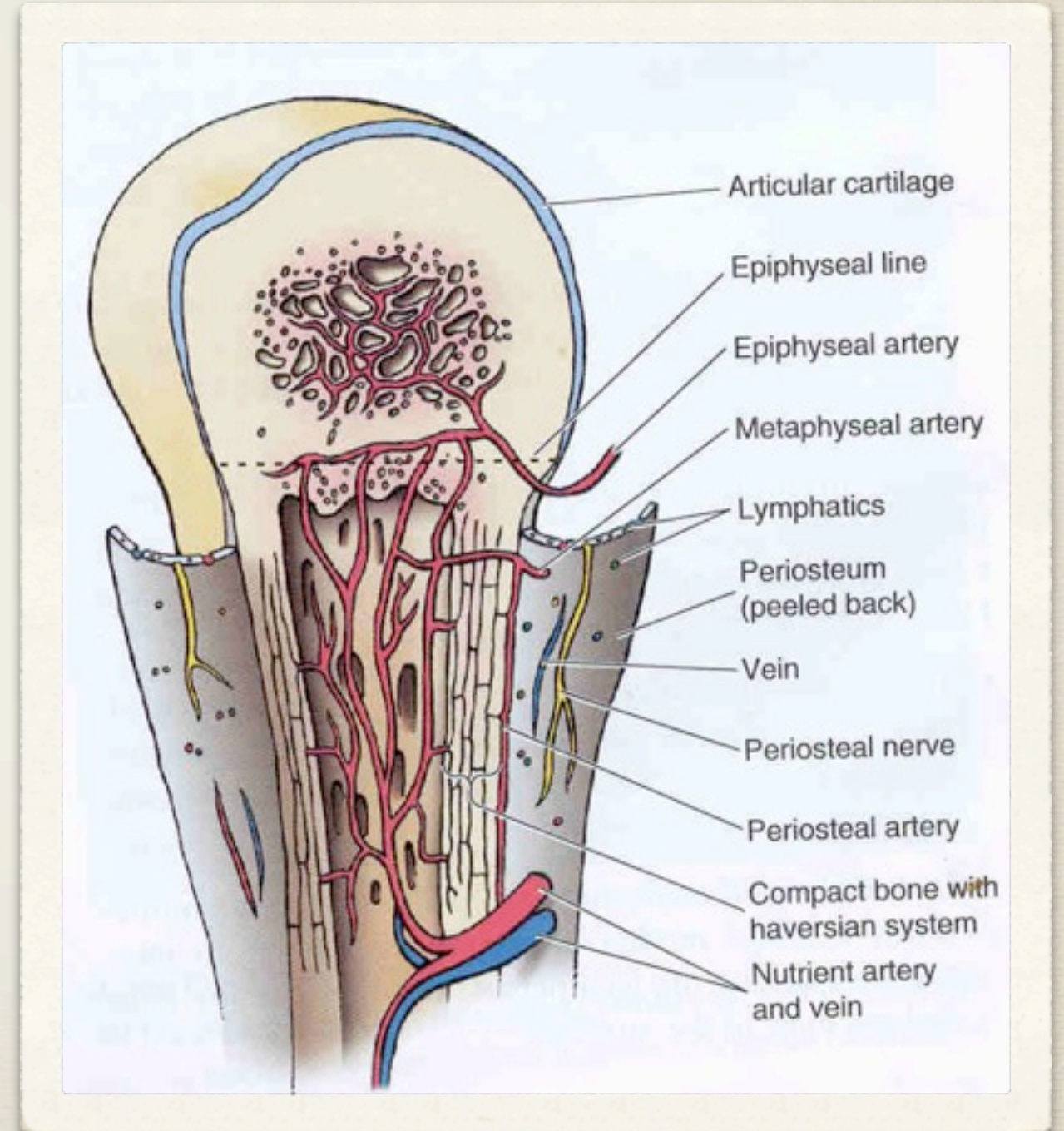
Kemikler

- * Kompakt kemik
- * Süngerimsi kemik
- * Cavitas medullaris
- * Kemik iliği (medulla osseum)
- * Kırmızı (medulla osseum rubra)
- * Sarı (medulla osseum flava)



Periosteum

- * Tüm kemiklerin dış yüzeyini örten membran
- * İzolasyon & koruma
- * Kan ve sinir iletim yolu
- * Kemik büyümesi ve tamiri
- * Kemikleri çevre bağ dokusuna bağlar



Kemikleşme

- * Ossifikasyon

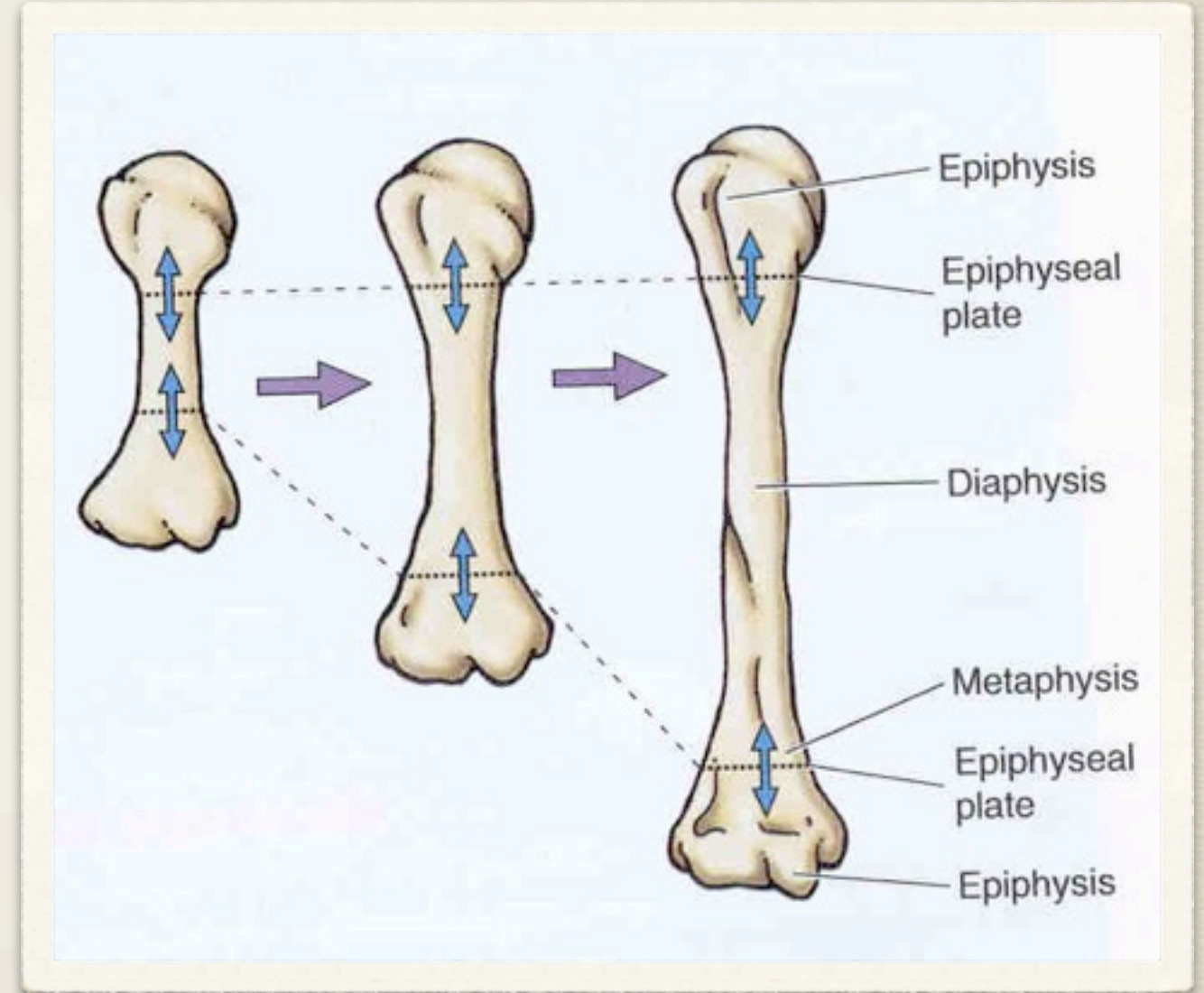
- * Intramembranöz

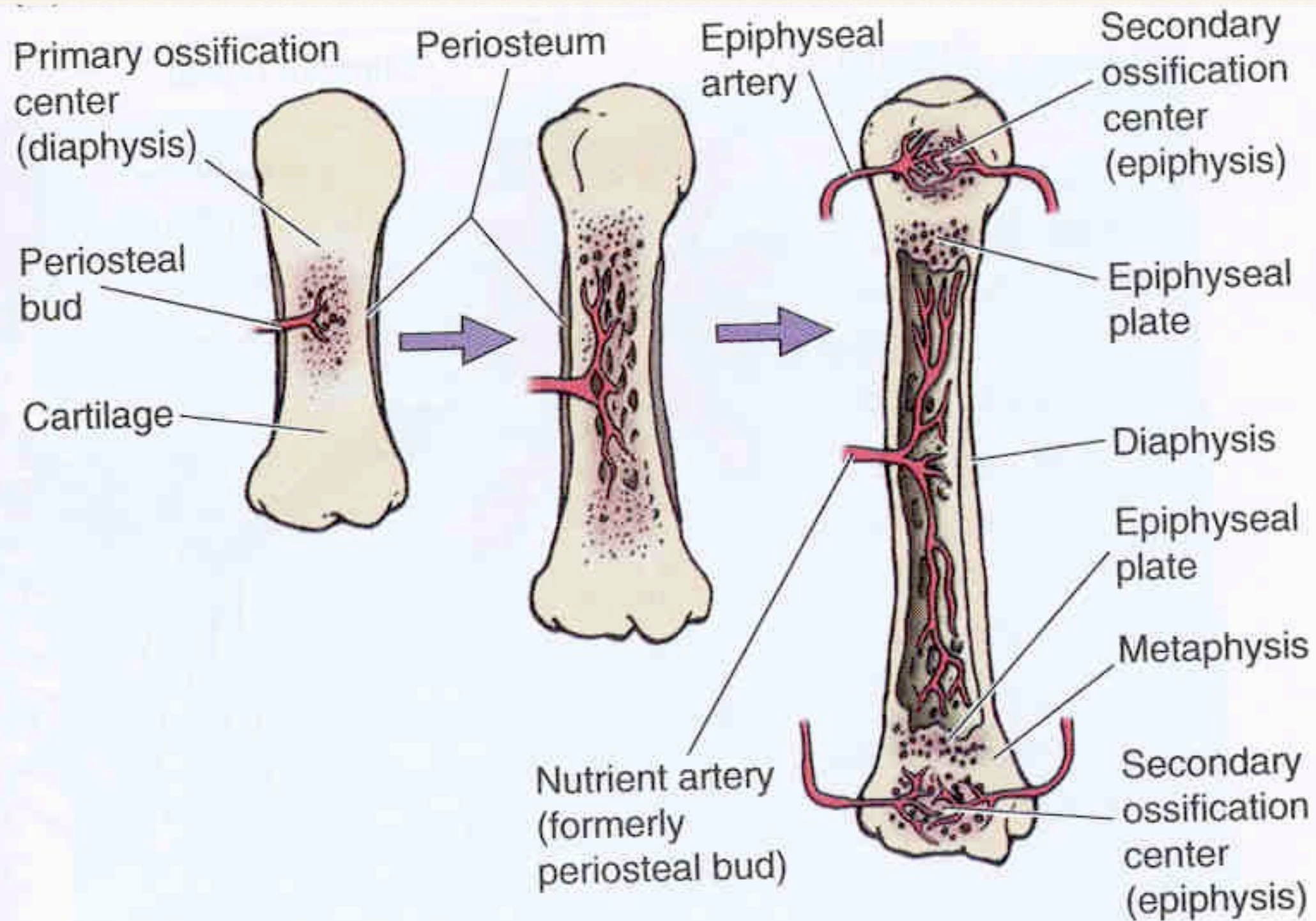
- * Enkondral
(intrakartilaginöz)

