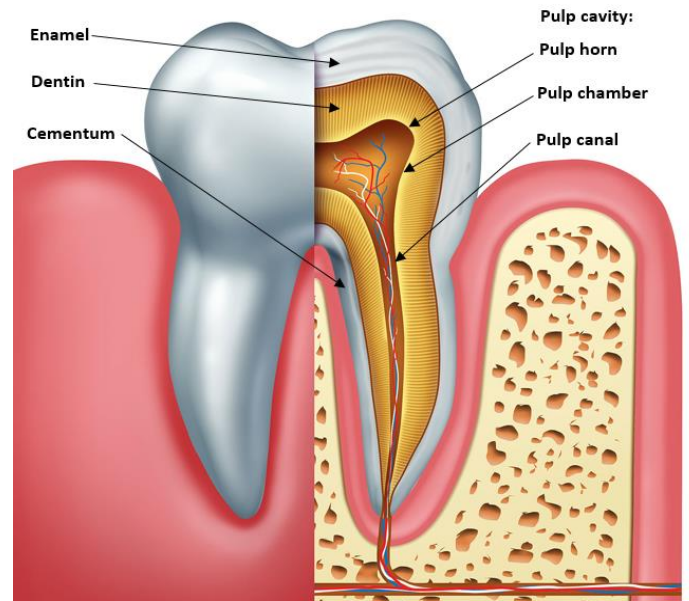


Pulp cavities

Dental pulp is the soft tissue of the tooth. The pulp occupies the internal cavities or spaces of the tooth which include the pulp chamber and the pulp canal (root canal).

The shape of the pulp cavities correspond to the external outline form of the tooth (the shape of the pulp chamber corresponds to the shape of the crown whereas the shape of the pulp canal corresponds to the shape of the root). The size of the pulp cavity depends on the age of the tooth and history of trauma. At the apical end of the root there is an opening through which the neurovascular bundle enters the pulp canal called



the apical foramen. The pulp horns are projections or prolongations of the pulp in the roof of the pulp chamber that correspond to the major cusps or lobes of the crown.

Pulp cavities of the maxillary teeth

Maxillary central incisor

The pulp chamber is very narrow labiolingually while it is wide mesiodistally.

In cross section, the pulp chamber is triangular in outline with the base of the triangle at the labial aspect.

Maxillary lateral incisor

The pulp chamber anatomy is similar to that of the central incisor. In cross section; it may be triangular, oval or round.

Maxillary canine

The pulp cavity is much narrower mesiodistally than labiolingually. In cross section, the shape of the pulp space is oval.

Maxillary first premolar

In cross section, the pulp chamber is kidney-shaped outline form.

Maxillary second premolar

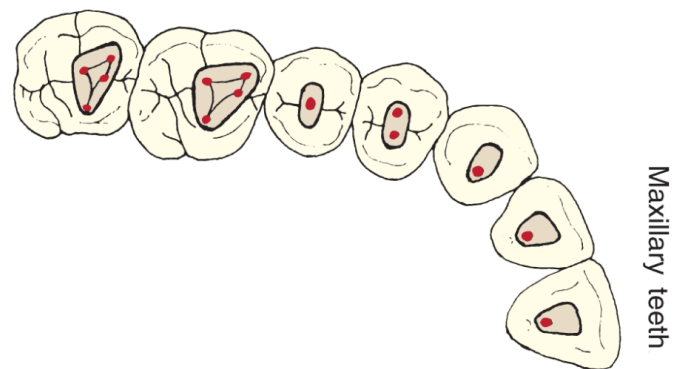
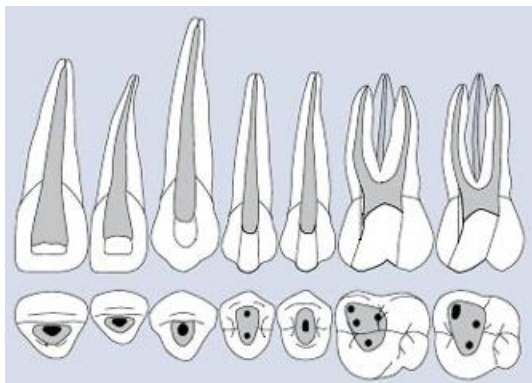
In cross section, the pulp chamber is oval in shape.

