

GENERAL STRUCTURE OF THE GASTROINTESTINAL TUBE

Mucous membrane (tunica mucosa):

Folds (**plicae**), smaller processes (**papillae**), **villi (villi intestinales)**. **Lamina epithelialis, lamina propria mucosae, lamina muscularis mucosae**. **Folliculi lymphatici solitarii** or **folliculi lymph. aggregati – Peyer's patches**.

Submucous tissue (tunica submucosa)

The nervous plexus is called **plexus submucosus Meissneri**.

Muscular tissue (tunica muscularis)

Is striated musculature or smooth. Internal **circular** and external **longitudinal**. The nervous **plexus myentericus Auerbachi**.

Outer layer

Tunica adventitia or **tunica serosa (visceral peritoneum)**.

Glands of the GIT

Intramural (e.g. goblet cells) or extramural glands.

ORAL CAVITY (CAVUM ORIS)

Rima oris

Vestibulum oris

Cavum oris proprium

Vestibule of the mouth

Labia oris - labium superius – sulcus nasolabialis, philtrum - tuberculum labii superioris

cheiloschisis (cleft lip)

gnathoschisis (cleft jaw)

palatoschisis (cleft palate)

- labium inferius - sulcus mentolabialis

pars intermedia

fornix vestibuli superior et inferior - frenulum (bridle)

anguli oris

glandulae labiales

m. orbicularis oris.

Buccae - glandulae buccales, m. buccinator, papilla parotidea - ductus parotideus.

Raphe pterygomandibularis –mandibular anesthesia

Gingiva - gingiva proper (attached gingiva) - pars fixa gingivae

- pars libera gingivae

Alveolar mucosa – separated from the gingiva by the mucogingival border

The oral cavity proper (cavum oris proprium)

diaphragma oris - mylohyoid muscles, geniohyoid muscles, anterior belly of the digastric muscle

glandula submandibularis

glandula sublingualis

Salivary glands

Glandulae salivariae minores - labiales, buccales, molares, palatinae, linguales

Glandulae salivariae majores - sublingualis, submandibularis and parotis

Glandula submandibularis – ductus submandibularis – caruncula sublingualis

Glandula sublingualis– plica sublingualis, ductus sublingualis major, ductus sublinguales minores

Glandula parotis - fossa retromandibularis, fascia parotideomasseterica. Tractus angularis separates the gland from the trigonum submandibulare. Parotid plexus - the CN VII – nervus facialis.

Ductus parotideus - papilla parotidea

Glandula parotis accessoria

The palate (palatum)

The hard palate (palatum durum) - the palatine processes of the maxillae and horizontal plates of the palatine bones

Raphe palati

Papilla incisiva

Plicae palatinae transversae

Glandulae palatinae

The soft palate (palatum molle, velum palatinum)

Aponeurosis palatina

Uvula palatina

Arcus palatoglossus et arcus palatopharyngeus

Tonsilla palatina – fossa (sinus) tonsillaris, plica triangularis, fossa supratonsillaris– plica semilunaris, 12 – 15 cryptae tonsillares– tonsillitis – tonsillar pegs, paratonsillar vein - tonsillectomy.

Muscles of the soft palate:

Musculus tensor veli palatini – CN V.

M. levator veli palatini

M. uvulae

M. palatoglossus

M. palatopharyngeus

plexus pharyngeus (CN IX., X.).

Tongue (lingua)

Corpus linguae

Radix linguae - tonsilla lingualis

Dorsum linguae - sulcus terminalis (ductus thyroglossus), sulcus medianus

Papillae filiformes, fungiformes, foliatae, valatae, (calliculi gustatorii)

Apex linguae

Margines linguae

Facies inferior linguae - frenulum linguae, plicae fimbriatae, plica sublingualis - caruncula sublingualis

Plica glossoepiglottica mediana and two plicae glossoepiglotticae laterales - valleculae epiglotticae

DENTITION

Dentes permanentes

32 teeth: 2 incisors, 1 canine, 2 premolars and 3 molars in one quadrant of the complete permanent dentition.