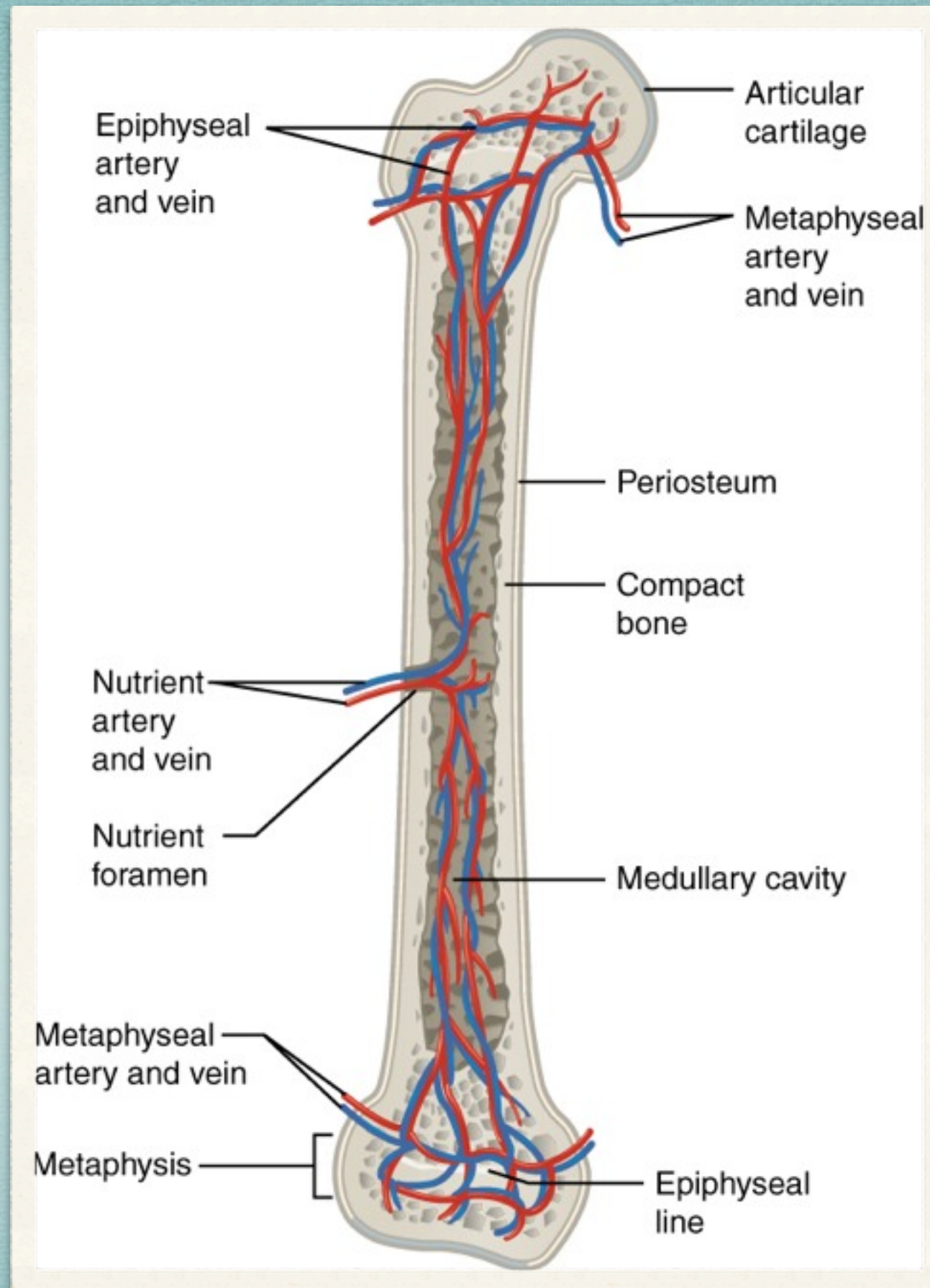
- * Primer ossifikasyon merkezi
(diafiz)

- * Sekonder ossifikasyon
merkezleri (epifiz)

- * Epifiz kıkırdığı (cartilago
epiphysialis)

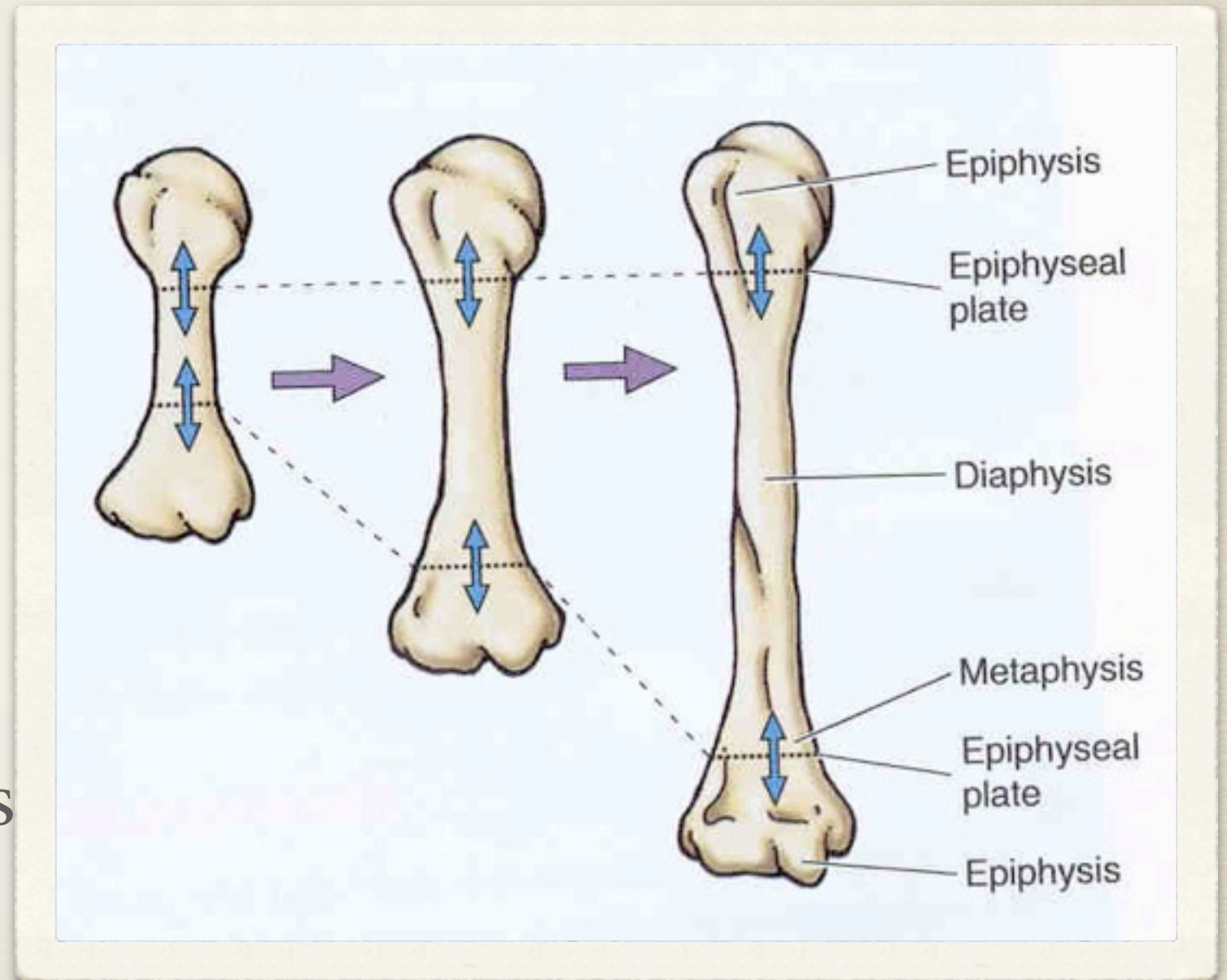


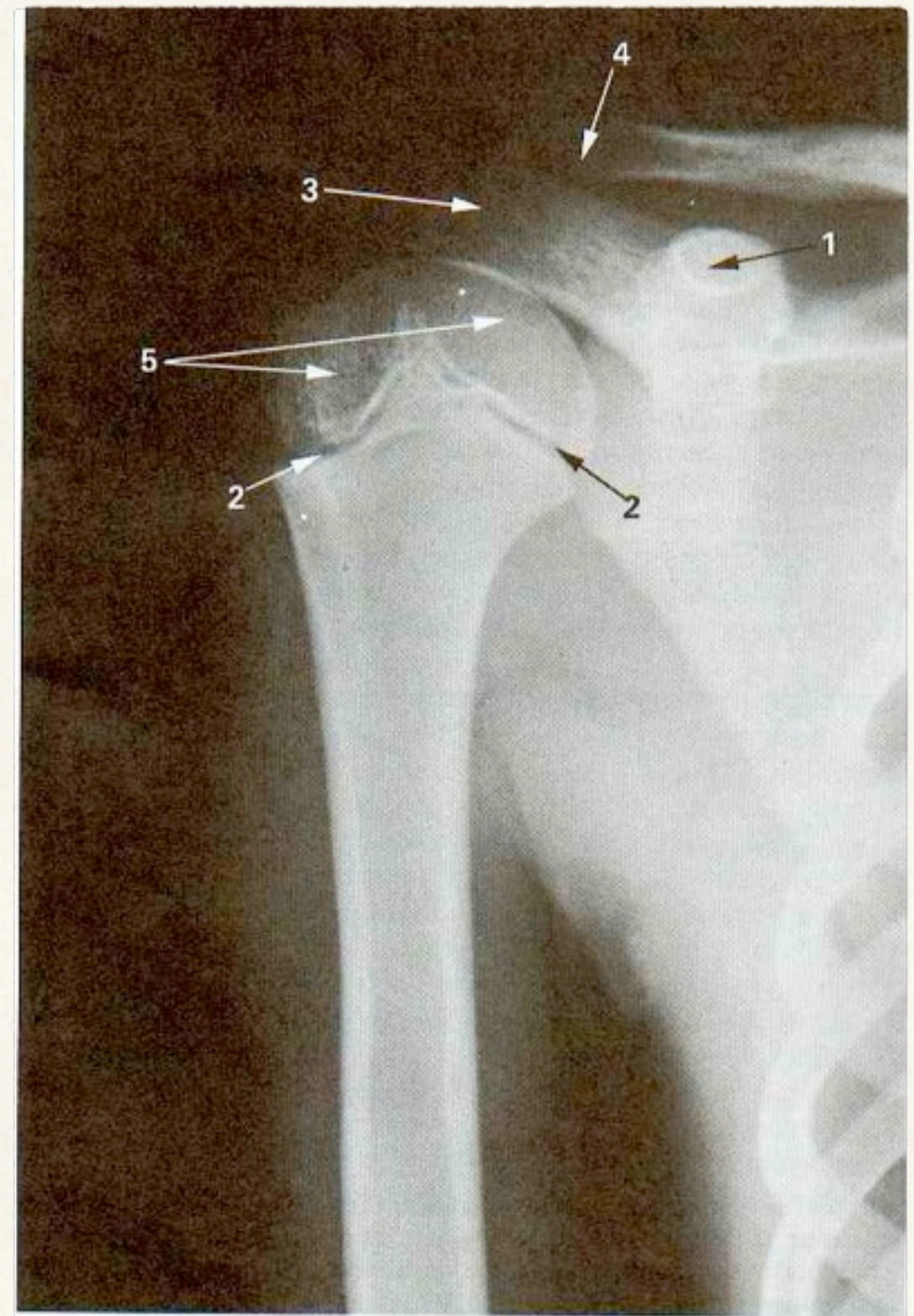
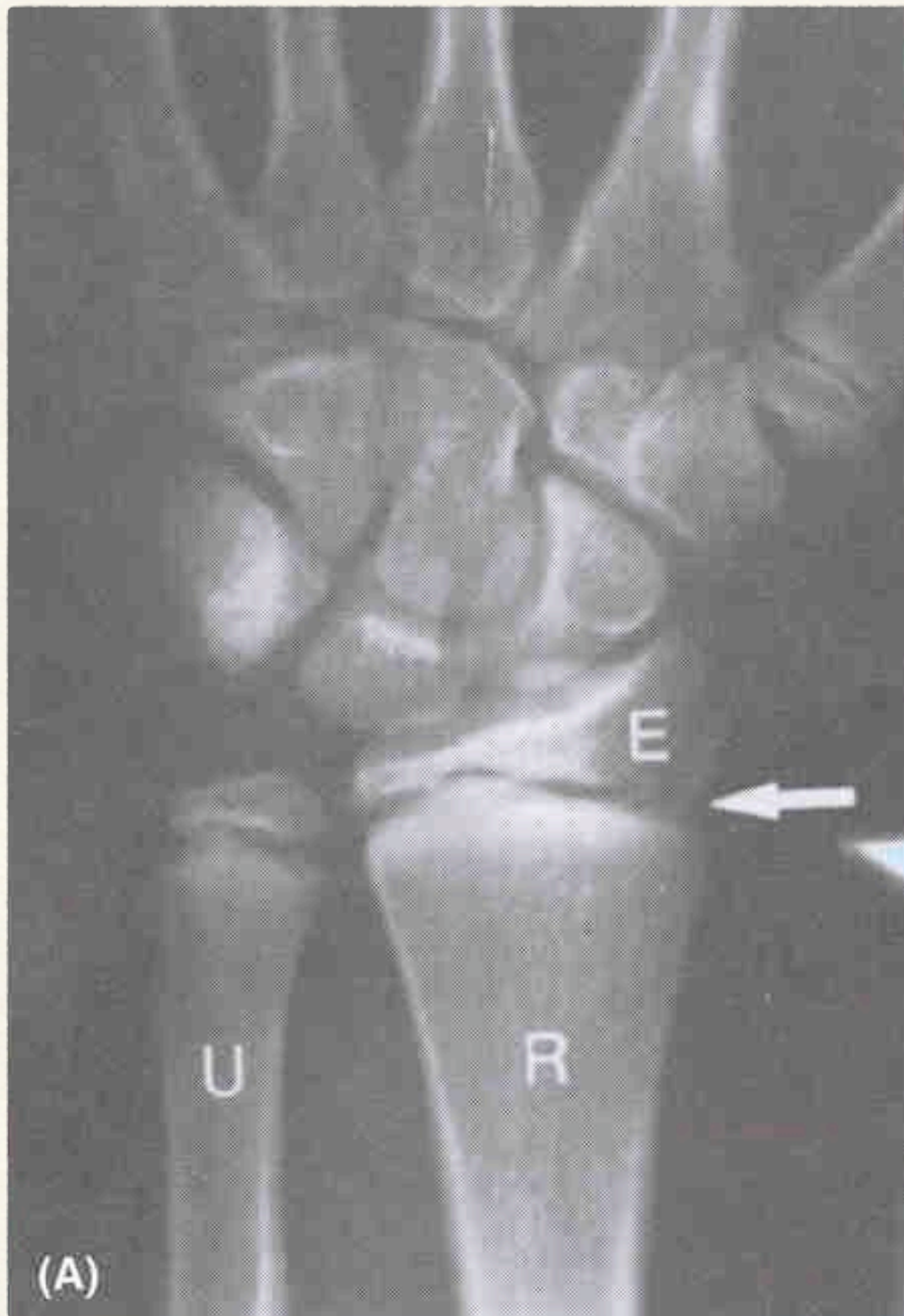




Kemik Büyümesi

- * Diaphysis: gövde
- * Epiphysis: sekonder ossifikasyon merkezi
- * Epifiz plakları
- * Epifiz çizgisi
- * Metaphysis: diaphysis ile epiphysis arası





3.181 Anteroposterior radiograph of the right shoulder in a boy aged 11.
 1. Coracoid process. 2. Growth plate of cartilage at upper end of humeral diaphysis. 3. Acromion. 4. Lateral end of clavicle, not yet completely ossified. 5. Proximal humeral epiphysis. Note its conical junction with the diaphysis.

