

# Premolar

## Morphology

The canine teeth (dentes premolares) are found only **in the permanent dentition** between the canine and the first molar. Unlike the canines and incisors, they have **five surfaces** (oral, vestibular, two approximal and masticatory - facies occlusalis). Their original name was dentes bicuspidati - teeth bicuspid, precisely because of the typical two bumps on the masticatory facies, which face vestibularly and orally.



The **marginal bars** are found on the masticatory surface in the approximal direction. Their main importance is to support and reinforce the relief of the crown and to reduce the risk of crown breakage. There is also a pronounced groove which runs mesiodistally and divides the surface into oral and buccal parts (more pronounced in the upper premolars than in the lower ones). All premolars are classified as pillars **Class II**



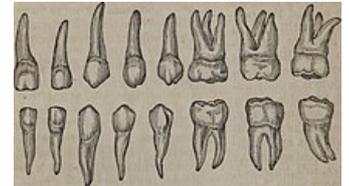
## Upper premolars

**The upper premolars** have an outline similar to a rectangle or an ellipse, and their vestibular surfaces resemble the labial surface of a canine. The approximal surfaces have a rectangular shape and are convex at the point of contact (on the contrary, they are concave in the cervical direction).

### First upper premolar

**Two cusps** - the buccal cusp points distally and is higher and sharper than the palatal cusp. As the only one of all premolars, it has the largest percentage of cases (60%)

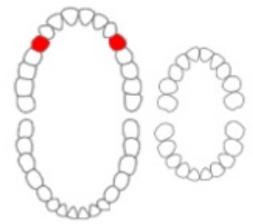
**two roots** and 92% two canals. The roots are gracile and twisted - difficult to treat endodontically. Frequent extraction for orthodontic reasons. This is pillar II. class according to Voldřich .



Upper teeth

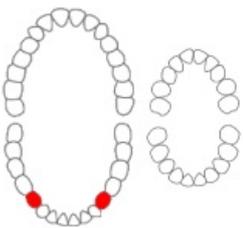
### Second upper premolar

It is smaller in volume than the first premolar , to which it is very similar except for a few differences. Unlike the first upper premolar, both cusps are the same height. In 90%, it has only one root, which has a close relationship with the maxillary cavity . Like all premolars, they belong to pillars II. class according to Voldřich .



First upper premolar

## Lower premolars



A distinctive feature of the lower premolars is the '*inclination of the*

*crown in the lingual direction.*

### Lower first premolar

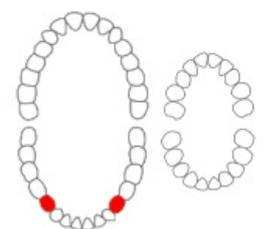
It is the smallest premolar in the oral cavity. It belongs to the pillars of class II according to Voldřich.

The cusps are divided by an edge into a shorter, higher mesial part and a longer, higher distal part. The buccal tubercle is very sharp and points in a lingual direction. The lingual bump, on the other hand, is smaller and much lower.

There is only one **root**, oval or circular in shape.

The **root canal** is only one in 75 % of the cases and is oval in shape.

The **pulp cavity** is cylindrical and extends into the two corners of the pulp, the larger buccal and the smaller lingual.



First lower premolar

### Second lower premolar

It is generally **the largest of all premolars**. Its masticatory surface differs from the others in that it can exist **in several forms** (two-pronged, three-pronged and multi-pronged). It is a Voldrich class II pillar.

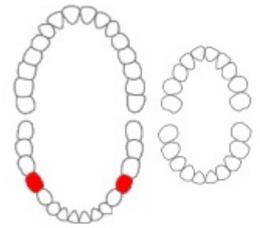
## Links

### Related articles

- Morphology of teeth

### References used

- SVOBODA, Otto, et al. *Stomatologická propedeutika : Učebnice pro lékařské fakulty*. 1. vydání. Avicenum, 1984. 392 s.



second lower premolar  
(adult dentition left)