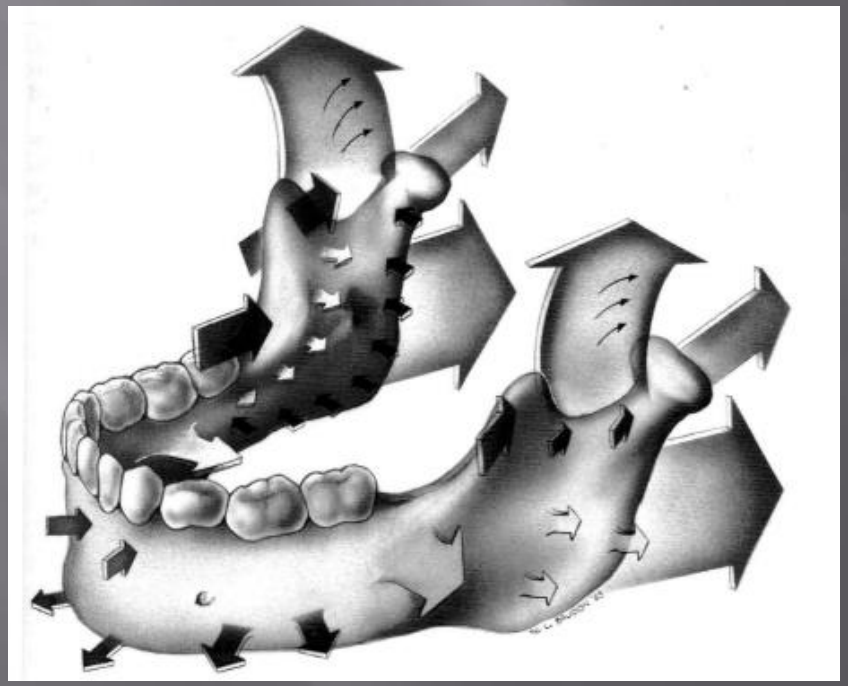
POSTNATAL GROWTH AND DEVELOPMENT OF THE MANDIBLE

MANDIBLE

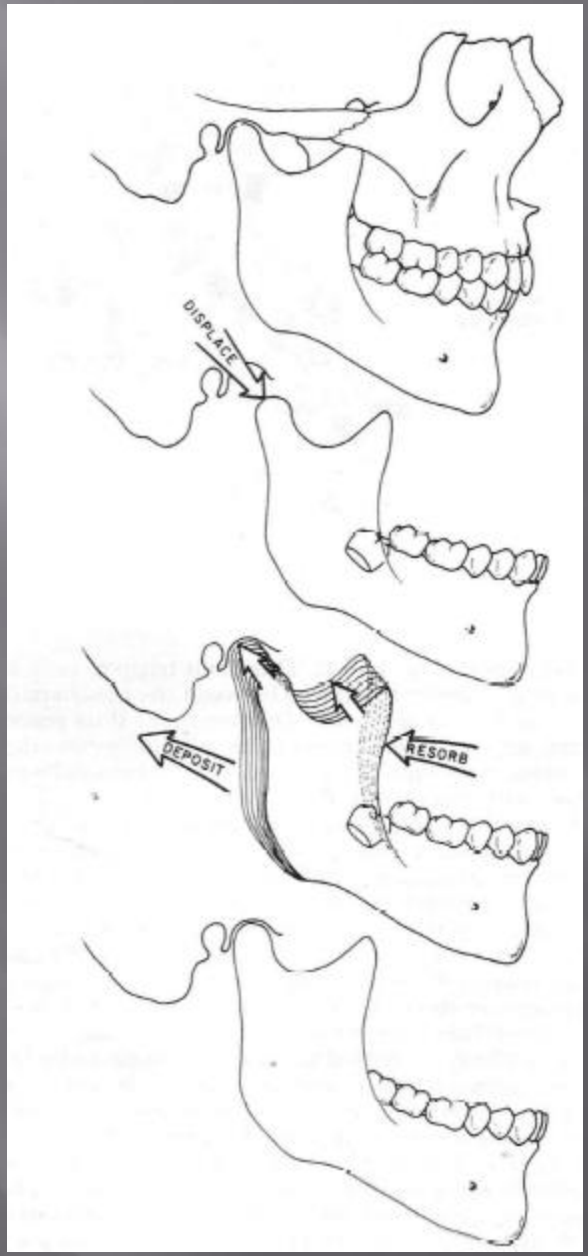
- An independent, consists of a single bone. form the lower part of the face and connecting the base of the head via the jaw joint.



