TEETH (दंत/दाँत)

→ Study of teeth – Odontology

→ Physician of teeth – Odontologist

→ No. of teeth – (32) (In adults) (20) (In children)

→ Teeth are the hardest substance in human body which contain least amount of water.

→ Teeth of human are: (i) Thecodont (गर्तदंती)
(ii) Heterodont (विषमदंती)
(iii) Diphyodont (द्विबारदंती)

(i) THECODONT – Teeth embedded in Jaw. (जबड़े में धंसे हुए)

(ii) DIPHYODONT –
- Temporary (दूध के दाँत) → 20 (6th month to 6th yr)
- Permanent (दूधी के दाँत) → 32 (After 6th yr.)

→ 20+32 = (52) teeth total grow in human life.

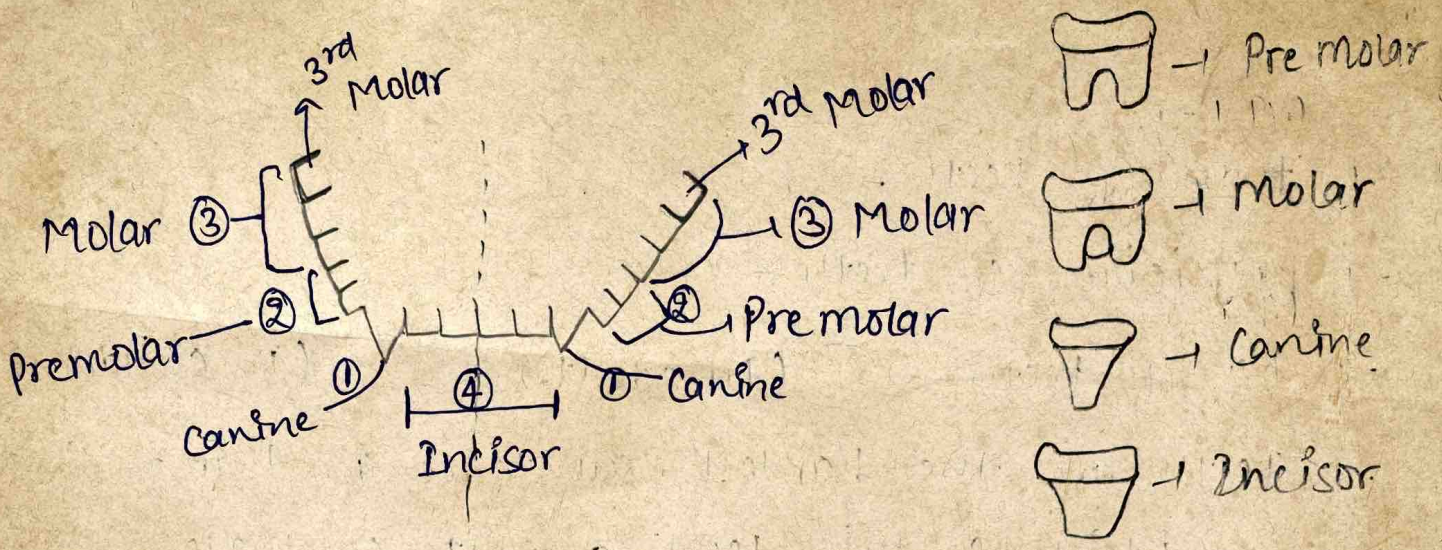
→ 20 teeth – Grow twice throughout life.

→ 12 teeth – Grow only once in human life which includes all Pre Molar & 3rd Molar.

(iii) HETERODONT –
- (i) Incisor (कृंतक) – 8
- (ii) Canine (रदनक) – 4
- (iii) Pre-Molar (अग्र-चवर्णक) – 8
- (iv) Molar (-चवर्णक) – 12

Upper Jaw → Maxilla (fixed)

Lower Jaw → Mandible (movable)



Teeth	Function	Roots	Number
Incisor (I)	Cutting	1	4+4 = 8
Canine (C)	Tearing	1	2+2 = 4
Pre-Molar (P)	Breaking	2 or 3	4+4 = 8
Molar (M)	Grinding	3 or 4	6+6 = 12

Wisdom Teeth — 3rd Molar is called wisdom teeth. (Total 4) (20 yrs. to 28 yrs.)
(अक्ल दाढ़)

→ It may grow or may not grow throughout life.

