Karaganda State Medical University
Chair of the foreign languages

TOOTH STRUCTURE.

Modal verbs: Can.

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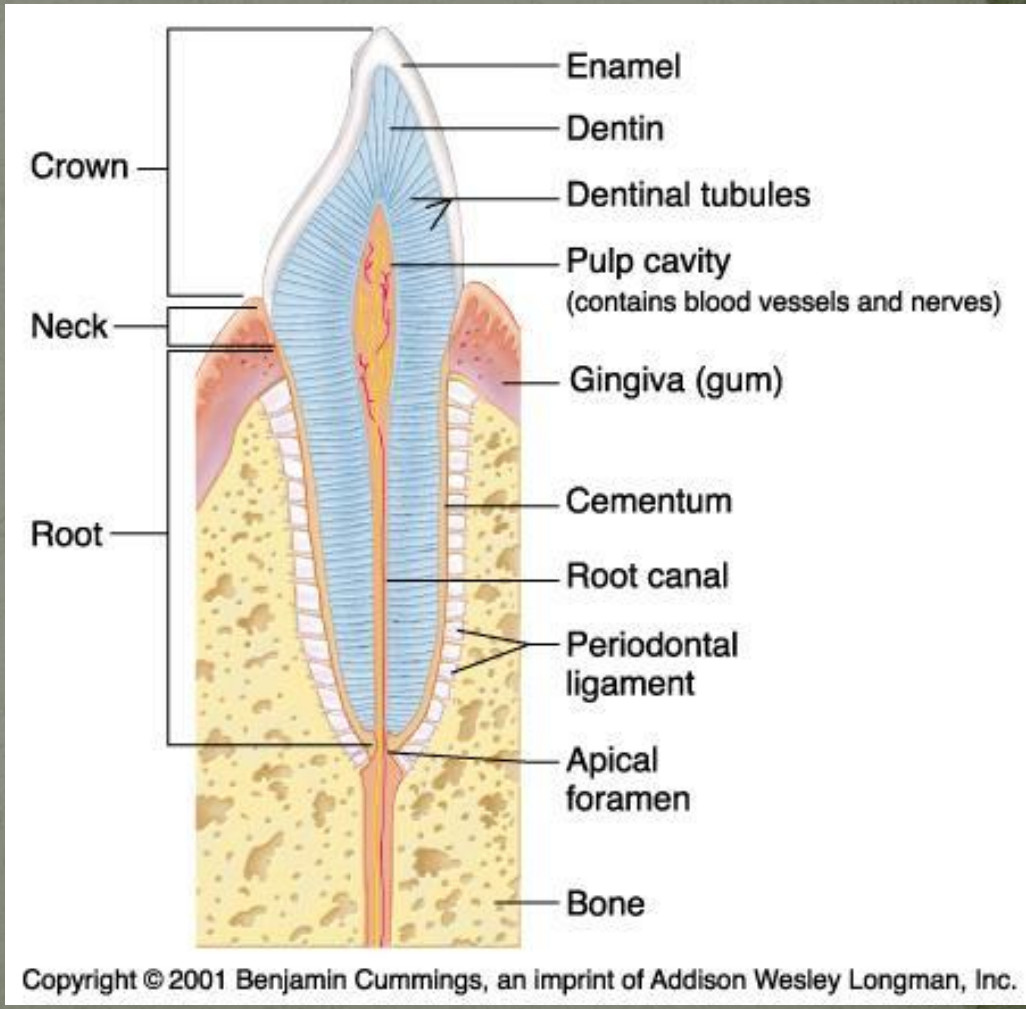
The tooth has three anatomical parts :



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Crown

The crown of a tooth is that part of the tooth which is covered with enamel and this is the part usually visible in the mouth.

The crown is located above the gingiva and may have various shapes, depending on the type of tooth (molar, canine, incisor).

Over time, it can undergo significant changes : abrasion, elongation (caused by gingival recession), erosion or dental decay that causes demineralization and destruction of the hard tissues of the tooth crown.

Neck

The neck of a tooth is the part of a tooth that is located at the gum line. The neck is located between the crown and the root of a tooth. The tooth neck includes a portion of the enamel, pulp, and dentin.

Conditions that afflict the tooth neck include broken teeth, dental caries, developmental abnormalities, impaction, dental attriction, and dental erosion.

Root

The root is the part embedded in the jaw. It anchors the tooth in its bony socket and is normally not visible.

The root is attached to the jawbone by a group of specialized connective tissue fibres called the periodontal ligament.

A tooth may have one or more roots. Normally, front teeth (incisors, canines) have a single root while molars can have two, three or more roots but this varies from individual to individual.

