

University of Basrah  
College of Dentistry  
Department of conservative  
Dentistry



جامعة البصرة  
كلية طب الاسنان  
فرع معالجة الاسنان

lecture 15

د.زهراء مازن الهواز

## TOOTH DEVELOPMENT

The development of the crown and the root of the tooth takes place within the bone in the jaw.

After the root and crown are formed, the tooth penetrates the mucous membrane and enters into the mouth by a process called "eruption". The eruption of a tooth stops when it occluded with a tooth in the opposing jaw and contacts the adjacent teeth.

Dental development can be considered to have two components: (1) the formation of crowns and roots and (2) the eruption of the teeth.

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Upper Teeth	Erupt	Shed
Central incisor	8-12 mos.	6-7 yrs.
Lateral incisor	9-13 mos.	7-8 yrs.
Cuspid (canine)	16-22 mos.	10-12 yrs.
First molar	13-19 mos.	9-11 yrs.
Second molar	25-33 mos.	10-12 yrs.
Lower Teeth	Erupt	Shed
Second molar	23-31 mos.	10-12 yrs.
First molar	14-18 mos.	9-11 yrs.
Cuspid (canine)	17-23 mos.	9-12 yrs.
Lateral incisor	10-16 mos.	7-8 yrs.
Central incisor	6-10 mos.	6-7 yrs.

**Deciduous teeth**

The deciduous teeth are 20 in number. They start erupting at the age of 6 months (mandibular central incisor), and they finish at the age of 20-30 months (mandibular & maxillary second molars).

**Benefits of deciduous teeth**

1. Allow proper mastication.
2. Prevents malocclusion.



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3. Guide the eruption of the permanent teeth.
4. Esthetics.
5. Phonetics.

The deciduous teeth roots are fully formed after eruption, then after a while resorption to these roots starts until exfoliation of the deciduous teeth occurs, followed by the eruption of the permanent successor teeth.

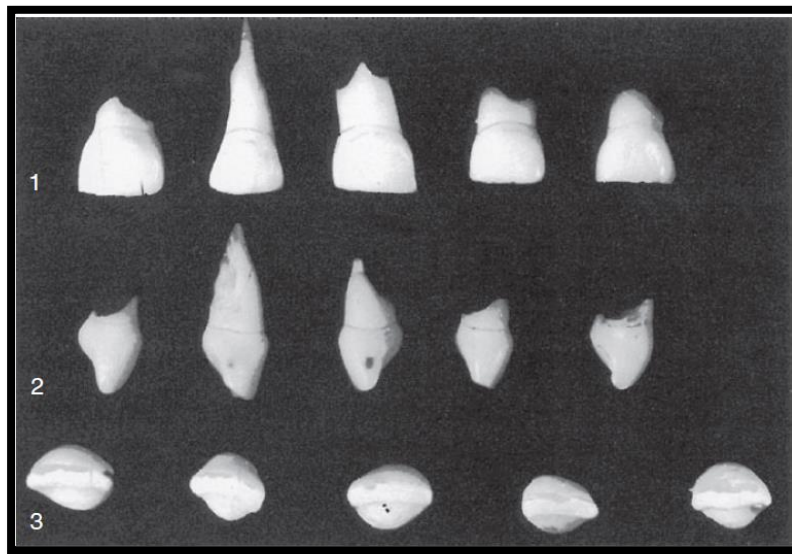
### Maxillary deciduous teeth

#### Central and lateral incisors

1. The mesio-distal width is more than the labio-lingual dimension.
2. The root length is greater in comparison with the crown length than that of the permanent central incisor.
3. From mesial aspect, the crown appears thicker because of the short crown's length.

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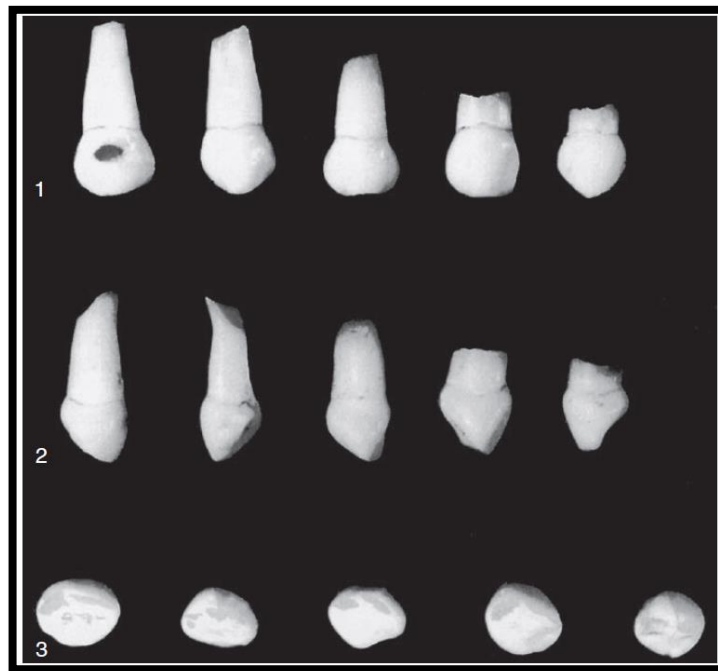