Dental Formula—

	I	C	P	M	
Adult →	2	1	2	3	× 2 ⇒ 32
	2	1	2	3	
Child →	2	1	0	2	× 2 ⇒ 20
	2	1	0	2	

→ In children, Pre-Molar teeth are absent

→ Pre-Molars & Molars are called Cheek teeth.

ENAMEL- It is the outermost layer of teeth & also called tooth-polish.

- Hardest part of body.
- Hardness of Enamel is due to the presence of Flourine.
- Enamel is made of :-

Salts (Calcium phosphate (Inner side of teeth)
Calcium Hydroxyapatite (outer side of teeth)

FLUOROSIS- It's a disease occured when fluorine exceeds.

CEMENTUM- Covering of layer at internal base/lower of teeth.

→ Tusk of Elephant → Incisor
↳ Largest teeth

→ Fang of Snake → Canine

→ Tusk of Walrus → Canine

→ In birds, teeth are absent as their jaw is modified into beak.

→ RCT → Root Canal Treatment.

→ Animals that don't have teeth — Turtles, Spiders, Bees, Octopus, Worms, Birds, Ostrich

→ No. of teeth in different animals —

Cow, Sheep, Deer, Chimpanzee, Goat, Giraffee → (32 teeth)

Mosquito → 47.

Horse → 36 to 44.

Pig — 44

Camel — 34

Lion — 30

Elephant → 26 + 2

Dog → 28 child, 42 adult

Cat → 26 temp, 30 permanent.

Crown —  white part of teeth that is not covered by gums.

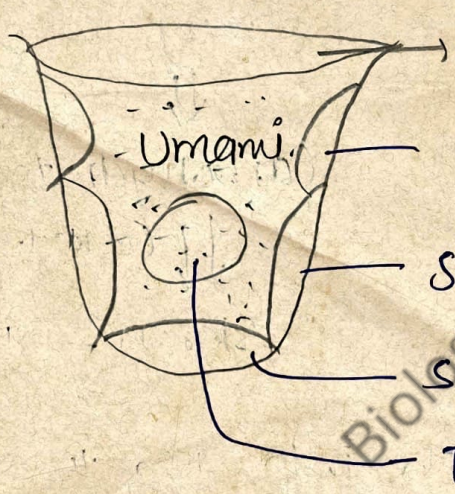
TONGUE

→ It's a sense orgen which senses taste due to taste buds.

→ No. of taste buds — 2000 to 9000.

→ length of human tongue — 8.5 cm. (Men)
7.9 cm. (women)

→ The base of tongue attached to Hyoid Bone (neck) & its floor attached by a fold of MUCous membrane called Frenulum.



→ Umami — Fifth taste — Savory or meaty taste.

→ Kokumi — Sixth taste < Koku means rich, mi means taste. Found in cheese, yeast.

→ PAPILLAE — Raised structure over tongue (दाने से दाने)

- Fungiform
- Filiform — Smallest taste bud having no taste.
- Foliate — Not present in adults.
- Circum vallate — Largest taste bud.

Salivary Gland (लारीय ग्रन्थी) –

→ Releases Saliva → 1 ltr. – 1.5 ltr./day.

↳ PH of saliva – 6.8 (Slightly acidic)

→ Saliva Contains → 99% water

contains → Ions like Na^+, K^+, HCO_3^- (bicarbonates), Cl^-

→ Mucous

→ Enzymes

- Lysozyme → Killed almost Germs, bacteria.
- Ptyline Amylase or Salivary Amylase → Carbohydrates (Cooked.) → Starch → Maltose

→ Ptyline Converted Starch into Maltose partially.

→ Complete digestion takes place in Small Intestine.

→ Partial digestion of Carbohydrates (Starch) takes place in mouth not of protein & fat.

→ Maltose – रोटी को ज्यादा चबाने से मीठी लगती है।

→ In Saliva, Mucin is present & acts as lubricant.

Functions of Saliva – Helps in speech.
- Helps in swallowing the food.
- Kill the bacteria present in food.
- Controls the temp. of mouth.
- Helps reduce the risk of cavities and gum disease.

Buccal Cavity – Digestion of food starts from here.

3 pairs of salivary glands – 6 in no.
- Parotid gland – Largest (near ear)
- Sub-Lingual – Smallest (below tongue)
- Sub-mendibular – below mendibular Jaw

↳ 70% to 75% saliva formed.