- In prenatal period mandible had membranous formed, but in prenatal and postnatal period scene of incidents related to growth of cartilage.

Postnatal development takes place with the two basic mechanisms

1. Displacement
2. Remodeling


DISPLACE
DEPOSIT
RESORB

Displacement

- Stimulus is required
- This stimulus were supposed condylar cartilage constructs it, but condylar cartilage development cant display in itself.

- Down and forward movement of the mandible, according to the functional matrix consists THEORY

Local formating in their mandible body

- Functional is by periosteal matrix.
- Mandibular has various skeletal units and its own matrix of a periosteal with each skeletal unit. Ex. angulus mandibula in the medial pterygoid muscle and external masseter muscle forms a periosteal matrix.

The speed of development

- Not always as the same.
- Very rapid after birth (about 3 mm per year)
- Up to the onset of puberty
- Gradually begins to fall, 11-12 ages is minimized.

- In puberty period reaches a maximum (about 5 mm per year)
- Maximum development period apear in about 14-15 years
- The development between ages 17 and 22-23 are completely stoped.

- Mandible not grow evenly in all directions.

The local formations according to various regions of the mandible

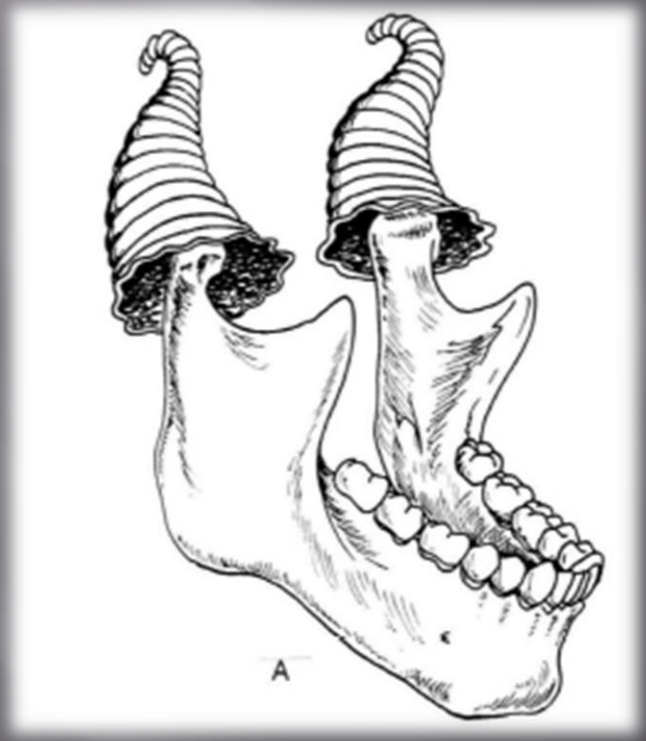
- Condyle Region
- Prominent coronoid Region
- Ramus Region
- Corpus Region
- Tip of the chin Region

Mechanism of the Condylar Growth

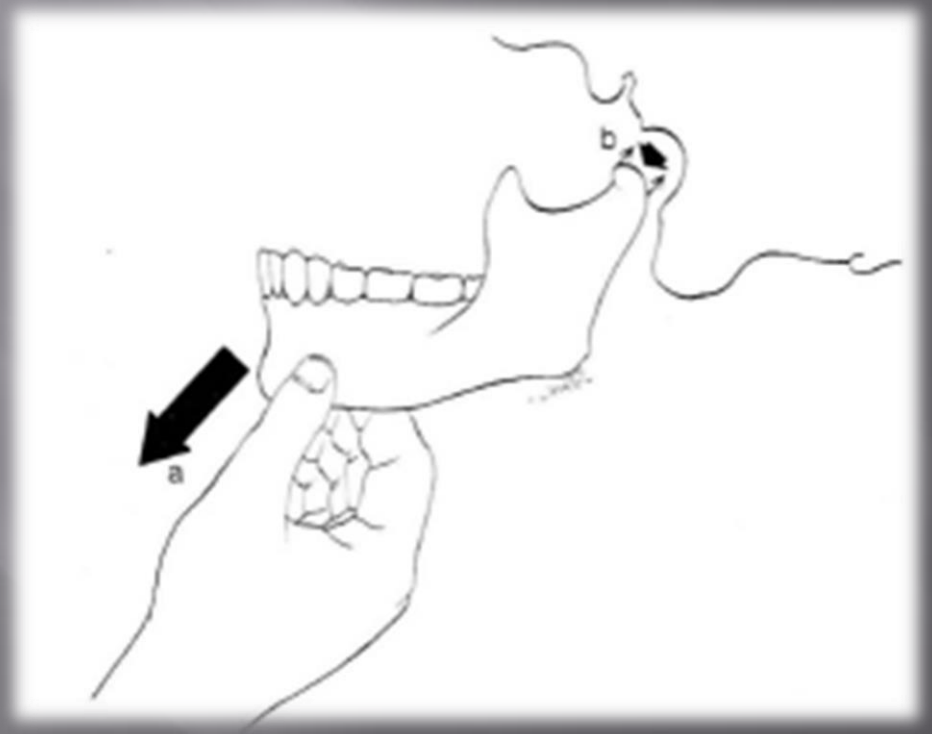
- The primary stimulus for the mandible development on to create with condyle, sees the main function in the development is the translational motion.