Erişkin



Fig. 612. X-ray film of the left hand of an adult. The shadow of the pisiform bone is projected on that of the triangular. The soft parts are seen only as faint shadows. The thicker calcium-containing bones appear darker than the thin or calcium-deficient ones. The articular cartilages are not visible.

15,5 yaş

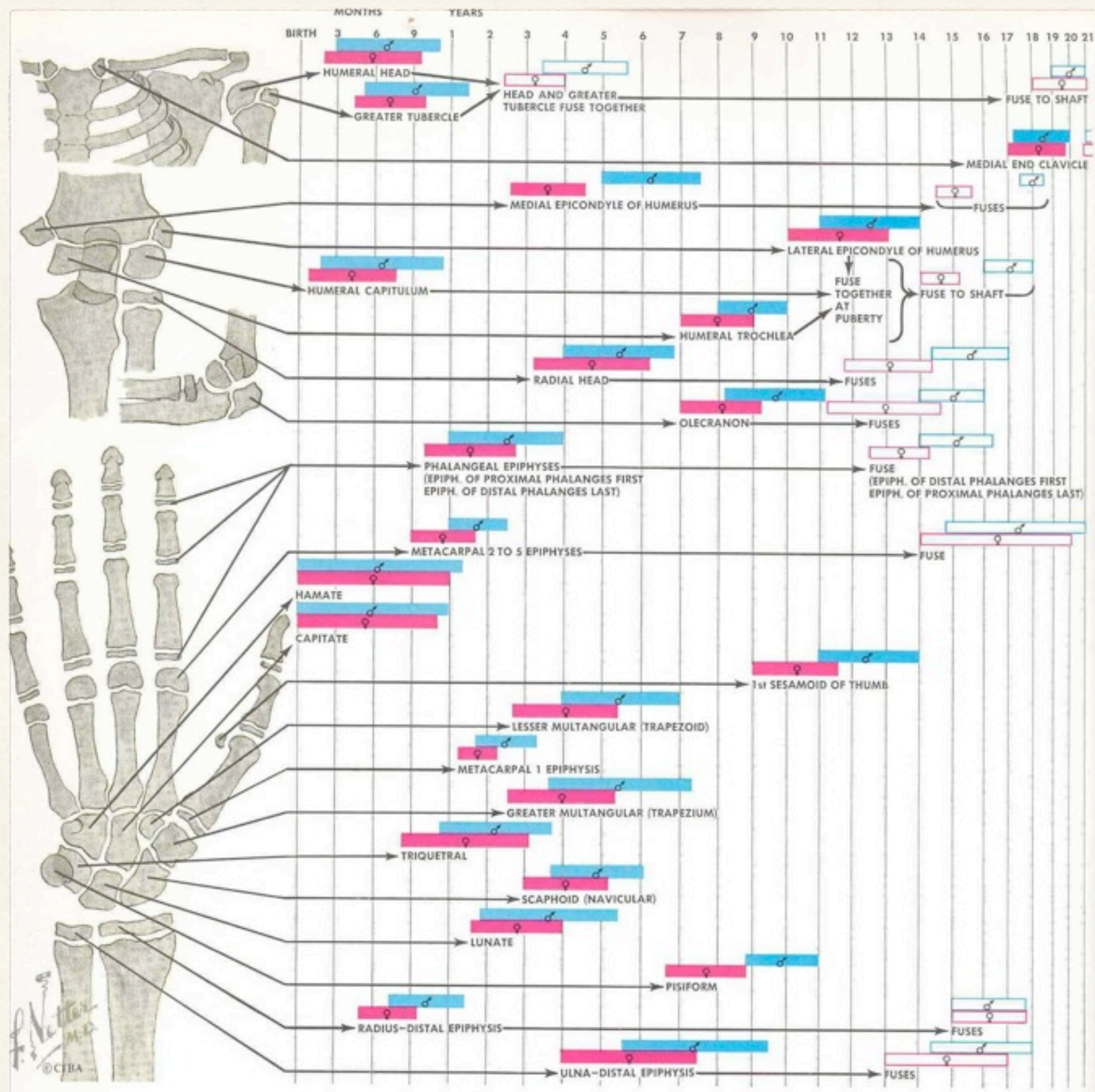


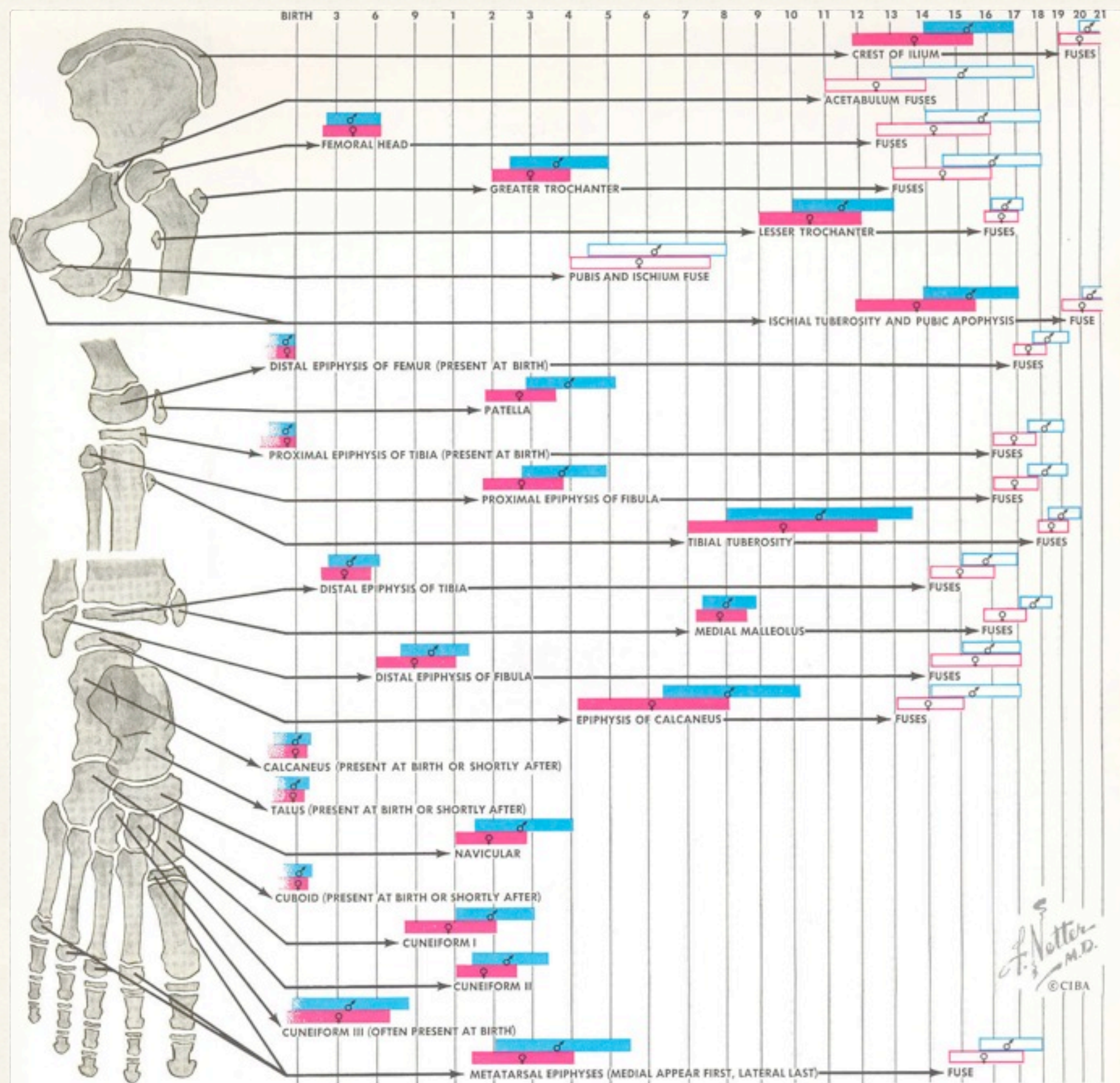
Fig. 613. X-ray film of the left hand of a 15½-year old. The distal epiphyses of the radius and ulna, as well as those of the metacarpals and phalanges, are not yet united with their respective diaphyses. Note the definite epiphyseal lines.

5,5 yaş



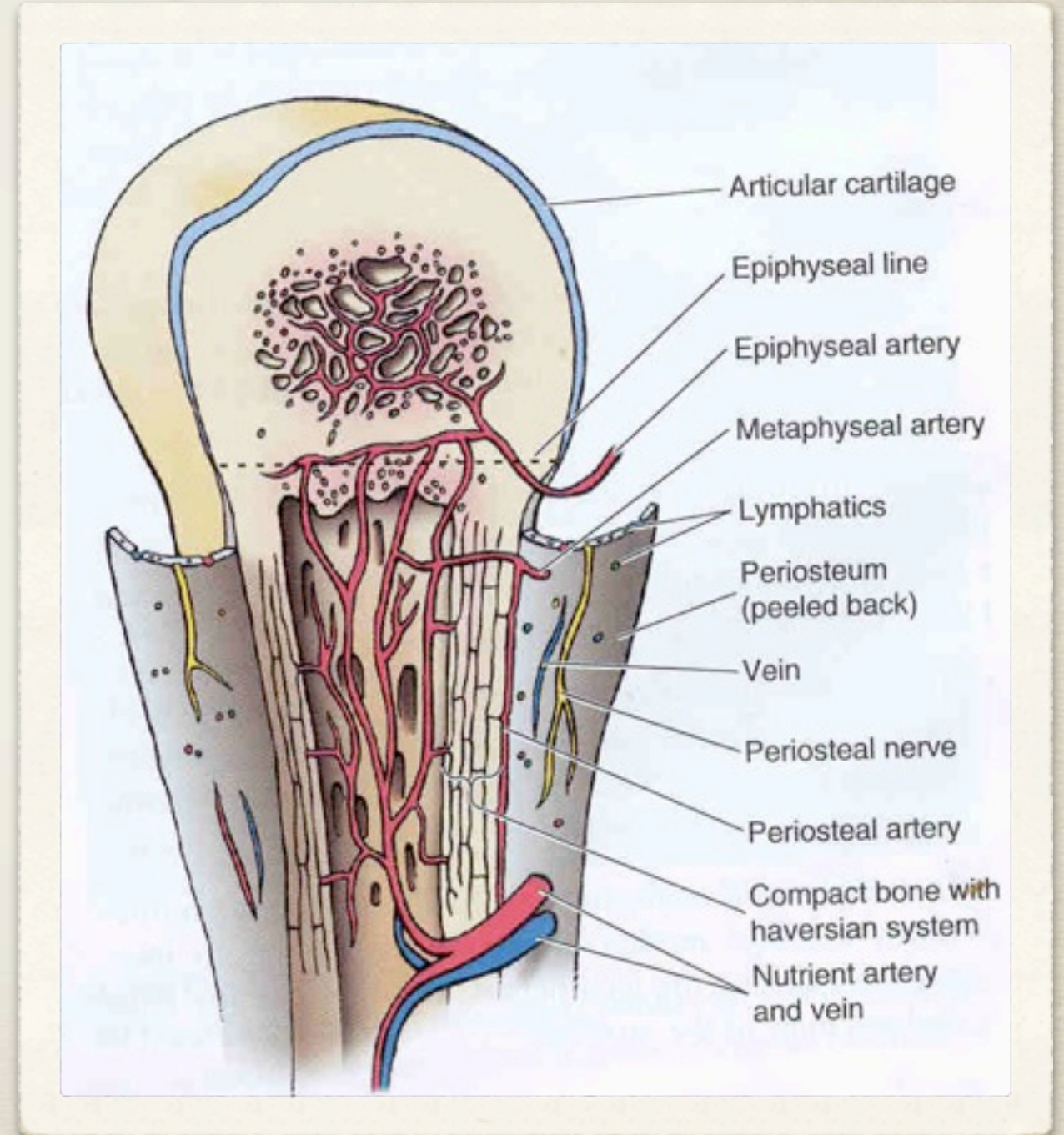
Fig. 614. X-ray film of the hand of a 5½-year old boy. The phalanges of the fingers have only one proximal epiphysis; the metacarpals II-V have only one distal. From this, one can see the metacarpal of the thumb as the proximal phalanx of the thumb. The center of ossification of the trapezoid and lunate bones are still very small; that of the scaphoid is absent. It is, therefore, possible to determine the age of children through investigation of the ossification.