→ Painful swelling in Parotid gland.

→ Digested + Undigested food → mixture → BOLUS

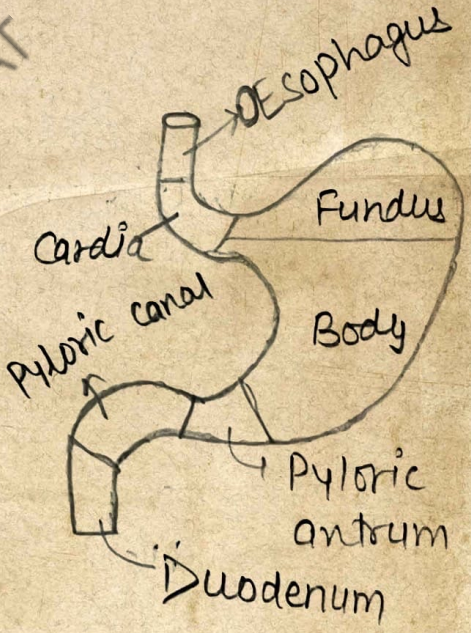
Starch (Carbohydrates)

food + saliva → BOLUS.

Protein & fats.

STOMACH

→ It's a food reservoir.
→ J-shaped organ.
→ Food exists in stomach for 3-4 hrs.
→ After 1-2 hrs., digestion starts.
→ After eating food, energy used to digest the food. That's why we exhaust and feel sleepy.
→ Protein digestion takes place in stomach.
→ PH of stomach → 1.5 to 3.5.
→ In human, it has 3 parts-
  (i) Cardia
  (ii) Fundus
  (iii) Pylorus



Cardia- Connects with food pipe/ oesophagus.

(जठर रस)
Gastric Juice- Present in our stomach that was formed by gastric gland.

- Gastric juice contains-
  → H_2O + ions + HCl acid + pepsin enzyme + Rennin + mucous (श्लेष्मा)
- It's a digestive fluid formed within the stomach lining.

→ Rugae- पेट में चूहे दौड़ना | पेट में आवाज आना
Allow expansion of stomach after taking food & liquid.

Gastric glands – made of → (i) Mucus cell / Goblet cells –

Mucus cell **secrete** ⟹ Mucus (चिपचिपा पदार्थ जो खाने को चिपकने नहीं देता)
→ Food को direction देता है

(पार्श्विका कोशिका)
(ii) Parietal ~~glands~~ cells / Oxyntic cells –

Parietal cell **forms** ⟹ HCl

(iii) Chief cells / peptic cells **forms** → Pro-Rennin enzyme
→ Pepsinogen

HCl – Functions → Deactive Ptyline (लार enzyme)
→ kills bacteria / Germs
→ Causes acidity

ENO, Pizen used to reduce the acidity

acid + base → salt + Neutral
$HCl + Mg(OH)_2 \rightarrow MgCl_2 + H_2O$

$Mg + (OH)_2 \rightarrow$ base

→ HCl activates the enzymes after giving acidic medium to digest the food.

Enzymes – Pepsinogen (inactive enzyme) + HCl → Pepsin formation (active digestion)
→ Pro-Rennin + HCl → Rennin formation (active form)

Protein $\xrightarrow[\text{breaks}]{\text{Pepsin}}$ Peptides / peptones $\xrightarrow{\text{Trypsin}}$ Amino acid.

↳ Partial / incomplete digestion.

Stomach — small intestine.

Milk protein (or Casein protein) $\xrightarrow[\text{converts}]{\text{Rennin}}$ Paracasein $\xrightarrow[\text{breaks}]{\text{Pepsin}}$ peptide / peptones

↳ white colour of milk is due to it.

- Rennin → found mostly in children. helps in digestion of milk.
- Renin – kidney hormone.

→ Paracasein → बच्चों के मुँह से निकला फटा दूध

→ CHYME – Digested carbohydrate (mouth) + digested protein (stomach) + undigested lipid / fat.

→ Protein digestion takes place in stomach.

→ Starch – Stored food material in plants.
- Cellulose is the most abundant carbohydrate on the Earth.

→ Chitin – Second most abundant carbohydrate on Earth.
- Cell wall of Fungus made up of Chitin.