

## Lecture Notes: **Skeletal System**

### Sec1 Functcs

A)

- 1) Forms internal
- 2) Upright/erect

B)

- 1) Soft tissues
- 2) Ex:

C)

- 1) Skeletal muscles attached

D)

- 1)
- 2) Minerals
  - a)
  - b)
  - c) Hormonally controlled

E) \*Hematopoiesis

### Sec2 Microscopic Anatomy (Review)

A) CT

- 1) Anatomy: Matrix, unique cells, structures, proteins
- 2) General functcs
- 3) Examples

B) Cartilage

- 1) Hyaline
- 2) Fibrocartilage

C) Dense Fibrous

D) Osseus

- 1) Compact bone
- 2) Spongy bone

## Sec3 Classification of Bones

### A) ≈206 Bones in Adult Human Skeleton

1) \*Axial Skeleton

2) \*Appendicular Skeleton

### B) Bones classified according to shape:

1) Flat

a) Gen:

b) Ex:

2) Short

a) Gen:

b)

c) Ex:

3) Irregular

a) Gen:

b) Ex:

4) Long

a) Ex:

b) Struct:

(1) \*Epiphysis

(2) Articular cartilage

(3) \*Diaphysis

(4) \*Periosteum

(5) Medullary cavity

(6) Endosteum

(7) Yellow Bone Marrow

## Sec4 Axial Skeleton

A) Includes:

B) Skull

1) Cranium

a) Bones:

b) Sinuses

2) Facial

a) Bones

3) Hyoid

## C) Vertebrae

### 1) Funct

- a) Support
- b) Protects
- c) Site
- d) Curvatures

### 2) Cervical vertebrae

- a) Gen
- b) C-1
- c) C-2

### 3) Thoracic vertebrae

- a) Gen:
- b) Protection
- c) Breathing

### 4) Lumbar vertebrae

- a) Gen

### 5) Sacral vertebrae

- a) Gen

- b) Foramina

### 6) Coccyx

## D) \*Bony Thorax

### 1) Components

### 2) Funct:

### 3) \*Costals

- a) True
- b) False
- c)

## Sec5 Appendicular Skeleton

### A) Pectoral Girdle and Arm

#### 1) Pectoral Girdle

a) Components:

b) Gen:

c) Advantage:

d) Disadvantage:

#### 2) Arm

a) Brachium

b) Antebrachium

c) Wrist

d) Palm

e) Digits

### B) Pelvic Girdle and Leg

#### 1) Pelvic Girdle:

a) 3 Fused bones

b) Funct:

#### 2) Leg

a) Thigh

b) Knee

c) Leg

d) Ankle

e) Instep/sole

f) Digits

## Sec6 Bone Growth and Repair

### A) Ossification

1) \*Osteoblasts

2) \*Osteocytes

3) \*Osteoclasts

4) Controlled by

### B) Embryonic Development

### C) Fetal Skeleton

1) >206 bones

2) Endochondral ossification

3) \*Fontanelles

a) Funct:

b) Intramembranous ossification

### D) Epiphyseal Plate

1) Growth

2) Hormonally controlled

E) Remodeling

1) Dynamic

2) Maintain

3) Demand

4) Blood calcium levels

a) Osteoblasts

b) Osteoclasts

c) Important:

d) Hormonally controlled

C) Bone Repair

1) Fracture

2) Steps

a) Hematoma

b) Fibrocartilage Callus

c) Spongy Callus

d) Remodeling

(1) Osteoblasts

(2) Osteoclasts

## Sec7 Articulations

### A) Articulation:

### B) Structural Classification

#### 1) Based on

#### 2) Fibrous Joints

a) Struct:

b) Funct:

c) Ex:

#### 3) Cartilaginous Joints

a) Hyaline Cartilage

b) Fibrocartilage

#### 4) Synovial Joint

a) Struct:

1) Cavity

2) Hyaline

3) Fibrous CT and Ligaments

4) Synovial membrane

5) Synovial fluid