Tooth structure

Teeth are made of hard tissues that protect the pulp located in the middle. Dental anatomy (or tooth anatomy) is a field of anatomy dedicated to the study of tooth structure.

Enamel

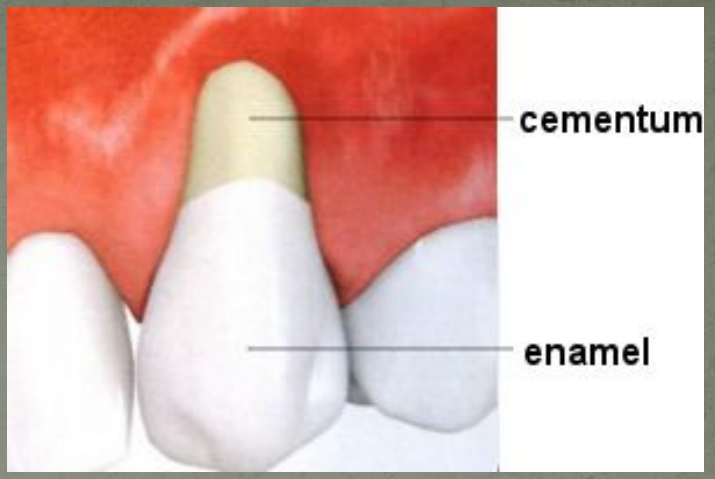
Enamel is the hardest and most highly mineralized substance of the body ; 96% of enamel consists of mineral, with water and organic material comprising the rest.

Enamel covers the crown of the tooth and varies in thickness over the surface of the tooth ; it is often thickest at the cusps, up to 2.5 mm, and thinnest at its border.

The normal color of enamel varies from light yellow to grayish white ; since enamel is semi-translucent, the color of dentin and any restorative dental material underneath the enamel strongly affects the appearance of a tooth.

Enamel does not contain any blood vessels or nerves ; therefore, enamel damage is painless. Enamel can be stained by coffee, tea, tobacco and other food dyes, especially in case of poor oral hygiene. Over time, it wears off, a process called attrition or abrasion.

Cementum



Cementum is a specialized bone like substance covering the root of a tooth. Its coloration is yellowish and it is softer than either dentin or enamel.

The principal role of cementum is to serve as a medium by which the periodontal ligaments can attach to the tooth for stability.

In case of gingival recession, the gum retracts from the tooth leaving part of the roots naked. In these areas, cementum is very sensitive to external stimuli (hot, cold).

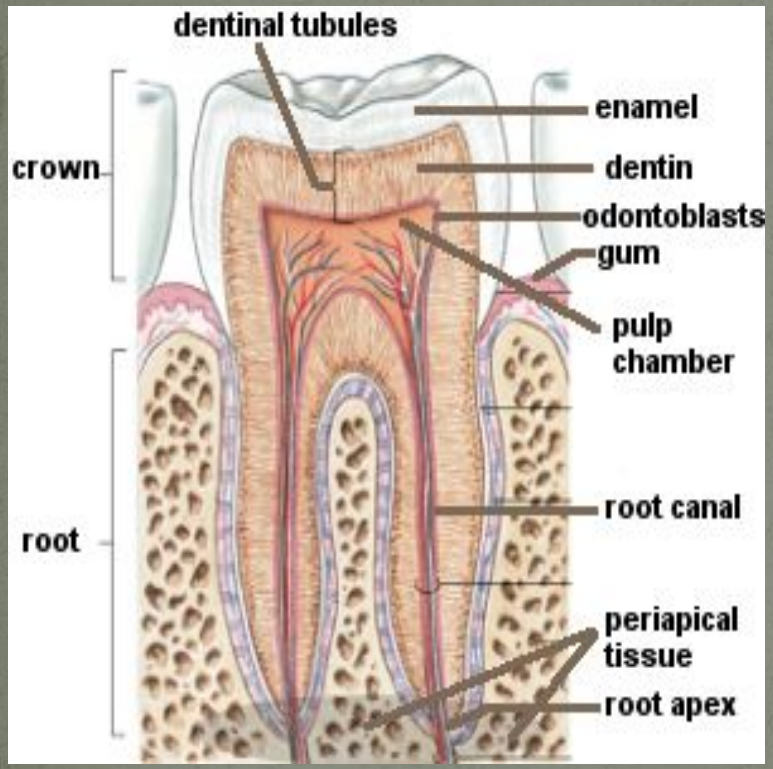
Dentin

Dentin is the substance between enamel or cementum and the pulp chamber. It forms the highest portion of the tooth and it normally has a gray-white or yellowish color.