- A result of the cartilage activity, condylar shows upwards and backwards development.
- By this activity condyle head revert to condylar neck.

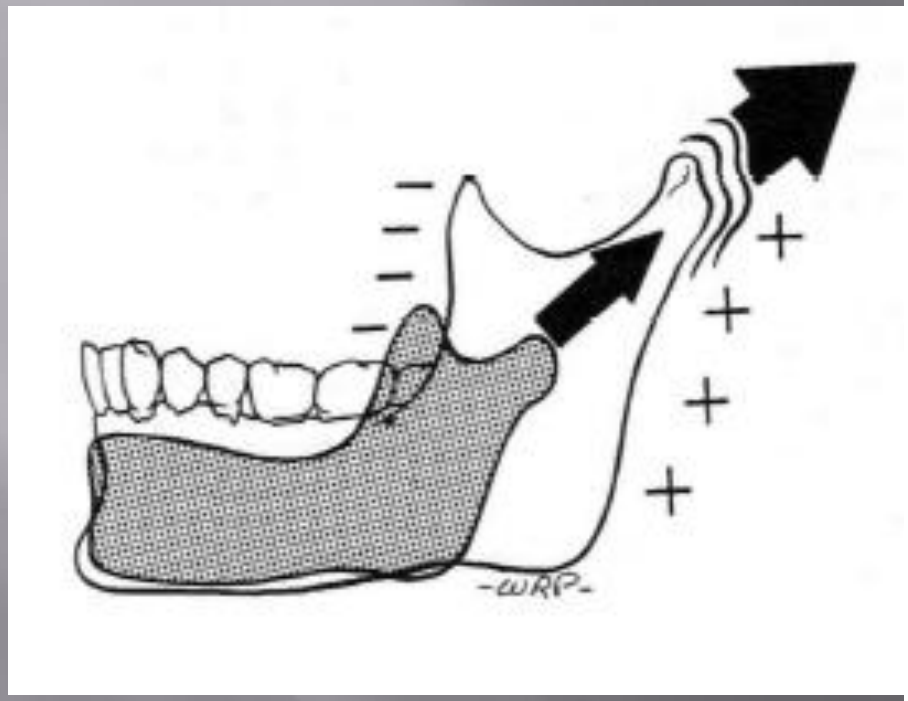
Condyle of the mandible is not the main development center of the bone

