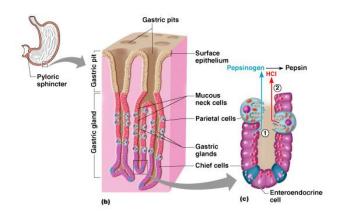
DIGESTIVE SYSTEM CLASS NOTES

Digestion • Breakdown of		food and the		of nutrients in the b	oloodstream.
Metabolism • Production of	for	and		cellular activities.	
The digestive system is	composed of	the			
	canal which i	s a continuous		Mouth (oral	Parotid gland
tube a	olong with sev	veral		Tongue	Sublingual gland Submandibular glands gland
	organs. The o	rgans along the	Eso	pphagus	Pharynx Stomach
alimentary canal incl	ude:		Sma inte	lbladder nall estine: uodenum ijunum	Pancreas (Spleen) Large intestine: • Transverse colon • Descending colon • Ascending colon • Cecum • Sigmoid co • Rectum • Appendix
THE MOUTH				Hard palate Oral	Soft palate Nasopharynx Uvula
• The lips		_ the anterior opening.		cavity Lips (labia) Vestibule	Palatine tonsil Lingual tonsil
• The hard palate	forms the	roof of the mo	uth.	Lingual frenulum	Oropharynx
• The soft palate for	orms the	roof of the mout	h.	Tongue Hyoid bone	Epiglottis Laryngopharyn
• Uvula is the	project	ion of the soft palate.		Trachea	Esophagus
• The oral cavity is	s the area con	tained by the		(a) 	
• The tongue is a _		_extension aiding in _		and	of food.
Tonsils					
In the mouth, mastication	on () of food, mixing 1	nast	ticated food with	
Initiation of swallowing	t by the	and allowi	ng f	for the cance of	

In the pharynx, it serves as a passageway for _	and	Food is propelled to the
by two muscle layers:		
°inner layer		
outer layer Food movement is by alternating contraction	s of the muscle layers ()
The esophagus runs from thet	to theand	moves food by
The submucosa contains blood vessels, and lymphatics.	Mesentery	Visceral peritoneum Intrinsic nerve plexuses: Myenteric nerve plexus Submucosal nerve plexus Submucosal glands Mucosa: Surface epithelium Lamina propria Muscle layer Submucosa Muscularis externa: Longitudinal muscle lay Cricular muscle play Serosas: (visceral peritoneum) Lumen Duct of gland outside alimentary canal
The stomach is located on the	side of the abdomina	al cavity. Food enters through
Esophagus Muscularis externa Longitudinal layer Circular layer Oblique layer Pylorus Duodenum Pyloric sphincter (valve)		Pyloric antrum
The stomach is afor food and it i	s where food begins to	The
chemical digestion ofbeg	ins here. The processe	d food is calledthat
will be delivered to the	·	
Simple columnar epithelium •Mucous neck cells – produce a sticky _	mucus	
∘Gastric glands – secrete	juice	
∘Chief cells – produce	digesting enzymes (p	epsinogens)
∘Parietal cells – produce	acid	
∘Endocrine cells – produce		



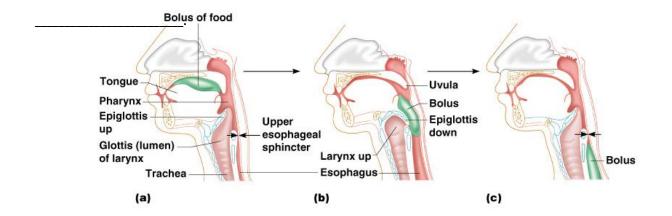
The small intestines are the body's major	organ. It is the site of nutrient
absorption into the	
The subdivisions of the small intestines include:	
Duodenum	
•Attached to the	
°Curves around the head of the pancreas	
J ejunum	
·Attaches anteriorly to the duodenum	
-l leum	
°Extends from jejunum to	
The source of the enzymes needed come from the Bile enters from the	and the Gallbladder Right and left hepatic ducts from liver Common hepatic duct
The villi of the small intestines is where all of the action is. The also increase the	Ouodenum Cystic duct Duodenum Hepatopancreatic ampulla and sphincter Pancreas Jejunum Main supposition
Muscle layers Large circular folds (plicae circulares) Villi (a) Small intestine	Duodenal papilla Main pancreatic duct and sphincte Microvilli

(c) Absorptive cells

Absorptive _____ and blood _____ are present.