Maxillary first molar

In cross section, the pulp chamber is rhomboidal in shape.

Maxillary second molar

The pulp chamber anatomy is similar to that of the maxillary first molar but the chamber is much smaller in mesiodistal section.



Pulp cavities of the mandibular teeth

Mandibular central incisor

The tooth usually has one canal but two canals may be found. The pulp cavity is narrow labiolingually while it is wide mesiodistally.

In cross section, the pulp chamber may be rounding or oval in shape.

Mandibular lateral incisor

It is similar to the central incisor but larger in size.

Mandibular canine

The pulp chamber is similar in size and shape to that of the maxillary canine but tends to be a little shorter. In cross-section, it is oval in shape.

Mandibular first premolar

This tooth mostly has one canal, but two canals are possible. The pulp horn of the buccal cusp is prominent but that of the lingual cusp is usually small or sometimes completely absent.

In cross-section, the pulp cavity may be round or elliptical.

Mandibular second premolar

The pulp horns are more prominent than those of the first premolar.

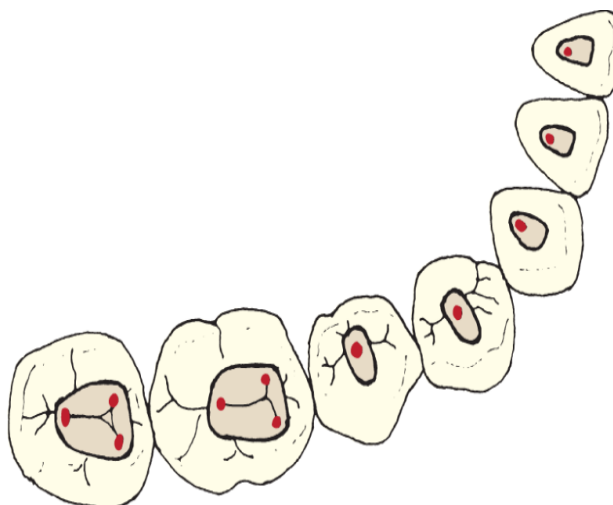
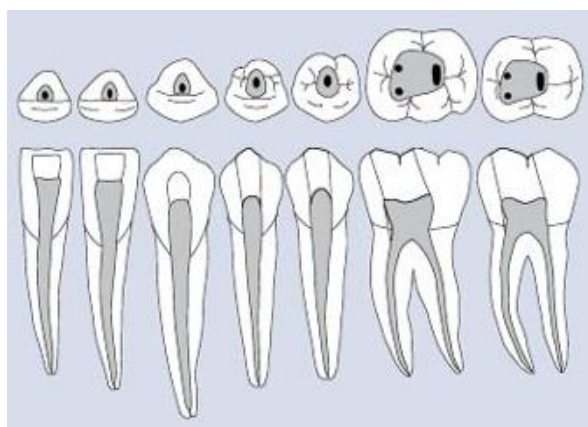
In cross-section, the pulp cavity may be rectangular or oval.

Mandibular first molar

This tooth usually has three canals. The mesial root has two canals while the distal root has one large canal. Sometimes the distal root has two canals. In cross-section, the pulp cavity is quadrilateral in form.

Mandibular second molar

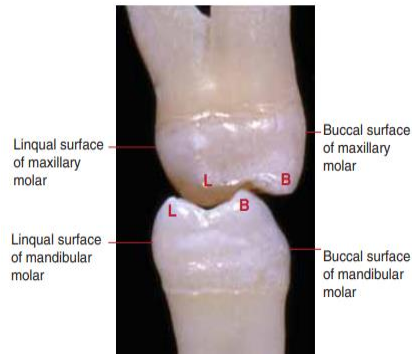
The pulp chamber anatomy is similar to that of the mandibular first molar.