Dentin is secreted by specialized cells (odontoblasts) located inside the dental pulp. Dentin has microscopic channels, called dentinal tubules, which radiate outward through the dentin from the pulp cavity to the exterior cementum or enamel border.

Because it is softer than enamel, dentin decays more rapidly and is subject to severe cavities if not properly treated, but it still acts as a protective layer and supports the crown of the tooth.

Dental pulp



The dental pulp (also called "the nerve" of the tooth) is the central part of the tooth and is filled with soft connective tissue that contains blood vessels and nerves. Along the border between the dentin and the pulp are odontoblasts, which initiate the formation of dentin.

The pulp tissues enter the tooth from a hole at the tip of the root called apical foramen or the root's apex. That is why most pulp infections spread through the apical foramen from the pulp to the periapical tissue and the surrounding bone.

Dental pulp ensures the tooth vitality and nutrition ; the pulp tissue has two main divisions: coronal pulp and radicular pulp :

Coronal pulp

The crown of a tooth contains the coronal pulp. The coronal pulp is the largest mass of the pulp and is housed in a closed space with rigid walls, called the pulp chamber.

The shape and size of each pulp chamber corresponds directly to the overall shape and size of the tooth, and thus is individualized for every tooth.

Radicular pulp

The radicular pulp is that pulp extending from the cervical region of the crown (where the coronal pulp ends) to the root apex. The radicular pulp is located inside the tooth's root, in a narrow and elongated space, called the root canal.

Root canals are not always straight and may vary in shape, size and number ; sometimes there are more than one root canal per root.

The radicular portion of the pulp is continuous with the periapical tissues through the apical foramen. Apical foramen is the opening of the radicular pulp into the periapical connective tissue.

Because of continuous deposition of dentin, the pulp becomes smaller with age. This is not uniform throughout the pulp but progresses faster on the pulp chamber's floor than on the roof or side walls.

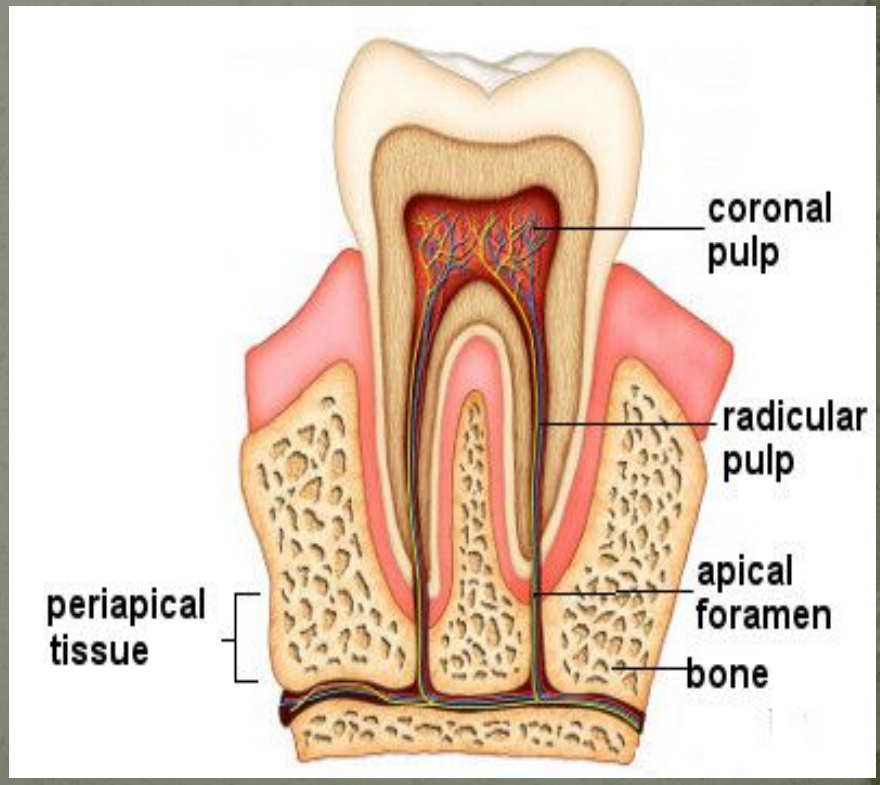
Periapical tissue

The periapical tissue (or apical periodontium) is located underneath the tooth ; basically, the radicular pulp is continuous with the periapical tissue through the apical foramen.