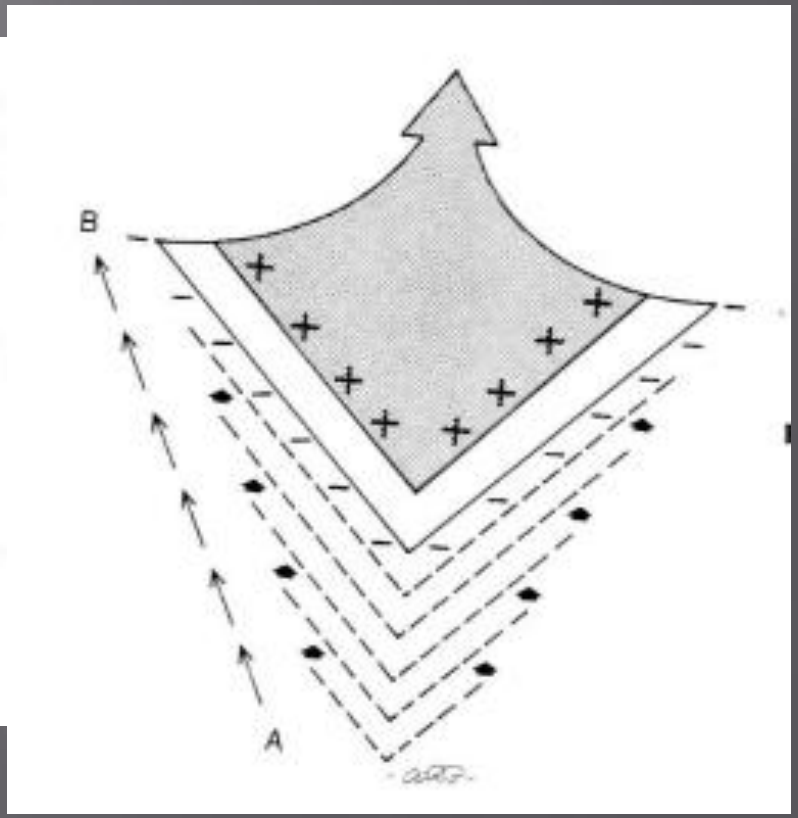


- Condyle acts as a regional integration.