Mandibular teeth

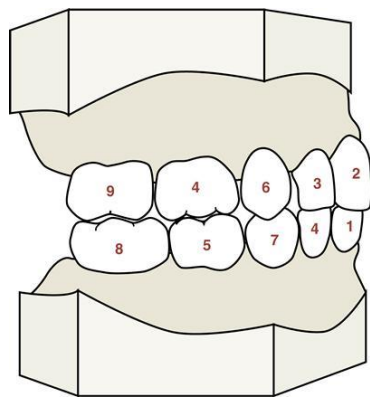
Teeth occlusion

Occlusion refers to any contact relationship between the maxillary and mandibular teeth during function and para-function. The arch form of the maxilla tends to be larger than that of the mandible. This results in the maxillary teeth overhanging the mandibular teeth when the teeth are in centric occlusion (the position of maximal inter-cuspatation). During maximum inter-cuspatation, the lingual cusps of the maxillary molars occludes with the central fossae of the mandibular molars.



Occlusion in deciduous (primary) dentition

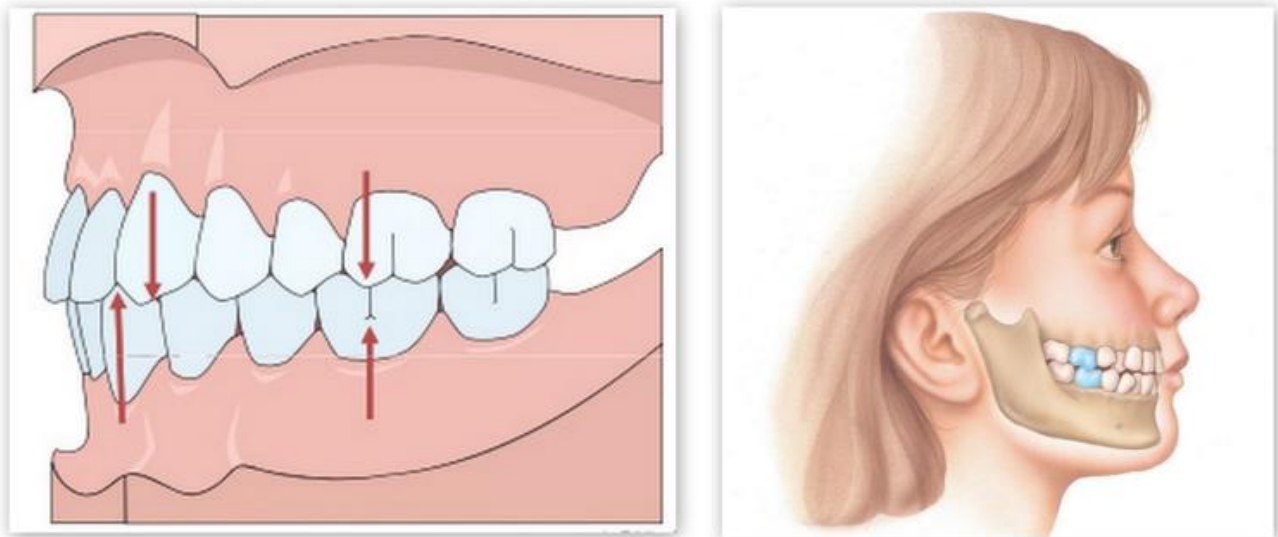
Each tooth occludes with two teeth of the opposing jaw except mandibular central and maxillary second molar. Occlusion is supported and made more efficient after eruption of the permanent first molars.



Occlusion in permanent dentition

With the exception of mandibular incisors and maxillary third molars, each tooth contacts two antagonist teeth in the opposing arch.

A normal dentition is characterized by an ideal alignment of the upper and lower teeth and by an inter-maxillary relationship (between both jaws). The upper canine is aligned with the embrasure between the lower canine and the lower first premolar (blue arrows). The first corner (mesiobuccal cusp) of the upper first molar is aligned with the center (mesiobuccal groove) of the lower first molar (red arrows). The maxillary arch midline fits with the mandibular arch midline.



Class I Occlusion