Component Parts of the Skull
“Growth is an increase in size & Development is progress towards maturity”
TYPES OF OSSIFICATION

1. Intramembranous ossification: The transformation of mesenchymal connective tissue usually in membranous sheets, into osseous tissues.

2. Endochondral ossification:
   The conversion of hyaline cartilage prototype models into bone.

3. Ossification Center
   The site of earliest bone formation via accumulation of osteoblasts within connective tissue (membranous ossification) or of earliest destruction of cartilage before onset of ossification (endochondral ossification).
Development of the Skull
Anatomy of the Mandible
Development of the Mandible
Ossification Spread

Forward

Backward

Ossified Body

Future level of the lingula
Growth of the Mandible
- Vertically
- Anteroposteriorly
- Transversely
Mandible at Birth
Mandible of the Adult
Postnatal_human_mandible_growth.mp4
Development of the Maxilla
Figure 3-38  Problem of the premaxilla. A, It is supposed that there are separate centers of ossification for the maxilla and the premaxilla and that bone from maxillary centers spreads and grows over the facial surface of the premaxilla. B, It is assumed that no separate center of ossification for the premaxilla exists and that the maxillary center is C-shaped with the concavity filling in and leaving an incomplete suture.
Growth of the Maxilla
- Sutural growth
- Growth at the alveolar process
- Subperiosteal bone formation
- Enlargement of the maxillary sinus
- Bone deposition and resorption
At birth:
1. The transverse and antro-posterior diameters of the bone are each greater than the vertical.
2. The frontal process is well-marked and the body of the bone consists of little more than the alveolar process.
3. The teeth sockets reaching almost to the floor of the orbit.
4. The maxillary sinus presents the appearance of a furrow on the lateral wall of the nose.
3.49 Cranium and facial skeleton at birth.
In the adult:

- In the adult the vertical diameter is the greatest.
3.50 Adult craniofacial skeleton.
In old age:
In old age the bone reverts in some measure to the infantile condition as:
1. Its height is diminished.
2. After the loss of the teeth the alveolar process is absorbed, and the lower part of the bone contracted and reduced in thickness.