The development of the condyle and condylar neck




B
A

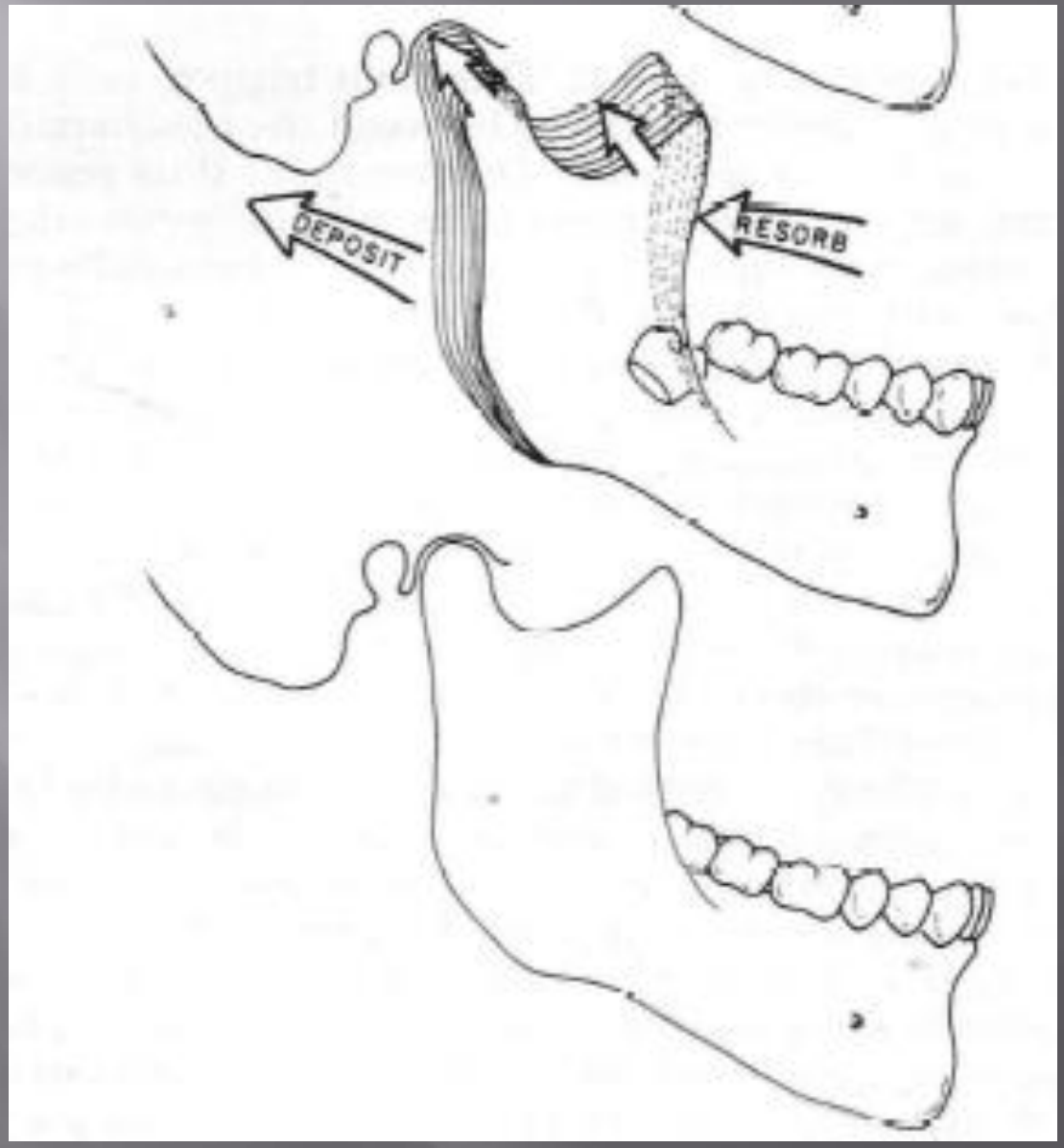
The growth of the coronoid Region

- Growth and development of this region under the influence of the temporal muscle
- Show a resorption in the outer surface of the ledge of bone.
- In the inner surface facing up periosteal apposition show, while in the outer surface show resorption.

- The ledge of coronoid, back-facing surfaces show periosteal apposition and in the outer surface corresponding to it show resorption.
- As a results the ledge of coronoid show backward and upward postnatal development.

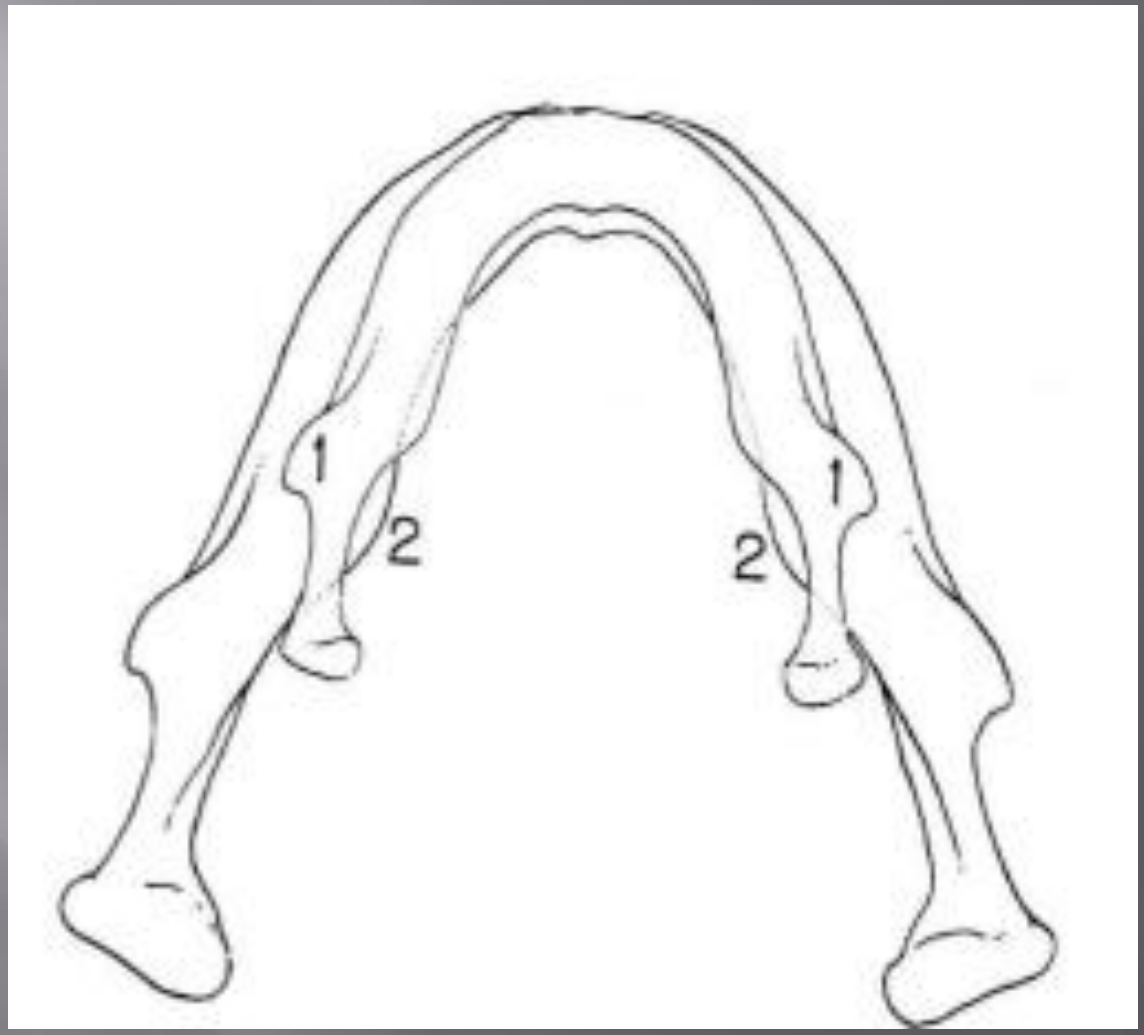
The Growth of Ramus

- The outer surface of ramus show periosteal apposition.
- In The inner surface the line between the length of condyle and mandibular foramen and above of linea mylohyoidea show bone apposition.