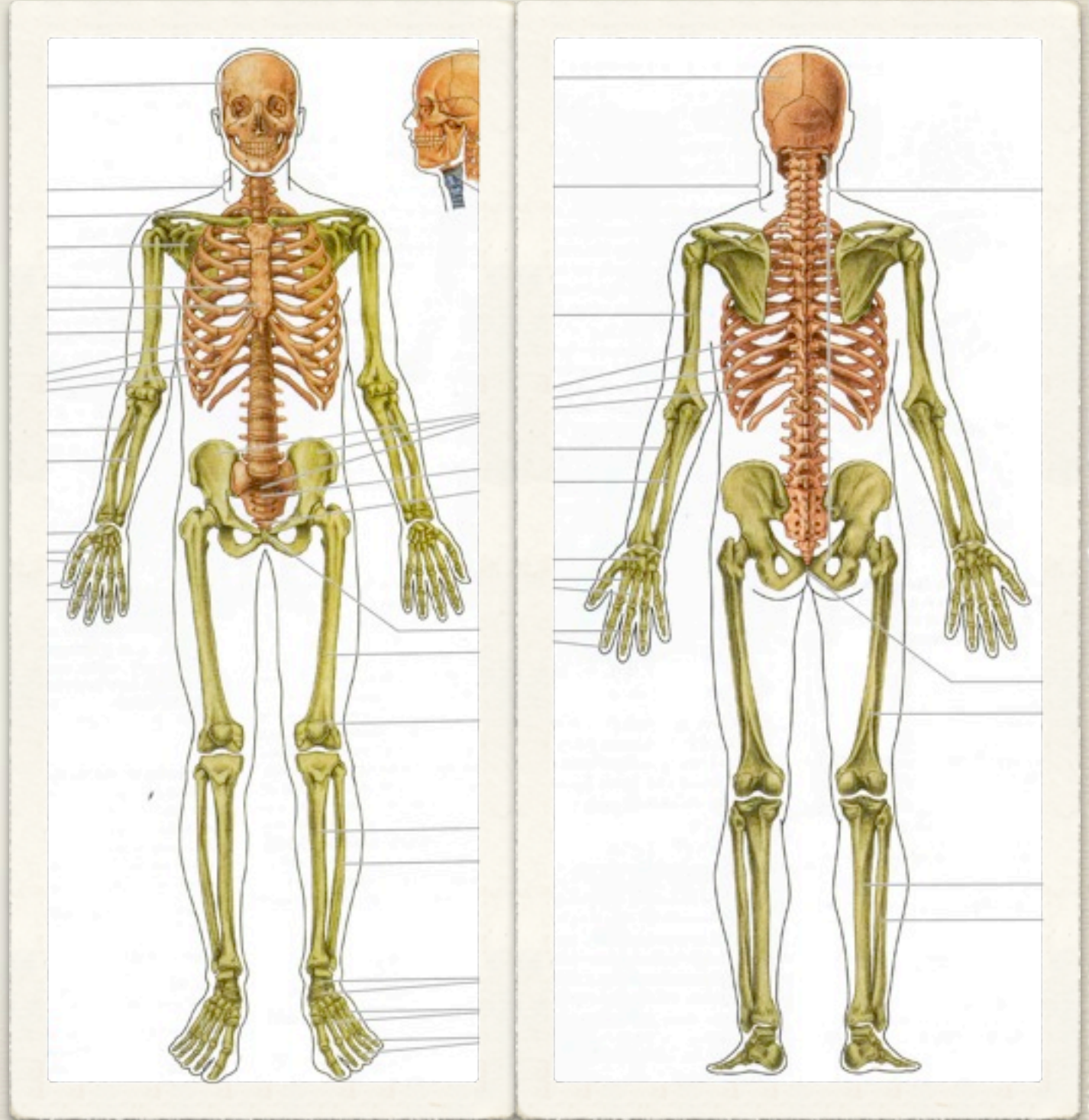
Kemiklerin Damarlanması ve İnervasyonu

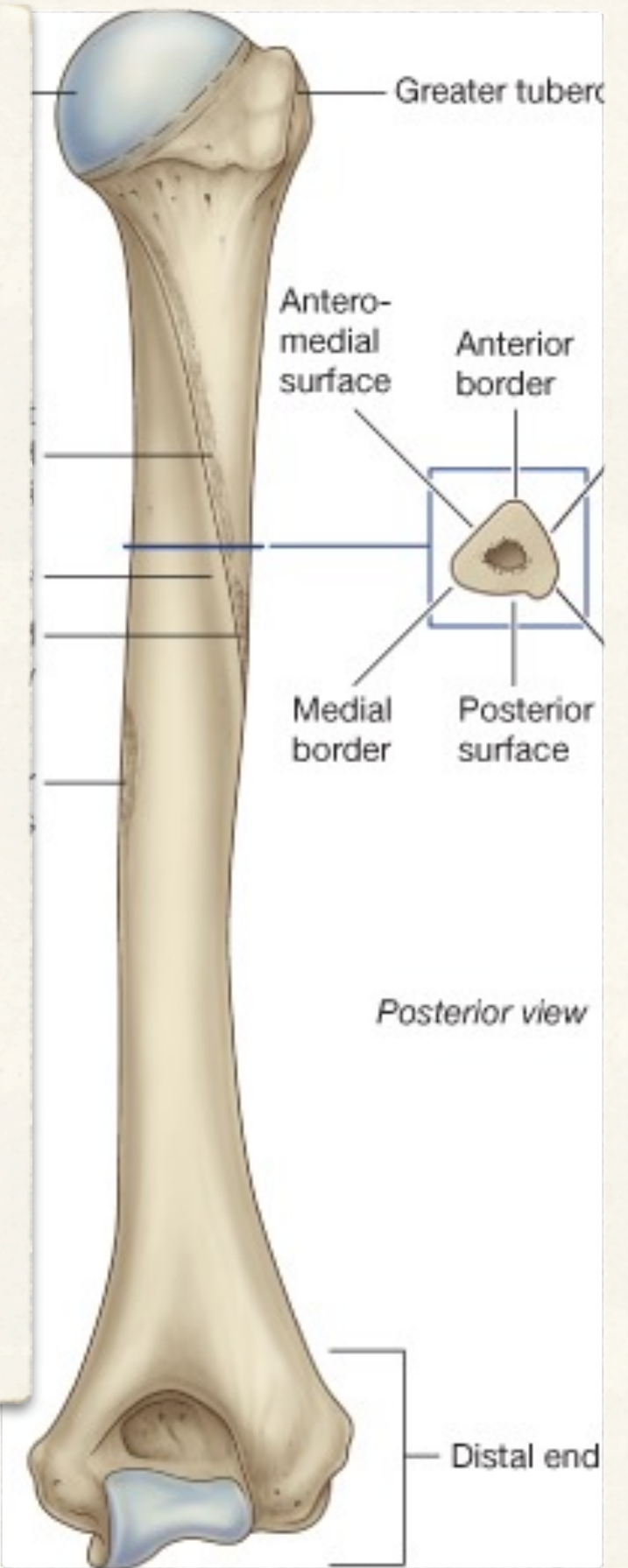
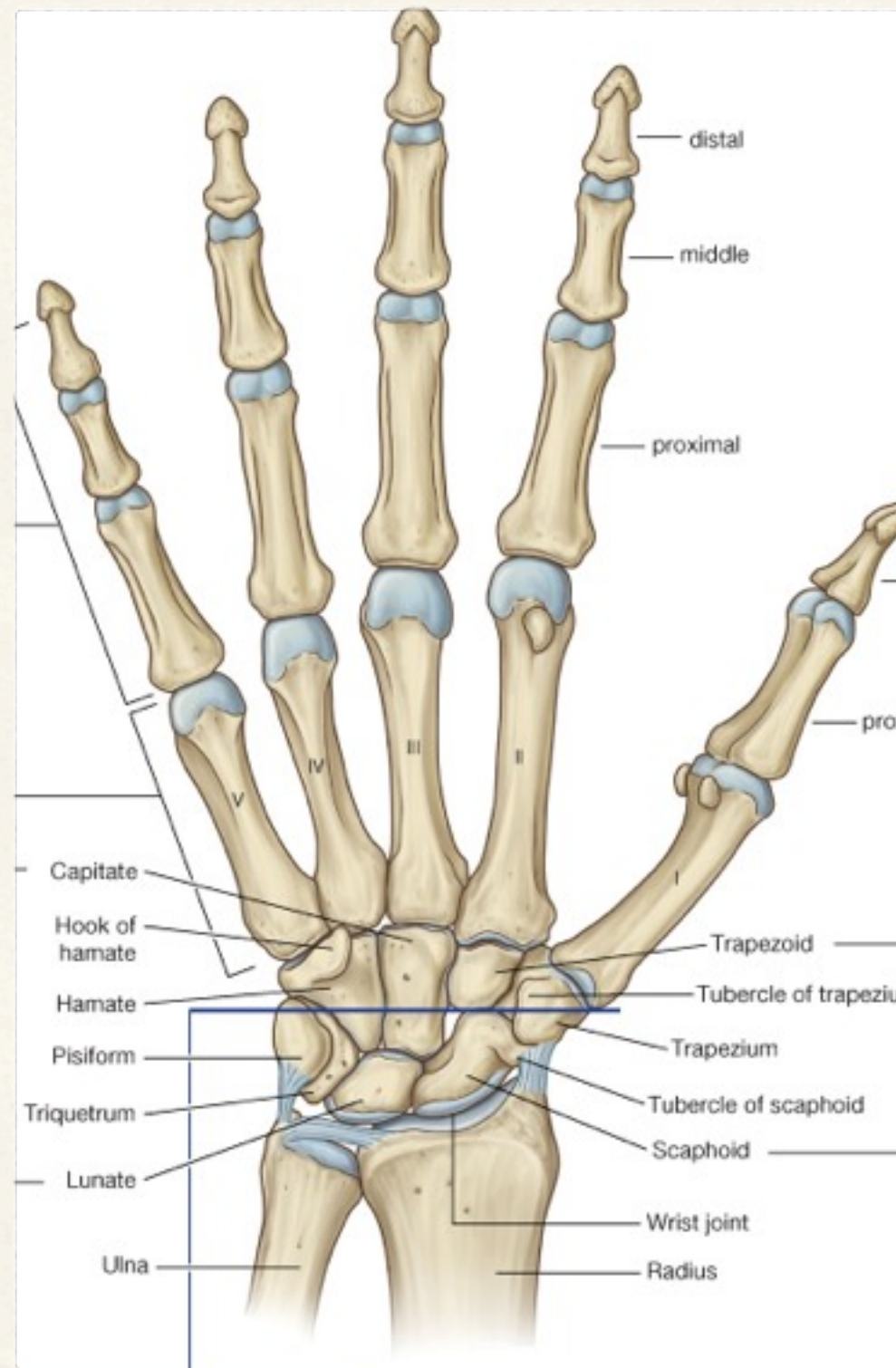
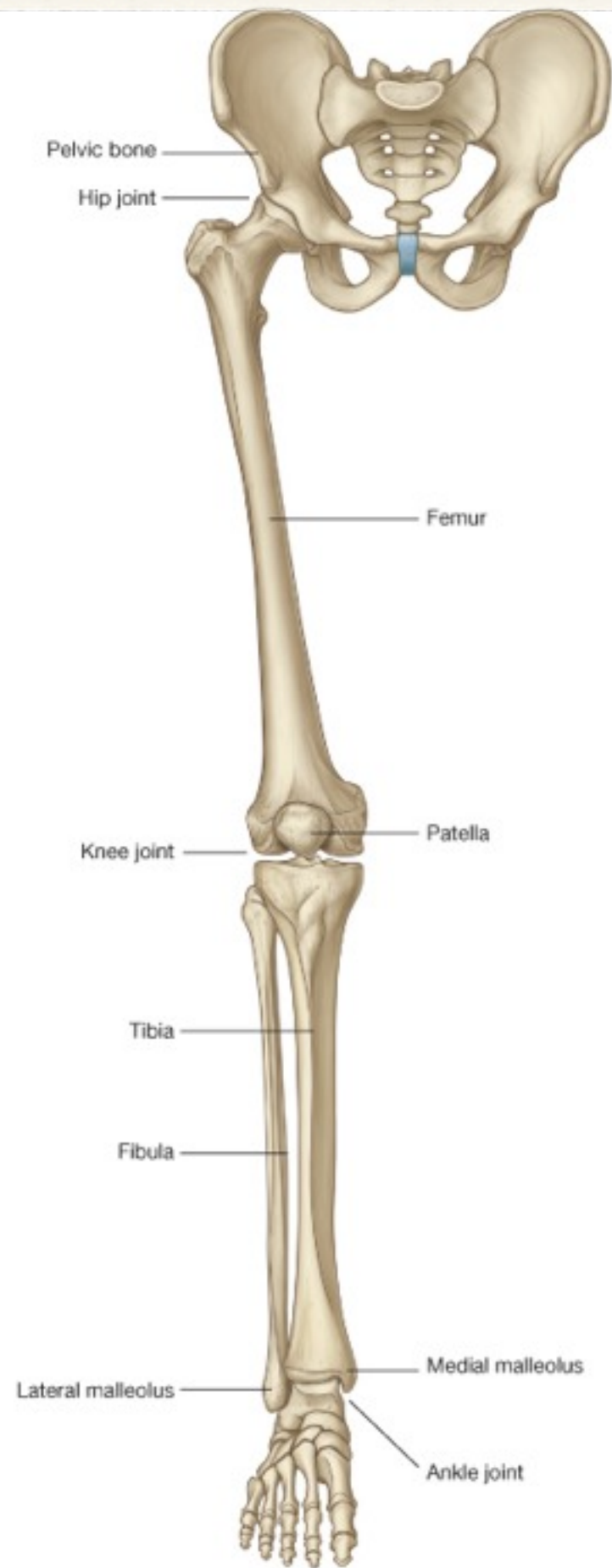
- * Arterler periost yoluyla girer
- * Periosteal arterler
- * Arteria nutriens
- * Epifizeal arterler
- * Metafizeal arterler
- * Periosteal sinirler
 - * Duyu, ağrı
 - * Yırtılma, gerilme