The large intestines are	Rí	ight colic			Left colic (splenic) flexure Transverse mesocolon
in dia	ameter but	ransverse colon			
than the smal	На	austra			Descending colon
intestines. It frames the intern	lal lle	eum (cut)			Cut edge of mesentery
·	c	ecum			-Teniae coli -Sigmoid colon
Its function is to absorb		ppendix —	Rectum		
and eliminates	food as		Anal canal -	External anal sphincter	
Ther	e is no	here		cells produ	ice
mucus as a lubricant.					
Cecum – saclike first part of the	e large intestine				
Appendix Accumulation of lymph	natic tissue that so	ometimes beco	mes inflamed ()
°Hangs from the					
The structures of the large inte	estines include:	,		and the	
	ACCESSO	ORY ORGANS			
The accessory organs of the dig	gestive system inc	clude:			
The salivary glands produce		Saliva is a con	nbination of		and
which helps	form food into a _		It contains	S	<u>-</u>
to begin the digestion of					
The role of the teeth is to	food. Hı	umans have tw	o sets of teeth,	Incisors Central (6–8 mo) Lateral	
theteeth or ba	aby/milk teeth. 20	0 of them are f	ormed by age _	(8–10 mo) Canine (eyetor (16–20 mo) Molars First molar (10–15 mo)	
The pancreas produces digesti	ve enzymes that b	oreak down	categories	Second molar— (about 2 yr) Incisors Central (7 yr)—	Deciduous (milk) teeth
of food into the duodenum.				Lateral (8 yr) Canine (eyetor (11 yr) Premolars	oth)
— Alkaline fluid introduced with	enzymes neutraliz	zes acidic chyn	ne	(bicuspids) First premolar— (11 yr) Second premola (12–13 yr)	
Endocrine product of the panc	reas			Molars First molar (6–7 vr) Second molar (12–13 yr) Third molar (wisdom tooth) (17–25 yr)	Permanent teeth

∘Insulin The liver is the	gland in the body and produces	It	is located on the
right side of the body under the	Connected to	the	via the
common hepatic duct.			
The gall bladder stores fro	om the liver by way of the cystic duct	t. Bile is in	troduced into the
duodenum in the presence of	food. Gallstones can cause	blockages.	
• – getting	food into the mouth		
• – mov	ring foods from one region of the dig	estive syst	em to another
Peristalsis – alternating waves of co Segmentation – moving materials b			
Mechanical digestion		*	(a)
•Mixing of food in the mo	uth by the		
∘Churning of food in the _			
Chemical Digestion			(d)
°breal	k down food molecules into their bui	ilding bloc	ks
∘Each major food group u	ses different		
The processes of the digestive syste	em are:		T
Absorption •End products of digestion	n are absorbed in the	or lymph	Food Ingestion Mechanical digestion • Chewing (mouth) Esophagus
Defecation •Elimination of indigestib	le substances as		Churning (stomach) Segmentation (small intestine) Chemical digestion Chemical direction (small intestine) Chemical digestion
The pharynx and the esophagus have	ve digestive function. They on	ly serve	large intestine Stomach Absorption Lymph
as passageways to the	.		vessel
Swallowing or thep	phase is voluntary and occurs in the	mouth.	intestine Blood vessel intestine Mainly H ₂ O
The food is formed into a	and forced down by the		Per Feces Anus



In the stomach,	_acid helps digest food chemically.	The environment has to be
acidic because it activates	to	_ for protein digestion. This
also helps kill	·	

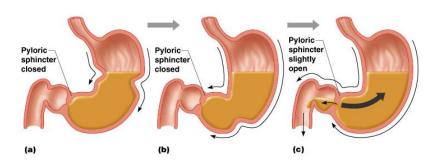
Protein digestion enzymes

•Pepsin – an active _____ digesting enzyme

•Rennin – works on digesting _____ protein

—The only absorption that occurs in the stomach is of _____ and ____

The stomach empties in _____hours.



Digestion in the small intes	stines uses lipase to digest from	the pancreas. Nucleic acids are
digested with	The alkaline content helps	the acidic environment.
Two hormones that stimul	ate the release of pancreatic juices are	and
Water is absorbed alon	g the small intestines	helps move things along.
In the large intestines,	digestive enzymes are produced. Res	ident digest
remaining nutrients		
∘Produce some vita	minand	

•Release — Water and vitamins K and B are Remaining materials are eliminated via feces
Mass movements
°Slow, powerful movements
°Occur to times per day
Presence of feces in the rectum causes a defecation reflex
oInternal anal sphincter is relaxed
Defecation occurs with relaxation of the voluntary (external) anal sphincter
DEVELOPMENTAL ASPECTS
The alimentary canal is a continuous tube by the week of development
 Digestive glands bud from the mucosa of the alimentary tube
 —The developing fetus receives all nutrients through the
• —In newborns, feeding must be frequent, peristalsis is inefficient, and vomiting is common
 —Teething begins around agemonths
 —Metabolism with old age
 —Middle age digestive problems
∘Ulcers
∘Gall bladder problems
Activity of digestive tract in old age
∘Fewer digestive juices
°Peristalsis
Diverticulosis and cancer are more common