DEPOSIT
RESORB

Growth of the Mandibular Corpus

- The inner and outer surface of the corpus shows separately the local formation.
- When the outer surface shows bone deposition, the inner surface above the linea mylohyoidea apposition below it show rezorpition.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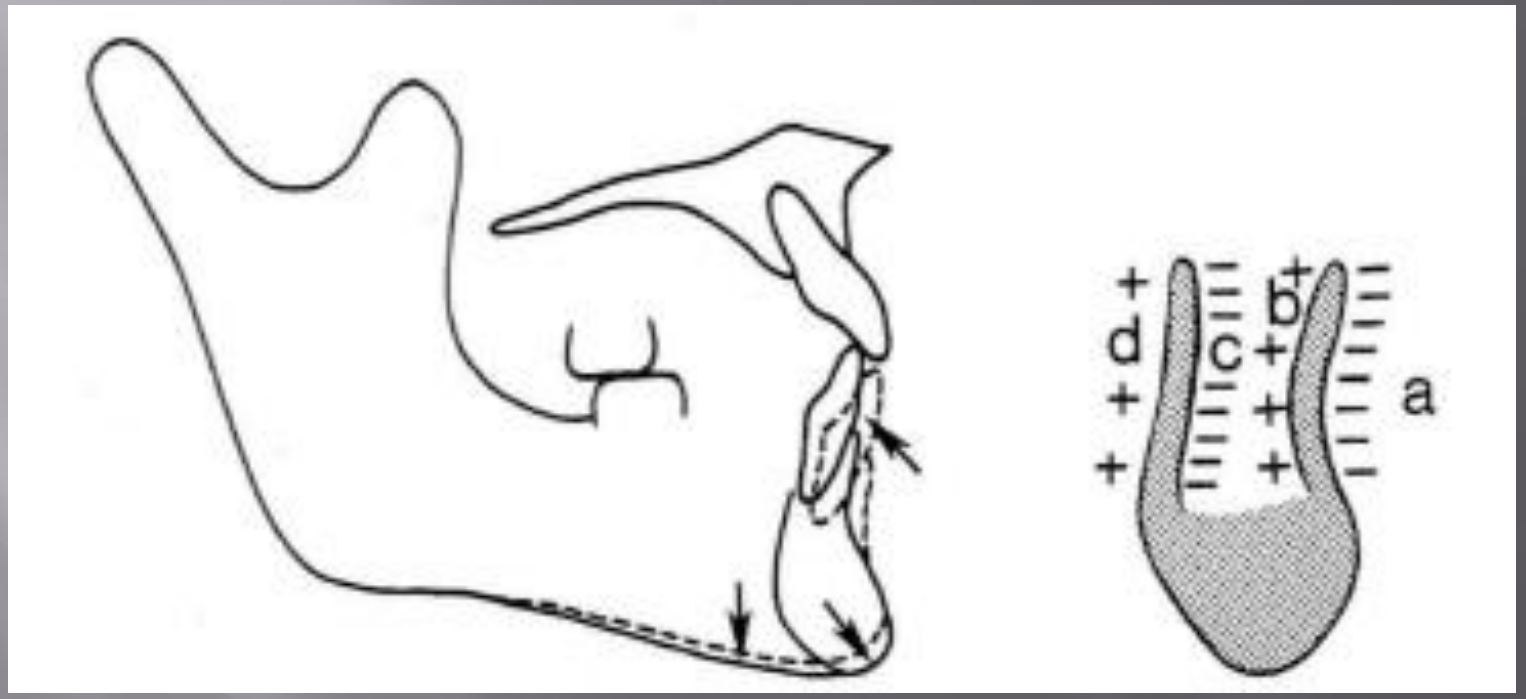
2
2
1

The Growth of the Chin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THE END OF THE GROWTH AND DEVELOPMENT