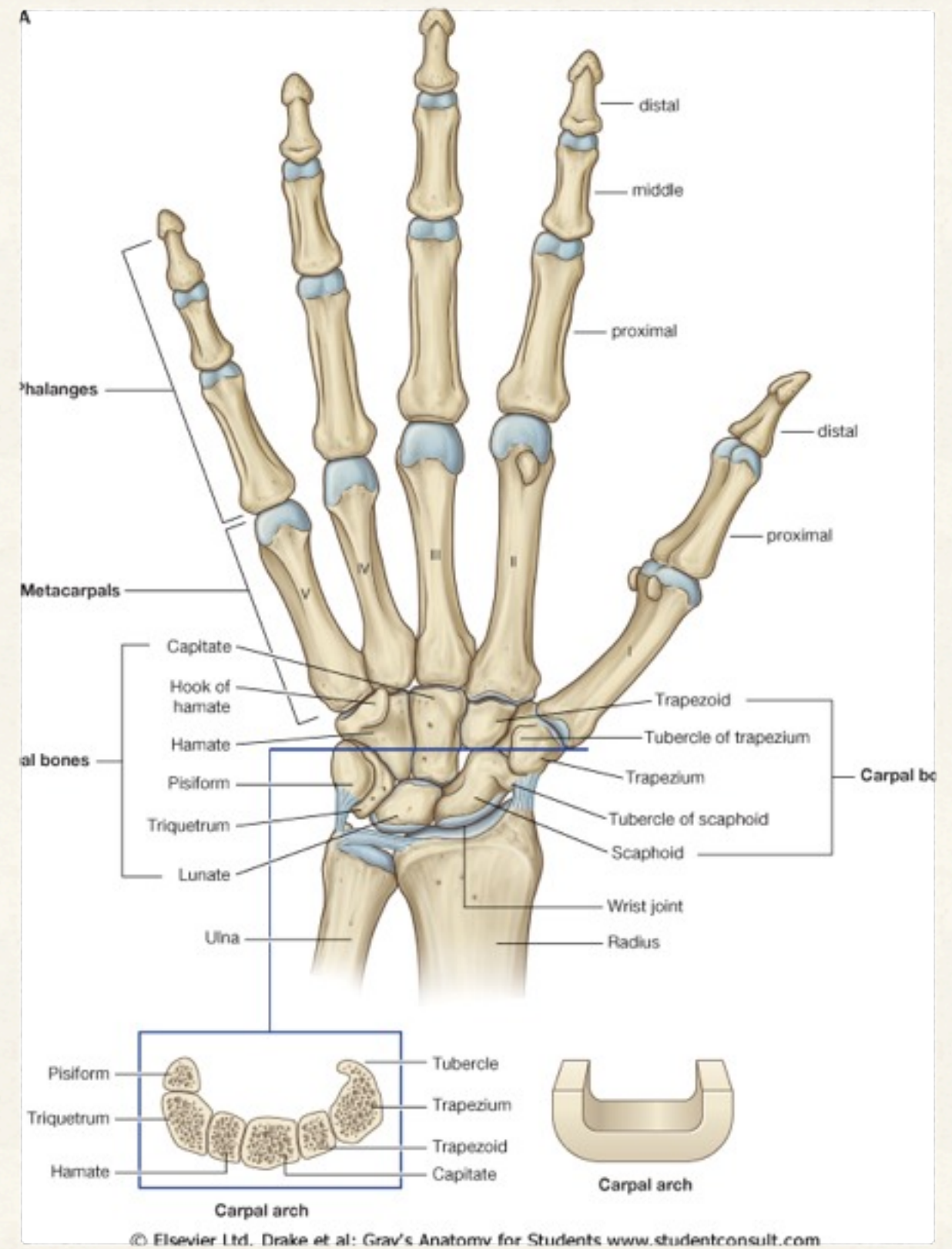
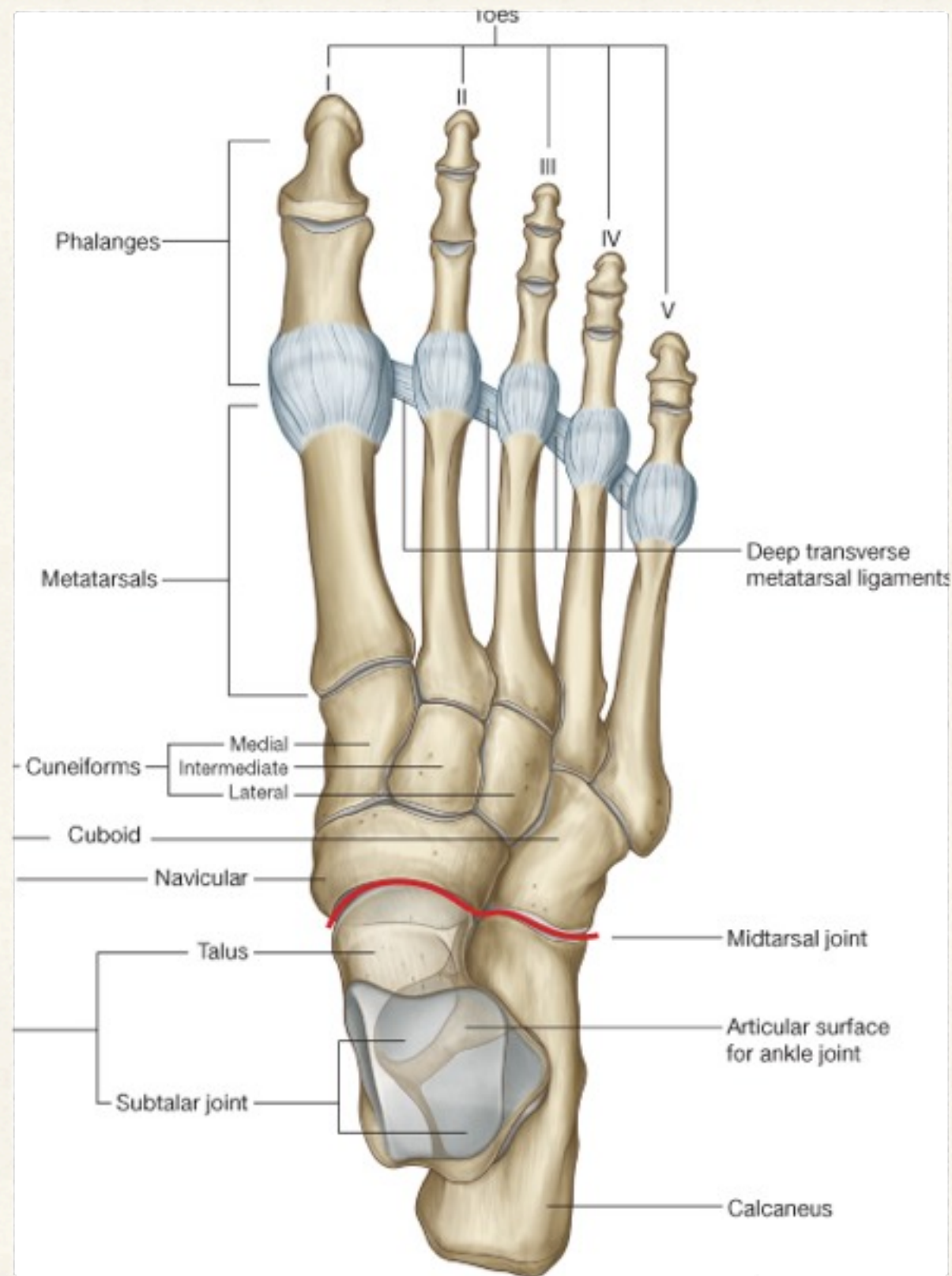
Kemiklerin Sınıflandırılması

- * Uzun (humerus, femur)
- * Kısa (el & ayak bileği)
- * Yassı (kafa)
- * Düzensiz (mandibula, vertebra)
- * Sesamoid (patella)
- * Pnömatize/havalı (maxilla, os frontale)