Description of the tooth:

The crown (corona dentis)

The masticatory s. (**facies oclusalis**) - **tubercula dentalia**

The contact ss. (**facies approximales**) - **facies mesialis, facies distalis**

The vestibular s. (**facies vestibularis**) - **f. labialis, f. buccalis**

The oral s. (**facies oralis**) - **f. palatina, f. lingualis**

The neck (collum dentis) - gingivodental cap

The root (radix dentis) is inserted into the alveolus of the jaw. Some teeth have one root, others 2 or 3.

The pulp cavity (**cavitas dentis**) - **canalis radialis - foramen apicis dentis**

Structure of the tooth

Dentin (**dentinum**) formed by odontoblasts, 70% of inorganic substances.

Enamel (**enamelum**) 97% of inorganic substances.

Cement (**cementum**) formed by the fibrous bone.

Pulp (**pulpa dentis**) - loose connective tissue, vessels and nerves.

Fixation of the tooth

Periodontium - collagen **Sharpey's fibers**

Parodontium - gum, periosteum, alveolus, periodontium, cement

Morphology of individual teeth

Dentes incisivi - 1 root, crown - occlusal edge. The largest incisor is upper medial one. The root is long, conical and flat from sides.

Dentes canini are long teeth with one root, the crown projects in the acute spike with cutting edges at its sides. The root is long and flat from sides. The upper canine is bigger than lower.

Dentes premolares has 2 tubercles on its occlusal surface (one vestibular, the other lingual).

Upper premolars have both tubercles of the same size, the lower have the bigger vestibular tubercle. Premolars have one root except the upper first premolar that has two roots – palatinal and buccal.

Dentes molares - the occlusal surface of upper molars has 4 tubercles separated by the deep groove. The size of molars decreases distally. The crown has 2 buccal and 2 palatinal tubercles. The groove has the shape of the letter H. Upper 1st molar is the strongest and biggest tooth of the upper arch. The additional tubercle may be on its palatine side (**tuberculum anomale Carabelli**). Upper 2nd and 3rd molar have often only 2 tubercles. The occlusal surface of the lower molars has the quadrangular shape. The groove has the shape of the cross. The 1st molar has often 5 tubercles the 5th lies distally. Third molars have variable crowns and may be impacted. Upper molars have 3 roots (2 vestibular and 1 palatinal), lower have 2 roots (1 mesial and 1 distal)

Dentes decidui

Crowns of milk teeth are lower and wide. They are of white colour with the blue shade. Roots are narrower and sharper and are more distant because surround primordia of crowns of permanent teeth.

Dental formula

i1, i2, c, m1, m2 (I, II, III, IV, V) – deciduous teeth

I1, I2, C, P1, P2, M1, M2, M3 (1, 2, 3, 4, 5, 6, 7, 8) – permanent teeth

Dentition is divided into 4 quadrants:

$\frac{1 2}{4 3}$	$\frac{5 6}{8 7}$
permanent	deciduous

23 = upper left permanent canine

85 = lower right milk second molar

Occlusion

Upper dental arch has a shape of the half of the oval, lower arch of parabola. Therefore the teeth do not meet each other exactly. Normally the crowns of the upper teeth are slightly oblique toward the vestibule and those of the lower teeth toward the tongue. Thus the cutting edges of the front teeth bypass each other like the blades of a pair of scissors. In the premolars and molars the vestibular tubercles of upper teeth overhangs those of lower teeth. Each tooth is in contact with two opposing teeth, with the principal antagonist (over a large contact area) and with an adjacent secondary antagonist. Only the 1st lower incisor and the third upper molar have a single antagonist. In rare cases the cutting edges are opposite each other like a forceps. In prognathism – the upper jaw is displaced anteriorly; in progenism – the lower jaw is ventral the upper one.

Eruption

The primordia of the deciduous teeth are already in a newborn child. The growing root pushes the crown to the gum, this atrophies and the tooth erupts.

I 6th-8th month

II 8th-12th month

III 16th-20th month

IV 12th-16th month

V 20th-36th month

Exchange of the teeth

Crowns of the permanent teeth grow orally and elicit resorption of alveoli of milk teeth and their roots. Roots of milk teeth shorten and disappear, the rest of the crown releases from the gum.

1 7th-8th year

2 8th-9th year

3 11th-13th year

4 9th-11th year

5 11th-13th year

6 6th-7th year

7 12th-14th year

8 17th-40th year