### Canine

1. From the labial aspect, the crown is more constricted at the cervical area, so the cusp and the slopes are seen more developed.
2. The mesial slope of the cusp is longer than the distal slope.
3. The mesial and distal contact areas are at the same level.
4. The root of the primary canine is long, slender, and tapering and is more than twice the crown length.
5. From mesial aspect, the crown appears thicker labio-lingually because of the short crown's length.

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### First molar

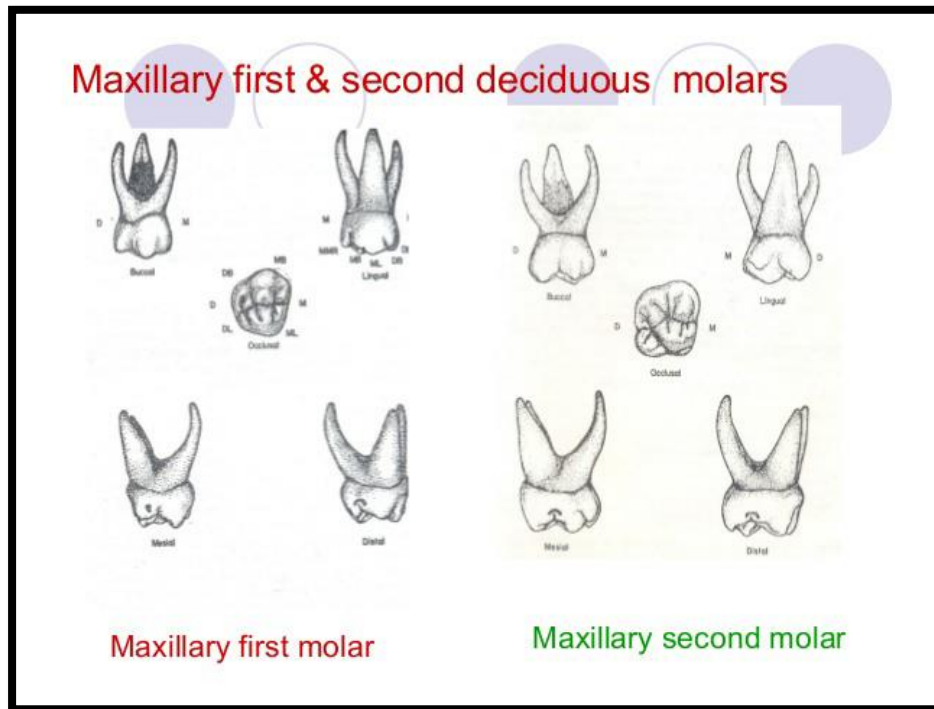
1. There are four cusps: mesio-palatal (largest), mesio-buccal, disto-buccal and disto-palatal (smallest).
2. There are three roots: palatal, mesio-buccal, and disto-buccal.

### Second molar

1. There are five cusps (four well developed and one supplemental) which are the mesio-palatal (largest), mesio-buccal, disto-buccal, disto-palatal and fifth cusp (supplemental cusp).
2. There are three roots: palatal, mesio-buccal, and disto-buccal roots.

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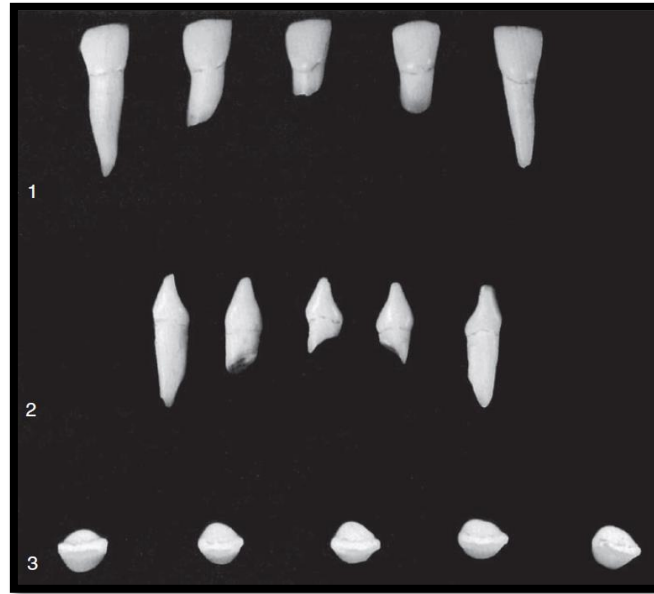
**Mandibular deciduous teeth**

**Central and lateral incisors**

1. They are wider mesio-distally in relation to their length more than the permanent mandibular incisors.
2. The root: crown ratio is increased.
3. The labiolingual width appear more due to the short crown's length.