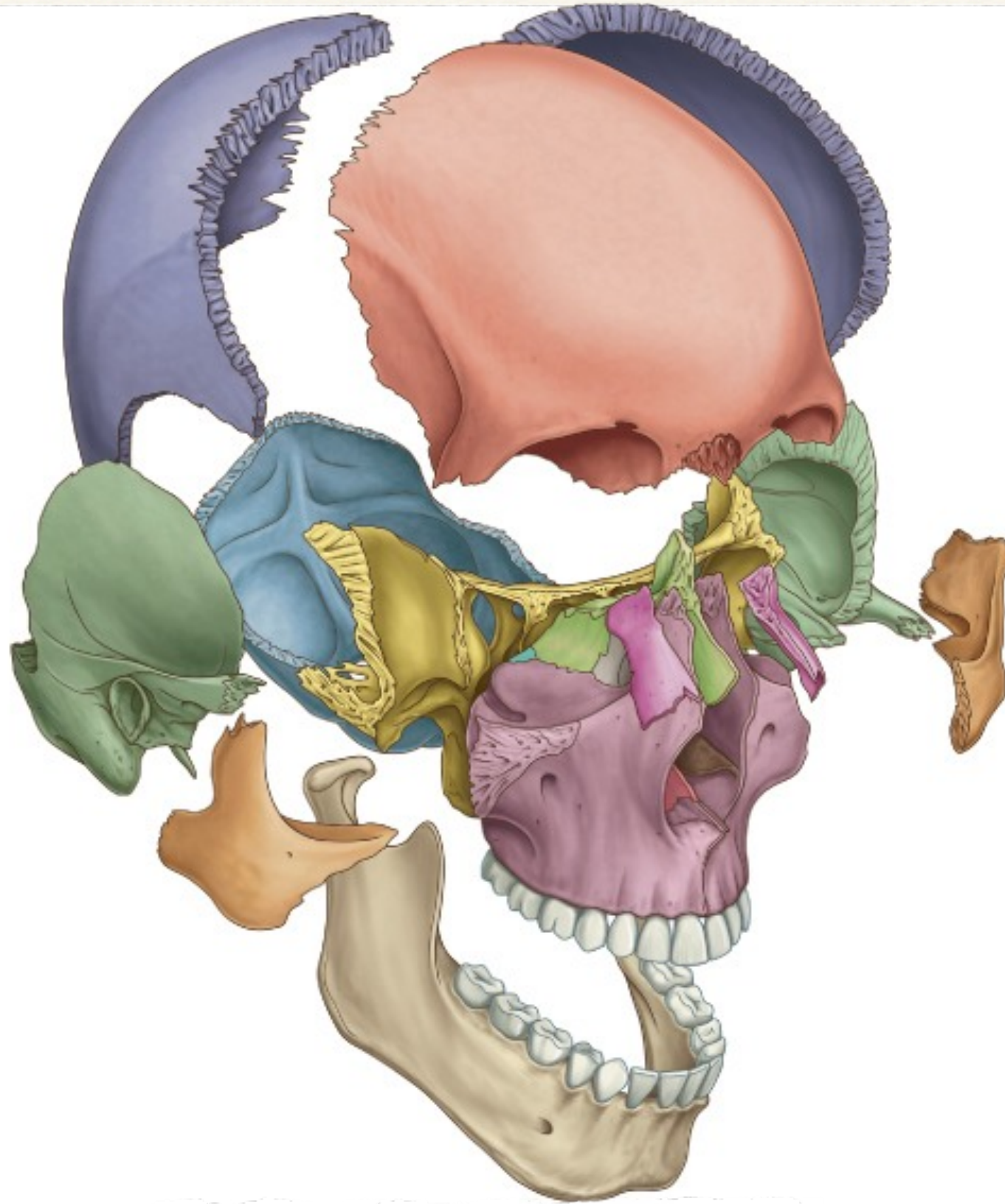




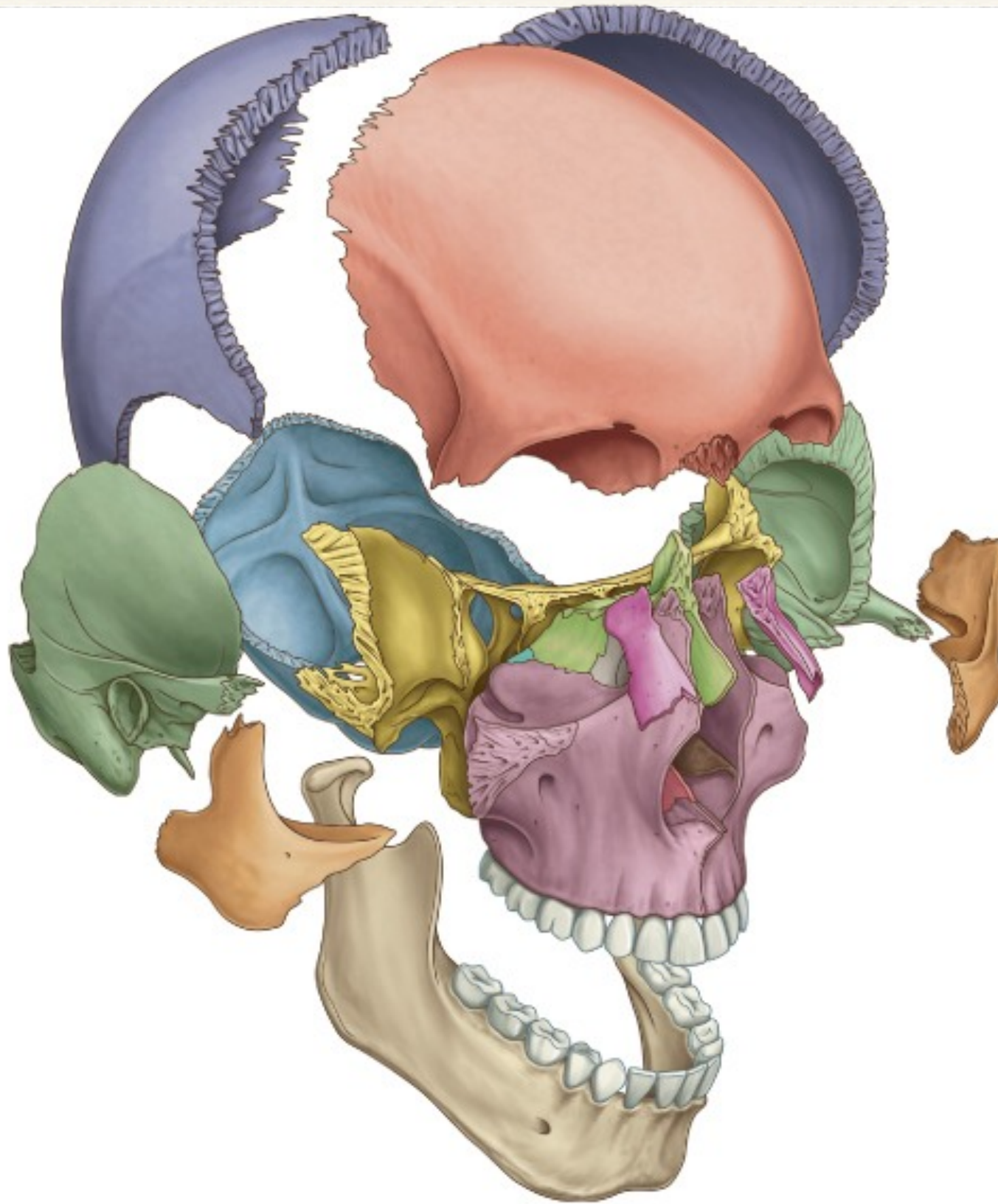
Uzun Kemikler



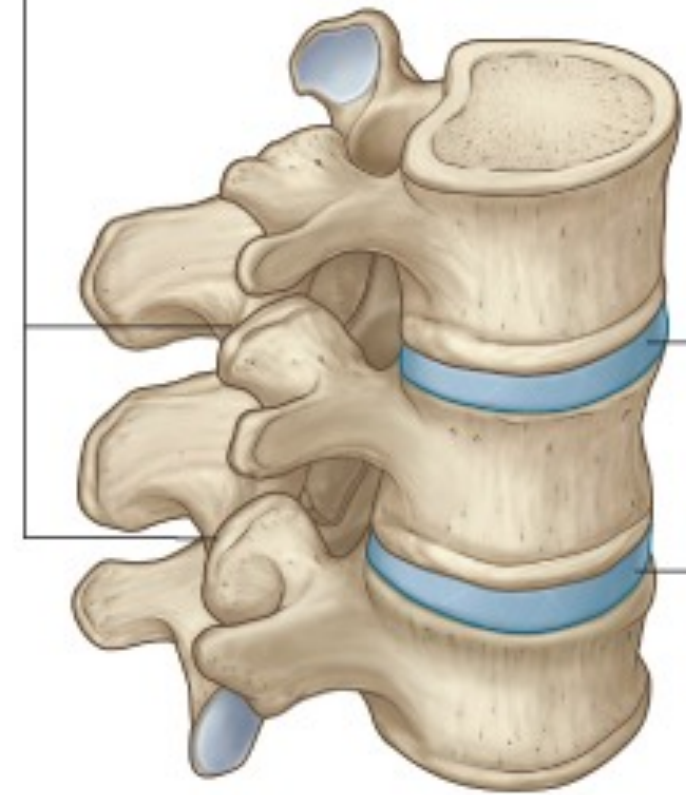
Kısa Kemikler



Yassı Kemikler



Zygapophysial joints



Intervertebral discs

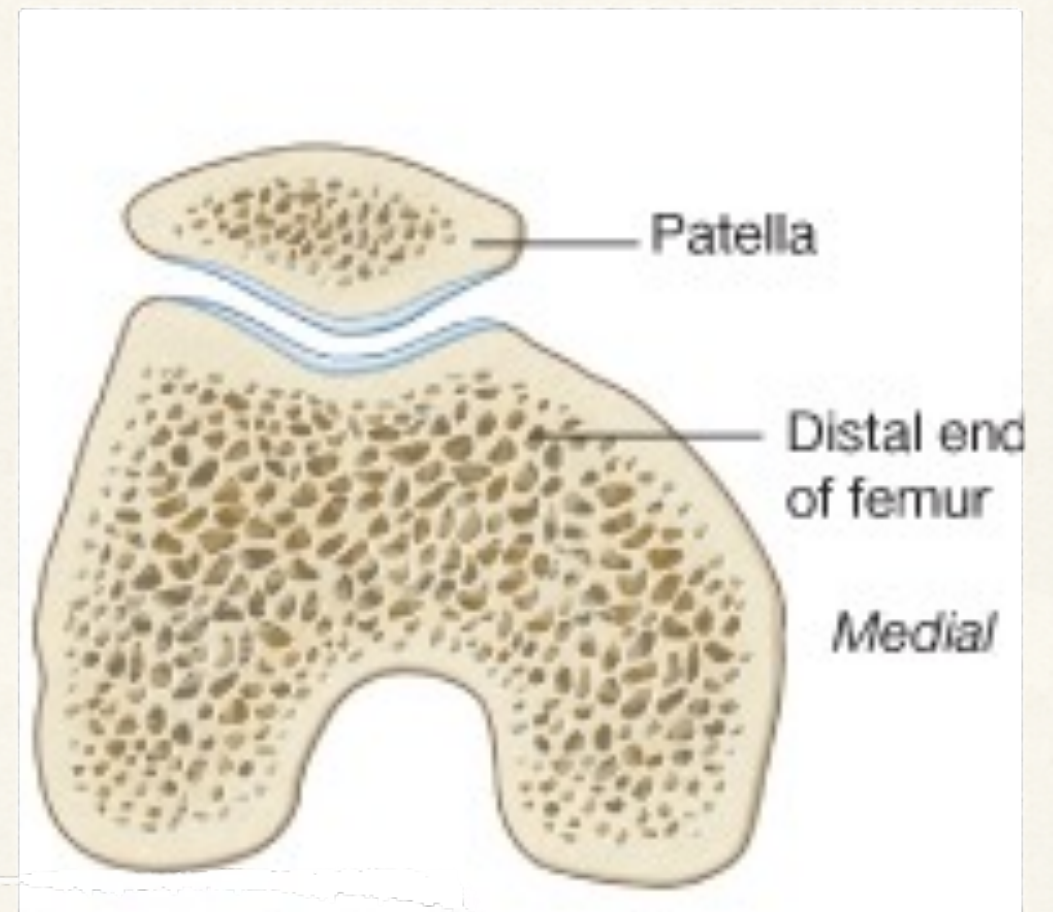
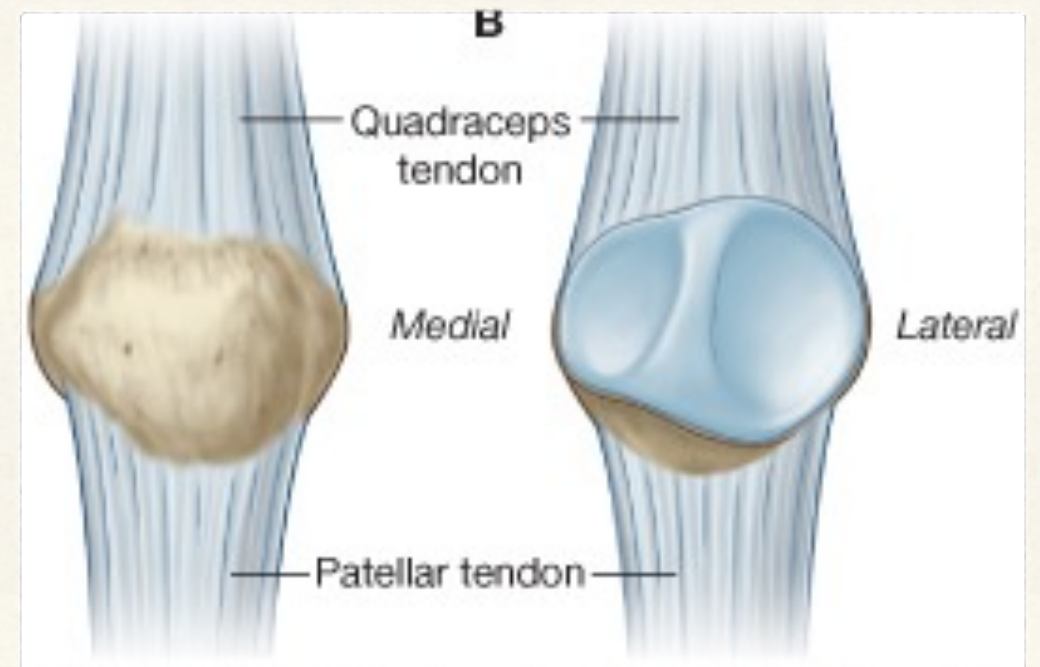
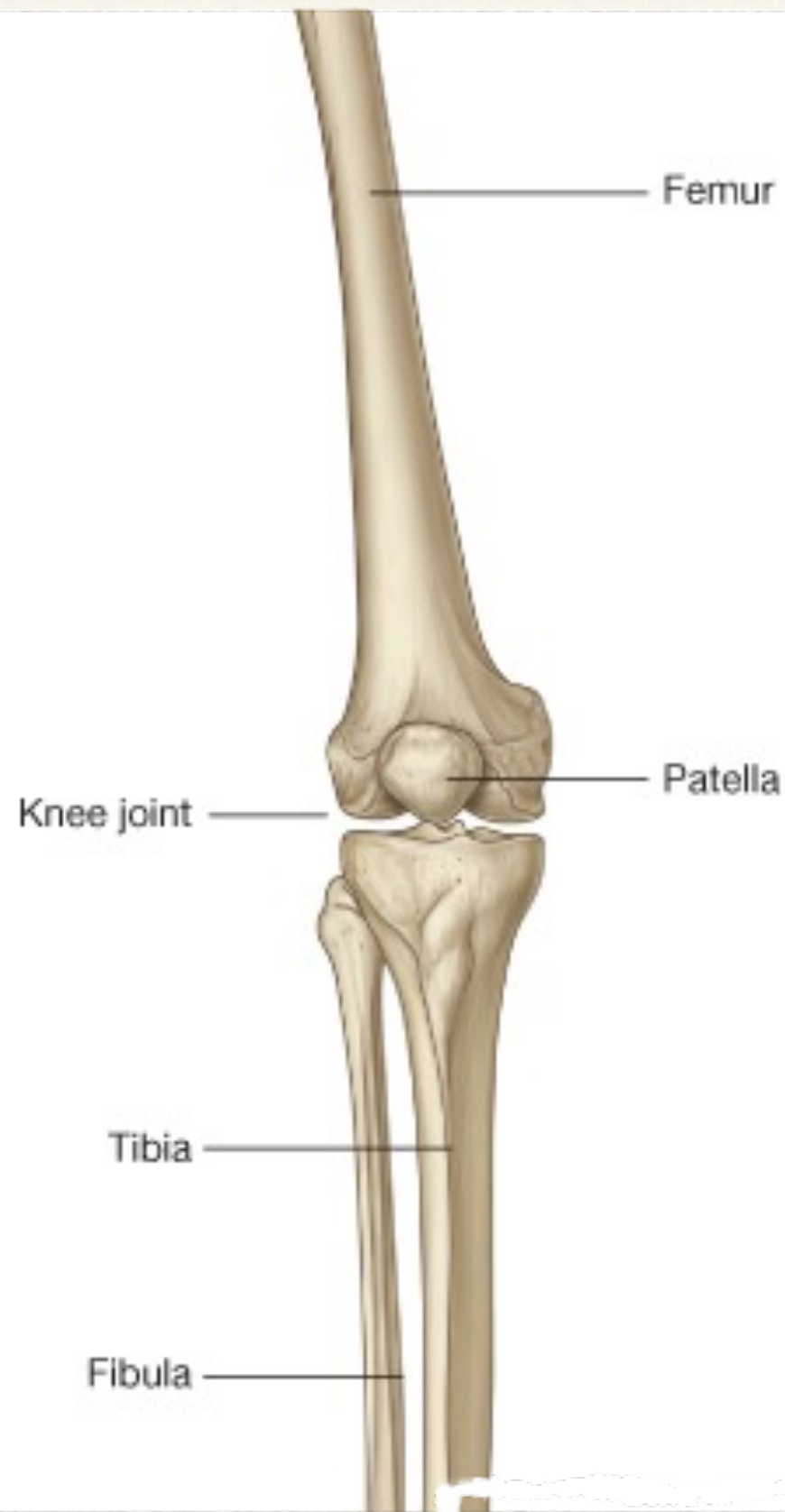
Anulus fibrosus