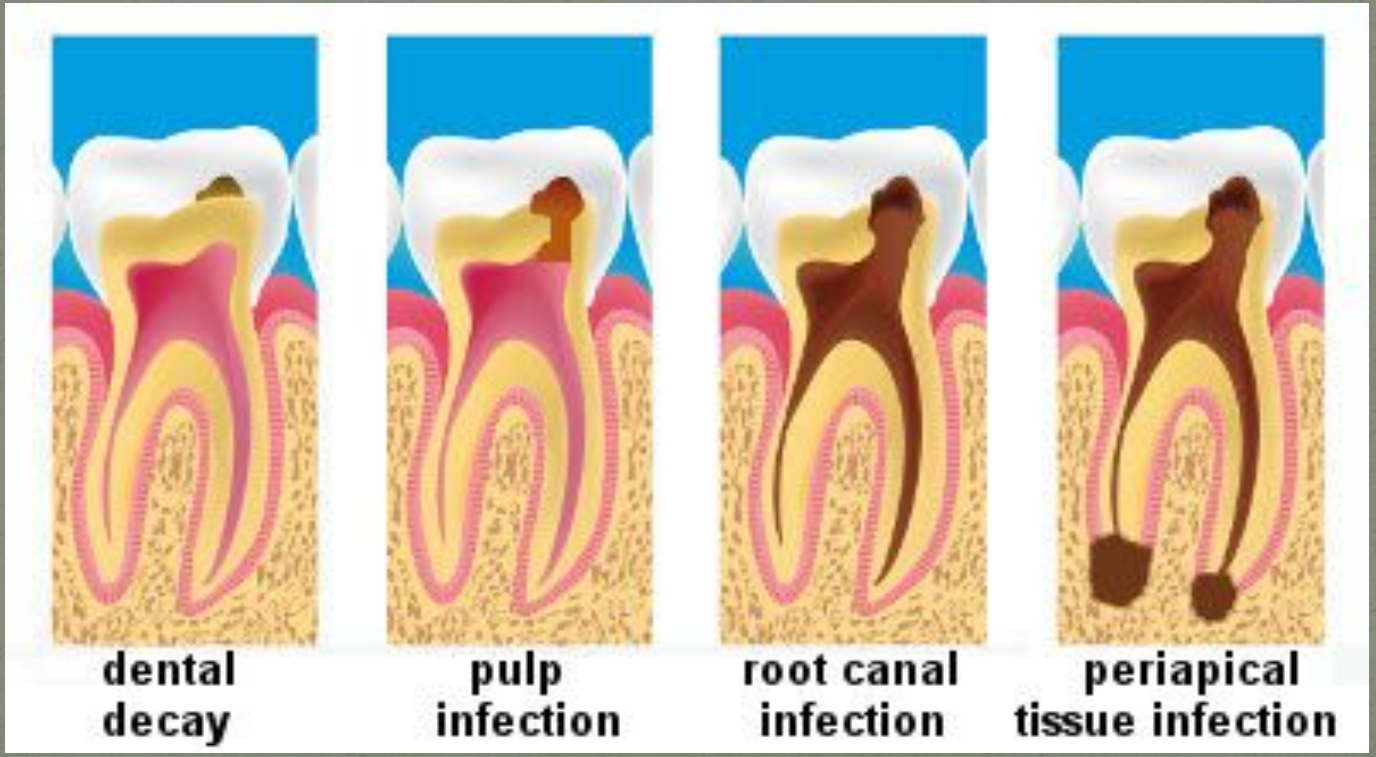
The periapical tissue is made of soft connective tissue, blood vessels, nerves, some periodontal ligaments that attach the tooth's root to the bone and the alveolar bone that supports the tooth.

The main feature of the periapical tissue is that most pulp infections that are not properly treated will spread through the apical foramen from the pulp to the periapical tissue.

Therefore, all periapical tissue infections are caused by bacteria infections from the dental pulp which themselves are a secondary development of tooth decays.



The dental speciality concerned with the study and treatment of dental pulp and periapical tissue infections is endodontics.



MODAL VERBS

Modal verbs are a part of the larger category called auxiliary verbs which are verbs that cannot be used on their own. They need to be accompanied by another (main) verb.

Modal verbs are used to express ability, obligation, permission, assumptions, probability and possibility, requests and offers, and advice. Each modal verb can have more than meaning which depends on the context of that sentence (or question).

The following words are modal verbs: Can, Could, May, Might, Must, Shall, Should, Will, Would.

Structure

(+) Subject + Modal Verb + Verb (base form of the infinitive)

(–) Subject + Modal Verb + not + Verb (base form of the infinitive)

(?) Modal Verb + Subject + Verb (base form of the infinitive)

CAN

1. To express ability.
Don't worry, I can stop this tooth easily.

2. To express a possibility (in general)
It can lead to caries.

3. To offer to do something for others
You don't need to pay for the treatment. I can do it for free.

4. To ask for or give permission / To request something
Can you show me your teeth?