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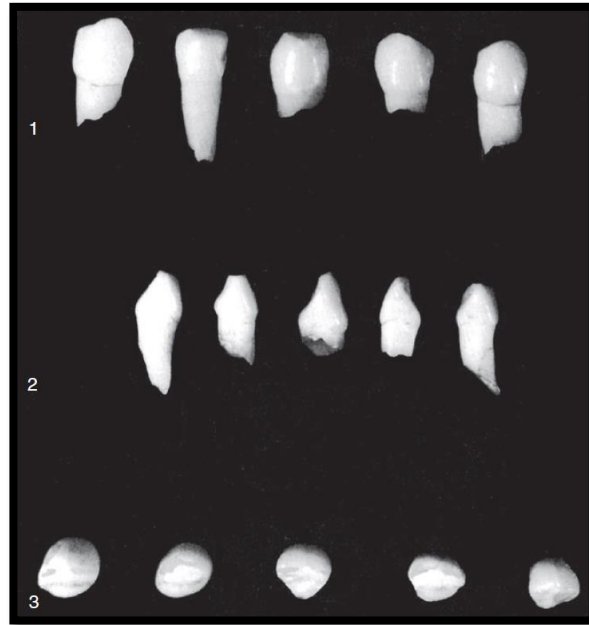


## Canine

1. The labio-lingual dimension is much less than the maxillary deciduous canine.
2. The cervical ridge is less pronounced than the maxillary deciduous canine.
3. The distal slope of the cusp is larger than the mesial slope.

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### First molar

1. There are four cusps: mesio-lingual (largest), mesio-buccal, disto-buccal and disto-lingual (smallest).
2. There are two roots: mesial and distal roots.

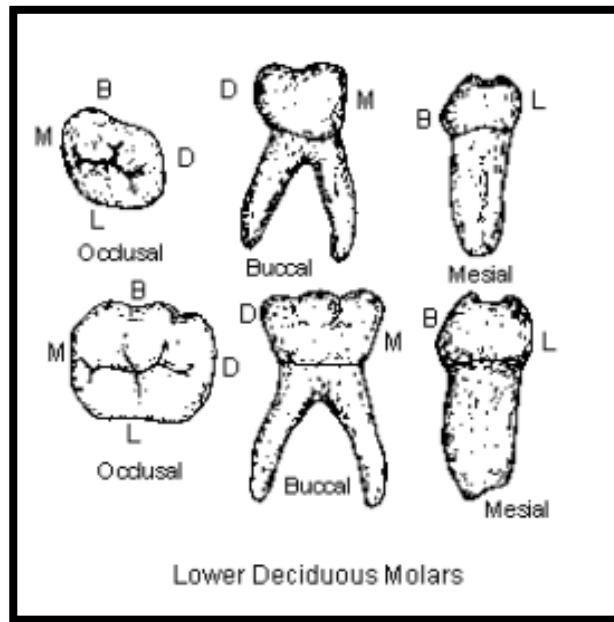
### Second molar

1. There are five cusps: mesio-lingual, mesio-buccal, disto-buccal, disto-lingual and distal cusp.
2. There are two roots: mesial and distal roots.



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## Principal differences between deciduous and permanent teeth

### General differences

1. The deciduous teeth are 20 in number while the permanent teeth are 32 in number.
2. The deciduous teeth are smallest in all dimensions.
3. The deciduous teeth is whiter and more opaque than the permanent teeth.
4. The deciduous teeth show less morphology variations.
5. The enamel of the deciduous teeth is thinner (0.5-1 cm) while in the permanent teeth it is (1.5-2.5 cm).



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### Crown differences

1. The crowns of the deciduous teeth are more constricted at the cervix.
2. The cervical ridges in all deciduous teeth are more prominent.
3. The intercuspatal distance of the deciduous teeth is more constricted bucco-lingually.
4. The crown of the deciduous anterior teeth are wider mesio-distally as compared with the crown's length.

### Root differences

1. Lack of root trunk in the deciduous molars.
2. The roots of the deciduous teeth are shorter, weaker, and narrower.
3. The roots of the deciduous teeth are longer in proportion to the crown.
4. The roots of the deciduous molars are wider than the crown, to allow more room for the development of the successor permanent teeth.