Nucleus pulposus

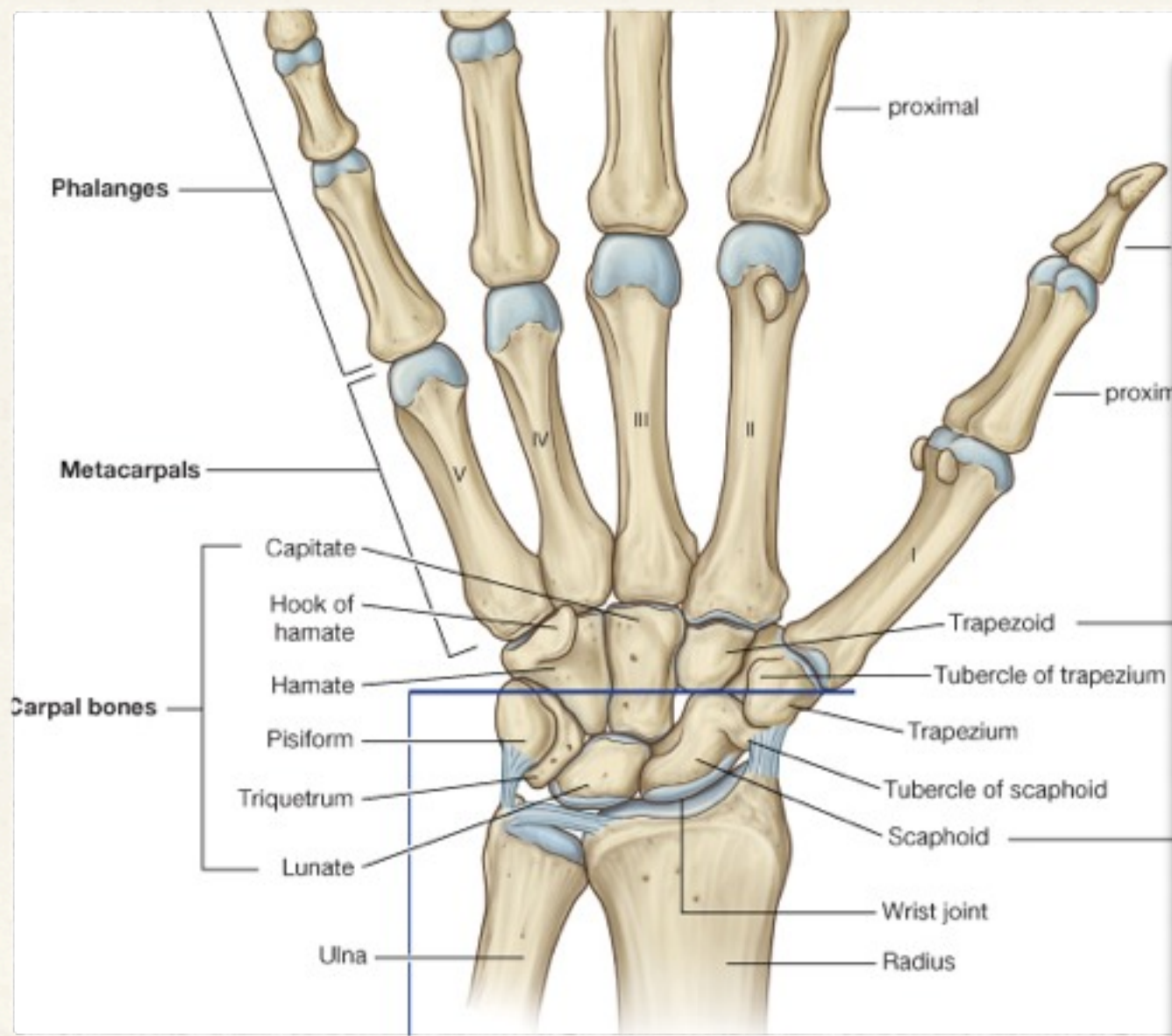


Layer of hyaline cartilage

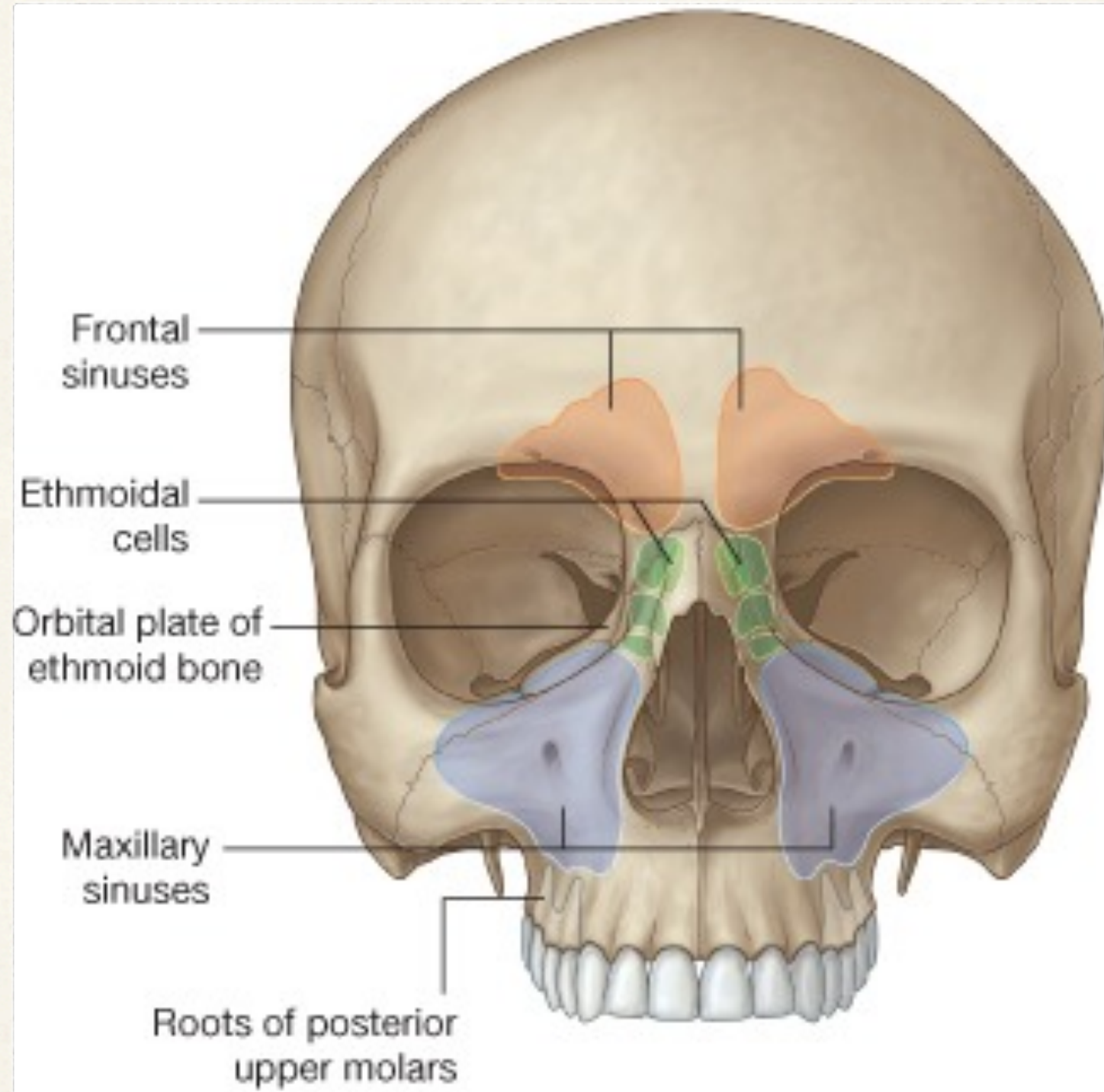
Düzensiz Kemikler



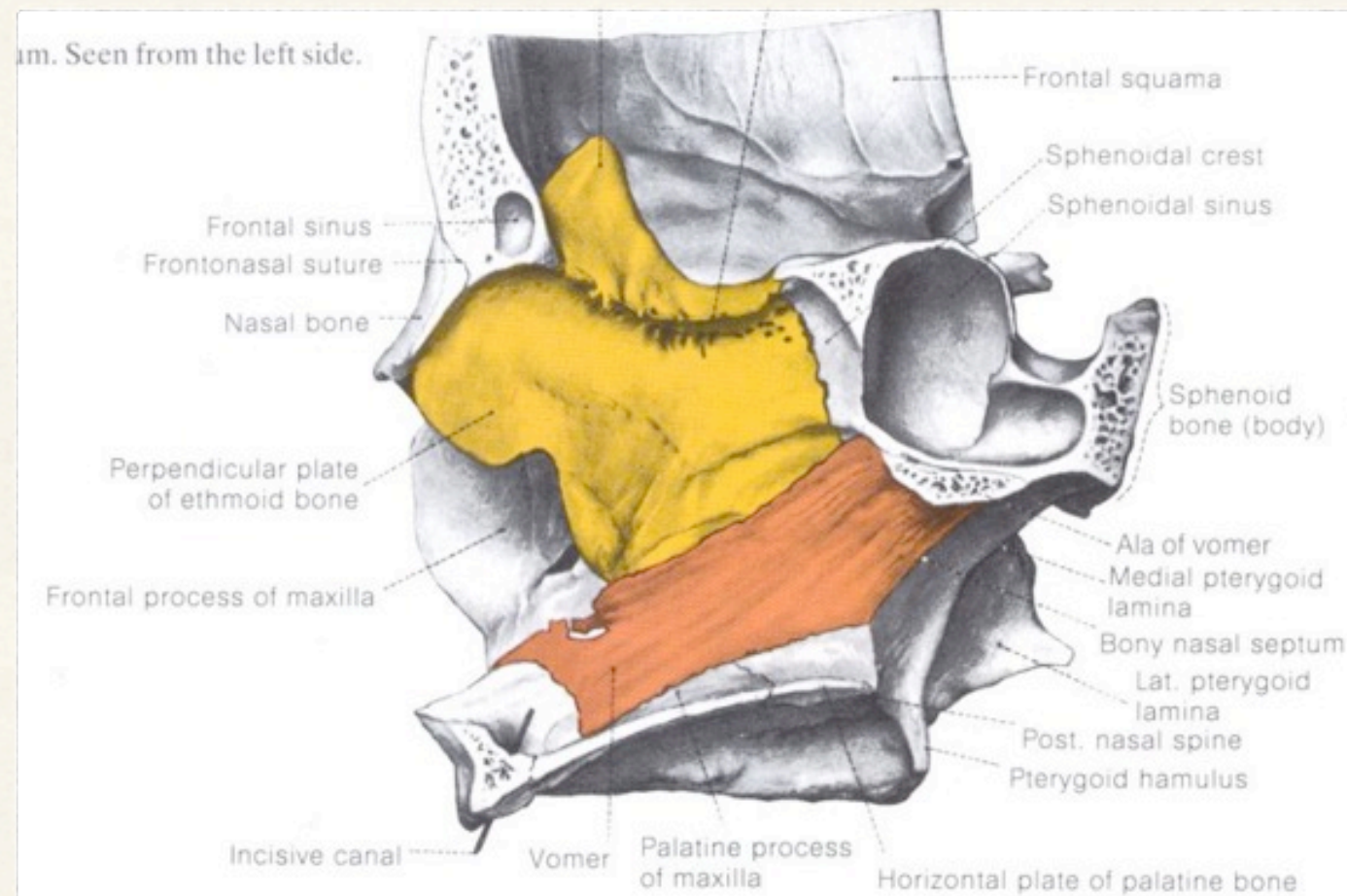
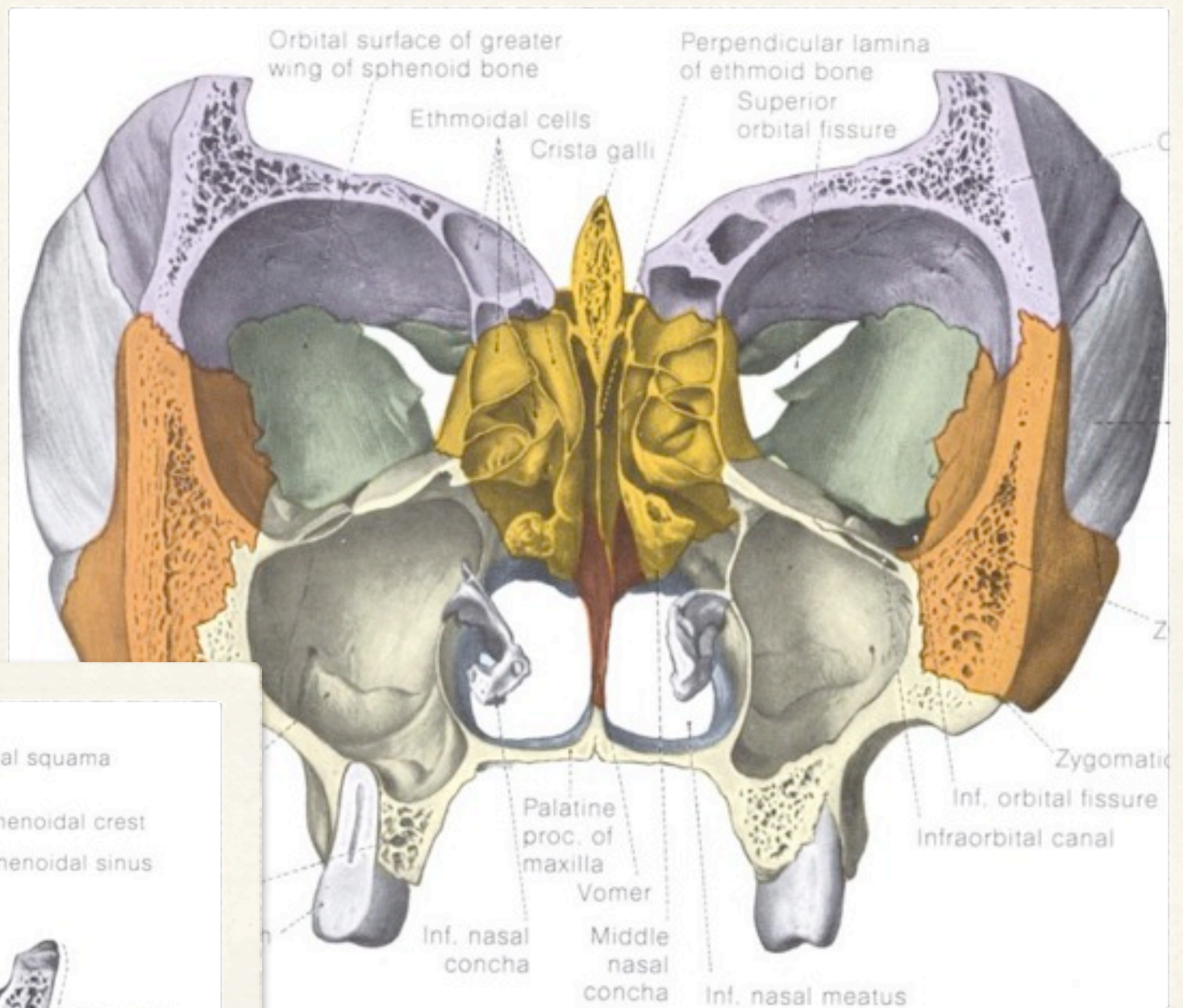
Sesamoid Kemikler



Sesamoid Kemikler



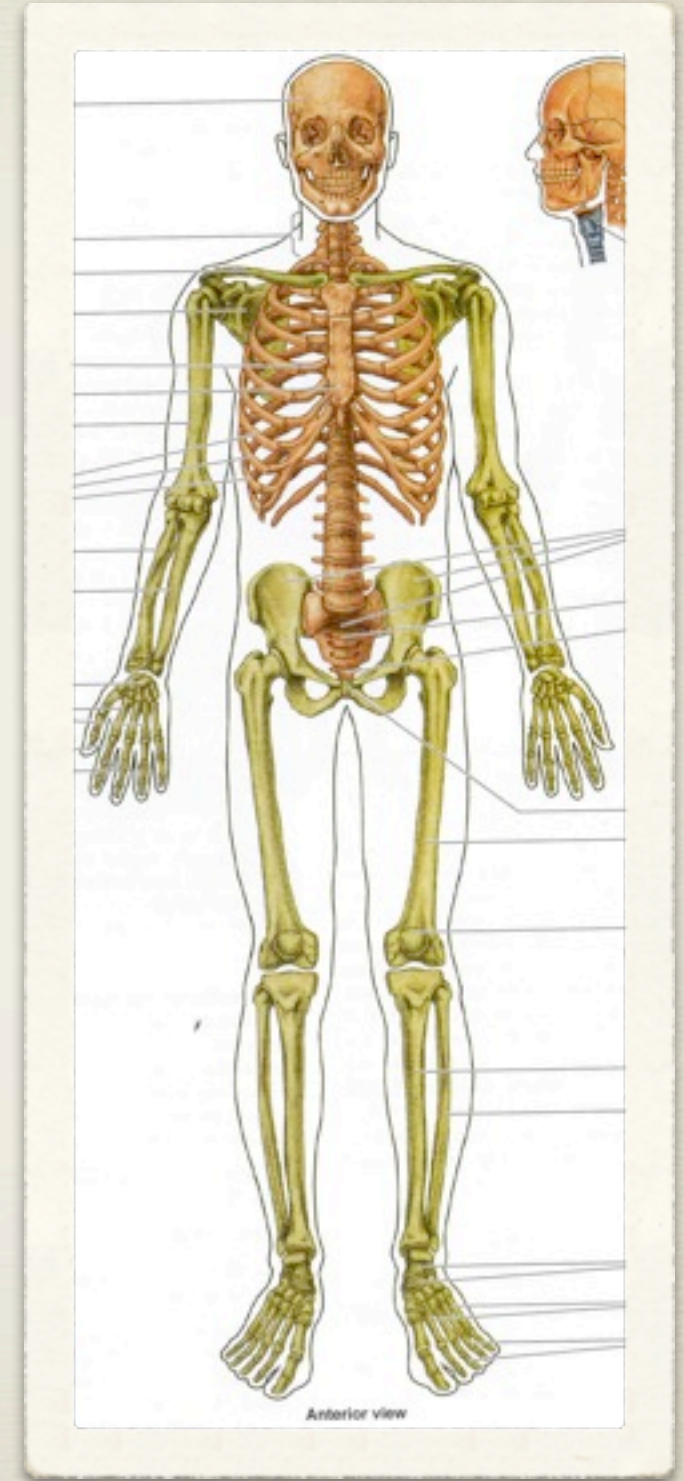
Pnömatize Kemikler



Pnömatize Kemikler

İskelet

- * Aksiyal
 - * Baş
 - * Boyun
 - * Gövde
- * Apendiküler
 - * Üst ekstremité
 - * Alt ekstremité



Kemiklerdeki Oluşumlar

* Processus

* Tuberculum

* Tuberositas

* Sulcus

* Spina

* Facies

* Facies articularis

* Fossa

* Crista

* Collum

* Foramen

* Incisura

* Linea

* Sinus

Klinik Bilgi – 1

- * Aksesuar kemikler

- * Genellikle bir kemiğin eksik kalan parçası şeklinde

- * Sutural veya wormian (Inca) kemikler

- * Heterotopik kemikler

- * Bale dansçılarının bacaklarında

- * At binicilerin uyluklarında

1. Hemorajik bölgeler

2. Kalsifikasyon

3. Ossifikasyon

Klinik Bilgi – 2

* Kırıklar

- * Kırık uçların bir araya getirilmesi (redüksiyon)
- * Fibroblast → kallus
- * Kalsifikasyon
- * Ossifikasyon

* Çocuklarda

- * Yeşil ağaç kırıkları
- * Esneme nedeniyle tam olmayan kırıklar
- * Erişkinlerden daha hızlı iyileşme



Klinik Bilgi – 3

- * Kemikler canlı organlardır
- * Ağrı
- * Kanama
- * Yaşla birlikte değişim
- * Atrofi (küçülme)
- * Hipertrofi (büyüme)
- * Kan damarları
- * Lenfatikler
- * Sinirler
- * Hastalıklar
- * Tümörler

Klinik Bilgi – 4

- * Osteoporoz

- * Kemik bileşenlerinin kaybı

- * İnorganik

- * Organik

- * Kadın VE erkek

- * Kemik iliği incelemesi

- * Hematolojik hastalık tanısı

- * Aspirasyon veya biyopsi

- * Ilium

- * Sternum

Klinik Bilgi – 5

- * Kemik yaşı belirlenmesi
 - * Klinik tıp
 - * Adli bilimler
 - * Antropoloji
 - * Radyogramlar kullanılır
- * Diafız ve/veya epifizde kalsifiye materyal görünümü
- * Epifiz plağını temsil eden koyu çizginin kaybolması

Klinik Bilgi – 6

- * Avasküler nekroz

- * Arter kanlanmasının kaybı

- * Epifiz veya diğer bölgelerde

- * Rikets/raşitizm

- * Vitamin D eksikliği

- * Eksik kalsifikasyon

- * Kemiklerde yumuşama

- * Deformite ve kırıklara yol açar

Genu varum

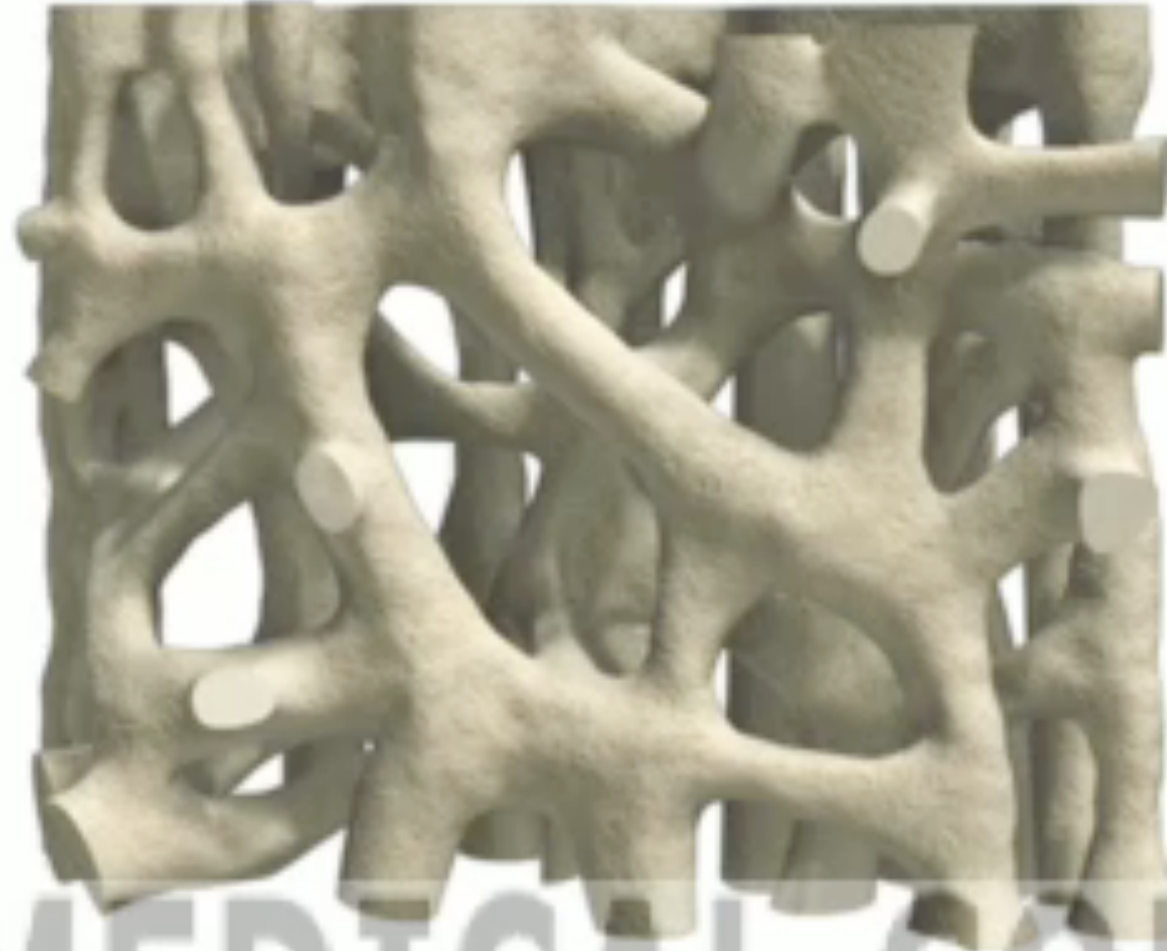




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Osteoporoz



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